1974

Report of the Governor's State Pension Study Commission

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REPORT OF THE GOVERNOR'S STATE PENSION STUDY COMMISSION

to

The Honorable Philip W. Noel

Governor of the State of Rhode Island and Providence Plantations

March 28, 1974
March 28, 1974

The Honorable Philip W. Noel
The Governor of the State of Rhode Island
and Providence Plantations
Executive Chamber
State House
Providence, Rhode Island 02903

Dear Governor Noel:

Enclosed is the report of your State Pension Study Commission. This study was commissioned at your request to study all aspects of the State's Retirement System and to analyze the possibilities of providing retirement benefits, without endangering the fiscal integrity of the retirement fund, after thirty years of service at 80 percent of the average salary of the highest three years regardless of age of the beneficiaries.

Since last spring members of the Commission have been meeting on regular basis on a full commission basis and on a subcommittee basis. Having completed an exhaustive review, members attending the past two months' meetings have formed a consensus on the findings that they believed should be brought to your attention.

The following items are the highlights of those findings and recommendations:

I. Unfunded Accrued Liabilities

1. The Retirement Fund is not properly funded. The statutory requirements for funding are not sufficient to meet the future needs of the fund.

2. To the extent possible with the implementation of new funding policies, the ratio of assets to liabilities should not be allowed to deteriorate any further.

3. A policy of partial funding is acceptable if contributions and revenues to the fund are sufficient to attain the following:
4. a. (cont.)

iii. assist in the establishment of a formal investment policy;

iv. assist in the establishment of the plans and objectives for the short range and the long range;

v. provide a continuous review of the performance of the portfolio;

vi. and to prepare the legislation to implement the above policies.

III. Administrative

1. The Retirement Board should be expanded to include more state employees and teacher representatives.

a. To accomplish that end, the Commission would suggest consideration of the following plan of representation:

Retirement Board

(1) General Treasurer
(1) Director of Administration or his designee
(1) Board of Regents' nominee
(1) League of Cities and Towns nominee
(2) Active state employee members of the system to be elected by active state employees
(2) Active teacher members of the system to be elected by active teachers
(1) Active municipal employee member of the system to be elected by active municipal employees
(1) Retired member of the system to be elected by retired members of the system
(1) Chairman of the House Finance Committee or his designee
(1) Chairman of the Senate Finance Committee or his designee
(1) Public representative appointed by the Governor
III. Administrative (cont.)

b. Members of the Retirement Board considered to be employee representatives are to be elected by the members in the following manner:

i. Each candidate must have 100 signatures of members of their respective group.

ii. The term of office for elected members shall be for four (4) years as follows:

- One (1) state employee elected to 1976
- One (1) teacher elected to 1976
- One (1) state employee elected to 1978
- One (1) teacher elected to 1978
- One (1) retired person elected to 1978

iii. In case of a vacancy for any reason the seat shall be filled by a new election of the respective group for the balance of the vacated term.

iv. Recall:

By petition for recall of twenty percent (20%) of the respective membership of the various groups a new election shall be ordered by the Retirement Board.

2. The Retirement Board should expand its administrative structure to include the following units: a retirement counseling center to provide individualized retirement planning services to employees and to assist retirees; a data processing capability to completely computerize the members' statistics; and a long range financial planning unit to establish long range financial goals and plans to achieve those goals for new benefits and improved investment policies.

3. The Retirement Board should be given legal control over its investments.

4. No benefits should be approved by the General Assembly until the new Retirement Board has been given a fiscal
III. Administrative

4. (cont.) note on that benefit, has voted its approval of the benefit as being consistent with its long range plan of benefit improvement, and, unless, adequate contributions are to be provided.

IV. Benefits

1. The Commission finds that the additional contributions required to provide retirement at 80 percent of salary after 30 years of service regardless of age are too costly to be implemented this year. However, the Commission believes that consideration should be given to phasing in such benefit over a several year period. The cost of such improved benefit should be shared on an equitable basis and the contributions should be sufficient to maintain the fiscal integrity of the fund.

2. All persons within the Retirement System should be treated equally. There should not be separate classes of members who receive more generous benefits than other members unless those benefits have been fully funded by the necessary contributions. Unfunded special benefits impair the integrity of the fund and provide an injustice to the majority of the members of the Retirement System. To help achieve this goal,

   a. Members who have received a more generous pension allowance than regular members should be required to pay the additional rate of contributions as recommended by the Actuary, and the

   b. Cost of pensions and death benefits for members of the General Assembly should be financed from general revenues.

3. No new benefits should be provided unless those benefits are to be supported by the additional contributions required to fund the benefits according to standards previously outlined.
The Honorable Philip W. Noel  
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March 28, 1974

IV. Benefits (cont.)

3. a. substantial new benefits should not be considered until existing benefits in the Retirement Plan are properly funded.

b. a long range plan should be developed for the gradual phasing in of improvements in the provisions of the plan.

c. changes in the Survivor's Benefits plan for teachers, which is overfunded and inadequate, and other technical changes in benefit provisions, should be considered immediately.

4. Provision should be made to ensure that all members of the State Retirement System are also members of the U. S. Social Security System.

a. Refunds of employer and employee contributions to the teacher's survivor's benefit plan to teachers and local communities should only be made on the condition that those funds are to be used to bring the teachers involved into the more generous Social Security survivor's benefit plan and related benefits, unless an individual teacher is withdrawing from the plan.

b. The survivor's benefit fund should be upgraded to the levels of Social Security for those persons who will not be able to accumulate enough credits to qualify for Social Security.

c. Legislation should be considered to mandate participation of all new teachers and present and new state employees in the Social Security system and to gradually phase out the teacher's survivor's benefit plan for new employees.

5. The Commission finds also that an added priority in a long range plan for benefit improvements should be the development of inflation hedges in retirement, such as use of the highest year's salary for a computation basis, and such as the use of annual cost of living increase
which goes into effect immediately and which more accurately represents the ongoing rate of inflation than the present three percent (3%) increase after three years of retirement.

6. A long range plan should also give consideration to the need for a "grandfather" clause for the purchase of retirement credits by persons transferring from other systems and to need for changing the provisions of the annuity options.

7. Return of interest with the return of contributions and earlier vesting are other provisions which deserve further consideration in a long range plan.

The Commission in making this report believes it has a strong responsibility for candor; and it realizes that its findings will be a disappointment to many employees who had expected the Commission to find some magical way to finance new benefits rather than making a finding that present benefits are not properly financed. However, the Commission believes that the serious implications of leaving unchanged the present funding system require that all parties to the State's Retirement System fully understand the financial limitations on any further changes in benefits without heavy additional contributions.

The members of the Commission appreciate the interest and financial support that you have provided for this study, and they feel honored to have served you.

The Commission would like to also note its appreciation to its consultant, Mr. H. Edward Spaulding of The Connell Company, for his patience and expert assistance.

Sincerely,

Keven A. McKenna, Chairman
State Pension Study Commission
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Technical assistance provided by the staff of Joseph G. Iannelli, Executive Director of the State Retirement System.
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FOREWORD

On May 9, 1973, Governor Philip W. Noel established a commission to study the state's pension system for state employees and school teachers.

The catalyst for the study was the close agreement between labor representatives of teachers and the governor that a goal should be established of a 20 percent retirement benefit, after 30 years of service regardless of sex, if that level of contribution could be cut without disturbing the integrity of the retirement system. It was agreed to set up a study commission.

The purpose of the study commission was to review all the information regarding the above goal and other aspects of the pension system to develop specific legislative recommendations.

Working with the assistance of a qualified consultant team, the study commission met numerous times on a full commission basis and frequently met on a subcommittee basis in the months between June 1973 and March 1974.

After undertaking a complete review of the workings of the state's retirement system for teachers and state employees on a full commission basis, the commission divided itself into the
FOREWARD

On May 3, 1973, Governor Philip W. Noel established a Commission to study the state's pension system for state employees and school teachers.

The catalyst for the study commission was an agreement between labor representatives of teachers and state employees and the Governor that a goal should be established for providing retirement benefits at 80 percent of salary after thirty years of service regardless of age if that benefit could be achieved without disturbing the integrity of the existing pension funds. To help achieve that goal and to evaluate all aspects of the present retirement system, it was agreed to establish a study commission. The purpose of the study commission was to make findings of fact regarding the above goal and other aspects of the system and not to develop specific legislative recommendations.

Working with the assistance of a pension consulting firm, the study commission met numerous times on a full commission basis, and frequently met on a subcommittee basis in the months between June 1973 and March 1974.

After undertaking a complete review of the workings of the state's retirement system for teachers and state employees on a full commission basis, the commission divided itself into the

A key element of the commission's work was an attempt to evaluate the potential of the state's retirement funds to generate greater income for the retirement funds and to analyze the present financial support for the retirement funds.

There were numerous delays which were encountered in obtaining the financial data and personnel statistics which were required by the actuary employed by the commission in order to certify the results of his evaluations. Those delays and the absence of specific data on members of the retirement system significantly slowed the work of the consultant and made it impossible for the commission to complete its work before the opening of the second session of the General Assembly as had been originally planned.

Although many members of the commission believed that there was a need for an extensive amount of additional study on the problems of the state's retirement system, the commission decided at its last meeting in February to report its findings to date to the Governor within the subsequent month.

The commission believes that the additional analysis required of the retirement system to develop a long range plan for
benefit improvements could be best undertaken by a restructured retirement board.

The report of the commission which is contained herewithin represents the findings of the commission and its subcommittees as of the middle of March. It is meant to be read in conjunction with the data included in the Thirty-Seventh Annual Report of the Retirement Board, and in the actuary's valuation and commentary also included in that report. The Introduction of this report provides specific data on the benefits provided by the retirement system and on the status of its finances.
INTRODUCTION

Overview of the Retirement System in Rhode Island

The System Today: The Employees' Retirement System presently includes all state employees and public school teachers in the State of Rhode Island with certain minor exceptions described by law. The system provides a complete schedule of benefits for eligible members and beneficiaries, for service, disability, and death. In most instances, these benefits supplement federal social security provisions.

Retirement Requirements and Benefits: Retirement is permitted at age sixty (60) or after thirty (30) years of service, at age fifty-five (55) with thirty (30) years of service, or at any age with thirty-five (35) years of service. Contributions of members cease after thirty-eight (38) years of service. The benefit formula is 1.7 percent for ten (10) years of service and 1.8 percent...
INTRODUCTION

Overview of the Retirement System in Rhode Island

The System Today - The Employees' Retirement System currently includes all state employees and public school teachers in the State of Rhode Island with certain minor exceptions specified by law. The system provides a complete schedule of benefits for eligible members and beneficiaries, for service retirement, disability, and death. In most instances, these benefits supplement federal social security provisions.

Retirement Requirements and Benefit Formulas - Normal retirement is permitted at age sixty (60) with ten (10) years of service, at age fifty-five (55) with thirty (30) years of service, or at any age with 35 years of service. Contributions of members cease after thirty-eight (38) years of service. The benefit formula is 1.7 percent for ten (10) years of service or less, 1.9 percent for eleven (11) to twenty (20) years of service, 2.4 percent for twenty-one (21) to thirty-seven (37) years of service, 3.2 percent for the 38th year of service to a maximum of 80 percent of final average salary (average of the highest three years) times years of credited service to a maximum of 38 years. Early retirement is provided at age 55 with 30 years' service. (The allowance is the normal allowance actuarially reduced for ages under 55.)
Disability retirement is available at any age to members with seven years of service if the disability is non-duty connected. The member is entitled to basic formula for each year of service. The minimum allowance is 26.5 percent of average compensation. If disability is duty-connected, the member regardless of age, or years of service, if under age 65, is entitled to 2/3 of salary at the time of disability, reduced by workmen's compensation payments. The retirement law provides for compulsory retirement at age 70. After retirement, three percent per year of original retirement allowance is added to a retiree's allowance after three years of retirement.

**Vesting and Deferred Allowances** - Benefits vest at any age after ten (10) years of service, and a deferred retirement allowance is payable at age sixty (60). The benefit is calculated as it is for normal retirement.

**Re-employment of Retired Employees** - State and municipal retirees may be re-employed by city or state agencies for up to seventy-five (75) days in any calendar year without loss of pension. No additional credit is gained and if service exceeds 75 days, the pension is suspended. Teachers may substitute up to 75 days in any school year. Some rules apply after 75 days. Members and employers must report the days worked monthly to the Retirement Board.
As of June 30, 1973, there were 14,373 state employees and 12,683 teachers included as contributing members of the system. Also, there were 2,665 state employees and 2,204 teachers listed as retirees, pensioners, or beneficiaries on the same date.

Origin and Background - The Employees' Retirement System became operative on July 1, 1936 (see Chapter 2334, P.L. 1936). State employees who were in service on that date received full pension credit for service prior to such date. Membership in the system for employees in service at that time was optional. School teachers were included in the system on July 1, 1949, by enactment of the legislature (see Chapter 2101, P.L. 1949) and teachers with prior teaching credits received pension credit for all such service. The original membership of the system in 1936 showed 2,561 state employees. The original teacher members in 1949 when the system was extended to cover them numbered 4,269. Since the establishment of the system in 1936 there have been numerous amendments to the law extending benefits, modifying restrictions, and in general upgrading and modernizing retirement provisions. Many of the improvements were the direct result of a broad review of the system undertaken by the retirement study commission in 1970.*

Membership - All employees of the state whose service

*See summary and commentary on 1970 changes in Appendix
is of a regular character must belong to the retirement system, but
this does not include employees whose service is of a casual nature.
Nor does the compulsory feature extend to certain other categories
of employees who are excluded by law or who are extended optional
provisions. Those excluded from the system are employees who
enter state service after their sixtieth birthday, judges of the
state's courts, and members of the state's police. Optional member-
ship is afforded to elected officials of the state and members of
the General Assembly. Also, academic and certain administrative
personnel of the state colleges and university have an option to
join the system or participate in the Teachers' Insurance Annuity
Association. Teachers of the public schools in the cities and
towns of Rhode Island are also included as compulsory members of
the system. This category includes superintendents, principals,
school nurses and certain other public school officials.

**Administration** - The management of the system is handled
by a retirement board of eleven members, consisting of the General
Treasurer, the Directors of Administration and Business Regulation,
the Commissioner of Education, the Chairmen of the Senate and House
of Representatives Finance Committees, and representatives of the
general public, the state employees, the school teachers, and the
municipal employees and employers. The board holds regular meet-
ings for the purpose of reviewing the current operations of the
system and approving retirement applications of members. The law
requires the board to develop a retirement program for state employees and teachers, and to make an annual report to the General Assembly. The board is also required to furnish each member with an annual statement of his retirement account. The day-to-day administrative business of the board is supervised by the Executive Director, assisted by a staff of administrative, financial, and clerical personnel. Administrative expenses of the staff are provided by direct appropriations of the state.

**Method of Funding** - The system operates on a jointly contributory basis with both the employees and employers sharing in its cost. State employees contribute five percent (5%) of salary. Teacher-members, because of their greater longevity, of their greater post service liabilities and other characteristics, contribute six percent (6%) of salary. The remainder of the cost for state employees is assumed by the state. The employer's requirements for teacher-members are shared equally by the state and the applicable cities and towns. The employer's share is a rate which is a percentage of total salaries. It reflects projected requirements for pension and benefit payments for a specified period of years, after giving effect to contributions by the beneficiaries, and of yield from investments. Consideration is also given in the determination of these requirements for other factors of actuarial significance. The rates of contribution for employers for the five year period dating from July 1, 1972, as determined under the partial method
of funding prescribed by the law, and as recommended by the actuary of the Retirement Board at that time are as follows:

State of Rhode Island, for state employee members 6.5%
State of Rhode Island and cities and towns of the state, for teacher-members each contributing one-half of the cost 9.0%

These rates are applicable to the salaries currently payable to the members in arriving at the amounts to be contributed by the employers to the system.

Financial Facts - Total reserves at June 30, 1973, amounted to $180,221,987. This compares with $162,861,738 at the end of the preceding year. Revenues from member contributions, employer contributions, investment income and miscellaneous sources amounted to $39,782,662. Expenditures during the year for pensions and benefits, refunds and other purposes totalled $22,417,237. Excess revenues of $17,365,425 were credited to the revenues to provide for the additional liability incurred during the year on account of pension credits earned by the members. Income from investments for the year was $9,303,799. This amount was equal to 23.3% of total revenues. In addition, a capital gain of $146,005 was realized during the year.
Investments - The authority for investments of all monies in the retirement funds is vested in the State Investment Commission as provided by Chapter 164, of the Rhode Island Public Laws 1958. The commission meets regularly each month to transact all business before it. The commission consists of the General Treasurer, ex-officio, who acts as Chairman, Director of Administration, ex-officio, Secretary, the Chairman of the Finance Committee of the Senate, ex-officio, the Chairman of the Finance Committee of the House of Representatives, ex-officio, and three members appointed by the Governor each for a term of three years and until his successor is elected and qualified.

Investments of the system's reserves consist primarily of securities representing corporate bonds and stocks.
PROBLEM AREAS

The Pension Study Commission in its initial review of the State's Retirement System focused on a number of specific concerns of the members of the commission.

Cost of New Benefits

There was considerable skepticism among many members of the commission at the outset regarding the additional costs that had been suggested for providing new benefits, such as 80 percent at thirty years regardless of age. Some members had felt that the projected costs of new benefits were the result of excessively conservative assumptions by the actuary of the State's Retirement System. Other members were concerned about the lack of information that they felt was needed about the financing of the retirement system. This concern resulted in the hiring of an independent actuary and consulting firm by the commission.

The concern about the cost of new benefits motivated a search for a means to pay for the additional costs of new benefits through an increased yield from the investments of the retirement funds assets. This concern led to two evaluations of the performance of the retirement system's investments.

Adequacy of Survivor's Benefits for Teachers

The limited pay-out to beneficiaries from the survivor's benefits fund for teachers and the inadequacy of its benefits in
comparison to benefits provided by Social Security led to a study of the survivor's benefits fund.

Members' Complaints and Administration

Some of the labor representatives indicate that they felt that the interests of employees were not adequately represented on the retirement board and that the needs of members for assistance and information were not always handled in a satisfactory manner.

Extensive concern was expressed about the financial administration of the retirement system. Questions were raised about the adequacy of the contributions of the state and of the localities to the fund and of the timeliness of those contributions.

Funding Level

Initially, the commission did not perceive a problem with the funding levels of the existing pension funds; however, after its initial review, considerable concern was developed about the financial support inadequacies of the system for existing benefits.

Those concerns and others led to the formation of a number of subcommittees to examine these problem areas. The reports of all the subcommittees follow. Following those subcommittee reports are the Major Findings made by the full Commission after having had reviewed those reports and other data presented to the full Commission.
Chapter Two

REPORT OF THE SUBCOMMITTEE ON
UNFUNDED ACCRUED LIABILITY

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Mr. James A. Carter
State Controller

Mr. Edward A. Casey, Executive Secretary
Rhode Island Federation of Teachers

Mr. John F. Drury, Jr.
Superintendent of Woonsocket Schools

Mr. A. Robert Mailloux, Finance Director
of the City of Woonsocket

Mr. Joseph R. DiPippo, President
Rhode Island State Employees' Association
Council 22, A.F.S.C.M.E., AFL-CIO

Mr. H. Edward Spaulding
Pension Consultant
REPORT OF THE SUBCOMMITTEE TO EVALUATE UNFUNDED ACCRUED LIABILITY: STATE RETIREMENT FUND

Introduction

An actuarial valuation of the State retirement system is undertaken annually to determine the liabilities incurred for the various benefit obligations. Once the extent of these liabilities is known, assets can be provided to meet these liabilities. A measure of the financial stability and soundness of the retirement system is the extent to which the accrued liabilities are covered by present assets. The extent to which the accrued liabilities are covered by net present assets is called the security ratio by the fund actuary. Exhibit I shows the security ratio for each of the past ten (10) years.

EXHIBIT I

Security Ratio for the Years 1964-1973

<table>
<thead>
<tr>
<th>Fiscal Year Ended June 30</th>
<th>Unfunded Liability</th>
<th>Percent Funded</th>
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<tr>
<td></td>
<td>State Employees</td>
<td>Teachers</td>
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<tr>
<td>1964</td>
<td>$30,189,200</td>
<td>$63,004,266</td>
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<td>1965</td>
<td>32,921,317</td>
<td>67,457,744</td>
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<tr>
<td>1966</td>
<td>33,760,447</td>
<td>74,430,890</td>
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<td>1967</td>
<td>39,715,316</td>
<td>77,297,416</td>
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<tr>
<td>1968</td>
<td>41,032,997</td>
<td>83,612,994</td>
</tr>
<tr>
<td>1969</td>
<td>40,688,000</td>
<td>87,646,000</td>
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<tr>
<td>1970</td>
<td>43,969,000</td>
<td>94,614,000</td>
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<tr>
<td>1971</td>
<td>54,877,000</td>
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<td>1972</td>
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<tr>
<td>1973</td>
<td>114,256,163</td>
<td>237,759,264</td>
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</table>
The steadily deteriorating security ratio is caused by several factors. First, the law governing the State Employees' Retirement System prescribes a partial method of funding the cost, rather than full funding of accruing pension credits. This has not been uncommon for Public Retirement Systems because there is little risk that a State will become bankrupt, whereas this risk is always present for private retirement plans. Contributions by the employers are determined as the average annual requirements for benefits according to a five year projection of pension expenditures by the system. The rate percent of contributions for the period of five years effective July 1, 1973, is 6.5 percent of payroll for state employees and 9.9 percent of payroll for teacher members. The latter cost is shared equally by the State and the cities and towns. Hence, this partial funding results in a deferment of part of the currently incurred pension cost (Normal Cost) and an increase in the unfunded accrued liability. The cost set forth by the Fund Actuary in the 37th Annual Report for service currently accruing (Normal Cost) for the plan year commencing July 1, 1973, expressed as a percentage of payroll, is 16.2 percent for state employees and 20.3 percent for teacher members. Employee contributions are fixed at five percent of payroll for state employees and six percent for teacher members.

Second, in 1970 retirement benefits were liberalized, yet additional contribution amounts sufficient to pay fully for these
benefits were not made. These benefits increased the unfunded liability amount by approximately $100,000,000. These benefits are set forth in the report by William J. DeNuccio on Retirement Study Commission (1970) Recommendations and Actions enclosed in the appendix.

Third, since the benefit and contribution provisions of the retirement plan assume compound interest of five percent per year, failure to pay this interest each year on the unfunded accrued liability has caused the latter item to increase.

Exhibit 2 shows the contribution amounts currently payable and the additional contribution required to (1) pay for service currently accruing, (2) pay five percent interest on unfunded accrued liability and (3) to fund the unfunded accrued liability over 30 years.
### EXHIBIT II

<table>
<thead>
<tr>
<th></th>
<th>State Employees</th>
<th>Teachers</th>
<th>Total</th>
<th>% of Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll</td>
<td>$112,314,024</td>
<td>$128,163,909</td>
<td>$240,477,933</td>
<td></td>
</tr>
<tr>
<td>Member Contribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5% and 6%)</td>
<td>$ 5,615,700</td>
<td>$ 7,689,800</td>
<td>$13,305,500</td>
<td>(5.5%)</td>
</tr>
<tr>
<td>Employer Contribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- currently payable</td>
<td>$ 7,300,400</td>
<td>$11,534,700</td>
<td>$18,835,100</td>
<td>(7.9%)</td>
</tr>
<tr>
<td>Additional in order</td>
<td>$ 5,278,700</td>
<td>$ 6,792,700</td>
<td>$12,071,400</td>
<td>(5.0%)</td>
</tr>
<tr>
<td>to pay for service</td>
<td>$ 5,712,800</td>
<td>$11,888,000</td>
<td>$17,600,800</td>
<td>(7.3%)</td>
</tr>
<tr>
<td>currently accruing</td>
<td>$ 5,128,700</td>
<td>$11,462,700</td>
<td>$16,631,400</td>
<td>(6.5%)</td>
</tr>
<tr>
<td>(4.7% and 5.3%)</td>
<td>$ 5,278,700</td>
<td>$ 6,792,700</td>
<td>$12,071,400</td>
<td>(5.0%)</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>$12,579,100</td>
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</tr>
<tr>
<td>Additional in order</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to pay 5% interest on unfunded accrued liability</td>
<td>$ 1,371,000</td>
<td>$ 2,853,100</td>
<td>$ 4,224,100</td>
<td>(1.8%)</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>$ 18,291,900</td>
<td>$30,215,400</td>
<td>$48,507,300</td>
<td>(20.2%)</td>
</tr>
<tr>
<td>Additional in order</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to fund U.A.L. over 30 years</td>
<td>$ 1,371,000</td>
<td>$ 2,853,100</td>
<td>$ 4,224,100</td>
<td>(1.8%)</td>
</tr>
<tr>
<td>TOTAL EMPLOYER</td>
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<td>$33,068,500</td>
<td>$52,731,400</td>
<td>(22.0%)</td>
</tr>
</tbody>
</table>

*The additional amount needed to pay for service currently accruing is $12,071,400 annually. This amount of $12,071,400 plus $17,600,800 or the total of $29,672,200 is the annual amount needed to pay for service currently accruing and interest on the unfunded accrued liability to keep the unfunded accrued liability from increasing. $12,071,400 plus $21,824,900 or $33,896,300 is the annual amount needed to pay for service accruing and to pay off the U.A.L. over 30 years.*
Exhibit III shows the projected benefit payments that the fund must make in the years stated.

**EXHIBIT III**

Payments for Retirement Benefits

<table>
<thead>
<tr>
<th>Year</th>
<th>Outlay (in millions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td>4.2</td>
</tr>
<tr>
<td>1973</td>
<td>18.9</td>
</tr>
<tr>
<td>1976</td>
<td>27.7</td>
</tr>
<tr>
<td>1979</td>
<td>37.3</td>
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<td>1982</td>
<td>49.2</td>
</tr>
<tr>
<td>1985</td>
<td>62.4</td>
</tr>
</tbody>
</table>

The subcommittee unanimously finds that a minimum level of funding shall be established. It suggests consideration of the following:

1. Pay the full current costs of the plan.
2. Pay the annual interest of five percent on the unfunded accrued liability.

It was the consensus of the subcommittee that the accrued liability growth should be stopped. The above recommendation would level the unfunded accrued liability amount at approximately $352 million.

The subcommittee also proposes that the concept of amortizing the cost of the unfunded liability over a future number of years be explored. Various time horizons were discussed and it was agreed that thirty (30) to forty (40) years should be considered.
SUMMARY

Additional amount necessary to pay full current costs $12,071,400

Additional amount necessary to pay 5% interest on unfunded accrued liability $17,600,800

Additional amount necessary to meet minimum level of funding suggested by subcommittee $29,672,200

Additional amount necessary to amortize over thirty (30) years $ 4,224,100

TOTAL $33,896,300
Chapter Three

REPORT OF THE INVESTMENT SUBCOMMITTEE

Mr. Charles T. Reilly, Chairman
Vice President and Secretary
James J. Reilly Insurance Company

Mr. Paul Bassett
Municipal Finance
Rhode Island Hospital Trust National Bank

Mr. Edward A. Casey, Executive Secretary
Rhode Island Federation of Teachers

Mr. William DeNuccio, Fiscal Advisor
House Finance Committee

Mr. Ronald L. DiOrio, President
Rhode Island Federation of Teachers

Mr. Joseph R. DiPippo, President
Rhode Island State Employees' Association
Council 22 A.F.S.C.M.E., AFL-CIO

Mr. John F. Drury, Jr.
Superintendent of Woonsocket Schools

Dr. John Fitzgerald, Associate Professor
of Finance and Insurance of the
University of Rhode Island

Representative Paul E. Hanaway

Mr. Joseph G. Iannelli, Executive Director
Employees' Retirement System

Mr. Charles Marwell, Executive Director
Rhode Island State Employees' Association
Council 22 A.F.S.C.M.E., AFL-CIO

Mr. A. Robert Mailloux
Finance Director of the City of Woonsocket

Representative Frank L. Nunes

Mr. H. Edward Spaulding
Pension Consultant
Report of the Investment Subcommittee

Flow of Funds

"Asset base" is the ultimate criteria of valuation. It is therefore, important to first present for review the "Results of Valuation" as presented by the actuary and submitted by the Retirement Board in its report of June 30, 1973.

Results of Valuation

"The financial stability of any retirement system may be determined by comparing the accrued liabilities for earned pension credits, at the end of a fiscal period, to present assets. This assumes that the accruing pension credits are fully funded currently, and that the accrued pension liability is being systematically amortized.

"This is not the case with the Employees' Retirement System which receives only a part of its currently accruing cost requirements. The system is funded on a partial reserve basis with the contributions by the State being at a lesser rate than the total cost of the accruing pension credit. The rate of funding for the system, or security ratio as it is commonly referred to, is only 33.9% (see Exhibit II following). This is the
extent to which the accrued liabilities are covered by net present assets.

"The contributions by the employer are determined as the average annual requirements for benefits according to a 5 year projection of pension expenditures by the system. The rate percent of contributions for the period of 5 years effective July 1, 1972, is 6.5% of payroll for State employees and 9.0% of payroll for teacher-members. The latter cost is shared equally by the State and the cities and towns. Partial funding results in a deferment of part of the currently incurred pension cost with the consequent increase in the actuarial deficit. As a result, the unfunded accrued liability or actuarial deficit is steadily increasing. Such unfunded liability has been in an upward trend for a number of years and will in all probability continue to increase for an indeterminate period.

"Even if full funding of currently accruing pension credits is provided, the unfunded accrued liability would continue to increase
by the accruing interest on the unfunded liability at the rate of interest assumption in effect, which is 5% per annum."

As is noted in the above "Results of Valuation," the rate percent of contributions is presently fixed. Consideration, however, must be given to the methodology payment. The "flow" of funds into the pool for investment may be considered as significant as the level of contributions.

The level of contributions as a percent of payroll is established each fifth year for a period of five years.

The payroll base submitted to the contribution percentage is selected as the actual payroll two year prior.

This "lag" in valuation which fixes for a period of time a contribution percent on an outdated base payroll retards the flow of funds available for investment; and consequently the income to the fund and the asset base of the fund are reduced.

Implementation of the recommendation that the "five year projection" be eliminated and annual valuation be instituted as the method of determining the rate percent of contribution and that current payroll be the base for such calculation would place the funding method in a current posture rather than the present method which
is not timely and also perpetuates a sluggishness in the flow of funds available for investment. It would also assist in retarding the steadily increasing actuarial deficit which results from the present deferment of funding of the currently incurred pension cost.

Investment Performance

The most significant factors that can effect a long range reduction in retirement cost are the current contributions and the yield from investments of the fund's assets.

The Investment Subcommittee undertook a study of the investment procedures and performance in order to determine the effectiveness of the present investment policy and to analyze the relationship of income from investments to other financial and actuarial findings. An increased yield from investments could change, for example, the amount of additional employer and employee contributions that may be required to protect the fiscal integrity of the fund. As indicated by the Subcommittee on Unfunded Accrued Liabilities a maximum level of funding should include additional contributions sufficient to pay full current cost, to retard the growth of the expanding unfunded accrued liability, and to amortize that past service liability over a minimum period of thirty (30) to forty (40) years.
### EXHIBIT I

<table>
<thead>
<tr>
<th>Payroll</th>
<th>State Employees</th>
<th>Teachers</th>
<th>Total</th>
<th>% of Payroll</th>
</tr>
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<td>(7.9%)</td>
</tr>
<tr>
<td>(6.5% and 9%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional in order to pay for</td>
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<td>(5.0%)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>(4.7% and 5.3%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>$12,579,100</td>
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<td>$30,906,500</td>
<td>(12.9%)</td>
</tr>
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<td>$5,712,800</td>
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<td>$17,600,800</td>
<td>(7.3%)</td>
</tr>
<tr>
<td>interest on unfunded accrued</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>liability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>$18,291,900</td>
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<td>Additional in order to fund</td>
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</tr>
<tr>
<td>U.A.L. over 30 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL EMPLOYER</td>
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<td>$52,731,400</td>
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</tr>
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*The additional amount needed to pay for service currently accruing is $12,071,400 annually. This amount of $12,071,400 plus $17,600,800 or the total of $29,672,200 is the annual amount needed to pay for service currently accruing and interest on the unfunded accrued liability to keep the unfunded accrued liability from increasing. $12,071,400 plus $21,824,900 or $33,896,300 is the annual amount needed to pay for service accruing and to pay off the U.A.L. over 30 years.*
If employee and employer contributions remain at present level,

If benefits remain at present level,

If the portfolio rate of return does not exceed the plan's assumed 5% interest,

Then additional funding needed to pay "full current cost."... $12,071,400

If expansion of the unfunded accrued liability is to be retarded - interest, as suggested in the plan, should be paid in the amount of 5% on the unfunded accrued liability

Then additional funding needed to pay "interest"... $17,600,800

If 100% funding is to be achieved, the unfunded accrued liability must be "amortized"

Then additional funding to "amortize" over 30 years... $4,224,100

Total additional annual deposits required to maximize funding... $33,896,300

As Exhibit I demonstrates, maximum funding of the present plan may require additional annual deposits to the plan of $33,896,300. Unfortunately these deposits are required at a time when there is substantial growth in both the plan's liability and actual benefit payments. Only additional contributions and/or additional investment income can provide that income.

History has shown that a sustained increase of one percent (1%) in the employees' retirement system portfolio rate of return could mean a reduction in the cost of plan benefits by an estimated twenty (20) to twenty-five (25) percent.
This is a most significant observation as it is considered by the Investment Subcommittee of the Task Force essential to increase both the investment income and the fund's asset base:

1. to effect a discontinuance of the deterioration of the rate of funding. The "rate of funding" represents the extent to which the total accrued liabilities are covered by net present assets. The report finding exhibits the increased unfunded liability and the percentage decrease in funding levels.

EXHIBIT II

Security Ratio for the Years 1964-1973

<table>
<thead>
<tr>
<th>Fiscal Year Ended June 30</th>
<th>State Unfunded Liability</th>
<th>Percent Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State Employees</td>
<td>Teachers</td>
</tr>
<tr>
<td>1964</td>
<td>$30,189,200</td>
<td>$63,004,266</td>
</tr>
<tr>
<td>1965</td>
<td>32,921,317</td>
<td>67,457,744</td>
</tr>
<tr>
<td>1966</td>
<td>33,760,447</td>
<td>74,430,890</td>
</tr>
<tr>
<td>1967</td>
<td>39,715,316</td>
<td>77,297,416</td>
</tr>
<tr>
<td>1968</td>
<td>41,032,997</td>
<td>83,612,994</td>
</tr>
<tr>
<td>1969</td>
<td>40,688,000</td>
<td>87,646,000</td>
</tr>
<tr>
<td>1970</td>
<td>43,969,000</td>
<td>94,614,000</td>
</tr>
<tr>
<td>1971</td>
<td>54,877,000</td>
<td>117,486,000</td>
</tr>
<tr>
<td>1972</td>
<td>85,746,775</td>
<td>206,425,856</td>
</tr>
<tr>
<td>1973</td>
<td>114,256,163</td>
<td>237,759,264</td>
</tr>
</tbody>
</table>
2. to provide the availability of sufficient funds to make payments to retirees and beneficiaries. In 1973 payments are in the amount of $18.9 million. Payments are projected at the present benefit level to be $62.4 million by the year 1985.

EXHIBIT III

Projected Payments for Retirement Benefits

<table>
<thead>
<tr>
<th>Year</th>
<th>Outlay (in millions of dollars)</th>
</tr>
</thead>
<tbody>
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<td>1963</td>
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<td>49.2</td>
</tr>
<tr>
<td>1985</td>
<td>62.4</td>
</tr>
</tbody>
</table>

The subcommittee unanimously supports the concept that the minimum level of funding be as follows:
1. Pay the full current costs of the plan.
2. Pay the annual interest of 5% on the unfunded accrued liability.

It was the consensus of the subcommittee that the accrued liability growth should be stopped. The above recommendation would level the unfunded accrued liability amount at approximately
$352 million.
The subcommittee also proposes that the concept of amortizing the cost of the unfunded accrued liability over a future number of years be explored. Various time horizons were discussed and it was agreed that 30 to 40 years should be considered.

Present Investment Authority

The authority for investments of all monies in the retirement funds is vested in the State Investment Commission as provided by Chapter 164, of the Rhode Island Public Laws as amended.
The Commission consists of the General Treasurer, ex-officio, who acts as Chairman, Director of Administration, ex-officio, Secretary, the Chairman of the Finance Committee of the Senate, ex-officio, the Chairman of the Finance Committee of the House of Representatives, ex-officio, and three members appointed by the Governor each for a term of three years and until his successor is elected and qualified.

A summary of the investments held for the benefit of the system at the close of the year June 30, 1973, according to type of security is as follows: (next page)
<table>
<thead>
<tr>
<th>Type of Investment</th>
<th>Par Value for Bonds and Cost for Stocks</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. S. Government</td>
<td>$23,034,000</td>
<td>12.8%</td>
</tr>
<tr>
<td>Certificates of Deposit</td>
<td>3,500,000</td>
<td>2.0%</td>
</tr>
<tr>
<td>Federal Land Bank</td>
<td>2,000,000</td>
<td>1.1%</td>
</tr>
<tr>
<td>Federal National Mortgage Association</td>
<td>1,085,000</td>
<td>0.6%</td>
</tr>
<tr>
<td>International Bank for Reconstruction</td>
<td>700,000</td>
<td>0.4%</td>
</tr>
<tr>
<td>Commercial Paper</td>
<td>9,600,000</td>
<td>5.4%</td>
</tr>
<tr>
<td>State &amp; Municipal Bonds</td>
<td>11,219,000</td>
<td>0.7%</td>
</tr>
<tr>
<td>Railroad Bonds</td>
<td>2,566,000</td>
<td>1.4%</td>
</tr>
<tr>
<td>Public Utility Bonds</td>
<td>56,731,000</td>
<td>31.7%</td>
</tr>
<tr>
<td>Industrial Bonds</td>
<td>21,711,734</td>
<td>12.1%</td>
</tr>
<tr>
<td>Bank Stocks</td>
<td>4,937,167</td>
<td>2.7%</td>
</tr>
<tr>
<td>Corporate Stocks</td>
<td>51,525,494</td>
<td>28.7%</td>
</tr>
<tr>
<td>Mutual Funds</td>
<td>623,290</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$179,232,685</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
The Governor's Task Force authorized the Investment Subcommittee to retain the services of the Rhode Island Hospital Trust* and the Task Force Consultant Firm, The Connell Company*, to analyze the investment performance of the portfolio of the employee retirement fund and to undertake a five year investment rate of return study.

An initial study by The Connell Company using face or carrying value as market for the bond segment resulted in an internal rate of return of 5.63% for the five year period ending on June 30, 1973*.

The study results using actual market for the bond segment were consistent. Both organizations concluded that the effective annualized internal rate of return over the five year period ending June 30, 1973, was 4.85%. For the purpose of measuring investment performance, market value of assets was used, interest and dividend income was included together with realized and unrealized capital gains and losses.

The study data was compared with other investment information received by the Investment Subcommittee. For example, reports from "Pooled Bank Trust Funds and Insurance Companies Separate Accounts," reflected a rate of return on equity funds with a range as high as 13.56% and a rate of return from bond funds with a range as high as 6.96%.

* See Appendix
The above summary of investments held by the employees retirement fund notes that as of June 30, 1973, approximately 30% of the fund is invested in equities and 70% of the fund is invested in bonds. A roughly calculated weighted average on a fund with such a "mix" would be a 8.93% return.

The Investment Subcommittee received data that investment contracts are available through pension departments of insurance carriers on bond type accounts which would guarantee a five year rate of return of eight percent (8%).

**Professional Money Management**

The Investment Subcommittee recommends, of the methods available to maximize the portfolio rate of return, that the utmost consideration be given to the retention of a professional money manager and investment advisor.

A contract with a professional money manager would provide full time professional expertise. Authorization to act with discretionary powers could be given to implement a stated investment policy designed to obtain the investment objective of maximizing yield consistent with prudent financial management.

A professional money manager and/or investment advisor should be given responsibility at least to:

a. Review and analyze the present "mix" and maturities of present investments and present
recommendations as to the possible "turn over" and expansion of other investment opportunities not presently utilized.

b. Assist in establishing a formal investment policy.

c. Assist in establishment of plan goals and objections for the short and long range future of the plan.

d. Provide a continuance review of the measure of portfolio performance.

e. Assist in the drafting of legislation which may be necessary to effect the implementation of the concept of professional money management and its other consequential changes in present state statute.

The Investment Subcommittee in its investigations of professional money management finds that these services are available on an individual basis or under contract with

1. Trust Department of financial institutions
2. Pension Departments of insurance companies
3. Brokerage firms
4. Mutual Funds
5. Other corporate entities formed substantially to provide investment management services.
The cost of contracting investment management services vary yet are generally a percentage of the total assets they manage and fees for such services are usually abstracted from investment income as is often the procedure for all other actuarial and administrative changes.

We found in our investigation, a definite trend by trustees of pension funds, including state employee retirement system, toward the utilization of professional money management.

The extent of our investigation included a review of the management procedures of other pensions including state funds. Two interesting findings, were that Connecticut has obtained a seat on the Philadelphia, Baltimore, and Washington Stock Exchange to achieve maximum buying strength without commission payments and that the National Municipal League has developed "A Mutual Investment of State Funds Law" which may be helpful if administrative changes and investment procedure and policy are enacted for the benefit of the Rhode Island Plan.
Chapter IV

REPORT OF THE ADMINISTRATIVE SUBCOMMITTEE

Mr. Ronald L. DiOrio, Chairman
President of the Rhode Island Education Association

Mr. Edward A. Casey, Executive Secretary
Rhode Island Federation of Teachers

Mr. Joseph R. DiPippo, President
Rhode Island State Employees' Association
Council 22, A.F.S.C.M.E., AFL-CIO

Mr. John F. Drury, Jr.
Superintendent of Woonsocket Schools

Mr. Joseph G. Iannelli, Executive Director
Employees' Retirement System

Mr. H. Edward Spaulding
Pension Consultant

The Chairmanship of the 5th Annual Joint Board shall be in each year on an annual basis by majority vote of the Board. The Board shall, in addition, elect on an annual basis, a Vice Chairman and Secretary. All officers shall be qualified for all such duties assigned to these offices.

The Board shall meet and organize within six weeks after appropriate legislation creating such a Board. The Board shall formulate (By-laws) rules and regulations for operation and
REPORT OF THE ADMINISTRATIVE SUBCOMMITTEE

It is recommended that there be a new structure, obligations and responsibilities for the state employees' and teachers' Retirement Board.

The new Retirement Board shall consist of:

1. General Treasurer
2. Director of Administration or his designee
3. Board of Regents' nominee
4. League of Cities and Towns nominee
5. Active state employee members of the system to be elected by active state employees
6. Active teacher members of the system to be elected by active teachers
7. Active municipal employee member of the system to be elected by active municipal employees
8. Retired member of the system to be elected by retired members of the system
9. Chairman of the House Finance Committee or his designee
10. Chairman of the Senate Finance Committee or his designee
11. Public representative appointed by the Governor

The Chairmanship of the Retirement Board shall be assigned on an annual basis by majority vote of the Board. The Board shall, in addition, elect on an annual basis, a Vice Chairman and Secretary. All officers shall be responsible for the usual duties assigned to these offices.

The Board shall meet and organize within six weeks after appropriate legislation creating such a Board. The Board shall formulate (By-laws) rules and regulations for operation and
establish transmittal dates of contributions for local municipalities. Its meetings shall be open to the public and media except when it is discussing personalities, the possible purchase of real estate, including stocks and bonds and other such property. Further, however, where a discussion may reflect in a harmful manner on the person(s) discussed, such persons(s) may choose to have that portion of the meeting open or closed at their discretion.

The quorum of the Board shall be a majority. Meetings shall be held at its place of business, provided at no cost to it by the state, at least once a month. The Board shall recommend and hire its own administrative staff.

Such staff may include, but not be limited to:

1. an executive director and assistant executive director
2. legal counsel
3. retirement counselors (2)
4. clerical staff
5. specialists (actuary/economist). The actuary shall prepare an actuarial investigation and valuations - adoption of tables and rates - report every year instead of every five years.

The actuary shall submit his annual report no later than November 1 following the close of the fiscal year.
6. specialist (public relations). The public relations specialist would prepare brochures explaining benefits, publish quarterly membership newsletters, publish operating handbook for personnel, issue from time to time a digest of state retirement laws as well as rules and regulations applying to the Retirement System, produce an illustrative and more complete annual report of the Retirement Board.

7. such other persons as may be deemed necessary to the effective and efficient operation and maintenance of the Retirement System.

Such persons shall be compensated from the general revenues of the State of Rhode Island.

Members of the Retirement Board shall not receive remuneration for their services, however, all ordinary expenses incurred by them, individually, or by the Board collectively in the discharge of their duties shall be reimbursed to them. The Board shall be responsible for creating, under its discretion and control, an agency whose sole purpose would be to invest the money of the participants in the Retirement System. The Board shall have flexibility in the creation of this body.

The Board shall recommend and hire its own money managers, investment brokers or firms in the business of investing money. Such groups shall operate under guidelines drawn up by the Retirement Board. Such groups shall be experienced in their work and their resumes should be subject to public scrutiny before hiring. The contracts of such hired groups shall be re-examined for renewal.
Such groups may be paid on a percentage, flat fee or other arrangement basis. Such fees are to be paid out of the investment income of the fund and are to be considered monies required by the Board in a discharge of its duties as provided by in the General Laws of the State of Rhode Island.

Any monies not immediately required by the Board in the discharge of its duties shall be invested for the benefit of the fund participants in any security or investment in which deposits of savings banks and participation deposits in banks and trust companies may be legally invested; provided that investments shall be made in securities as would be acquired by prudent men of discretion and intelligence in such matters, who are seeking a reasonable income and the preservation of their capital.

The Board shall have issued to each participant in the fund a more detailed and informative annual statement showing the employee's number of years in service; each year's contribution by the employee and when the employee is eligible for benefits or options to be exercised.

The elected members of the Retirement Board shall be seated by the following procedure:

i. Each candidate must have 100 signatures of members of their respective group.

ii. The term of office for elected members shall be for four (4) years as follows:

One (1) state employee elected to 1976
One (1) teacher elected to 1976
One (1) state employee elected to 1978
One (1) teacher elected to 1978
One (1) retired person elected to 1978
iii. In case of a vacancy for any reason the seat shall be filled by a new election of the respective group for the balance of the vacated term.

iv. Recall:

By petition for recall of twenty percent (20%) of the respective membership of the various groups a new election shall be ordered by the Retirement Board.
Chapter V

REPORT OF THE SUBCOMMITTEE ON BENEFITS

Mr. Keven A. McKenna, Chairman
Special Counsel to the Governor for
Policy and Program Review

Mr. Edward A. Casey, Executive Secretary
Rhode Island Federation of Teachers

Mr. William J. DeNuccio, Fiscal Advisor
House Finance Committee

Mr. Ronald L. DiOrio, President
Rhode Island Education Association

Mr. Joseph R. DiPippo, President
Rhode Island State Employees' Association
Council 22 A.F.S.C.M.E., AFL-CIO

Mr. John F. Drury, Jr.
Superintendent of Woonsocket Schools

Mr. Joseph G. Iannelli, Executive Director
Employees' Retirement System

Mr. Charles Marwell, Executive Director
Rhode Island State Employees' Association
Council 22 A.F.S.C.M.E., AFL-CIO

Ms. Anna M. Prior
Retired Teachers' Association

Mr. Clinton Ross
Chief Budget Analyst

Mr. H. Edward Spaulding
Pension Consultant
INTRODUCTION

The purpose of the Benefits Subcommittee's work has been to advise the full committee of the Governor's Retirement Study Commission on the nature of new benefits in which both teachers and state employees were interested, to analyze the advantages and disadvantages of establishing new benefits, and to establish a priority list of the benefits for which cost estimates would be made.

The subcommittee's purpose was focused on providing information to persons interested in making changes in the benefit structure of the retirement system of teachers and state employees.

The ultimate desirability of any particular benefit is a function of many variable factors.

The subcommittee fully understands that increased benefits may involve increased contributions from the state, from localities, from employees and teachers, and from an increased yield from investments of the retirement funds.
PRIORITY BENEFITS TO BE COSTED

The Subcommittee believed that there were a number of benefit proposals that had been suggested that should be given a priority in the consultant's cost analysis. The following is a list of those benefits:

1. The number one priority of the subcommittee was the costing of a proposal to allow teacher and state employees to retire after thirty (30) years of service at eighty (80) percent of their highest three years' average salary. This proposal and other other proposals for an increased pension level was made on condition that employees who continued to be employed after thirty (30) years will continue to make contributions to the system and will receive no additional credits.

2. The second priority for costing was thirty (30) years retirement at seventy (70) percent of salary.

3. The third priority would be retirement benefits equal to eighty (80) percent of salary after thirty-five (35) years of service.

4. The fourth priority would be to change the cost of living increases for retirees to an annual year change equal to whatever the increase was in the previous
calendar year as determined by the Boston Consumer price index.

5. The fifth priority would be to change the formula for computing retirement income from a multiple of an average of the highest three years' salaries to a multiple of the highest annual salary.

6. The sixth priority would be to establish a floor of Five Thousand Dollars ($5,000.00) a year for retirees with thirty-eight (38) years of service.

7. The seventh priority was to allow a deceased retiree's survivor to receive one hundred percent (100%) of the benefits that the retiree would have received had he lived.

8. The eighth priority would be to increase a retiree's benefit to the amount it would have been if the retiree had not elected a reduced pension to provide a spouse survivor income, if the spouse of the retiree predeceased the retiree.

9. The ninth priority would be to allow persons leaving the retirement system to receive interest on their contributions if they have been a member of the system for five (5) years.
10. The tenth priority would be to have benefits vest at the one hundred percent (100%) level after the fifth year instead of the tenth year.

11. The eleventh priority was to have the teacher's survivor benefits fund distributed to its contributors; and to have the state make a grant to local communities and to its non-covered state employees to allow them to buy into the Social Security system for their back credits in order to have all members covered under the same dual system.

12. The twelfth priority would be to permit Grandfather's Rights to teachers who entered the retirement system prior to the 1970 restriction on purchasing out-of-state credits or extend the period of time that they may purchase credits for a six-month period to allow teachers who entered the system before January 1, 1971, to purchase retirement credits for a maximum of ten years' service at a cost of ten percent (10%) of beginning salary.
<table>
<thead>
<tr>
<th>SUMMARY OF PROPOSED BENEFIT IMPROVEMENTS</th>
<th>NORMAL COST</th>
<th>INTEREST ON U.A.L.</th>
<th>TOTAL</th>
<th>% OF PAYROLL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 80% - 30 years - any age</td>
<td>$16,592,977</td>
<td>$4,809,558</td>
<td>$21,402,535</td>
<td>(8.9%)</td>
</tr>
<tr>
<td>2. 70% - 30 years - any age</td>
<td>$7,214,338</td>
<td>$2,164,301</td>
<td>$9,378,639</td>
<td>(3.9%)</td>
</tr>
<tr>
<td>3. 80% - 35 years - any age</td>
<td>$2,164,301</td>
<td>$721,434</td>
<td>$2,885,735</td>
<td>(1.2%)</td>
</tr>
<tr>
<td>4. Annual 3% cost of living increase</td>
<td>$3,366,691</td>
<td>$961,911</td>
<td>$4,328,602</td>
<td>(1.8%)</td>
</tr>
<tr>
<td>5. Retirement amount to be determined</td>
<td>$1,923,823</td>
<td>$721,434</td>
<td>$2,645,257</td>
<td>(1.1%)</td>
</tr>
<tr>
<td>6. $5,000 minimum annual pension for</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>retirees for 36 years of service</td>
<td></td>
<td></td>
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<tr>
<td>7. Continuation of retired employees</td>
<td>$6,011,948</td>
<td>$1,923,823</td>
<td>$7,935,771</td>
<td>(3.3%)</td>
</tr>
<tr>
<td>pension income to surviving spouse, if</td>
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<tr>
<td>any, surviving spouse must be</td>
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<tr>
<td>married to retired employee for a period</td>
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<tr>
<td>of 5 years prior to retirement. - Cost</td>
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<tr>
<td>Assumption - 80% of males married - 50%</td>
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<tr>
<td>of females married</td>
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<td>8. Survivor Benefit Option</td>
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<tr>
<td>Data not sufficient to cost</td>
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<tr>
<td>9. Return employee contributions with</td>
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<tr>
<td>interest after 5 years</td>
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</tr>
<tr>
<td>Data not sufficient to cost</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. 100% vested after 5 years of service</td>
<td>$3,126,213</td>
<td>$961,911</td>
<td>$4,088,124</td>
<td>(1.7%)</td>
</tr>
<tr>
<td>Cost assumption - All terminated employees leave contributions in Plan</td>
<td></td>
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<tr>
<td>11. Discontinue Teachers Survivor Benefits Fund</td>
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<tr>
<td>and buy into Social Security</td>
<td></td>
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<td></td>
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<tr>
<td>Data not sufficient to cost</td>
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<tr>
<td>12. &quot;Grandfather Rights&quot; to teachers who</td>
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<tr>
<td>entered retirement system prior to</td>
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<tr>
<td>1970 restrictions on purchase of out-</td>
<td></td>
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<tr>
<td>of-state credits</td>
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<tr>
<td>Data not sufficient to cost</td>
<td></td>
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</tbody>
</table>

* Employee Contributions continue to actual retirement

Normal Cost - Cost for service currently accruing

U.A.L. (Unfunded Accrued Liability) - Cost for service accrued and unpaid
Chapter VI

REPORT OF THE SURVIVOR'S BENEFITS SUBCOMMITTEE

Mr. Edward Casey, Chairman
Executive Secretary of the Rhode Island Federation of Teachers

Mr. Ronald DiOrio, President
Rhode Island Education Association

Mr. John F. Drury Jr.
Superintendent of Woonsocket Schools

Mr. H. Edward Spaulding
Pension Consultant

At the time the Teacher's Survivor's Benefit Program was enacted the benefit levels were comparable to Social Security. Since that time however, with the advent of Social Security, the benefit levels in the Teacher's Survivor's Benefits Program have not been improved so that today there is a substantial gap between Teacher's Survivor's Benefits and Social Security. The benefits payable under Survivor's Benefits are totally inadequate in view of the sharp rise in the cost of living since 1963. In addition, a further inequity was created this year when the General Assembly passed legislation improving the Widow's Benefits but failed to pass comparable legislation improving Mother's and Children's Benefits. The Task Force should also bear in mind when considering this proposal that the Survivor's Benefits Program is substantially underfunded based on current benefit levels.
PROPOSAL

To improve the Widow's, Widower's, Mother's, Children's and Parent's (16-16-26 through 16-16-30) to the current benefit level of Social Security while maintaining the present level of funding (16-16-35). In the event that the present funding level will not support the benefit level proposed, it is recommended that cost analysis be completed to determine the maximum benefit level that is supportable at present funding levels.

BACKGROUND AND NEED

At the time the Teacher's Survivor's Benefits Program was enacted the benefit levels were comparable to social security. Since that time however, with one exception, the benefit levels in the Teacher's Survivor's Benefits Program have not been improved so that today there is a substantial gap between Teacher's Survivor's Benefits and Social Security. The benefits payable under Survivor's Benefits are totally unrealistic in view of the sharp rise in the cost of living since 1963. In addition, a further inequity was created this year when the General Assembly passed legislation improving the Widow's Benefits but failed to pass comparable legislation improving Mother's and Children's Benefits. The Task Force should also bear in mind when considering this proposal that the Survivor's Benefits Program is substantially over funded based on current benefit levels.
ADVANTAGES

The most obvious advantage of this proposal is that it would provide for a more equitable and realistic benefit for those participating in the program. Of equal importance is the fact that the benefit improvement can be accomplished without any additional payments from either the teacher members or the municipalities. Finally, the adoption of this proposal will eliminate the disparity between Widow's and Mother's benefits which was created as a result of the 1973 legislation.

DISADVANTAGES

There are no apparent disadvantages since the Teacher's Survivor's Benefits fund is one of the few areas in which an improvement can be made without a corresponding increase in contributions by either the employee or the employer.

COST ESTIMATES

To be determined by The Connell Company
Chapter VII

MAJOR FINDINGS

The Governor's State Pension Study Commission, after having reviewed the operation of the State's Retirement System and having reviewed the costs of such additional benefits, makes the following findings:

1. The State's Retirement System is not properly funded, due mainly to the failure to increase the rates of contributions from employees, employers, and independent contractors for the Fund to meet its future obligations, and the inability of the Independent Study Commission to provide adequate payroll supplements in the period not long beyond the current fiscal year.

If significant changes are not made to reduce the annual and continued growth of the unfunded accrued liabilities, it may be necessary at some point in the future to use current contributions of employees and teachers to meet the benefit costs of retirees and it may be further necessary to provide the costs of benefits for retirees from general tax revenues on an annual basis.

2. To provide for the proper financing of the State's Retirement Fund requires increased revenue from either the state...
MAJOR FINDINGS

The Governor's State Pension Study Commission, after having reviewed the operation of the State's Retirement System and having reviewed the costs of some additional benefits, makes the following findings:

1. The Retirement Fund for teachers and state employees is not properly funded. Combined contributions from employers, employees, and investments are not sufficient for the fund to meet its future obligations. The obligations of the Retirement Fund to make payments to retired persons is expected to be increased geometrically by three fold in the next twelve years, and it does not appear that the assets are increasing at a rate sufficient to produce the pay-out needed to meet those obligations in the period not long beyond the present five year plan.

Unless significant changes are made to reduce the size and continued growth of the unfunded accrued liabilities, it may be necessary at some point in the future to use current contributions of employees and teachers to meet the benefit costs of retirees; and it may be further necessary to provide the costs of benefits for retirees from general tax revenues on an annual basis.

2. To provide for the proper financing of the State's Retirement Fund requires increased revenue from either the state
and local governments, or from employees and teachers, or from the invested assets of the retirement funds, or from a combination of any or all of the aforementioned sources of increased revenue.

Since the establishment of a retirement fund for the teachers and for state employees, there has not been a change in the contribution rate, of five percent (5%) of annual salary for state employees and of six percent (6%) of annual salary for teachers.

In 1972 the contributions of the state were increased, at a five year average rate, to six and a half percent (6.5%) of salary a year. The joint contributions of the state and local governments for teachers were increased to a joint rate of nine percent (9.0%) of compensation. Towns pay four and a half percent (4.5%) and the state pays four and a half percent (4.5%).

Those labor-management contributions are based on an assumption that income from investments will yield an additional five percent (5%) interest in income to the Retirement Fund, and that all contributions would be sufficient to meet benefit pay-outs for the following five (5) years.

Evaluations of the pension fund's portfolio show that the rate of return for the last five years has been at an average rate of four and eighty-five hundredths percent (4.85%).
Actuaries hired by the Retirement Board and by the Pension Study Commission have found those combined existing contributions to be insufficient to meet the needs of the fund beyond the five (5) year period and that those levels of contributions may have to be increased by as much as one hundred and sixty-two percent (162%) to an average combination contribution rate of twenty and thirty hundredths percent (20.30%) of an employee's annual compensation costs to the state.

3. Recognizing that it is acceptable for a public employee retirement system to be partially funded, the Commission finds that significant changes still must be made in the funding policies of the state's retirement system; and that the establishment of a new minimum level of funding support should become a first priority of the Retirement System, of the Governor, and of the General Assembly.

The Commission suggests that a policy be established of paying the full current costs of benefits accruing in the plan and that the growth of the unfunded accrued liability be further stymied by an annual payment of five percent (5%) interest on that liability. The Commission further suggests that serious consideration be given to amortizing the cost of the unfunded accrued liability over a long range period.
The significance of this finding overwhelms the other findings regarding the cost of additional benefits; and can be best understood by a review of the comments of two actuaries on the present funding status of the retirement system.

Mr. A. A. Weinberg made the following comments in this past year's valuation of the retirement system for the Retirement Board's Annual Report, and in an independent assessment of that analysis, Mr. William Lumsden, Actuary of The Connell Company, made the following comments:
The contributions by the employers are determined as the average annual requirements for benefits according to a 5-year projection of pension expenditures by the system. The rate per cent of contributions for the period of 5 years effective July 1, 1972 is 6.5% of payroll for State employees and 8.0% of payroll for teacher members. The latter cost is shared equally by the State and the cities and towns. Partial funding is the retirement of part of the currently unfunded pension's income, resulting in a consequent increase in the actuarial liability. The unfunded accrued liability has increased. Such unfunded accrued liability will require an increase for a number of years and will be paid in accordance with the actuarial assumptions. The increase for an assumed increase in the rate of interest assumed for interest on the unfunded accrued liability will result in a greater liability.

Even if full funding of the unfunded liability is provided, the unfunded liability will still increase by the accruing interest on the unfunded liability. The rate of interest assumed for the unfunded liability is 8.0%.

Actuarial reserve funding. The full cost of benefits, including service of the members of the system, as a percentage of payroll is determined according to actuarial criteria which reflect the actuarial principle, as follows:

<table>
<thead>
<tr>
<th></th>
<th>State Employees</th>
<th>Teacher Members</th>
<th>Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal cost as a percentage of payroll</td>
<td>16.2%</td>
<td>20.3%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Less, member contributions</td>
<td>5.0%</td>
<td>6.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cost to the Employers</td>
<td>11.2%</td>
<td>14.3%</td>
<td>11.0%</td>
</tr>
</tbody>
</table>

* FROM PAGE 18 OF THE THIRTY-SEVENTH ANNUAL REPORT OF THE RETIREMENT BOARD
The contributions by the employers are determined as the average annual requirements for benefits according to a 5-year projection of pension expenditures by the system. The rate per cent of contributions for the period of 5 years effective July 1, 1972 is 6.5% of payroll for State employees and 9.0% of payroll for teacher-members. The latter cost is shared equally by the State and the cities and towns. Partial funding results in a deferment of part of the currently incurred pension cost with the consequent increase in the actuarial deficit. As a result, the unfunded accrued liability or actuarial deficit is steadily increased. Such unfunded liability has been in an upward trend for a number of years and will in all probability continue to increase for an indeterminate period.

Even if full funding of currently accruing pension credits is provided, the unfunded accrued liability would continue to increase by the accruing interest on the unfunded liability at the rate of interest assumption in effect, which is 5% per annum.

**Actuarial reserve funding.** The full cost of financing current service of the members of the system, as a percentage of payroll, according to actuarial criteria which reflects the accrual principle, is as follows:

<table>
<thead>
<tr>
<th></th>
<th>State Employees</th>
<th>Teacher Members</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal cost as a percentage of payroll</td>
<td>16.2%</td>
<td>20.3%</td>
<td>18.4%</td>
</tr>
<tr>
<td>Less, member contributions</td>
<td>5.0</td>
<td>6.0</td>
<td>5.5</td>
</tr>
<tr>
<td>Cost to the Employers</td>
<td>11.2%</td>
<td>14.3%</td>
<td>12.9%</td>
</tr>
</tbody>
</table>

* FROM PAGE 15 OF THE THIRTY-SEVENTH ANNUAL REPORT OF THE RETIREMENT BOARD
A Valuation Balance Sheet is presented in the following pages displaying the financial condition of the system at June 30, 1973. From a technical standpoint, a sound financial condition exists when the system has present assets equal to the difference between (a) the total of all accrued and prospective liabilities, and (b) the present value of future contributions to be received according to the prescribed rates. A system attaining this status will have provided in full for all accrued pension credits in accordance with actuarial requirements.
RECONCILIATION OF THE INCREASE IN
THE UNFUNDED ACCRUED LIABILITY

1. Normal cost requirements -
   12.9% of payroll of $240,477,933 $31,021,653
   Less, employers' contributions for the year 16,372,459
   Deficiency in current year's contributions $14,649,194

2. Interest on the unfunded accrued liability at June 30, 1972 14,608,618

3. Increase in liability due to 1973 amendments 9,331,452

4. Adjustment of actuarial factors to reflect current operating experience -
   (a) Salary projection scale 13,916,211
   (b) Mortality 8,690,591
   TOTAL $61,196,066

Less, excess investment income above the 5% interest rate assumption 1,353,000

BALANCE $59,843,066

* FROM PAGE 21 OF THE THIRTY-SEVENTH ANNUAL REPORT OF THE RETIREMENT BOARD
FUTURE PENSION AND BENEFIT PAYOUTS

For the purpose of illustrating the importance of adequate funding of pension obligations on a systematic basis, giving effect to the accruing aspects thereof, there is presented herein a projection of pension and benefit payouts for a number of years in the future. Such a statement should serve to dramatize and focus attention on the magnitude of the pension obligation and its full meaning in terms that may be readily understood by the public officials having to do with the formulation of budgets and more particularly by members of the Legislature.

The following projection of future pension payouts clearly illustrate the amounts of pension payments that the system will be required to meet in future years under the present conditions of the retirement plan.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amounts of future pension payments (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>$18.9</td>
</tr>
<tr>
<td>1976</td>
<td>27.7</td>
</tr>
<tr>
<td>1979</td>
<td>37.3</td>
</tr>
<tr>
<td>1982</td>
<td>49.2</td>
</tr>
<tr>
<td>1985</td>
<td>62.4</td>
</tr>
</tbody>
</table>

It should also be noted that any liberalizing changes in the provisions of the plan will effect an increase in the foregoing amounts.

* FROM PAGE 24 OF THE THIRTY-SEVENTH ANNUAL REPORT OF THE RETIREMENT BOARD
FINANCING THE PENSION OBLIGATION

*The cost of retirement benefits in any year is represented by the value of the pension credits earned by the active members during the year. These yearly pension credits form a proportionate part of the ultimate retirement benefits which would become due and payable to the members as they qualify for retirement by fulfilling the prescribed conditions as to age and service.

Pension and benefit payments during any year, therefore, are derived from a combination or accumulation of earned pension credits covering a number of productive years which represent the total periods of service rendered by the annuitants. It is the accumulation of these pension credits during the service of the members which constitutes the reserve requirements for financing the pension payments to the qualifying members when the obligations mature. This current accumulation of pension credits represents the real cost of the benefits for any fiscal period.

The foregoing illustrates the accrual or reserve principle that governs a retirement system. Actuarial criteria reflect the accrual concept. It underlies all retirement system operations. Even if a retirement law did not specifically spell out the methods of financing the pension credits, the accrual principle would be implicit in its basic provisions. Rates of contribution are formulated with the view of accumulating adequate

* FROM PAGE 25 OF THE THIRTY-SEVENTH ANNUAL REPORT OF THE RETIREMENT BOARD
reserves representing the pension credits to meet the ultimate payouts for the retirement benefits. Revenues from these rates are substantially in excess of the current expenditures for retirement benefits. This excess represents the reserve for meeting the future pension and benefit payments.

It is this reserve which is created by the application of these contribution rates that seems to be a source of temptation to officials of government, particularly those having to do with the formulation of budgets. This has brought about the withholding of revenues from the retirement system by means of arbitrary reductions in appropriations below the actual requirements for the accruing pension credits. Pressures also arise from time to time for the application or diversion of some or all of the accumulated reserves for other governmental purposes.

The Employees' Retirement System of the State of Rhode Island has been affected by this process. It has experienced a substantial curtailment of prescribed revenues during recent years. The effect of this practice, if continued, will be a steady depletion of its reserves and a deterioration of its financial condition. This has already occurred as will be noted by a reduction in the funded rate or security ratio this past year. In the course of time, if this process is continued, the assets of the system would be reduced to a point where a diversion of members' contribution credits may be necessary to
meet a part or all of current pension payments. The statement of projected payouts under the existing benefit schedule referred to in the preceding section of this report is irrefutable evidence of the shortcomings of a policy designed to curtail the revenues of the system below its accruing cost requirements.

In its true concept, pension cost is a current operating expense of government. It is an obligation which cannot logically be deferred. It has a direct and immediate relationship to the entire fiscal operations of government. There is no short cut method or formula for financing this cost. A retirement plan is considered to be a legitimate employee welfare program of governmental concern. The principle that government should bear a measure of responsibility for employees whose productivity has become impaired due to old age or disability is now generally accepted. Since this is the case, government should face up to its responsibility in this area. It should be willing to meet the cost of pensions on the most practical and economical basis. This basis is the one that reflects the accruing or current budgeting concept.
SELECTED COMMENTS FROM
THE CONNELL COMPANY


a 134% increase in the department budget (which is the double) in order to avoid future generations of the "zero" budget problem and to only pay for current benefit accruals and forget the off prior benefit accruals from increased.

"An increase of 162% in the Employee Benefit Actuary will be required if a minimum program were to be established. No penalty for prior benefit accruals.

*Assumes additional employee increase prohibited by law
Excerpts from memorandum

To: Mr. H. Edward Spaulding, Vice President of The Connell Company

From: Mr. William F. Lumsden, F.S.A., F.C.A., M.A.A.A., Vice President of The Connell Company

Subject: Employees' Retirement System of the State of Rhode Island

"This report gives a clear picture of the liabilities of the plan and I have no reason to question the actuarial assumptions or methods used therein.

"However, perhaps the actuary did not use strong enough language to emphasize the financial liabilities which have accrued and are continuing to accrue under the plan. My reading of the report indicates that minimum pension funding standards call for a 134% increase in the employer contribution* (i.e., more than double) in order to avoid passing current year's costs on to future generations of tax-payers. Even this contribution would only pay for current benefit accruals and prevent the value of prior benefit accruals from increasing.

"An increase of 162% in the employer contribution* would be required if a minimum program were to be established of paying for prior benefit accruals.

*Assumes additional employee increase prohibited by law
"I understand that you are working with a number of committees on a review of the state's benefit program. I hope one of the major committees is working on how they are going to pay for it.

"Following are some thoughts based on numbers abstracted from the actuary's report.

Present Situation

"On 6-30-72 assets of plan consisted of $162,861,738. Of this $71,533,520 represented prior contributions of members not yet retired. These members will receive a benefit of at least the return of their contributions so this amount can be looked at as a prior lien on the trust fund, leaving $91,328,218, which is what remains of employer contributions and investment earnings on the trust fund after paying out benefits due on the past.

"Against this $91,328,218 there are two liabilities. The first is the remaining benefit payments due to pensioners, survivors and beneficiaries who have started to receive their benefits. The value of these future benefit payments is $150,552,751, so, unlike most pension plans, there isn't now enough money in the fund to cover the former employees, by $59,224,533.

"The second obligation is the value of benefits accrued to date by currently active members. This exceeds the value of prior members' contributions by $232,947,828.
"Thus the unfunded accrued liability of the plan, that is the value of benefits accrued to date not represented by trust fund assets is $292,172,361.

Going concern - past service

"Now the fact that there is an unfunded accrued liability is not unusual in a pension plan (especially when we recognize that about $100,000,000 arose out of the 1971 amendments), but

(a) the fact that part of the unfunded accrued liability represents an unfunded portion of the liability for pensioners, survivors, and beneficiaries is unusual, and

(b) the fact that there is a conscious effort being made to increase the unfunded accrued liability by not making a sufficiently large annual contribution to at least maintain the status quo is, to say the least, unusual, and verges on irresponsibility, and

(c) the fact that there is a conscious effort being made to increase the unfunded accrued liability by not making a large enough contribution to pay for benefits currently accruing is also very unusual.

"Since the unfunded accrued liability has been calculated by discounting future benefit payments by 5% interest, the amount will increase each year in the future if the funds are not available to invest and earn 5%. Since the funds are not available, the unfunded accrued liability can be maintained at its present level by making a contribution of 5% of the principal amount each year, or preferably, a planned program can be started of amortizing the principal over, say, 30 years. Payment of
interest and principal over this period would require a payment of 6.51% of the initial principal amount.

**Going concern - future service**

"The report clearly indicates that even for service currently accruing, the contribution is deficient and part of the cost is being passed on to future tax-payers in the form of a further continuing increase in the accrued liability.

"The contribution made by the employer (6.5% for state employees and 9% for teachers) is based on a five year projection of benefit payouts on pensioners, etc. with no recognition given to benefits accruing for active members.

"The report indicates that an employer contribution of 9.9% for state employees and 12.0% for teachers is necessary to pay the costs of service currently accruing.

**Going concern - projected contributions**

"Based on annual compensation

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>for state employees</td>
<td>$101,631,00</td>
</tr>
<tr>
<td>for teachers</td>
<td>$101,277,00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$202,908,00</strong></td>
</tr>
</tbody>
</table>

"We arrive at the following contribution by the employer*

*Assumes additional employee increase prohibited by law
to maintain the plan without passing on expenses to future generations of tax-payers.*

<table>
<thead>
<tr>
<th>Member contribution</th>
<th>Employees</th>
<th>Teachers</th>
<th>Total</th>
<th>% of Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5% and 6%)</td>
<td>$5,082,000</td>
<td>$6,077,000</td>
<td>$11,159,000</td>
<td>(5.5%)</td>
</tr>
<tr>
<td>Employer contribution—currently payable</td>
<td>6,606,000</td>
<td>$9,115,000</td>
<td>$15,721,000</td>
<td>(7.7%)</td>
</tr>
<tr>
<td>- additional in order to pay for service currently accruing (3.4% and 3%)</td>
<td>3,455,000</td>
<td>$3,038,000</td>
<td>$6,493,000</td>
<td>(3.2%)</td>
</tr>
<tr>
<td>- sub-total</td>
<td>$10,061,000</td>
<td>$12,153,000</td>
<td>$22,214,000</td>
<td>(10.9%)</td>
</tr>
<tr>
<td>- additional in order to pay 5% on unfunded accrued liability</td>
<td>$4,287,000</td>
<td>$10,322,000</td>
<td>$14,609,000</td>
<td>(7.2%)</td>
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<tr>
<td>- sub-total</td>
<td>$14,348,000</td>
<td>$22,475,000</td>
<td>$36,823,000</td>
<td>(18.1%)</td>
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<tr>
<td>- additional in order to fund UAL over 30 years</td>
<td>$1,295,000</td>
<td>$3,117,000</td>
<td>$4,412,000</td>
<td>(2.2%)</td>
</tr>
<tr>
<td></td>
<td>$15,643,000</td>
<td>$25,592,000</td>
<td>$41,235,000</td>
<td>(20.3%)</td>
</tr>
</tbody>
</table>

*Assumes additional employee contribution prohibited by law

*Assumes no change in interest assumptions
Conclusion

"Minimum standards of pension funding require the annual employer contribution to the plan to be increased from the present $15,721,000 (of which $4,558,000 is payable by cities and towns) to $36,823,000 (of which $11,238,000 would be paid by cities and towns under the present formula).

"Normal standards call for an annual contribution of $41,235,000 (of which $12,796,000 would be paid by cities and towns) which would pay off the accrued liability in 30 years.

"In other words, it may be necessary that the employer contribution be increased from 7.7% of payroll to 18.1% or 20.3%.

*Assumes additional employee contribution prohibited by law
4. While the Commission members had strong and diverse feelings regarding the responsibilities of employers and employees for meeting the cost of existing unfunded accrued liabilities, the Commission did find (i) that existing funding problems were due in most part to the failure to provide proper long range funding for the more than $100 million in new unfunded accrued liabilities that were added to the system's benefit plan in 1970; (ii) that any additional benefits should be properly funded according to the principles previously noted, and (iii) that such additional benefits must involve increased contributions from employees and teachers as well as from the state and local governments.

The Commission reviewed the history of financial support from the system and found that there was considerable misunderstanding as to whom was responsible for recommending legislative changes in the rates of contributions each year by employers and by employees.

Some members were of the understanding that the increased employer contributions provided in fiscal year 1972 were to have been sufficient to meet the cost of the additional benefits.

Other members pointed out that there is no evidence to suggest that employees and teachers were not ever going to be asked to make additional contributions toward the increased benefits provided to them by the 1970 amendments.

Some members indicated that recommendations on funding by the
Commission members, however, agreed that the inadequate funding basis was a requirement of law, and not the fault of any one person. The Commission noted Chapter 36-10-2 of Rhode Island General Laws only requires that the employer's contribution rates be sufficient to meet the demand for pay-outs in the following five years.

36-10-2. State contributions.--The state of Rhode Island shall make contributions to the system of such amounts as, together with (a) the contributions made by the members, (b) income on investments and (c) other income of the system, shall be sufficient to meet the cost of maintaining the system and providing the annuities, benefits and retirement allowances in accordance with the provisions of this chapter. The contributions to be made by the state for any fiscal year shall be in the form of an appropriation and shall consist of an amount equal to the computed average annual expenditures under the provisions of this chapter for the period of five (5) years next succeeding the fiscal year in question, after applying against these expenditures the amounts contributed by the members involved in these expenditures. Such amounts shall be computed as a level rate per cent of members' compensation as determined and recommended by the actuary of the system. Such rate shall be applied by the budget division of the department of administration to the total compensation paid to the members during the fiscal year preceding the submission of the budget to the general assembly as provided in §35-3-7 of the general laws. The amount thus established shall constitute the recommended appropriation to be made by the state.

The Commission did not find that basis for partial funding
satisfactory. However, while the Pension Study Commission as a majority favored consideration of full funding accrual principles, it did not indicate that it disagreed with the overall concept of partial funding for a public system guaranteed by the sovereign integrity of the state. However, the Commission was extremely concerned about the degree of partial funding that had been allowed to develop on the present system.

The Study Commission felt that the level of funding should not be allowed to deteriorate any further. To stop this deterioration of the fund's asset position, the Commission believes that any new benefits must be funded to meet normal costs and interest on newly accruing unfunded liabilities, that increased contributions are needed for the existing benefit structure, and that an increased yield from investments is required.

5. After having reviewed the costs of new benefits, such as eighty percent (80%) at thirty (30) years, the Commission found that the costs of some new benefits could be substantial and that a moratorium on new benefits should be seriously considered until the problems relating to the financing of the support for the present benefit structure is resolved, and that a long range plan for upgrading benefits on a properly funded basis be developed.
While most members of the Commission found that it would be immediately desirable from an employee's point of view to improve the benefits of the system, the Commission found that the cost of significantly improved benefits should not be undertaken until other changes relating to financing and structure are made.

However, the Commission did find that there were a number of benefit areas which did deserve consideration in a long range plan. Those areas involve provisions to mitigate the costs of inflation, to make the provisions of the system more equitable in their operation, and to ensure that all members of the state retirement system are also members of the federal Social Security System.

6. The Commission found that provisions of the survivor's benefits program for school teachers were too limited and not comparable to the federal Social Security program. The Commission further found that questions of the equity of the state retirement system could not be realistically addressed when nearly fifty percent (50%) of the teachers in the system and a small percentage of state employees were not participating in the Social Security system. Since the Social Security system's benefits have increased to such an extent, it is not practical to plan benefits for the state retirement system which is sup-
ported by employer/employee contributions without giving considera-
tion to the Social Security system which is supported also by employer/employee contributions.

Since the cost of bringing local school teachers into the Social Security might be high for local communities, especially if they had many older teachers, the Commission suggests that a state grant be considered to local communities to assist in the purchase of Social Security coverage within the first year with an emphasis given to new teachers. If most teachers were in the Social Security system, then there would be little need for the survivor's benefits program. The money in the survivor's benefits program could then be disbursed to teachers and local communities to assist them in buying into the Social Security system.

Besides the equity of that situation, a minority of the members of the Commission thought such a step was necessary if an integration of the benefit structure of Social Security and of the state's retirement system would ever be possible. Under an integrated system employees can be guaranteed up to one hundred percent (100%) retirement benefits based on the joint benefits from their Social Security and state pension systems.

However, many of the employee members of the Commission were opposed to an integration of the benefit structure of
Social Security and of the state's retirement system for fear that there might be a reduction in state benefits for present members. Other members indicated that an integration of benefits did not mean any loss of potential benefits, it simply meant that there would be a unified long range plan for retirement. However, in any case the entire Commission did support the view that all employees and teachers should have Social Security benefits, especially in view of the richness of the Social Security program with regard to Medicare, which is only available at a high cost to non-members, and with regard to its generous plan for survivor's benefits.

In lieu of substituting Social Security for survivor's benefits, the Commission recommends consideration to a substantial upgrading of the present survivor's benefits program for teachers to make that program comparable to the similar provisions of the Social Security program.

7. The Commission found that the extraordinary increases in the rates of inflation in the past year has increased the reluctance of many school teachers and state employees to retire; consequently, the Commission recommends that a high priority should be given in the long range plan to a new means of protecting retirees against the increases in the rate of inflation. Consideration should be given to changing the salary computation
to the highest year's salary rather than an average of the highest last three years, to changing the automatic cost of living increase after the third year to an automatic increase after the first year, and to providing some minimum floor of benefits to existing retirees who have had thirty-eight (38) years of services and are receiving less in absolute amounts than later retirees with only thirty (30) years of service.

8. The Commission found that there were a number of technical changes involving the purchase of credits in the system and the designation of survivors option that might be considered as possible short term items for change. This is based on the assumption that there would be a small additional cost to the employee and the employer to fund these changes.

9. In lieu of consideration of extensive changes in the benefit structure of the Retirement System at this time, the Commission found that a greater priority should be given to changes that might increase the ability of the Retirement System to improve its own finances. Those changes would involve the method by which employer contributions are made to the Retirement System and would involve the means by which investments are made for the Retirement System by the State of Rhode Island's Investment Commission.
(a) The Commission found that the ability of the investments to create additional income for the Retirement Fund would be improved if employer contributions were calculated on the basis of a current payroll, rather than a two year old payroll, and if employer contributions from both state government and local government were received on a payroll frequency basis instead of on a year end basis as is the case with local communities.

(b) The Commission further found that the investment rate of return for the past five years was at four and eighty-five hundredths percent (4.85%). The Commission believed that while that rate of return was respectable, a greater effort is needed to be made to increase the rate of return. To accomplish that goal, the Commission felt that the Retirement Board should control its own investments and promote a more aggressive investment policy.

Instead of turning over the assets of the fund to the State Investment Commission, as required by law, the Pension Study Commission found that it might be profitable to consider the use of professional money managers and investment advisors under the direction of the Retirement Board.

The Pension Study Commission found that this was an important consideration since an increase of an average return of
one percent (1%) on the return on the fund's investments could significantly improve the ratio of assets in the fund to outstanding liabilities, and possibly decrease proportionately the cost of benefits by as much as one-fourth of the average of long range cost increases for accruing liabilities.

10. The Commission found that changes could be made in the structure of the Retirement Board and in the administration of the Retirement System that might make the system more responsive to consumer concerns and might improve the confidence of employees, of teachers, and of retirees in the retirement system.

The Commission found that increased teacher and employee representation on the Board would be desirable and that the creation of a retirement counseling unit for employees and retirees and the establishment of a financial planning and money management unit in the Retirement System could improve the consumer services of the System, and could further improve the financial management of the system's assets and contributions. The Commission also believed that the Board required a data collection and analysis capability if improved actuarial projections are to be made.

11. The Commission further found that a newly created Retirement Board and administrative system as described should be given responsibility for planning long range improvements
in the benefit structure of the system for benefits which are
not possible at this time.

11a. The members of the Commission believed that a long
range plan of properly funded additional benefits should be im-
plemented by a newly restructured Board, and that new benefits
should not be added for special groups or for any group unless
properly funded and unless they are consistent with a long range
plan of improvement for all members.
APPENDIX TO CHAPTER 1 AND CHAPTER 2

The Task Force recommended that the Work Group be convened for a review of the recommendations in the 1983 Report and the actions subsequently taken or to be taken. This follows:

RECOMMENDATION 1: APPRAISAL OF THE WORK GROUP
The present value of the benefit to be derived from such rate to be paid to the 142 employees of the present 42 years of service.

APPENDIX

(a) For each of the 42 years,
(b) For the last year,
(c) For the 24-year period.

The maximum retirement value of the salary, would be valued in 1983 and paid at such rate to be paid to the 142 employees of the present 42 years of service.

ACTION: Enacted by Chapter 47, 1983.
APPENDIX TO CHAPTER I and CHAPTER V

The Task Force membership at its meeting of December 18th asked for a review of the recommendations of the 1970 Retirement Study Commission, and the actions subsequently taken on the recommendations. A summary of this follows:

RECOMMENDATION 1: SERVICE RETIREMENT ALLOWANCE

The present rate of 1-2/3% of average compensation (3-year average) should be revised to a graded rate schedule according to periods of credited service:

(a) For each of the first 10 years .......................1.7%
(b) For the 11th year and each year thereafter, to and including the 20th year ........1.9%
(c) For the 21st year and each year thereafter ...2.4%

The maximum retirement allowance, now 75% of average salary, would be raised to 80% of average salary with such rate to be payable for 38 years of service, instead of the present 45 years of service.

ACTION: Enacted (see Chapter 112, P.L. 1970)

RECOMMENDATION 2: RETIREMENT AFTER 30 YEARS OF CREDITED SERVICE

Any member completing 30 years of credited service should be eligible to retire at a full rate of service retirement allowance, but not earlier than age 58.

ACTION: Enacted (see Chapter 112, P.L. 1970)

RECOMMENDATION 3: COMPULSORY RETIREMENT AGE

The compulsory retirement age for members of the Employees' Retirement System, including state employees and teachers, would be 70 years; also, no extension beyond such age should be granted after July 1, 1971.

ACTION: Enacted (see Chapter 112, P.L. 1970)
RECOMMENDATION 4: REEMPLOYMENT OF RETIRED MEMBERS
Any retired member of the system should be permitted to reenter the service of the system for not more than 75 working days in a calendar year without interruption of pension benefits. Pension payments, however, should be suspended when this period is exceeded. If the retired member continues in service beyond the 75-day period (with his annuity temporarily suspended) he should not be eligible for pension credit for such additional service, nor be required to make pension contributions for this service.

ACTION: Enacted (see Chapter 112, P. L. 1970)

RECOMMENDATION 5: VARIABLE ANNUITIES FOR RETIRES
It is recommended that a variable annuity be made available to members upon retirement, granting them the privilege of allocating a proportion of their equity in the service retirement allowance not exceeding 50%. This program should be reinsured with a private underwriter who would handle all management and administrative details.

ACTION: Not Enacted

RECOMMENDATION 6: POST-RETIREMENT PENSION ADJUSTMENTS
The commission recommends that the systematic plan adopted in 1968 for state employees retired on or before December 31, 1967, of the 1 1/2% increase in the retirement annuity for each year on retirement, based upon the original pension annuity, be retained provided that these retirees receive a 3% increase for the year beginning January 1, 1971 and each year thereafter subject to the $500. maximum. The commission also recommends extending the above plan to cover public school teacher members who retired on or before December 31, 1967, with payments to begin July 1, 1970.

For state employees and public school teachers retired on or after January 1, 1968 the commission recommends a plan that would provide an increase in the retirement annuity of 3% for each year on retirement, based on the original annuity, beginning on January 1, of the year next following the third anniversary date of retirement to continue thereafter during the lifetime of the annuity.

ACTION: Enacted (see Chap. 112, P.L. 1970)
Recommendation 7: Ordinary Death Benefits
The present rate of benefit of $250 per year of service should be increased to $400 per year of credited service, with the minimum of $1,000 increased to $2,000, and the maximum payment increased from $5,000 to $8,000. As at present the full benefit would be carried into retirement and reduced 25% annually to a minimum of $2,000.

ACTION: Enacted (see Chap. 112, P.L. 1970)

Recommendation 8: Teacher Survivor Benefits
The commission recommends that the survivor benefits program for public school teachers created by an act effective July 1, 1963, should be repealed as of January 1, 1973; and that teachers covered under this program presently, be given coverage in the federal social security plan.

ACTION: Not Enacted.

Recommendation 9: Transferability of In-State Pension Credits
The Commission recommends establishment of a plan for the transferability of pension credits for public employment within the state, for any participating governmental unit so as to assure full credit for pension purposes for all public employment. Each participating governmental unit should assume its proportional financial obligation for the amount of service rendered such unit.

ACTION: Enacted (see Chap. 112, P.L. 1970)

Recommendation 10: Transferability of Special Teaching Pension Credits
The present provision granting pension credit, under prescribed conditions, for out-of-state service, should be repealed effective upon passage. In lieu thereof, provision should be made for allowing the purchase of pension credits for certified teaching services only, in non-profit schools within the state upon payment by the teachers of the full actuarial cost. This should represent the full-funded rate for the normal cost for such service, based upon the salary in effect at the date pension credit is applied for.

ACTION: Enacted (see Chap. 112, P.L. 1970) but in a modified form allowing five (5) years transfer out-of-state credits, instead of outright repeal.
RECOMMENDATION 11: CODIFICATION OF PENSION LAWS
The subject of pensions is essentially complex, but much can be done to simplify and clarify such laws without making substantive changes. As a long-term objective, the Commission believes that a valuable contribution can be made in the direction of simplifying the existing pension laws. Codification of these laws, therefore, is recommended. In the process of this codification, the name of the Employees’ Retirement System should be changed to the "Public Employees' Retirement System of Rhode Island" which would be more expressive of the scope of its operation.


RECOMMENDATION 12: FINANCING THE RECOMMENDED PENSION BENEFITS. Some recommendations presented in this report entail increases in cost. It is the judgment of the Commission that increases in costs be met by the revision of the contribution rate schedule which is to become effective on July 1, 1972 based upon the 5-year actuarial survey to be completed prior to such date.

ACTION: The rate was increased by action of the Retirement Board, effective July 1972.

RECOMMENDATION 13: RETIRED SCHOOL TEACHERS (PRE-1948)
A cost-of-living adjustment for school teachers who retired before 1948 has merit, and the present annual pension should be increased from $2,000 to $2,500. effective July 1, 1970.

ACTION: Enacted (see Chap 114, P.L. 1970. Also, the pension has been upgraded by law since then).

RECOMMENDATION 14: MUNICIPAL EMPLOYEES' RETIREMENT
In the interest of uniformity and standardization, and an effective pension program for public employees in the state, the same standards should be maintained for all employees.

ACTION: Most of the additional state employee/teacher benefits were enacted on a piecemeal basis between 1970 and 1972.
RECOMMENDATION 15: STATE POLICE RETIREMENT

The Commission recommends that state policemen be brought into the State Employees Retirement System with the necessary special provisions to give recognition to the nature and extent of state police services, and with assurance that present pension rights would not be jeopardized by this change from a non-contributory program to the contributory state employees' plan. The Commission suggests that legislation for this change be initiated by the State Retirement Board, along with action which would extend to state policemen annual cost-of-living adjustments for present and future retirees and coverage in the federal Social Security System.

ACTION: Not enacted.

RECOMMENDATION 16: JUDGES' RETIREMENT

The Commission recommends a revision of the retirement program for members of the state's Judiciary, and suggests that this may be accomplished by the state Retirement Board and legislation initiated by them at a later time.

ACTION: Not accomplished as recommended. However, the judges' retirement provision were revised considerably in 1970 by legislative action (see Chap 300, P. L. 1970).
APPENDIX to Chapter IV - Exhibits

STATE OF RHODE ISLAND
EMPLOYEES RETIREMENT SYSTEM

ASSUMPTIONS

Bond Segment
Market value was assumed to be face or carrying value. This assumption is reasonable due to practice of holding bonds to maturity; also necessary due to a large number of non-traded issues in the portfolio.

Commercial paper was not considered to be part of the bond segment but considered to be cash. A distortion has probably arisen due to interest received on commercial paper being credited to the bond account, no distinction was made on data supplied.

Monthly interest was assumed received on the fifteenth of each month.

Stock Segment
Market value for 6/30/73 was reconstructed and can only be considered as unaudited and for information only.

Monthly dividends were assumed received on the fifteenth of each month.

Whole Fund
Contributions and disbursements were netted out per year yielding only net contributions in. Slight variations due to timings have been ignored.

The 6/30/73 market value was reconstructed and is an unaudited figure for information only.
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<thead>
<tr>
<th>DATE</th>
<th>Whole Fund</th>
<th>Stock</th>
<th>Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/68</td>
<td>$116,826,890</td>
<td>$36,256,210</td>
<td>$79,093,637</td>
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<tr>
<td>6/30/69</td>
<td>128,875,028</td>
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<td>6/30/70</td>
<td>133,885,092</td>
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<td>6/30/71</td>
<td>158,526,587</td>
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<td>6/30/72</td>
<td>180,039,639</td>
<td>62,567,629</td>
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<td>6/30/73</td>
<td>188,218,819</td>
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### EFFECTIVE RATES OF RETURN

**RHODE ISLAND RETIREMENT SYSTEM**

**6/30/68 through 6/30/73**

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<td>Whole Fund</td>
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<tr>
<td>Rate for Year</td>
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<td>(2.57)</td>
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<td>7.93</td>
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<td>Effective Annualized Rate to 6/30/73</td>
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<td>5.56</td>
<td>8.49</td>
<td>6.20</td>
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<td>10.61</td>
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<td>10.85</td>
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</table>
Background and Concepts

Pension actuarial clients of The Connell Company have been asking with increasing frequency for assistance in measuring investment performance of their trust funds. Accordingly, The Connell Company now maintains a performance measurement service which is available on a fee basis to sponsors of pension and other employee benefit trusts.

There are a number of ways to measure performance, all producing different results. For this reason, it seems worthwhile to recite the basic concepts underlying the Connell system:

1. For the purpose of measuring investment performance, market values are the only relevant values to be placed on assets.

2. In a tax exempt employee benefit trust, no distinction need be made between investment income on one hand and appreciation or depreciation on the other. Instead, the relevant question is "what was the market value of assets at the end of the period in which the study is being made."

3. Investment rate of return should be calculated on both dollar weighted and time weighted bases (these are described later).

4. For ease of comparison, all rates of return should be expressed as annual rates compounded annually regardless of the period over which measurements are being made.

5. In evaluating rate of return, one should evaluate as well the amount of risk to which the trust has been exposed. In particular it is not legitimate to compare rates of return of two trust funds without comparing the two on exposure to risk. The risk measurement tool in the Connell system is "mean absolute deviation." This tool is discussed later.
6. In addition to measuring the performance of an overall trust it is useful to measure performance of individual subdivisions such as the common stock component and the fixed income component.

7. In appraising investment managers, two trusts should be compared directly only if investment constraints are similar. For example, a trust under which the trustee has complete investment discretion should not be compared with one under which investment decisions must be approved by the sponsoring employer. Similarly, a trustee who has been instructed to "be aggressive in seeking long term growth" should not be compared with one under orders to "maintain a balanced portfolio at all times."

Output of The Connell Company Service

The Connell Company service provides both time weighted and dollar weighted rates of investment return. These rates are available for any given quarter and for all desired combinations of quarterly beginning and ending dates. The service also provides mean absolute deviation calculations for any combination of quarterly beginning and ending dates. For example, if experience over a ten year period is being examined, these are some of the calculations which could be furnished:

- Rates for each of the forty quarters;
- Rates for each of the ten years;
- Rates for every possible combination of four consecutive quarters (there would be 37 such combinations);
- Rates for various sub-periods beginning at different quarterly dates and ending at the end of the ten year period.

Regardless of the length of period for which a rate of return is calculated, the rate is expressed in terms of its annual equivalent.
Rates may be furnished for the fund as a whole and for any subdivision. It is suggested that investments be grouped into these combinations for analysis:

a. The entire trust fund;
b. Common stocks and common stock equivalents;
c. Long term fixed income investments;
d. Cash and short term cash equivalents.

Other subdivisions may be established if desired.

Input Requirements

These items will be required for the entire period to be studied:

1. Dates and amounts of each contribution to the trust fund.
2. Dates and amounts of each benefit or expense disbursement from the fund.
3. Dates and amounts of cash flow into and out of each subdivision to be investigated separately. For example, a transfer from long bonds to common stocks is a disbursement from bonds, a contribution to stocks and "no activity" from the standpoint of the overall trust.
4. Market valuations of the overall trust and each subdivision. These should be provided at least quarterly and preferably monthly. In addition, it is desirable to provide a special valuation whenever an extraordinary transaction takes place.

Coding forms and instructions will be provided by The Connell Company for assistance in preparing these items.
The Connell Company service is available to individual fund sponsors on this basis:

1. Basic fee per computer run -- $100.00

2. Additional fee for each combination of starting and ending dates for which rate calculations are desired -- 1.00 per combination (If the same starting and ending date applies to the fund and each subdivision, it is treated as one combination.)

3. Additional fee for keypunching contribution, disbursement, and valuation information -- .15 per transaction

4. Additional fee for consulting time in discussing input preparation and reviewing output with client -- 40.00 per hour.

These fees assume that information will be required on no more than three subdivisions in addition to the fund as a whole.

The user should anticipate two or three hours of consulting time prior to the initial run and perhaps two hours to review output after this first pass. Ordinarily, no significant amount of consulting time need be anticipated in connection with subsequent runs.

It is recommended that runs be performed at least once yearly. Each annual run can generate updating information covering the four quarters since the prior run.
TIME WEIGHTED VS DOLLAR WEIGHTED RATES OF RETURN

Dollar Weighted Rate

The dollar weighted rate of return is the traditional calculation. It is easier to calculate and requires less data. Until recently it was the only measure in general use. To illustrate the significance of the dollar weighted rate, suppose it is determined that the dollar weighted return of pension trust A measured over a given five years is 6% compounded annually, even though market value fluctuations at various times during the five year period are considerably greater. Suppose trust B is invested over the same five years entirely in a savings bank paying interest from day of deposit to day of withdrawal at the rate of 6% per year, compounded annually. If both trusts start with the same balance, receive the same contributions, and make the same disbursements for benefits and expenses, all on the same dates, both trusts will have exactly the same ending balance.

The dollar weighted rate is sometimes called the internal or discounted rate of return.

Time Weighted Rate

The time weighted rate eliminates one serious shortcoming of dollar weighting. Suppose a given time period encompasses two shorter periods: a bull market followed by a bear market. Suppose, for reasons entirely beyond control of the investment manager, trust M has large balances during the bull market and small balances later. Suppose the balances for trust N follow the opposite pattern: small balances while prices are rising and large ones while they are falling. Suppose both trusts are fully invested in the same mutual fund. The dollar weighted rate for trust M will be greater than the comparable rate for trust N. Yet they were both fully invested at all times in the same mutual fund. The time weighted rate will be the same for both trusts. The time weighted rate eliminates those differences which are entirely attributable to differences in timing and amount of contributions and disbursements. For any period in which there are no contributions and no disbursements, dollar and time weighted rates will be the same.
Relative Usefulness

There are two principal reasons for measuring rate of return. One is to help determine how good a job the investment manager is doing. The other is to help predict probable future return on the fund. In general, time weighted returns are more helpful in both of these areas.

First, consider the question of evaluating the investment manager. Dollar weighted returns are affected by contributions and disbursements. Where the entire trust fund is being measured, contributions and disbursements are totally beyond the control of the investment manager. They should not influence any judgment concerning his effectiveness. Clearly, time weighted rates constitute the more useful tool. Where the measurement covers only a subdivision of the fund, such as the common stock component, the investment manager usually has some control over cash flow. Within limits, he may adjust the mix between subdivisions, causing funds to flow into or out of the common stock subdivision, for example. Here, both time weighted and dollar weighted rates can be useful.

Next, consider the question of predicting future return. As a rule, contributions and disbursements do not enhance or detract from investment results in any consistent and predictable manner. In general, it is more useful to employ time weighted rates, which offset the effects of cash flow whatever these effects might be. Occasionally, it may be possible to establish a pattern. In this case, the prediction as to future results might be weighted for the effects of cash flow. The availability of both time weighted and dollar weighted rates will help establish the existence of any pattern.
MEAN ABSOLUTE DEVIATION

The justification for examining mean absolute deviation is the proposition that the more fluctuation in value a fund experiences, the more risk it is taking.

This correlation between volatility and risk taking is by no means a universally accepted proposition. Many authorities feel the only legitimate approach to risk is a case by case examination of the individual securities in the portfolio.

One advantage of a volatility measure is that it furnishes a concrete numerical basis for comparing two or more funds.

Mean absolute deviation is a relatively simple concept and can best be defined by means of an illustration. Suppose rates of return in four consecutive periods equal minus 2%, plus 10%, plus 20%, and minus 8%. The algebraic mean (average) of these four rates is 5%. Each of the four rates deviates from this mean thus:

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<td>10%</td>
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<tr>
<td>3</td>
<td>20%</td>
<td>15%</td>
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<td>4</td>
<td>-8%</td>
<td>-13%</td>
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The concept "absolute deviation" means a negative deviation is treated no differently from a positive one. It is the extent of the swing that counts, not its direction. In accordance with this concept, one strips the minus signs from the deviation column and determines their mean (average). This mean deviation in the illustration is ten percentage points.

In order to have much validity, an examination of mean deviations should cover performance over at least one full period of rising and falling prices.
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RHODE ISLAND RETIREMENT FUND

TIME WEIGHTED RATES TO BE COMPUTED FROM 06/30/68 TO 06/30/73 — RESULTS NAMED 'LINK'
LINKED INTERNAL METHOD TO BE USED

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<td>RETURN TIME WEIGHTED</td>
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RHODE ISLAND RETIREMENT FUND

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**TWR MATRIX**  
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### RHODE ISLAND HOSPITAL TRUST STUDY

STATE OF RHODE ISLAND - EMPLOYEES' RETIREMENT SYSTEM

#### PERCENTAGE RATES OF RETURN -- ANNUALIZED

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#### DOW-JONES INDUSTRIALS

PERCENTAGE RATES OF RETURN -- ANNUALIZED

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#### S & P 500

PERCENTAGE RATES OF RETURN -- ANNUALIZED

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### POOLED BANK TRUST FUNDS AND INSURANCE COMPANY SEPARATE ACCOUNTS

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<td>Aetna - Acct. 1</td>
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<td>(11.73%)</td>
<td>(7.33%)</td>
<td>10.29%</td>
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<td>N/A</td>
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<td>8.71</td>
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<td>11.68</td>
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## EFFECTIVE RATES OF RETURN - 1967 THROUGH 1972

**POOLED BANK TRUST FUNDS AND INSURANCE COMPANY SEPARATE ACCOUNTS**

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<td>5.37</td>
<td>10.89</td>
<td>14.87</td>
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<td>(9.73)</td>
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<td>12.97</td>
<td>8.69</td>
<td>7.31</td>
<td>13.72</td>
<td>18.01</td>
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<td>(2.39)</td>
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<td>(12.03)</td>
<td>23.63</td>
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<td>N/A</td>
<td>N/A</td>
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<td>10.93</td>
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<td>3 years</td>
<td>2 years</td>
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<td>2.74</td>
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<td>13.98</td>
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<td>(8.60)</td>
<td>7.93</td>
<td>13.97</td>
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### Comparative Investment Results of Various Insurance Company Separate Equity Investment Accounts

**Investment Return Rates for the Periods**

- Returns are overall rates of investment return from dividends, interest, and realized and unrealized capital gains.

#### Annual Rates of Return Applicable to a Given Amount Held in the Account at the Beginning of the Year

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<th>Year</th>
<th>Standard &amp; Poor's 500</th>
<th>CREF</th>
<th>Aetna No. 1</th>
<th>Connecticut General Account A</th>
<th>Equitable No. 1</th>
<th>Metropolitan No. 1</th>
<th>Prudential (Investment Fund)</th>
<th>Travelers &quot;A&quot;</th>
<th>NHWRA</th>
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<td>1967</td>
<td>23.73%</td>
<td>23.42%</td>
<td>16.55%</td>
<td>22.30%</td>
<td>20.05%</td>
<td>10.28%</td>
<td>24.25%</td>
<td>20.85%</td>
<td>6.00%</td>
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<td>1968</td>
<td>10.84%</td>
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<td>12.40%</td>
<td>8.27</td>
<td>7.33</td>
<td>9.80</td>
<td>9.36</td>
<td>12.89</td>
<td>1.89</td>
</tr>
<tr>
<td>1969</td>
<td>- 8.32%</td>
<td>- 5.51</td>
<td>-11.73%</td>
<td>-14.44</td>
<td>- 8.93</td>
<td>- 0.78</td>
<td>- 8.42</td>
<td>- 8.96</td>
<td>0.93</td>
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<tr>
<td>1970</td>
<td>3.51%</td>
<td>3.22</td>
<td>7.33%</td>
<td>2.03</td>
<td>0.57</td>
<td>- 14.70</td>
<td>2.25</td>
<td>4.36</td>
<td>0.00</td>
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<tr>
<td>1972</td>
<td>16.65%</td>
<td>17.07</td>
<td>8.41%</td>
<td>14.38</td>
<td>24.80</td>
<td>26.30</td>
<td>15.86</td>
<td>17.39</td>
<td>20.93</td>
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#### Equivalent Level Annual Rate of Return Applicable to a Given Amount Held in the Account at the Beginning of the Period

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<td>1968</td>
<td>7.3%</td>
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<tr>
<td>1969</td>
<td>6.5%</td>
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<td>1970</td>
<td>11.9%</td>
</tr>
<tr>
<td>1971</td>
<td>16.4%</td>
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<tr>
<td>1972</td>
<td>18.7%</td>
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#### Value at End of Period of $1.00 Invested in Account at Beginning of Period

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<th>Connecticut General Account A</th>
<th>Equitable No. 1</th>
<th>Metropolitan No. 1</th>
<th>Prudential (Investment Fund)</th>
<th>Travelers &quot;A&quot;</th>
<th>NHWRA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>1.76%</td>
<td>1.69</td>
<td>1.29%</td>
<td>1.29</td>
<td>1.59</td>
<td>1.81</td>
<td>1.63</td>
<td>1.79</td>
<td>1.56</td>
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<tr>
<td>1968</td>
<td>1.42%</td>
<td>1.37</td>
<td>1.10%</td>
<td>1.20</td>
<td>1.30</td>
<td>1.51</td>
<td>1.48</td>
<td>1.48</td>
<td>1.47</td>
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<tr>
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<td>1.29%</td>
<td>1.29</td>
<td>0.98%</td>
<td>1.20</td>
<td>1.41</td>
<td>1.48</td>
<td>1.35</td>
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<td>1.44</td>
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<tr>
<td>1970</td>
<td>1.40%</td>
<td>1.36</td>
<td>1.11%</td>
<td>1.11</td>
<td>1.41</td>
<td>1.54</td>
<td>1.34</td>
<td>1.33</td>
<td>1.43</td>
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<tr>
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<td>1.20%</td>
<td>1.33</td>
<td>1.53</td>
<td>1.57</td>
<td>1.30</td>
<td>1.39</td>
<td>1.43</td>
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<tr>
<td>1972</td>
<td>1.19%</td>
<td>1.17</td>
<td>1.08%</td>
<td>1.11</td>
<td>1.25</td>
<td>1.26</td>
<td>1.16</td>
<td>1.17</td>
<td>1.21</td>
</tr>
</tbody>
</table>

#### Value at End of Period of Invested in Account at Beginning of Each Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Value at End of Period of $1.00 Invested in Account at Beginning of Each Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>$ 0.41</td>
</tr>
<tr>
<td>1968</td>
<td>$ 8.29</td>
</tr>
<tr>
<td>1969</td>
<td>$ 6.75</td>
</tr>
<tr>
<td>1970</td>
<td>$ 8.02</td>
</tr>
<tr>
<td>1971</td>
<td>$ 9.05</td>
</tr>
<tr>
<td>1972</td>
<td>$ 8.63</td>
</tr>
</tbody>
</table>

#### Responding Equivalent Level Annual Rate of Return

- Standard & Poor's 500: 9.7%
- CREF: 9.3%
- Aetna No. 1: 3.5%
- Connecticut General Account A: 8.4%
- Equitable No. 1: 12.0%
- Metropolitan No. 1: 10.5%
- Prudential (Investment Fund): 8.2%
- Travelers "A": 10.3%

#### Notes:
- The rates of return shown for all Companies are net of Company Investment management charges.
- The above rates of investment return are "Time-weighted" rates of return, which do not reflect the dates or amount of contributions or disbursements from the respective funds.

NATIONAL HEALTH & WELFARE RETIREMENT ASSOCIATION, INC.

Based on study by: The Wyatt Company
APPENDIX

to Chapter VI

Background on cost of "Grandfather Credits"

Number of teachers with service outside the state prior to July 1, 1970 - 387

Average number of years outside state - 5

Average Rhode Island starting salary - $7,566

Number of teachers who would purchase credits if allowed - 210

Number of teachers who purchased credits after July 1, 1970, for prior service - 24