# Pennsylvania Public School Employes' Retirement System 

Annual Report
Year Ended June 30, 1982


# Commonwealth of Pennsylvania <br> Public School Employes' Retirement System <br> 301 Chestnut Street <br> Harrisburg, PA 17101 . 

Annual Financial Report<br>Fiscal Year Ended<br>June 30, 1982

M. Andrew Sheffler<br>Executive Director

J. Henry Eisenhart, Jr.

Chairperson
Board of Trustees

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Investment Advisors
Investment Counsel
Mellon Bank NA
Pittsburgh
Mortgage Counsel
The Fidelity Bank
Philadelphia
Actuary
George B. Buck Consulting Actuaries, Inc.
New York
Auditor
Peat, Marwick, Mitchell and Co.
Certified Public Accountants
Harrisburg

# Letter of Transmittal 

The Board of Trustees
Public School Employes' Retirement System
Harrisburg, PA 17101
The annual report of the Public School Employes' Retirement System (PSERS) for the fiscal year ended June 30, 1982, is submitted herewith. The report consists of five sections: an Introductory Section which contains this letter of transmittal, the Chairman's Report, identification of the administrative organization, and the consulting services utilized by the System; the Financial Section which contains the opinion of the independent certified public accountant and the financial statements of the System; the Actuarial Section which contains the independent consulting actuary's opinion and the results of their latest annual valuation; the fourth section which contains significant statistical data pertaining to PSERS; the last section which details PSERS' investments.

## Accounting System and Reports

The report has been prepared in accordance with generally accepted accounting and reporting principles promulgated by the National Council on Governmental Accounting and the American Institute of Certified Public Accountants. This report will be submitted to the Municipal Finance Officers Association for the certificate of conformance annual review.

The accrual basis is the method of accounting used to record assets and liabilities, revenues, and expenses. Revenues for the System are taken into account when earned without regard to date of collection, and expenses are recorded when the corresponding liabilities are incurred regardless of when payment is made. Fixed assets are recorded at cost; however, depreciation is not taken over the useful life of the assets. Bond premium and discount are amortized over the life of the security. The unfunded portion of the actuarial liability is disclosed in the footnotes to the financial statements.

## Revenues

Public employe retirement systems are established by law to pay retirement benefits and accumulate the resources with which to pay such benefits. PSERS accumulates its resources through collection of contributions and from income earned on invested contributions. Contributions and investment income for 1982 totaled $\$ 1,117.5$ million. This represents an increase of 11.1 percent over 1981 revenues of $\$ 1,005.4$ million as shown below.

| Revenue Source | $\begin{gathered} 1982 \\ \text { (Millions) } \end{gathered}$ | $\begin{gathered} 1981 \\ \text { (Millions) } \end{gathered}$ | Increase Amount |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | (Millions) | \% |
| Member Contributions | \$ 180.6 | \$ 175.3 | \$ 5.3 | 3.0 |
| Employer Contributions | 501.0 | 478.9 | 22.1 | 4.6 |
| Investment Income | 435.9 | 351.2 | 84.7 | 24.1 |
|  | \$1,117.5 | \$1,005.4 | \$112.1 | 11.1 |

The increase in revenue resulted from (1) increase in the salaries of the participating members from which $51 / 4$ percent is deducted as their contribution; (2) an increase in the
employers' contribution which was brought about by the increased salaries paid. The employer rate of contribution of 15 percent is shared equally by the school districts and the Commonwealth of Pennsylvania and is based on the total salaries paid; and (3) increased investment income attributable primarily to improved earnings on short-term investment and to the increase in the total investments available for earnings.

## Expenses

The largest single factor of expense relates to the purpose for which the Retirement System was created: payment of benefits. These payments coupled with the expense to administer the plan, constitute the total expenses of the plan.

Expenses by type for 1982 and 1981 are shown for comparative purposes.

| Expenses | $\begin{gathered} 1982 \\ \text { (Millions) } \end{gathered}$ | $\begin{gathered} 1981 \\ \text { (Millions) } \end{gathered}$ | Increase Amount |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | (Millions) | \% |
| Benefits | \$450.9 | \$435.5 | \$15.4 | 3.5 |
| Refunds | 19.2 | 18.2 | 1.0 | 5.5 |
| Disabilities | 18.8 | 13.8 | 5.0 | 36.2 |
| Lump Sum | 53.2 | 43.0 | 10.2 | 23.7 |
| Administrative | 5.9 | 5.1 | . 8 | 15.7 |
| Other | 5.0 | 7.0 | (2.0) | (28.6) |
| Total | \$553.0 | \$522.6 | \$30.4 | 5.8 |

The increase in benefit payments resulted from an increase in the number of annuitants receiving payments and an increase in the average benefit paid. The number of benefit claims paid in 1982 increased over 1981 by 2.6 percent. The average benefit paid for retirement, disabilities and withdrawals increased from $\$ 5,119.48$ in 1981 to $\$ 5,692.26$ in 1982. See table on page 59 for the five year trend.

Administrative expenses amounted to $\$ 5,892,417$ for the 1981-82 fiscal year. The budget as established must be approved in legislative bill form by both the State Senate and House Appropriation Committees each fiscal year. See page 25 for a detailed breakdown of these expenses.

## Funding

Full funding of a retirement system would require the accumulated assets to equal the actuarial liabilities. Revenue must exceed expenses each year by the amount of pension benefits accrued for the accumulated services of the membership. It is rare for a retirement plan to be fully funded since the actuarial liabilities are projected approximately $20-25$ years in advance. Therefore, the difference between the accumulated assets and the actuarial liabilities is the unfunded obligation, which at June 30 , 1981, amounted to $\$ 5.2$ billion. The chart on page 59 indicates the funding ratios for the last ten years. A systematic planned approach to fund this has been to incorporate this obligation into the employer rate of contribution.

The following summary shows the distribution of the net reserves to the net assets.

| Assets | $\begin{gathered} 1982 \\ \text { (Millions) } \end{gathered}$ | $\begin{gathered} 1981 \\ \text { (Millions) } \end{gathered}$ | Increase (Decrease) (Millions) |
| :---: | :---: | :---: | :---: |
| Cash \& Short Term Investments | \$ 961.3 | \$ 567.9 | \$393.4 |
| Receivables | 318.7 | 302.2 | 16.5 |
| Investments | 4,621.9 | 4,474.1 | 147.8 |
| Fixed Assets | 1.2 | 1.1 | . 1 |
|  | \$5,903.1 | \$5,345.3 | \$557.8 |
| Less Payables | 9.4 | 16.1 | (6.7) |
| Net Assets | \$5,893.7 | \$5,329.2 | \$564.5 |
| Reserves |  |  |  |
| Member | \$1,868.0 | \$1,717.7 | \$150.3 |
| Retirement | 2,466.6 | 2,334.3 | 132.3 |
| Disability | 143.7 | 129.3 | 14.4 |
| State Accumulation | 1,415.4 | 1,147.9 | 267.5 |
| Net Reserves | \$5,893.7 | \$5,329.2 | \$564.5 |

Member reserves increased $\$ 150.3$ million after collecting $\$ 180.6$ million from the active members and allocating $\$ 66.0$ million from investment income to satisfy the 4 percent interest requirement to each member's account and after deducting $\$ 34.2$ million for the option of the retiring members taking out their contributions and interest, paying death benefits and transfers to the State Employes' Retirement System. Refunds in the amount of $\$ 19.2$ million were made to the active members leaving the System who requested the return of their contributions plus interest. Further, $\$ 39.8$ million was transferred to the retirement reserve for those active members choosing retirement and $\$ 3.1$ million for active members granted disability allowances.

The reserve for retirements increased by $\$ 132.2$ million after transferring from the state accumulation account $\$ 414.9$ million which represents the actuarially determined amount necessary to pay benefits to retiring members. The employe contributions of $\$ 39.8$ million and allocated investment earnings of $\$ 130.2$ million also increased the reserve for retirements while retirement benefits paid of $\$ 452.6$ million were charged to this reserve.

The reserve for disability was increased by $\$ 14.4$ million brought about by the increase in the number of disability allowances granted, from 2,983 in 1981 to 3,153 in 1982. This was an increase of 170 active members granted disability under the qualifications of the System.

A team of doctors under contract to PSERS examines the medical records submitted on each disability request and makes their recommendations on each case to the Board. A hearing on the recommendations can be requested by the member, and the Appeals Committee of the Board reviews the data and makes final recommendations in each case.

The state accumulation account increased by $\$ 267.5$ million. The Commonwealth of Pennsylvania and the school districts contribute equally as employers to this account. Their combined contributions for the 81-82 fiscal year were $\$ 501.0$ million, of which $\$ 414.9$ million was transferred for current retirements of active members and $\$ 22.8$ million for disability allowances. This reserve was credited with the $51 / 2$ percent valuation interest of $\$ 66.8$ million from the investment earnings. After satisfying the requirements established by state law to credit the reserve accounts for their appropriate investment income, the remaining
earnings of $\$ 159.8$ million were retained in the state accumulation account to assist in reducing the unfunded liability. Death benefits and transfers to the State Employes' Retirement System also reduced this reserve by $\$ 24.2$ million. Income from the State Employes' Retirement System amounts to $\$ 1.8$ million for the employes transferring to the Public School Employes' Retirement System.

Although PSERS is not fully funded in the sense that the financial assets fully cover the total actuarial liabilities, full funding is the goal of this System, and a 25 -year plan to be fully funded by 2001 has been under way for six years.

## Investments

Investment income represents a major source of revenue to the System. This income amounted to $\$ 435.9$ million in the 1981-82 fiscal year, or 38.9 percent of total revenue received. After deducting $\$ 5.9$ million of administrative expenses, $\$ 430$ million was distributed to the reserve accounts.

The $\$ 435.9$ million investment income was $\$ 84.7$ million higher than the $\$ 351.2$ million earned for the $80-81$ fiscal year. The value of proper funding and improving investment yields tends to be self-evident with this increase.

Approximately $\$ 4.6$ billion or 83 percent of the investment portfolio is in long-term investments of stocks, bonds, and mortgages. The remaining $\$ 961.2$ million, or 17 percent, is in short-term cash equivalents.

The total time rated return for the year ended June 30, 1982, on the investment portfolio, at market value, was 7.4 percent, placing PSERS in the first quartile of the largest universe of public fund results. This means PSERS out-performed 75 percent of the public funds in this universe due mainly to the strengthening of the fixed income market in which PSERS has invested approximately 56 percent of its portfolio at market value. The fixed income market consists of bonds and mortgages both of which improved in their earnings ratios this year. Also, the short-term investment earnings were strong in the fiscal year with 17 percent of the portfolio, at market, in this category. The return on common stocks was negative; however, most widely accepted national indicators were negative.

The yield at book value has improved over the past five years as follows:

| June 30 | Total | Bonds | Treasury <br> Notes | Stocks | Mortgages | Short- <br> Term |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1982 | $9.5 \%$ | $8.9 \%$ | $14.5 \%$ | $5.5 \%$ | $9.5 \%$ | $13.4 \%$ |
| 1981 | $8.3 \%$ | $7.9 \%$ | $12.7 \%$ | $5.3 \%$ | $9.2 \%$ | $13.1 \%$ |
| 1980 | $7.4 \%$ | $7.5 \%$ | $12.7 \%$ | $5.0 \%$ | $7.9 \%$ | $12.7 \%$ |
| 1979 | $6.8 \%$ | $7.3 \%$ |  | $4.4 \%$ | $6.6 \%$ | $9.7 \%$ |
| 1978 | $6.5 \%$ | $7.1 \%$ |  | $3.9 \%$ | $6.9 \%$ | $6.7 \%$ |

An investment summary appears on page 26 of this report recapping the investment categories in which the activity of investing took place.

The investment policy of the board stipulates that earnings are to be maximized while also maximizing the quality of the investment portfolio. As an achievement toward this end, the Legislature of the Commonwealth has approved a broad spectrum of investments heretofore unavailable to this Board which will assist greatly in maximizing earnings while maintaining the quality of the portfolio.

In the Moody's Bond Rankings, PSERS' bond portfolio was slightly higher than an overall ranking of AA. This is considered a high ranking with the best rank being AAA.

The Standard and Poor's Earnings and Dividend Rankings would place the PSERS common stocks in the rank of A with A+ being the highest rating.

The individual investments held at June 30, 1982, are listed in the last section of this report with our illustrative chart plotting investment income for the ten-year period ended June 30, 1982.

## Statistics

Additional statistics are supplied to assist in judging the overall performance of the Fund's activities. They go beyond the collection of revenue and payment of benefits and point to different insights. The six most significant and probably the most helpful are:

## Indicator

1. Funding Ratio
2. Revenues by Source
3. Expenses by Type
4. Ratio of Net Receipts Retained to Total Receipts
5. Ratio of Unfunded Accrued Liabilities to Active Members' Payroll
6. Cash Flow - Fiscal Year - 1981-82

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Ten Years 58
Ten Years 58
Ten Years 58
Ten Years 61

Ten Years 60
One Year 62

In the funding ratio, net assets have increased by approximately $\$ 3.0$ billion while the actuarial liability increased by $\$ 3.5$ billion. This increase in the unfunded liability is being addressed by the Board and the actuary by increasing the employer rate of contribution.

Revenues by source indicates that investment income has averaged, over the last ten years, about 34.1 percent of total revenues ranging from a high of 39.0 percent in the 1982 fiscal year to a low of 31.1 percent in the 1977 fiscal year. A further improvement is expected in future years with the advent of an investment law removing many constraints on the types of investments PSERS can make.

Expenses by type show that since the retirees were given the opportunity beginning July 1,1975 , to receive a lump-sum payment of their contributions plus interest at the time of retirement this option has been exercised by almost every retiring member. An increase in the employer rate of contribution has been necessary to offset the cost of the option. In the ten-year period (1973-1982), benefits paid have increased 230 percent, due to a 130 percent increase in the number of members retiring and a 200 percent increase in salaries upon which the retirements were based.

Net receipts retained in the System to total receipts is represented by a chart with a slightly regressive trend line brought about by increased benefit payments which indicates that the cash available for investment has declined somewhat. This is being addressed by increasing the employer rate of contribution. Improved investment rates of return will also greatly assist in this area.

The unfunded accrued liability when charted to total salaries paid indicates an increase in the ratio of uncovered liabilities to payroll over the last ten years. A 25 -year actuarial study through the year 2001 projects the unfunded amount to increase until the year 1993, in a 7 percent inflation environment, and to drop from that point until the year 2001 when the unfunded amount is expected to be minor in relation to salaries paid.

As in the past, cash flow is positive for the fiscal year ended June 30, 1982, and indicates a strong net cash position, tempered somewhat by the trend of the net receipts retained.

## Professional Services

Professional consultants are appointed by the Board of Trustees to perform services essential in the operation of PSERS. Statements of certification are provided by the certified public accountant and the actuary. Investment guidelines and manager performance are supplied by a professional investment consultant. A complete listing of these consultants is supplied in this introductory section.

## Future Developments

Significant changes are in process in the investment area. Seven additional money managers have been selected to manage the investments of this Fund, four in the equity area and three in the fixed income area. Three of the seven managers are currently under contract and investing the Fund's proceeds, two in the equity area and one in the fixed income area. The remaining four managers will be phased in during the fiscal year ending June 30, 1983. These are in addition to the Mellon Bank, Pittsburgh, Pa., which handles both equities and fixed income transactions for PSERS, and The Fidelity Bank, Philadelphia, Pa., which handles the mortgage investments. Plans are being finalized for the purchase of a new energy efficient computer to assist in performing various functions at a faster pace for less cash.

## Miscellaneous

PSERS is an independent agency reporting directly to the Governor of the Commonwealth of Pennsylvania, but it must deal directly with other state agencies and departments, some of which are empowered to audit various payments and prepare the checks for this System. Others perform an after-the-fact audit for compliance with the pension code and other funding restrictions. Budgets and appropriation requests must be routed through the Governor's Budget Office and ultimately approved by the Legislature.

## Data

Newsletters have been sent to the active and retired members of PSERS, legislators, and school districts on a periodic basis throughout the fiscal year, to give them information about the Retirement System.

## Conclusion

The preparation of this report reflects the combined efforts of the PSERS staff under the leadership of the Board of Trustees and the Executive Director. The report provides financial and actuarial data for the benefit of the membership and general public and portrays the stewardship of the assets.

Respectfully submitted,

M. Andrew Sheffler

Executive Director

# Administrative Organization 

M. Andrew Sheffler<br>Executive Director<br>James A. Perry<br>Assistant Executive Director<br>Directors<br>Richard J. McElroy<br>Fiscal Control<br>Terry Moser<br>Information Systems<br>Linda Weidner<br>Contributor Services<br>Thomas Yagel<br>Administrative Services<br>Vacant<br>Chief Counsel<br>Marsha Mills<br>Assistant Counsel

COMMONWEALTH OF PENNSYLVANIA

## PUBLIC SCHOOL EMPLOYES' RETIREMENT SYSTEM <br> BOX 125

HARRISBURG, PENNSYLVANIA 17108
December 31, 1982

## CHAIRMAN OF THE BOARD

Honorable Dick Thornburgh, Governor of Pennsylvania,
Members of the Legislature, and
Members of the Retirement System
Dear Governor Thornburgh, Legislators, and Members:
The responsibility of the trustees in the operation of the Public School Employes' Retirement System (PSERS) has always been fully recognized by the Board. Likewise, the obligation of the trustees to the membership and the general public has found full expression in the Board's management policies.

One of the responsibilities of the Board of Trustees is to prepare annually this financial report which is assembled by the PSERS staff, enabling the participants of PSERS and the general public to obtain a better understanding, of the financial and actuarial conditions of the System and the various factors affecting its operation. Each participating member of PSERS is furnished a summary of this report. A copy of this entire report will be furnished to any member upon request.

Other important responsibilities of the Board of Trustees include the investment of assets of this System, the review of disability benefit requests, and the selection of advisors and consultants to discharge these and other responsibilities of the Board.

In the fiscal year ended June 30, 1982, Ms. Nancy Noonan, former chairperson, completed her term on the Board of Trustees. John Yarnovic was elected by the active members as her replacement. We are confident Mr. Yarnovic will serve with distinction. I was elected chairperson by the Board members as Ms. Noonan's successor. I am cognizant of my responsibilities in this capacity to the membership and general public to assist the staff and the Board in their continued effort to strengthen and improve PSERS.

On behalf of the Board of Trustees, I would take this opportunity to thank the staff, advisors, and participants who consistently strive to maintain PSERS in the forefront among public employe retirement systems in the nation. Serious challenges lie ahead, and with everyone's assistance, these problems will be met.

We ask your continued support in maintaining a financially secure retirement future for the active and retired members of PSERS.


## Financial Section

The Board of Trustees<br>Commonwealth of Pennsylvania<br>Public School Employes' Retirement System:

We have examined the balance sheets of the Commonwealth of Pennsylvania Public School Employed' Retirement System as of June 30, 1982 and 1981 and the related statements of revenues, expenses and changes in reserves and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of the Commonwealth of Pennsylvania Public School Employs' Retirement System at June 30,1982 and 1981 , and the results of its operations, the changes in its reserves and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Our examinations were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplementary information included on pages $25-27$ is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the examinations of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.


September 30, 1982

## Balance Sheets

June 30, 1982 and 1981
Assets
1982
悬
1981
Investments (note 5):

| Corporate and government debentures <br> (including unamortized yield adjust- |  |  |
| :--- | ---: | ---: |
| $\quad$ ments of $\$ 548,186,492$ in 1982 and |  |  |
| $\$ 381,953,825$ in 1981 ) | $\$ 2,425,908,820$ | $\$ 2,541,908,593$ |
| Treasury notes and bonds | $431,452,119$ | $205,672,319$ |
| First mortgage loans | $900,633,605$ | $884,345,722$ |
| Common and preferred stocks |  | $863,842,876$ |
| U.S. Treasury bills | $90,942,510$ | $642,316,222$ |
| Other short-term investments |  | $870,342,592$ |
|  | Total investments | $5,583,122,522$ |

Receivables:
Contributions:
Members
29,434,167
26,543,527
Employers
Commonwealth of Pennsylvania:
Current receivable
98,140,517
89,813,712

Deficit receivable (note 4)
Investments:
Income receivable
61,651,713
61,176,000
$29,840,610 \quad 45,216,000$

Proceeds receivable
Other

## Cash

Fixed assets

## Liabilities and Reserves

Accounts payable and accrued expenses
Investment purchases payable

Reserves (note 3):
State accumulation account
Members' savings account
Reserve for retirement
Reserve for disabilities

|  | $1,868,01,828$ <br> $2,466,539,053$ <br> $143,659,509$ |
| ---: | ---: |
| Total reserves |  |
| $5,893,659,582$ |  |
| $\$ 5,903,095,132$ |  |


| $\$$ | $4,145,663$ |
| ---: | ---: |
| $11,993,443$ |  |
| $\$$ | $16,139,106$ |

$$
\begin{array}{r}
1,717,738,874 \\
1,147,907,520 \\
2,334,283,646 \\
129,261,001 \\
\hline 5,329,191,041 \\
\hline \$ 5,345,330,147 \\
\hline \hline
\end{array}
$$

See accompanying notes to financial statements.

# Statements of Revenues, Expenses and Changes in Reserves <br> Years ended June 30, 1982 and 1981 

|  | Years ended June 30, 1982 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Total | State Accumulation Account | Members' <br> Savings <br> Account | Reserve for Retirement |
| Revenue: |  |  |  |  |
| Contributions: |  |  |  |  |
| School Employers | \$ 250,964,336 | \$ 250,964,336 | - | - |
| Employes | 180,561,806 | - | \$ 180,561,806 | - |
| Commonwealth of Pennsylvania | 250,061,000 | 250,061,000 | - | - |
|  | 681,587,142 | 501,025,336 | 180,561,806 | - |
| Investment revenue, net of related expenses (note 5) |  |  |  |  |
|  | 435,888,135 | 232,451,986 | 65,967,574 | \$ 130,164,133 |
|  | 1,117,475,277 | 733,477,322 | 246,529,380 | 130,164,133 |
| Expenses: |  |  |  |  |
| Benefits | 522,856,422 | 17,748,739 | 33,705,372 | 452,607,123 |
| Refunds | 19,206,012 | - | 19,206,012 | - |
| Net transfers to State |  |  |  |  |
| Employes' |  |  |  |  |
| Retirement System | 5,051,885 | 4,551,841 | 500,044 | - |
| Administrative expenses | 5,892,417 | 5,892,417 | - | - |
| Total expenses | 553,006,736 | 28,192,997 | 53,411,428 | 452,607,123 |
| Excess (deficiency) of revenues |  |  |  |  |
| Transfers between reserves for: (note 3) |  |  |  |  |
| Retirements by members | - | $(376,594,029)$ | (42,982,378) | 393,140,815 |
| Annuitants who returned to service | - | 1,433,976 | 137,380 | $(1,025,018)$ |
| Actuarial requirements | - | $(62,582,600)$ | - | 62,582,600 |
| Inactive accounts | - | - | - | - |
| Reserve balance at beginning of year | 5,329,191,041 | 1,147,907,520 | 1,717,738,874 | 2,334,283,646 |
| Reserve balance at end of year | \$5,893,659,582 | \$1,415,449,192 | \$1,868,011,828 | \$2,466,539,053 |

See accompanying notes to financial statements.

| Reserve for Disabilities | Year ended June 30, 1981 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | State Accumulation Account | Members' <br> Savings <br> Account | Reserve for Retirements | $\begin{gathered} \text { Reserve } \\ \text { for } \\ \text { Disabilities } \end{gathered}$ |
| - | \$238,632,632 | \$238,632,632 | - | - | - |
| - | 175,306,070 | - | \$175,306,070 | - | - |
| - | 240,230,000 | 240,230,000 | - | - | - |
| . - | 654,168,702 | 478,862,632 | 175,306,070 | - | - |
| \$7,304,442 | 351,220,123 | 156,675,130 | 64,639,674 | \$123,551,590 | \$6,353,729 |
| 7,304,442 | 1,005,388,825 | 635,537,762 | 239,945,744 | 123,551,590 | 6,353,729 |
| 18,795,188 | 492,339,248 | 16,008,976 | 46,701,046 | 415,812,059 | 13,817,167 |
| - | 18,215,997 | - | 18,215,997 | - | - |
| - | 6,999,959 | 6,354,639 | 645,320 | - | - |
| - | 5,130,308 | 5,130,308 | - | - | - |
| 18,795,188 | 522,685,512 | 27,493,923 | 65,562,363 | 415,812,059 | 13,817,167 |
| $(11,490,746)$ | 482,703,313 | 608,043,839 | 174,383,381 | $(292,260,469)$ | $(7,463,438)$ |
| 26,435,592 | - | $(348,845,744)$ | $(25,206,926)$ | 345,355,502 | 28,697,168 |
| $(546,338)$ | - | 910,188 | 64,386 | $(864,408)$ | $(110,166)$ |
| - | - | (71,349,650) | - | 71,349,650 | - |
| - | - | 10,386,437 | $(10,386,437)$ | - | - |
| 129,261,001 | 4,846,487,728 | 948,762,450 | 1,578,884,470 | 2,210,703,371 | 108,137,437 |
| \$143,659,509 | \$5,329,191,041 | \$1,147,907,520 | \$1,717,738,874 | \$2,334,283,646 | \$129,261,001 |

## Statements of Changes in Financial Position

For Years Ended June 30, 1982 and June 30, 1981


# Notes to Financial Statements <br> June 30, 1982 

(1) Organization and Description of the System
(a) Organization

The Commonwealth of Pennsylvania Public School Employes' Retirement System (the "System') was established as of July 18, 1917, under the provision of P.L. 1043, No. 343. The System's designated purpose is to provide retirement allowances and other benefits to members. Membership in the System is mandatory for substantially all full-time public school employes in the Commonwealth. Responsibility for the organization and administration of the System is vested in the Board of Trustees.
(b) Benefits

Significant amendments to the System were made in 1975 as a result of legislative approval of Act 96. Under the provisions of Act 96, members are eligible for monthly retirement benefits upon reaching (a) age 62; (b) age 60 and 30 or more years of service or; (c) 35 or more years of service. Another recent amendment was made in accordance with Act 152 (effective June 1, 1982) which permitted teachers age 55 with 25 years service to retire with full benefits provided they would retire before September 1, 1982. Such benefits are generally equal to 2 percent of the member's final average salary (as defined) multiplied by the number of years of credited service. Early retirement resulting in reduced benefits may be elected after completion of 10 years of service. Under certain features of the System, participants may purchase credit for previous types of educational or military service on a lump-sum or installment purchase basis.

In addition to regular retirement benefits, the System also provides for disability retirement benefits and death benefits. Participants are eligible for disability retirement benefits after completion of five years of eligible service. Death
benefits are payable upon the death of an active member who has reached age 62 or who has at least 10 years of eligible service.

Members with credited service in the State Employes' Retirement System may elect to transfer such service to the Public School Employes' Retirement System upon commencement of employment in the public school system. Similarly, a member with credited service in the System may transfer such service to the State Employes' Retirement System upon becoming a member of that system.

Upon termination of a member's employment in the public school sector, the member's accumulated contributions plus interest are refundable from the Members' Savings Account.
(c) Contributions

The contribution policy is set by Act 96 and requires contributions by active members, employers and the Commonwealth. The rate of contribution for most active members is set by law at $51 / 4$ percent of the member's compensation. The contributions required of employers and the Commonwealth are based upon an actuarial valuation computed as a percentage of the total compensation of all active members during the period for which the amount is determined. For the years ended June 30, 1982 and 1981, the combined amounts required from the employers and the Commonwealth were 15 percent of active member payroll. The employer and the Commonwealth share such cost equally. Effective July l, 1982, the combined contribution rate was increased to 16 percent.

The 1982-83 budget of the Commonwealth includes an appropriation of $\$ 277.5$ million for its required contribution. According to unaudited projections prepared by the System, the Commonwealth's contribution should be approxi-
mately $\$ 293$ million.
(d) Actuarial Valuation

The contribution policy requires employers and the Commonwealth to make a normal contribution and a past service contribution as determined by a qualified actuary. The System's actuary uses the "entry age normal" method to determine normal costs. As of June 30, 1981, the date of the most recent actuarial report, the actuary computed that, utilizing the present method of funding, the actuarial liability of the employers and Commonwealth for prior service of $\$ 5,307,000,000$ should be funded in approximately 21 years. Such liability included $\$ 69,818,000$ related to unaccrued interest receivable on Commonwealth contributions which were not paid on a timely basis (note 4).

Significant assumptions underlying the actuarial computations include: (a) assumed rate of return on investments of $51 / 2$ percent; (b) assumed rate of salary increases ranging from 6.99 percent at age 25 to 1.89 percent at age 69 ; (c) assets valued at cost or amortized cost; and (d) mortality, vesting, retirement age and withdrawal estimates based on tables furnished by the actuary.

As a result of an actuarial study comparing actual to expected experience revised estimates of mortality, vesting, retirement age and withdrawals were adopted in the 1981 valuation. These revisions resulted in an increase in the unfunded accrued liability of approximately $\$ 1,170,000,000$.
(2) Summary of Significant Accounting Policies

The financial statements of the System are prepared on the accrual basis of accounting and conform to generally accepted accounting principles. In order to assist the reader in understanding the accompanying financial statements, a summary of the more significant accounting policies is presented below:
(a) Investments

Corporate and government debentures with fixed maturities are reported at cost
as of the trade date of the transaction adjusted for amortization of premiums and accretion of discounts, both computed on a straight-line basis to the maturity date of the investment. Unamortized yield adjustments represent the deferral of net losses incurred when corporate bonds are exchanged for similar bonds in order to achieve a higher yield. Losses incurred in such transactions are amortized over the remaining life of the bond purchased or sold, whichever is shorter.

Investments in first mortgage loans are carried at the amount of the unpaid principal balance of the loan, adjusted for accretion of discounts. Such discounts are amortized on a straight-line basis to the maturity date of the loan for large project loans, or over the average 12-year life of the portfolio for single family mortgages. Income on mortgages is recognized as earned.
Investments in common and preferred stocks are carried at cost. Gains and losses on stock sales are recognized on the basis of the average cost of the stocks sold. Dividend income is recognized as dividends are declared.
Investments in short-term obligations, principally certificates of deposit, commercial paper, U.S. Treasury bills and bank repurchase agreements are carried at cost, which approximates market value. Income on these investments is recognized when earned.
(b) Fixed Assets

Fixed assets, consisting primarily of data processing equipment, are carried at cost. Other fixed assets are expensed when purchased. The System does not depreciate fixed assets.
(c) Federal Income Tax Status

During the years ended June 30, 1982 and 1981, the System qualified under the provision of the Internal Revenue Code and was exempt from Federal income taxes.
(3) Description of Reserves

Act 96 defines the following reserve accounts to be maintained by the System:
(a) Members' Savings Account

The Members' Saving Account is credited with all contributions made by active members of the System. Interest is added to the members individual account at an annual rate of 4 percent.

Upon death or retirement of a member the accumulated contributions plus interest are transferred to the Reserve for Retirements and Reserve for Disabilities for subsequent payment of benefits.
(b) State Accumulation Account

The State Accumulation Account is credited with the contributions of the Commonwealth and the school districts ("employers"). Additionally, interest earnings of the System (after crediting the Members' Savings Account with the aforementioned 4 percent credit and the annuity reserve account with a $51 / 2$ percent credit) are credited to this account. Each year, the amounts necessary as determined by the actuary for the payment of retirement and death benefits are transferred from the State Accumulation Account to the Reserve for Retirements and Reserve for Disabilities. All administrative expenditures necessary for the operation of the System are paid from the State Accumulation Account.
(c) Reserve for Retirements

The Reserve for Retirements represents the amounts transferred from the Members' Savings and State Accumulation accounts, plus additional contributions made by the Commonwealth for the payment of supplemental annuities and cost-of-living increases. All death and retirement benefits are paid from this account. Annual interest of $51 / 2$ percent is credited to the Reserve for Retirements. Prior to this fiscal year, the Reserve for Retirements and the Reserve for Disabilities were combined as the Annuity Reserve Account.
(d) Reserve for Disabilities

The Reserve for Disabilities represents the amounts transferred from the Members' Savings and State Accumula-
tion accounts, plus additional contributions made by the Commonwealth for the payment of supplemented annuities and cost-of-living increases. All disability benefits are paid from this account. Annual interest of $51 / 2$ percent is credited to the Reserve for Disabilities. Prior to this fiscal year the Reserve for Disabilities and the Reserve for Retirements were combined as the Annuity Reserve Account.
(4) Deficit Commonwealth Contributions Receivable

Deficit Commonwealth contributions receivable represent amounts determined by the System's actuary to be necessary to fund current and prospective annuities as defined by Act 96 , but which have not been appropriated by the Legislature. Such deficits represent underfunding of Commonwealth contributions for fiscal years ended June 30, 1970 to 1973. The Commonwealth has agreed to make annual payments of $\$ 9$ million in order to satisfy this obligation. At June 30, 1982 and 1981, no interest was recorded on this receivable.
(5) Investments

The Board of Trustees has the responsibility to invest and reinvest available funds of the System, in accordance with the guidelines and limitations outlined by Act 96 . Under these guidelines, the Board may make investments in common and preferred stocks, first mortgage loans and corporate and government obligations in such a manner as to maximize return while maintaining a sound portfolio with minimum risk. By law, investments in common stock are limited to 50 percent of the total assets of the System. Additionally, the amount invested in common stock of any one entity may not exceed 2 percent of the book value of the assets of the System or 5 percent of the total issued and outstanding common stock of that entity at the date of purchase.

A summary of investment securities as of June 30, 1982 and 1981, and the approximate market values follows:

|  | 1982 |  |  | 1981 |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Book Value |  | Market Value | Book Value | Market Value |
| Corporate, government and other debentures: |  |  |  |  |  |
| Corporate bonds | \$1,340,039,433 | \$ | 736,410,457 | \$1,442,396,171 | \$ 865,363,774 |
| Utility bonds | 346,363,450 |  | 179,224,672 | 521,552,000 | 267,293,845 |
| Financial institution bonds | 585,655,000 |  | 351,237,373 | 424,975,000 | 258,202,598 |
| International bank bonds | 105,424,000 |  | 58,354,905 | 122,424,000 | 69,872,603 |
| Railroad equipment trusts \& debentures | 6,149,887 |  | 4,177,098 | 9,298,573 | 6,724,438 |
| FHA debentures | 1,746,150 |  | 1,746,150 | 3,098,450 | 3,098,450 |
| Municipal bonds | 69,000 |  | 51,032 | 85,000 | 63,095 |
| University of Pittsburgh debentures | 446,000 |  | 356,800 | 552,000 | 441.600 |
| Plus unamortized yield adjustments | 548,186,492 |  | - | 381,953,825 | - |
| Less unamortized discount (net of premium) | (508,170,592) |  | - | $(364,426,426)$ | - |
|  | 2,425,908,820 |  | 1,331,558,487 | 2,541,908,593 | 1,471,120,463 |

Long Term treasury obligations:

Treasury notes and bonds
Less unamortized discount

$$
\begin{array}{r}
445,329,000 \\
(13,876,881) \\
\hline 431,452,119
\end{array}
$$

$$
\begin{gathered}
414,619,337 \\
\hline 414,619,337
\end{gathered}
$$

$$
369,122,729
$$

$$
205,785,921
$$

$322,710,621$
178,563,400
FHA/VA guaranteed
single-family
mortgages
GNMA-backed graduated payment mortgages
GNMA-backed fixed payment mortgages
Other mortgages
334,803,64
$204,281,635$
$176,310,91$
76,010,159
60,486,077
78,334,060
62,562,568
46,513,408
41,576,106
42,298,631
37,953,643

Less unamortized dis-
count

$$
\frac{(102,127,250)}{900,633,605} \quad \frac{-}{636,626,560} \quad \frac{(84,416,157)}{884,345,722} \quad \frac{-}{611,406,268}
$$

|  | 1982 |  | 1981 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Book Value | Market Value | Book Value | Market䈏 |
| Common and preferred stocks: |  |  |  |  |
| Common stocks | 856,846,238 | 871,466,806 | 835,319,584 | 1,048,116,148 |
| Preferred stocks | 6,996,638 | 5,607,000 | 6,996,638 | 7,661,500 |
|  | 863,842,876 | 877,073,806 | 842,316,222 | 1,055,777,648 |
| U.S. Treasury bills | 90,942,510 | 91,762,125 | 65,449,940 | 65,515,548 |
| Other short-term <br> obligations: |  |  |  |  |
| Certificates of deposit | 37,810,000 | 38,327,647 | - | - |
| Commercial paper | 478,550,842 | 482,376,621 | 274,644,826 | 274,760,516 |
| Bank repurchase agreements | 353,981,750 | 357,780,505 | 227,706,750 | 227,706,750 |
|  | 870,342,592 | 878,484,773 | 502,351,576 | 502,467,266 |
| Total investments | \$5,583,122,522 | \$4,230,125,088 | \$5,042,044,372 | \$3,902,679,134 |

The major components of investment revenue for the years ended June 30, 1982 and 1981, are as follows:

|  | 1982 | 1981 |
| :---: | :---: | :---: |
| Corporate, government, and other |  |  |
| debentures | \$179,690,688 | 184,100,387 |
| First mortgage loans | 85,168,982 | 77,783,158 |
| Common and preferred stocks | 46,928,621 | 43,350,219 |
| U.S. Treasury notes and bonds | 42,828,862 | 15,565,371 |
| U.S. Treasury bills | 8,439,400 | 14,175,200 |
| Other short-term investments | 95,295,973 | 40,798,603 |
|  | 458,352,526 | 375,772,938 |
| Accretion of discount | 37,832,449 | 22,207,901 |
| Net gain (loss) on investment |  |  |
| Amortization of yield adjustments | $(53,613,253)$ | $(29,967,095)$ |
| Total investment revenue before investment expenses | 438,509,638 | 353,375,797 |
| Investment expenses | $(2,621,503)$ | (2,155,674) |
| Net investment revenue | \$435,888,135 | \$351,220,123 |

(6) Relationships With Other Commonwealth Agencies

The Treasurer of the Commonwealth of Pennsylvania is designated under Act 96 as the custodian of all cash and investment securities of the System. The Treasurer of the Commonwealth or his designate also serves as a member of the Board of Trustees.
(7) Litigation and Contingencies

The System is subject to various threatened and pending lawsuits which deal with the question of benefit eligibility. Management does not anticipate that the ultimate liability arising from such litigation and threats of litigation will have a material ef-
fect on the financial statements of the System.

The System had been a defendant in a class action lawsuit brought by the school districts of the Commonwealth. This litigation dealt with the eligibility of members to purchase part-time service rendered before July 1, 1975, the date when the Legislature authorized, for the first time, membership for these employment categories. The Court has ruled that members are eligible to purchase part-time service and the System's liability for prior service costs has been reflected in its actuarial liability.

# Comparative Two－Year Schedule of Administrative Expenses 

## 喜案

June 30， 1982
Personnel costs：
Salaries and wages
Social Security contributions
Retirement contributions
Employes＇insurance
Other employe benefits
Total personnel costs
Operating costs：
Auditor General services
Treasury services
Civil Service Commission
Classification and pay
Purchasing services
Data processing services
Consultant fees
Legal fees
Specialized services
Contracted personnel services
Printing
Postage
Telephone and telegraph
Dues and subscriptions
Insurance
Electricity
Motorized equipment supplies
Travel
Contracted maintenance
Rent of real estate
Rent of equipment
Office supplies
Miscellaneous expenses
Total operating expenses
Fixed charges：

| Equipment and machinery | $\$$ | 39,672 |
| :--- | ---: | ---: |
| Furniture and furnishings | 4,328 |  |
| Total fixed charges | $\$ \quad 44,000$ |  |
| Total administrative expenses | $\$ 5,892,418$ |  |

Budgeted
$\begin{array}{r}\$ 2,709,898 \\ 179,404 \\ 387,404 \\ 351,302 \\ 46,706 \\ \hline \$ 3,674,714\end{array}$
\＄40，289
156，507
11，443
2，413
2，134
18，247
78，930
$(50,274)$
320，509
10，988
142，177
361，497
166，082
4，574 714
58，114
6，215
54，213
197，230
331，040
203，002
53，116
$\begin{array}{r}4,544 \\ \hline \$ 2,173,704\end{array}$
•，092，418
\＄2，745，189
184，000
396，000
396，000
52，090
\＄3，773，279
\＄88，642
105，622
11，200
2，000
4，550
17，540
17，281
$(38,222)$
392，683
11，305
149，620
463，659
122，760
4，350
700
39，653
5，589
46，869
219，488
333，518
210，499
62，387
781
$\mathbf{\$ 2 , 2 7 2 , 4 7 4}$
$\left.\begin{array}{rr}\$ & 53,432 \\ (56,870)\end{array}\right)$

June 30， 1981
Actual

| $\$$80,639 <br> 25,192 |
| ---: |
| $\$ 105,831$ |
| $\$ 5,130,309$ |

Budgeted
\＄2，445，098
144，081 333，666 296，071
56,120
$\$ 3,275,036$
\＄177，178 252，080 10，000 11，500 4，657 55，758 31，462 61，355 641，993 27，933 44，269 390，601
103，410
3，551
100，500
55，757 14，182 48，530 180，935
69，203
62，733
103，236
$\frac{(142,271)}{2,308,552}$
\＄322，263
$\$ 341,950$
$\$ 5,925,538$

## Investment Summary

## (Beginning of Year Date)

| Type of Investment | $\begin{gathered} \text { Book } \\ 7 / 1 / 81 \end{gathered}$ | Market 6/81 | Purchases | Sales |
| :---: | :---: | :---: | :---: | :---: |
| Bonds, Mortgages, and other Debentures: | (000) | (000) | (000) | (000) |
| Government Bonds | \$ 205,757 | \$ 196,455 | \$ 273,271 | \$ 49,292 |
| Corporate Bonds | 2,519,302 | 1,452,093 | 469,832 | 557,756 |
| Corp. Loans and Leaseholds | 4,853 | 4,064 | - | 425 |
| Convertible Bonds | 14,571 | 11,801 | 16,422 | 4,430 |
| Project Mortgage Debenture | 3,098 | 3,098 | - | 1,352 |
| Total Bonds | \$2,747,581 | \$1,667,511 | \$ 979,371 | \$ 613,255 |
| FHA/VA Residential Mortgages | \$ 343,748 | \$ 207,776 | \$ 696 | \$ 16,043 |
| FHA Project Mortgages | 252,807 | 178,563 | 26,921 | 2,824 |
| GNMAs | 245,492 | 187,113 | - | 1,309 |
| Equity Real Estate | 26,432 | 26,433 | 4,804 | 64 |
| Other Mortgages | 15,867 | 11,522 | - | 227 |
| Total Mortgages | \$ 884,346 | \$ 611,407 | \$ 32,421 | § 20,467 |
| Common Stock: |  |  |  |  |
| Financial/International | \$ 30,080 | \$ 36,058 |  |  |
| Utilities/Transportation | 62,939 | 81,648 |  |  |
| Consumer Goods/Services | 326,072 | 406,990 |  |  |
| Capital Goods | 218,798 | 267,920 |  |  |
| Basic Materials | 197,431 | 255,500 |  |  |
| Total Common Stock | \$ 835,320 | \$1,048,116 | \$ 201,503 | \$ 193,722 |
| Preferred Stock | \$ 6,997 | \$ 7,662 | - | - |
| Short Term Investments: |  |  |  |  |
| US Treasury Bills | \$ 65,450 | \$ 65,516 | \$ 280,485 | \$ 255,046 |
| Repurchase Agreements | 227,706 | 227,707 | 2,039,284 | 1,913,008 |
| Commercial Paper | 274,645 | 274,760 | 2,254,172 | 2,050,267 |
| Certificates of Deposit | - | - | 75,985 | 38,175 |
| Total Short-Term |  |  |  |  |
| Investments | \$ 567,801 | \$ 567,983 | \$4,649,926 | \$4,256,496 |
| Grand Total | \$5,042,045 | \$3,902,679 | \$5,643,375 | \$5,083,940 |

Investment Summary-Continued

| $\begin{gathered} \text { Gain/(Loss) } \\ \text { on Sales } \end{gathered}$ | Amortized Premium (Net of Disc.) | (End of Year Date) |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Book 6/82 | Market <br> 6/82 | $\begin{gathered} \text { \% Market } \\ 6 / 82 \\ \hline \end{gathered}$ |
| (000) | (000) | (000) | (000) |  |
| \$ (80) | \$ 1,865 | \$ 431,521 | \$ 414,670 | 9.8\% |
| $(17,019)$ | $(22,027)$ | 2,392,332 | 1,303,607 | 30.8 |
| - | - | 4.428 | 3.482 | . 1 |
| 725 | 48 | 27,336 | 22,672 | . 5 |
| - | - | 1,746 | 1,746 | . 0 |
|  | \$(20,114) | \$2,857,363 | \$1,746,177 | 41.2\% |
| \$ (1) | \$ 728 | \$ 329,128 | \$ 204,282 | 4.8\% |
| - | 2,859 | 279,763 | 205,786 | 4.9 |
| - | 746 | 244,929 | 184,983 | 4.4 |
| - | - | 31,172 | 30,873 | . 7 |
| - | - | 15,640 | 10,703 | . 3 |
| \$ (1) | \$ 4,333 | \$ 900,632 | \$ 636,627 | 15.1\% |
|  | - | \$ 52,328 | \$ 48,847 |  |
|  | - | 52,929 | 54,649 |  |
|  | - | 296,212 | 334,230 |  |
|  | - | 206,647 | 208,652 |  |
|  | - | 248,730 | 225,089 |  |
| \$ 13,745 | - | \$ 856,846 | \$ 871,467 | 20.6\% |
| - | - | \$ 6,997 | \$ 5,607 | .1\% |
| \$ 54 | - | \$ 90,943 | \$ 91,762 |  |
| - | - | 353,982 | 357,780 |  |
| - | - | 478,550 | 482,377 |  |
| 54 | - | 37,810 | 38,328 |  |
| - | - | \$ 961,285 | \$ 970,247 | 23.0\% |
| \$ 2,576 ) | $(\$ 15,781)$ | \$5,583,123 | \$4,230,125 | 100.0\% |

## Actuarial Section

## George B. Buck Consulting Actuaries, Inc.

Two Pennsylvania Plaza, New York. New York 10121
Telephone 212|279 4400
September 30, 1982

To the Retirement Board
Public School Employees'
Retirement System of Pennsylvania

## BUG <br> CONSULTANTS

P. O. Box 125

Harrisburg, Pennsylvania 17108
Ladies and Gentlemen:

We have now completed the June 30,1981 valuation of the Public School Employees' Retirement System of Pennsylvania. The valuation was prepared on the basis of the data supplied by the Retirement System office and the revised actuarial assumptions adopted by the Retirement Board, and reflects the benefits in effect on the valuation date.

Based on the revised actuarial assumptions the total contribution rate payable by the employers is equal to 18.98 percent of payroll. As part of the phase-in of this rate over the next few years, it is recommended that the total contribution rate payable by employers for the year commencing July 1 , 1983 be set equal to 17.06 percent of payroll. The recommended rate of $17.06 \%$ includes an additional rate of $.06 \%$ on account of the temporary early retirement option in effect during the period June 1, 1982 to August 31, 1982.

The revised actuarial assumptions are, in the aggregate, reasonable. The actuarial cost method utilized is the entry age normal method with open-end accrued liability, as specified in the statutes. The current assets applecable to the System were supplied by the Retirement System office and were taken at book value.

The results of the valuation on the revised assumptions indicate that the rates of contribution payable by members and employers together with scheduled increases and the assets currently available are adequate to fund the actuarial liabilities on account of all benefits under the System. The liquidation periods for the four portions of the accrued liability range from $11 \frac{1}{2}$ to $24 \frac{1}{2}$ years.

Respectfully submitted,
GEORGE B. BUCK CONSULTING ACTUARIES, INC.


John W. Thompson Consulting Actuary

JWT: AK

## Report on an Actuarial Valuation of Assets and Liabilities June 30, 1981 <br> Section I - Summary of Principal Results

1. This report presents the results of an actuarial valuation of the assets and liabilities of the Public School Employes' Retirement System of Pennsylvania, prepared as of June 30, 1981. For convenience of reference, a comparison of membership statistics for the years ended June 30, 1981 and 1980, and a summary of the principal results of the valuation and a comparison with the preceding year's results are presented on the next two pages. On the basis of the experience investigation for the five year period ended June 30, 1980, new actuarial assumptions were recommended and adopted and were used as a basis for the valuation as of June 30, 1981. Results of the June 30, 1980, valuation are shown on two bases, one, on the basis of the old actuarial assumptions which are the figures shown in last year's report, and two, on the basis of the revised actuarial assumptions. The results of the June 30, 1981, valuation are based on the revised actuarial assumptions and the contribution rate also reflects the cost of the temporary early retirement program which was in effect from June 1, 1982, through August 31, 1982.

## Table I <br> Comparison of Membership Statistics <br> (Dollar Amounts in Thousands) <br> 6/30/81

Valuation Date
Active members included in valuation
Number
Annual payroll
Number of accounts not updated
Total adjusted active membership
Number
Annual payroll
Number of inactive and vested accounts
Retired membership
Number
Annual annuities

206,423
$\$ 2,996,660$
8,015
214,438
\$3,152,967
24,145
67,450
\$421,012

6/30/80 216,333
\$2,915,377
2,154
218,487
\$2,967,712
20,623
64,122
\$408,056

## Table II

Summary of Principal Results
(Dollar Amounts in Thousands)
Valuation Date
Assumptions

Assets (book value)
Accounts receivable included in assets From State:

Principal amount
Interest
From School Districts
From Members
Total
Total employer contribution rate
Normal

Supplemental annuity (excluding 7/1/79 Increase)
Supplemental annuity (7/1/79 Increase)

Total
Unfunded accrued liability:
Before consideration of Act 96
Increase on account of Act 96
Total
Accrued liability funding period:
Established prior to Act 96
Established on account of Act 96
Unfunded supplemental annuity liability:
Excluding July 1, 1979, increases
July 1, 1979, increases

## Total

Supplemental annuity liability funding period
Established prior to July 1, 1979
July 1, 1979, increases

6/30/81 6/30/80
Revised Revised
$\$ 5,399,010 \quad \$ 4,901,476$

| $\$ 106,392$ | $\$ 117,513$ |  | 117,513 |  |
| ---: | ---: | ---: | ---: | ---: |
| 69,819 |  | 54,988 |  | 54,988 |
| 89,814 |  | 77,806 |  | 77,806 |
| 26,543 |  | 20,135 |  | 20,135 |
| $\$ 292,568$ | $\$ 270,442$ | $\$$ | 270,442 |  |


| $8.75 \%$ | $8.75 \%$ | $6.93 \%$ |
| :---: | :---: | :---: |
| 6.99 | 6.99 | 4.83 |
| 1.55 | 1.55 | 1.55 |
| 1.69 | 1.69 | 1.69 |
| $18.98 \%^{*}$ | $18.98 \%^{* *}$ | $15.00 \%$ |
|  |  |  |
| $\$ 3,475,625$ | $\$ 3,183,285$ | $\$ 2,186,947$ |
| 611,110 | 559,710 | 384,526 |
| $\$ 4,086,735$ | $\$ 3,742,995$ | $\$ 2,571,473$ |


| 22 years | 21 years | 21 years |
| ---: | :--- | :--- |
| $241 / 2$ years | 24 years | 24 years |


| $\$ 501,478$ | $\$ 522,931$ | $\$ 522,931$ |
| ---: | ---: | ---: | ---: |
| 648,967 | 668,129 | 668,129 |
| $\$ 1,150,445$ | $\$ 1,191,060$ | $\$ 1,191,060$ |

*It is recommended that the total employer rate payable for the 1983-84 fiscal year be set at 17.06 percent as part of the phase-in, which includes an additional rate of .06 percent on account of the implementation of the early retirement option during the period June 1, 1982, to August 31, 1982.
**In accordance with the resolution adopted by the Retirement Board the increase above 15 percent is to be phased-in. The total employer rate payable for the 1982-83 fiscal year was set at 16 percent.
2. The valuation balance sheet showing the results of the valuation is given in Section III.
3. Comments on the valuation results are given in Section IV and comments on the experience during the valuation year are given in Section $V$.
4. Schedule A of this report outlines the full set of actuarial assumptions and methods employed. Schedule B gives a summary of the benefit and contribution provisions of the System.

## Section II - Membership Data

Data regarding the membership of the System for use as a basis for the valuation were furnished by the System's office. The following tables summarize the membership of the System as of June 30, 1981 upon which the valuation was based. Detailed tabulations of the data are given in Schedule C.

## Table III <br> Active Membership of System as of June 30, 1981

| Group | Number | Annual <br> Salaries |
| :--- | ---: | ---: |
| Included in Valuation: |  |  |
| $\quad$ Men | 75,758 | $\$ 1,373,383,141$ |
| Women | 130,665 | $1,623,276,796$ |
| Total | 206,423 | $\$ 2,996,659,937$ |
| Total to Which Adjusted | 214,438 | $\$ 3,152,967,000$ |

In addition to the above 24,145 inactive members and vestees were included in the valuation.

## Table IV <br> Annuitants and Survivor Annuitants of the System On June 30, 1981

| Class | Number | Annual <br> Annuities |
| :---: | :---: | :---: |
| Retired on account of superannuation and those in receipt of withdrawal annuities: |  |  |
| Men | 17,666 | \$113,164,698 |
| Women | 44,223 | 287,176,816 |
| Total | 61,889 | \$400,341,514 |
| Retired on account of disability: |  |  |
| Men | 1,046 | \$ 5,118,340 |
| Women | 1,847 | 8,110,287 |
| Total | 2,893 | \$ 13,228,627 |
| Survivor annuitants in receipt of benefits: |  |  |
| Men | 405 | \$ 1,104,720 |
| Women | 2,259 | 6,336,247 |
| Total | 2,664 | \$ 7,440,967 |
| Annuities in lieu of return of accumulated deductions: |  |  |
| Men | 0 | \$ 0 |
| Women | 4 | \$ 507 |
| Total | 4 | \$ 507 |
| Grand Total | 67,450 | \$421,011,615 |

## Section III - Valuation Balance Sheet

The valuation balance sheet shown on the following pages takes into account the contingent assets and liabilities of the Public School Employes' Retirement System of Pennsylvania as well as the funds in hand and shows the financial condition of the System as of June 30, 1981. The present assets shown on the balance sheet are based on a statement furnished by the System's office.

The following amounts have been included as contributions receivable as of the valuation date:
Amount Receivable
As of Valuation Date
Members
School Districts
\$ 26,543,527
Commonwealth
Principal amount
106,392,000
Interest
69,818,802*
Grand Total
$\$ 292,568,041$
*Calculated on the basis of interest rates applicable to new money investments during appropriate period.

## Table V <br> Valuation Balance Sheet Showing Financial Condition As Of June 30, 1981 <br> (amounts in thousands)

Assets

| Present assets: |  |  |  |
| :---: | :---: | :---: | :---: |
| Members' Savings Account |  | \$1,717,739 |  |
| Annuity Reserve Account (including Supplemental |  |  |  |
| Retirement Allowance |  |  |  |
| Account): |  |  |  |
| Credited to account | \$2,463,545 |  |  |
| Add amount transferable from |  |  |  |
| State Accumulation Account | 262,235 | 2,725,780 |  |
| State Accumulation Account: |  |  |  |
| Credited to account | \$1,217,726 |  |  |
| Subtract amount transferable |  |  |  |
| Total Present Assets |  |  | \$ 5,399,010 |
| Present value of future contributions by members |  |  | 2,092,567 |
| Present value of prospective contributions payable to State |  |  |  |
|  |  |  |  |
| Normal contributions |  | \$3,551,526 |  |
| Accrued liability contributions |  | 4,086,735 |  |
| Total prospective contributions payable to State |  |  |  |
| Accumulation Account |  |  | 7,638,261 |
| Present value of prospective accrued liability contributions payable to the Annuity Reserve |  |  |  |
| Account on account of supplemental annuities |  |  | 1,150,445 |
| Total Assets |  |  | \$16,280,283 |

> Table V
> Valuation Balance Sheet 話
> Showing Financial Condition of As Of June 30, 1981
> (amounts in thousands)
> Present value of benefits on account of past and future contributions by members to
> \$ 3,810,306
> 3,876,225

## Section IV - Comments on Valuation

The valuation balance sheet brings out the following facts regarding the accounts of the System.

## 1. Members' Savings Account

The Members' Savings Account is the account to which are credited all members' contributions with interest and from which are paid all contributions to members leaving service without annuities. The balance sheet shows that assets credited to the account as of June 30,1981 , are equal to $\$ 1,717,739,000$ and that future contributions by members have a present value of $\$ 2,092,567,000$. The total past and future contributions of members therefore have a present value of $\$ 3,810,306,000$. The liabilities of this account are shown to be equal to this amount since members will receive benefits on account of their contributions equal in value to their contributions.

## 2. Annuity Reserve Account (including Supplemental Retirement Allowance Account)

The Annuity Reserve Account is the account which holds the reserves for the payment of annuities and death benefits on account of annuities and to which are credited the employer contributions for the payment of supplemental annuities. The liabilities on account of annuitants and survivor annuitants were $\$ 3,876,225,000$ as of June 30,1981 , and the assets, after taking into account the amount transferable from the State Accumulation Account, were equal to $\$ 2,725,780,000$. The difference between the liabilities and present assets, of $\$ 1,150,445,000$, is the present value of future accrued liability contributions payable on account of supplemental annuities which have been granted through July 1, 1979, of which $\$ 501,478,000$ is on account of supplemental annuities granted prior to July l, 1979. It is recommended that contributions to fund supplemental annuities granted prior to July 1, 1979, be continued at 1.55 percent of total payroll. Contributions at this rate are expected to liquidate the unfunded liability in $11 \frac{1}{2}$ years. The liability on account of the increases in annuities effective as of July 1, 1979, is to be funded by annual payments of 1.69 percent of the payroll over the balance of the 20 -year period commencing July 1,1980 , or 19 years.

## 3. State Accumulation Account

The State Accumulation Account is the account to which are credited all contributions of the State and school districts other than contributions for supplemental annuities. The liabilities of the account are shown on the balance sheet to be $\$ 8,593,752,000$ and the assets, after taking into account the amounts transferable from the account, are $\$ 955,491,000$ as of June 30,1981 . Therefore, to balance the uncovered liabilities, future contributions are payable by the State and school districts having a value equal to $\$ 7,638,261,000$.

The law provides that the employers make a normal contribution and an accrued liability contribution. The normal contribution rate is defined as the percentage of the compensation of the average new active member which, if contributed on the basis of his prospective compensation, would be sufficient to provide any benefit payable to him or on his account in excess of that funded by his prospective member contributions.

On the basis of the valuation it is recommended that the normal contribution rate be set at 8.75 percent of compensation on the basis of the revised assumptions. Future normal contributions at a rate of 8.75 percent have a present value of $\$ 3,551,526,000$. If this amount is subtracted from $\$ 7,638,261,000$, the present value of future contributions payable by the employer, there remains $\$ 4,086,735,000$ as the present value of accrued liability contributions. Of this amount, $\$ 611,110,000$ is the unfunded portion of the increase in past service liability on account of the passage of Act 96. It is recommended that contributions of .96 percent of payroll be made, with each payment 4 percent greater than the previous one. On this basis the unfunded liability will be liquidated in about $241 / 2$ years from the valuation date.

The remainder of the unfunded accrued liability, or $\$ 3,475,625,000$, is attributable to the System prior to the passage of Act 96. It is recommended that accrued liability contributions be made at the rate of 6.03 percent of payroll with each payment at least 4 percent greater than the previous in order to liquidate this amount. Contributions at this rate are expected to liquidate the unfunded accrued liability of $\$ 3,475,625,000$ in about 22 years from June 30,1981 , which compares with an expected period of 21 years as determined in the previous valuation.

The total accrued liability rate is therefore equal to 6.99 percent of payroll.
The total contribution rate payable to the State Accumulation Account is therefore equal to 15.74 percent of payroll.

## Section V - Rate of Contribution Payable by Employers

On the basis of the valuation the total contribution rate payable by employers is 18.98 percent exclusive of the rate payable on account of the early retirement window effective June 1, 1982, through August 31, 1982. In accordance with the resolution by the Board that the increase in rate of 3.98 percent of payroll resulting from the use of revised actuarial assumptions be phased in over a period of years it is recommended that for the year commencing July 1, 1983, the employer contribution rate be set at 17 percent of payroll exclusive of the rate payable for the early retirement window. The early retirement window will add .06 percent of payroll to this rate resulting in a total employer rate of 17.06 percent for the year commencing July 1, 1983.

## Section VI - Comments on Experience

Revised rates of separation and mortality tables for service retirements and beneficiaries were adopted on the basis of the experience investigation for the five-year period ended June 30, 1980. Since the increase in rate resulting from the use of the revised assumptions is being phased in over a period of years it is expected that the liquidation periods of the unfunded accrued liability will increase somewhat since full contributions will not be paid until probably the 1985-86 fiscal year. On the basis of the June 30, 1981, valuation the periods of liquidation of the unfunded accrued liabilities of the State Accumulation Account increased somewhat.

A comparison of the results of this valuation with the projections prepared on the basis of the June 30, 1977, valuation is not valid at this time since the actuarial assumptions were changed.
The unfunded accrued liability of $\$ 2,571.5$ million shown on the June 30,1980 , report increased $\$ 1,171.5$ million as of that date on account of the change in assumptions. A rough reconciliation of the increase in the unfunded accrued liability on account of the experience during the valuation year is as follows:

## Table VI

## Reconciliation of Unfunded Accrued Liability

| State Accumulation Account <br> (1) Unfunded accrued liability $6 / 30 / 80$ before change in actuarial as- <br> sumptions | In Millions <br> of Dollars |
| :--- | ---: |
| (2) Increase in unfunded accrued liability on account of change in actuari- |  |
| al assumptions |  |$\quad \$ 2,571.5$

## SCHEDULE A

## Outline of Actuarial Assumptions and Methods

INTEREST RATE: $51 / 2$ percent per annum, compounded annually, by statute.
SEPARATIONS FROM SERVICE AND SALARY INCREASE: Representative values of the assumed annual rates of separation and annual rates of salary increases are as follows:

| Age | Withdrawal |  | ANNUAL RATE OF: <br> Vesting \& Early Retirement |  |  | Super- <br> Annuation Retirement | Salary Increase |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Less Than 25 Yrs. of | 25 or <br> More Yrs. of |  |  |
|  |  | Death | Disability | Service MEN |  |  |  |
| 25 | 7.70\% | .05\% | . $01 \%$ | 1.52\% |  |  | 6.99\% |
| 30 | 5.40 | . 06 | . 01 | 1.52 |  |  | 6.32 |
| 35 | 4.52 | . 06 | . 02 | 1.47 |  |  | 5.23 |
| 40 | 4.03 | . 10 | . 08 | 1.10 | .12\% |  | 4.14 |
| 45 | 3.73 | . 19 | . 15 | 1.00 | . 14 |  | 3.27 |
| 50 | 3.52 | . 33 | . 34 | 1.30 | . 27 | 21.00\% | 2.60 |
| 55 | 3.40 | . 52 | . 65 | 2.30 | 3.00 | 15.90 | 2.13 |
| 60 | 3.36 | . 72 | 1.34 | 3.26 | 3.60 | 16.30 | 1.91 |
| 65 |  | . 92 |  |  |  | 35.80 | 1.90 |
| 69 |  | 1.08 |  |  |  | 15.00 | 1.89 |
|  |  |  |  | WOMEN |  |  |  |
| 25 | 8.30\% | .03\% | . $01 \%$ | 7.20\% |  |  | 6.99\% |
| 30 | 7.52 | . 03 | . 02 | 4.40 |  |  | 6.32 |
| 35 | 6.60 | . 04 | . 05 | 2.10 |  |  | 5.23 |
| 40 | 5.52 | . 06 | . 07 | 1.40 | 1.20\% |  | 4.14 |
| 45 | 4.75 | . 11 | . 10 | 1.50 | 1.20 |  | 3.27 |
| 50 | 4.28 | . 16 | . 23 | 2.05 | . 78 | 20.80\% | 2.60 |
| 55 | 4.00 | . 20 | . 45 | 3.00 | 4.25 | 14.30 | 2.13 |
| 60 | 3.95 | . 25 | . 79 | 5.15 | 7.00 | 19.35 | 1.91 |
| 65 |  | . 34 |  |  |  | 32.65 | 1.90 |
| 69 |  | . 42 |  |  |  | 22.00 | 1.89 |

DEATH AFTER RETIREMENT: 1979 George B. Buck Mortality Tables for service retirements and dependent beneficiaries and a special mortality table for disability retirements.

VALUATION METHOD: Projected benefit method with level percentage entry age normal cost and open-end unfunded accrued liability. Gains and losses are reflected in the period remaining to liquidate the unfunded accrued liability.

ASSET VALUATION METHOD: Amortized cost on bonds, initial cost on stocks and amortized value of mortgages.

## SCHEDULE B

## SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

A summary of the main benefit and contribution provisions of the System, as interpreted for the valuation, is presented in the following digest. Although there are three classes of membership, Class T-A, Class T-B and Class T-C, for purposes of the valuation all employes are considered to be members of Class T-C, and the summary contains the benefit and contribution provisions applicable to that class. "Final average salary" is used to mean the highest average annual salary for any three years of service preceding retirement.
A joint coverage member is a school employe who became a member prior to January 1, 1966, but subsequent to May 28, 1957, or who having become a member on or prior to that date elected Social Security coverage. Primary insurance amount of Social Security is the amount computed in accordance with the Federal Social Security Act based on compensation for services covered by the Retirement System. Under Act 525 of 1963 any joint coverage member may become a member of the dual coverage group by filing an election to make contributions and to receive benefits without the reduction on account of Social Security coverage. Such a member must also make up the difference between his accumulated deductions and what they would have been had he not been a joint coverage member. All school employes who become members on and after January 1, 1966, are members of the dual coverage group.

## Benefits

## Superannuation Annuity Condition for Annuity

Any member who has attained age 62 or has attained age 60 and completed 30 or more years of credited service, or has completed 35 years of credited service, may retire upon his own request on a superannuation annuity.

## Amount of Annuity

The superannuation annuity is equal to 2 percent of the member's final average salary multi-
plied by the number of his years of credited service.

The minimum superannuation annuity is equal to $\$ 100$ for each year of credited service.

After the age at which Social Security benefits become payable, the annuity of a joint coverage member is reduced by an amount equal to 40 percent of the primary insurance amount of his Social Security provided that the reduction in annuity cannot exceed 1 percent of his final average salary for each year of credited service multiplied by the ratio of the sum of three years of highest taxable wages under the Federal Insurance Contributions Act to an amount equal to three times the final average salary and by the ratio of years of credited service after December 31, 1955, to total years of credited service.

## Withdrawal Annuity

A member separating from service after completing 10 years of credited service may elect to leave his money in the System and receive an immediate annuity which is actuarially equivalent in value to an annuity beginning at the superannuation retirement age at which the member would have qualified for retirement had he remained in service, based on the final average salary and years of service at date of withdrawal. In the case of a member who separates from service after attaining age 55 and completing 25 years of credited service the annuity is equal to the annuity beginning at the superannuation retirement age at which the member would have qualified for retirement had he remained in service, based on the final average salary and years of service at date of withdrawal, reduced by $1 / 4$ percent for each month by which withdrawal precedes the aforementioned superannuation age.

A member who had attained age 55 and completed 25 years of credited service was eligible to retire during the period June 1, 1982, through August 31, 1982, with no reduction in his immediate annuity.

A member who had attained age 50, but not age 55 , and completed 25 years of credited serv-
ice, was eligible to retire during the period June 1, 1982, through August 31, 1982, and receive an immediate annuity with a reduction of $1 / 4$ percent for each month by which his retirement preceded age 55.

After the age at which Social Security benefits become payable, the annuity of a joint coverage member is reduced by an amount equal to 40 percent of the primary insurance amount of his Social Security, subject to the same limitations as are applicable to the superannuation retirement annuity.

## Disability Annuity <br> Condition for Annuity

Any member who is under superannuation retirement age and is mentally or physically incapacitated for service after five years of credited service is eligible for a disability annuity.

## Amount of Annuity

The disability annuity is equal to 2 percent of the member's final average salary multiplied by the number of his years of credited service, but not less than $331 / 3$ percent of such final average salary, except that such annuity shall not exceed the rate of annuity to which the member might have been entitled at superannuation retirement age had he remained in service until such age. The minimum disability annuity including any cost-of-living increases is $\$ 100$ for each year of credited service.

## Vesting Annuity <br> Condition for Annuity

Upon separation from service, a member who has completed 10 or more years of credited service may elect to have his accumulated deductions remain in the System to earn interest, and receive an annuity commencing at superannuation retirement age.

## Amount of Annuity

The annuity is calculated as a superannuation annuity based upon the member's final average salary and years of credited service to the date of separation from service.

## Optional Benefits

Upon retirement with 10 or more years of credited service a member may elect to convert his annuity to one of the following equivalent benefits:

Option 1. A reduced benefit with the provision that if he dies before he receives in payments the present value of the benefit as it was at the time of his retirement, the balance if less than $\$ 5,000$ shall be paid in a lump sum to his designated beneficiary or if the balance is $\$ 5,000$ or more the beneficiary may elect to receive the payment of the balance as a lump sum payment, an annuity having a present value equal to the balance payable or a lump sum payment and an annuity.

Option 2. A reduced benefit with the provision that at his death such benefit shall be continued throughout the life of such other person as he shall have designated at the time of his retirement.
Option 3. A reduced benefit with the provision that at his death one-half of such benefit shall be continued throughout the life of such other person as he shall have designated at the time of his retirement.

Option 4. Such other benefit as shall be certified by the actuary to be of equivalent actuarial value to his regular benefit.

## Death Benefit

Any active member or vestee who dies and was eligible for an annuity is considered as having applied for an annuity to become effective the day before his death and in the event he has not elected any option it is assumed that he elected Option 1.

## Return of Contributions

Upon separation from service where no other benefit is payable, the member's accumulated deductions are returned to him.
Upon death in service where no other benefit is payable, the member's accumulated deductions are paid to his designated beneficiary or estate.

Upon the death of an annuitant who has elected the maximum annuity, other than a disability annuitant who has 10 years of credited
service, the excess of his accumulated deductions at retirement over the annuity payments made is paid to his designated beneficiary or legal representative. Upon the death of a disability annuitant who has 10 years of credited service and who has elected the maximum annuity the excess of the present value of his annuity on his retirement date over payments received is paid to his designated beneficiary.

## Contributions

## By Members

The rate of contribution for each Class T-C member of the single or dual coverage group is $51 / 4$ percent of his compensation.

In the case of joint coverage members the amount of contribution determined at the basic rate is reduced by 40 percent of his Social Security tax exclusive of that portion attributable to disability and medical coverage. A joint cover-
age member who applies for a superannuation or withdrawal annuity may elect to receive such allowance without the reduction on fecount of Social Security coverage by paying a lump sum equal to the difference between the amount of accumulated deductions to his credit and the amount which would have been to his credit if contributions had been made without the reduction on account of Social Security coverage.
By State*

The State contributes a percentage of the total compensation of all members known as the normal contribution, an additional percentage of such compensation known as the accrued liability contribution and a percentage of such compensation known as the supplemental annuity contribution in order to accumulate the required reserves to provide the benefits payable.
*School districts' contributions match state contributions.

## Detailed Tabulations of the Data Schedule C

## Table 1

The Number and Annual Salaries
of Members in Active Service
Distributed by Age as of June 30, 1981

|  |  |
| :---: | ---: |
| Age | Number |
| 17 | 3 |
| 18 | 19 |
| 19 | 74 |
| 20 | 147 |
| 21 | 213 |
| 22 | 266 |
| 23 | 880 |
| 24 | 974 |
| 25 | 1,113 |
| 26 | 1,332 |
| 27 | 1,589 |
| 28 | 1,954 |
| 29 | 2,345 |
| 30 | 2,398 |
| 31 | 2,733 |
| 32 | 2,970 |
| 33 | 3,614 |
| 34 | 3,045 |
| 35 | 2,529 |
| 36 | 2,387 |
| 37 | 2,554 |
| 38 | 2,598 |
| 39 | 2,031 |
| 40 | 1,839 |
| 41 | 1,674 |
| 42 | 1,709 |
| 43 | 1,708 |
| 44 | 1,685 |
| 45 | 1,595 |
| 46 | 1,591 |
| 47 | 1,645 |
| 48 | 1,682 |
| 49 | 1,709 |
| 50 | 1,671 |
| 51 | 1,556 |
| 52 | 1,621 |
| 53 | 1,599 |
| 54 | 1,630 |
| 55 |  |
| 56 |  |
|  |  |

Men
Women

| Number | Amount |
| ---: | ---: |
| 1 | $\$ 2,194$ |
| 17 | 49,741 |
| 105 | 437,784 |
| 183 | 980,905 |
| 231 | $1,286,715$ |
| 416 | $2,481,477$ |
| 1,342 | $9,983,129$ |
| 2,005 | $18,185,538$ |
| 2,368 | $23,269,523$ |
| 2,629 | $27,995,016$ |
| 3,113 | $34,935,126$ |
| 3,696 | $43,858,663$ |
| 4,274 | $53,575,099$ |
| 4,749 | $62,017,425$ |
| 4,549 | $60,973,948$ |
| 4,403 | $60,061,247$ |
| 4,386 | $62,152,029$ |
| 4,864 | $68,342,225$ |
| 3,873 | $54,431,537$ |
| 3,178 | $43,974,585$ |
| 3,183 | $43,096,144$ |
| 3,535 | $45,984,460$ |
| 3,538 | $45,779,869$ |
| 3,302 | $40,802,410$ |
| 3,081 | $38,555,446$ |
| 3,045 | $37,146,795$ |
| 3,127 | $37,816,177$ |
| 3,010 | $35,699,810$ |
| 2,970 | $35,697,066$ |
| 2,969 | $34,621,191$ |
| 2,836 | $34,423,563$ |
| 2,734 | $33,120,325$ |
| 2,997 | $36,953,635$ |
| 3,103 | $38,720,092$ |
| 3,078 | $38,708,242$ |
| 2,965 | $36,524,230$ |
| 3,190 | $39,918,151$ |
| 3,054 | $38,994,834$ |
| 2,889 | $37,054,323$ |
| 2,771 | $34,614,302$ |
|  |  |

## Table 1-Continued

The Number and Annual Salaries
.
of Members in Active Service
Distributed by Age as of June 30, 1981

|  |  |
| :--- | ---: |
| Age | Number |
| 57 | 1,565 |
| 58 | 1,468 |
| 59 | 1,354 |
| 60 | 1,235 |
| 61 | 1,244 |
| 62 | 978 |
| 63 | 827 |
| 64 | 675 |
| 65 | 513 |
| 66 | 345 |
| 67 | 217 |
| 68 | 142 |
| 69 | 90 |
| 70 | 71 |
| 71 | 40 |
| 72 | 31 |
| 73 | 25 |
| 74 | 18 |
| 75 | 11 |
| 76 | 11 |
| Total | 75,758 |

Men

| Amount | Number |
| ---: | ---: |
| $29,861,892$ | 2,771 |
| $27,589,828$ | 2,505 |
| $24,211,816$ | 2,356 |
| $21,497,974$ | 2,388 |
| $21,097,572$ | 2,223 |
| $16,664,039$ | 1,736 |
| $13,625,258$ | 1,465 |
| $10,468,614$ | 1,136 |
| $7,922,674$ | 894 |
| $4,832,676$ | 552 |
| $3,120,114$ | 424 |
| $1,595,729$ | 203 |
| 878,143 | 106 |
| 604,141 | 60 |
| 250,904 | 26 |
| 252,667 | 15 |
| 159,701 | 14 |
| 112,598 | 19 |
| 67,936 | 7 |
| 81,158 | 6 |
| $\$ 1,373,383,141$ | 130,665 |

## Women

| Amount |
| ---: |
| $33,773,438$ |
| $30,601,791$ |
| $28,948,443$ |
| $29,427,534$ |
| $27,210,289$ |
| $21,925,261$ |
| $18,384,601$ |
| $14,083,152$ |
| $10,788,444$ |
| $6,597,678$ |
| $4,495,521$ |
| $2,185,670$ |
| 873,878 |
| 364,246 |
| 162,365 |
| 67,459 |
| 54,397 |
| 95,983 |
| 39,191 |
| 62,484 |
| $\$ 1,623,276,796$ |

## Table 2

The Number and Annual Salaries
of Members in Active Service
Distributed by Years of Credited Service As of June 30, 1981

| Years <br> of <br> Service | Number |
| :---: | ---: |
| 0 | 961 |
| 1 | 3,893 |
| 2 | 3,514 |
| 3 | 3,157 |
| 4 | 2,883 |
| 5 | 3,009 |
| 6 | 2,968 |
| 7 | 3,659 |
| 8 | 3,718 |

Men
Women
Number
2,300
10,740
10,713
10,081
8,860
8,084
7,083
7,813
7,322

# Table 2-Continued <br> The Number and Annual Salaries <br> of Members in Active Service <br> Distributed by Years of Credited Service As of June 30, 1981 

| Years <br> of <br> Service | Number |
| :---: | :---: |
| 9 | 3,796 |
| 10 | 3,351 |
| 11 | 3,574 |
| 12 | 3,596 |
| 13 | 3,450 |
| 14 | 3,189 |
| 15 | 2,746 |
| 16 | 2,341 |
| 17 | 2,075 |
| 18 | 1,923 |
| 19 | 1,679 |
| 20 | 1,598 |
| 21 | 1,509 |
| 22 | 1,494 |
| 23 | 1,404 |
| 24 | 1,302 |
| 25 | 1,203 |
| 26 | 1,096 |
| 27 | 912 |
| 28 | 872 |
| 29 | 725 |
| 30 | 695 |
| 31 | 668 |
| 32 | 623 |
| 33 | 557 |
| 34 | 479 |
| 35 | 374 |
| 36 | 240 |
| 37 | 179 |
| 38 | 129 |
| 39 | 91 |
| 40 | 51 |
| 41 | 22 |
| 42 | 15 |
| 43 | 13 |
| 44 | 11 |
| 45 |  |
| 46 | 1 |
| 47 |  |
|  |  |

Men
Women

| Amount | Number | Amount |
| ---: | ---: | ---: |
| $64,554,686$ | 7,028 | $95,551,397$ |
| $58,381,890$ | 6,183 | $87,105,574$ |
| $66,525,775$ | 6,031 | $92,988,615$ |
| $69,773,451$ | 5,199 | $81,127,102$ |
| $67,670,730$ | 4,469 | $70,386,000$ |
| $65,303,351$ | 4,313 | $68,070,507$ |
| $57,043,734$ | 3,901 | $64,421,214$ |
| $50,001,738$ | 2,715 | $47,769,126$ |
| $45,679,495$ | 2,180 | $38,993,310$ |
| $42,288,903$ | 2,045 | $36,977,454$ |
| $37,429,655$ | 1,802 | $33,757,946$ |
| $36,125,522$ | 1,472 | $28,389,894$ |
| $34,597,032$ | 1,449 | $27,412,043$ |
| $35,030,181$ | 1,219 | $23,760,956$ |
| $32,852,204$ | 1,103 | $21,477,658$ |
| $30,972,631$ | 994 | $20,067,298$ |
| $28,583,966$ | 850 | $17,526,388$ |
| $26,558,350$ | 726 | $14,835,087$ |
| $23,020,982$ | 574 | $12,406,054$ |
| $21,823,013$ | 538 | $11,766,951$ |
| $18,478,485$ | 428 | $9,410,748$ |
| $17,608,326$ | 405 | $8,956,855$ |
| $17,400,323$ | 332 | $7,318,785$ |
| $16,418,849$ | 315 | $6,991,861$ |
| $14,728,925$ | 251 | $5,591,424$ |
| $12,602,228$ | 210 | $4,626,265$ |
| $10,165,376$ | 195 | $4,322,621$ |
| $6,545,646$ | 147 | $3,338,332$ |
| $4,935,513$ | 127 | $2,806,968$ |
| $3,594,126$ | 108 | $2,402,927$ |
| $2,521,639$ | 111 | $2,347,360$ |
| $1,495,240$ | 82 | $1,843,630$ |
| 654,731 | 59 | $1,360,707$ |
| 472,123 | 36 | 815,825 |
| 364,177 | 22 | 463,437 |
| 331,249 | 13 | 269,851 |
| 216,034 | 17 | 333,939 |
| 39,709 | 216,160 |  |
| 180,531 | 2 | 48,236 |
|  |  |  |

## Table 2-Continued

The Number and Annual Salaries
of Members in Active Service
Distributed by Years of Credited Service
As of June 30, 1981
Women

| Years of | Men |  | Number | $\begin{aligned} & \text { Amount } \\ & 113,956 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | Number | Amount |  |  |
|  |  |  |  | 26,318 |
| Service |  |  | 1 | 19,219 |
| 48 49 |  |  | 1 | \$1,623,276,796 |
| 49 50 |  | \$1,373,383, | 130,665 |  |
| I | 75,758 | \$1 |  |  |



## Table 3-Continued

The Number and Annual Annuities of Annuitants on the Retired List as of June 30, 1981 Classified by Age

Retired on Account of Superannuation and Those in Receipt of Withdrawal Annuities

Men

| Age | Number | Total Annuities | Number | Tota <br> Annuitie |
| :---: | :---: | :---: | :---: | :---: |
| 50 | 29 | 70,489 | 60 | 102,801 |
| 51 | 25 | 73,495 | 78 | 99,436 |
| 52 | 34 | 92,095 | 72 | 120,026 |
| 53 | 37 | 128,358 | 73 | 129,649 |
| 54 | 43 | 131,644 | 81 | 223,959 |
| 55 | 40 | 189,723 | 108 | 282,659 |
| 56 | 80 | 645,546 | 125 | 440,412 |
| 57 | 93 | 853,328 | 169 | 869,968 |
| 58 | 108 | 949,638 | 234 | 1.255,760 |
| 59 | 147 | 1,389,086 | 293 | 1,577,685 |
| 60 | 169 | 1,797,054 | 382 | 2,456,312 |
| 61 | 234 | 2,468,605 | 474 | 3,078,476 |
| 62 | 220 | 2,004,344 | 580 | 3,690,120 |
| 63 | 555 | 4,216,271 | 1,222 | 7,188,151 |
| 64 | 671 | 4,771,162 | 1,437 | 8,352,490 |
| 65 | 778 | 5,225,895 | 1,567 | 9,067,428 |
| 66 | 955 | 5,806,302 | 1,861 | 10,832,014 |
| 67 | 1,062 | 6,291,346 | 2,160 | 12,937,459 |
| 68 | 1,117 | 6,999,481 | 2,242 | 13,897,106 |
| 69 | 1,088 | 6,331,926 | 2,430 | 15,888,338 |
| 70 | 1,033 | 6,231,432 | 2,404 | 16,252,495 |
| 71 | 961 | 6,372,176 | 2,550 | 17,601,388 |
| 72 | 965 | 6,338,743 | 2.506 | 17,970,456 |
| 73 | 933 | 6,255.854 | 2,671 | 19,704,104 |
| 74 | 829 | 5,837,073 | 2,480 | 18,088,465 |
| 75 | 730 | 4,961,332 | 2,246 | 16,242,917 |
| 76 | 659 | 4,526,556 | 1,990 | 14,120,187 |
| 77 | 592 | 4,091,719 | 1,672 | 11,815,938 |
| 78 | 471 | 3,069,497 | 1,476 | 10,280,060 |
| 79 | 402 | 2,855,625 | 1,271 | 8,792,101 |
| 80 | 311 | 1,947,284 | 1,002 | 6,711,565 |
| 81 | 250 | 1,538,778 | 922 | 6,225,523 |
| 82 | 245 | 1,639,135 | 724 | 4,916,475 |
| 83 | 189 | 1,176,715 | 670 | 4,398,797 |
| 84 | 162 | 1,027,554 | 605 | 4,018,748 |
| 85 | 117 | 788,603 | 557 | 3,719,031 |
| 86 | 128 | 849,994 | 439 | 2,827,201 |

# Table 3-Continued <br> The Number and Annual Annuities of Annuitants on the Retired List型 as of June 30, 1981 Classified by Age 

Retired on Account of Superannuation and Those in Receipt of Withdrawal Annuities


|  | Summary |  |  |  |
| :--- | ---: | ---: | ---: | ---: |
| No Option | 9,229 | $\$ 48,451,298$ | 37,168 | $\$ 241,702,213$ |
| Option 1 | 2,297 | $14,702,400$ | 4,069 | $24,655,246$ |
| Option 2 | 1,931 | $9,722,407$ | 1,098 | $6,060,866$ |
| Option 3 | 3,942 | $36,950,152$ | 1,771 | $13,756,294$ |
| Option 4 | 267 | $3,338,441$ | 117 | $1,002,197$ |

## Table 4

## The Number and Annual Annuities of Survivor Annuitants as of June 30, 1981

Classified by Age

Men


## Table 4-Continued

The Number and Annual Annuities
of Survivor Annuitants as of June 30, 1981
Classified by Age
Men

Table 5
The Number and Annual Annuities of Survivor Annuitants as of June 30, 1981
Classified by Years of Unexpired Period

Men
$\left.\begin{array}{crcrrr}\text { Years } & \text { Number } & \begin{array}{c}\text { Total } \\ \text { Annuities }\end{array} & \text { Number } & \begin{array}{r}\text { Total } \\ \text { Annuities }\end{array} \\ 6 & & & \$ 3,261\end{array}\right)$

## Table 6

The Number and Annual Annuities of Annuitants on the Retired List as of June 30, 1981 Classified by Age

Retired on Account of Disability
Men

Total
Annuities $\$ 4,286$ 3,662 2 Number
2 1
$4,293 \quad 2$ $6+4$
6
6 Women

Total
Annuities
$\$ 8,580$
3,993
7,359
2680

- 42,791

30,651
23,102
35,113
35,808

## Table 6-Continued

# The Number and Annual Annuities <br> of Annuitants on the Retired List as of June 30, 1981 Classified by Age 

Retired on Account of Disability

| Age | Men |  | Women |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Number | Total Annuities | Number | Total Annuities |
| 41 | 4 | 21,792 | 5 | 26,665 |
| 42 | 5 | 22,329 | 6 | 23,190 |
| 43 | 2 | 15,536 | 6 | 31,682 |
| 44 | 9 | 44,186 | 9 | 45,861 |
| 45 | 12 | 65,860 | 8 | 33,454 |
| 46 | 13 | 56,559 | 12 | 51,235 |
| 47 | 14 | 89,694 | 13 | 59,881 |
| 48 | 14 | 80,789 | 10 | 52,990 |
| 49 | 16 | 90,838 | 14 | 86,616 |
| 50 | 13 | 87,825 | 27 | 128,189 |
| 51 | 19 | 108,702 | 21 | 89,141 |
| 52 | 28 | 202,395 | 27 | 124,589 |
| 53 | 36 | 212,212 | 39 | 163,118 |
| 54 | 32 | 209,905 | 26 | 125,574 |
| 55 | 29 | 153,730 | 42 | 240,508 |
| 56 | 53 | 276,317 | 50 | 252,826 |
| 57 | 49 | 264,608 | 61 | 275,494 |
| 58 | 32 | 185,735 | 63 | 291,075 |
| 59 | 60 | 331,994 | 92 | 403,652 |
| 60 | 51 | 290,062 | 84 | 363,190 |
| 61 | 63 | 293,171 | 97 | 447,447 |
| 62 | 79 | 372,932 | 97 | 386,663 |
| 63 | 62 | 230,945 | 95 | 427,938 |
| 64 | 62 | 267,625 | 91 | 382,953 |
| 65 | 52 | 206,350 | 77 | 318,181 |
| 66 | 37 | 143,477 | 92 | 390,122 |
| 67 | 38 | 180,416 | 74 | 286,916 |
| 68 | 26 | 99,093 | 83 | 398,745 |
| 69 | 14 | 47,758 | 40 | 201,478 |
| 70 | 24 | 83,472 | 42 | 196,442 |
| 71 | 18 | 71,189 | 51 | 221,154 |
| 72 | 12 | 45,477 | 38 | 159,539 |
| 73 | 9 | 29,357 | 51 | 200,430 |
| 74 | 8 | 30,339 | 47 | 198,398 |
| 75 | 3 | 8,826 | 29 | 117,054 |
| 76 | 5 | 14,516 | 24 | 98,695 |
| 77 |  |  | 16 | 56,723 |
| 78 | 5 | 15,758 | 24 | 80,964 |

## Table 6-Continued

## The Number and Annual Annuities of Annuitants on the Retired List as of June 30, 1981 Classified by Age

## Retired on Account of Disability

Men
Number

Women
Total
Annuities Number
Total
Annuities



|  | Summary |  |  |  |
| :--- | ---: | :---: | ---: | ---: |
| No Option | 809 | $\$ 3,895,157$ | 1,749 | $\$ 7,597,614$ |
| Option 1 | 33 | 164,504 | 38 | 179,889 |
| Option 2 | 140 | 682,667 | 40 | 212,010 |
| Option 3 | 64 | 376,012 | 20 | 120,774 |

Table 7

Number
Age Number Annuities
 Total Men

AnnuitiesThe Number and Annual Annuities :of Annuitants on the Retired Listas of June 30, 1981 Classified by Age
Receiving Annuities at Withdrawal

星 of Annuitants on the Retired List as of June 30, 1981 Classified by Age

Women
Total Annuities $\$ 39$ 95 75 298 $\$ 507$

# Development of the Unfunded Accrued Liability Using the Net Reserves of the System 

In
Billions
Financial Reserves Available for:
The first obligation against the net assets to be considered is the active contributing members' accumulated contributions with 4 percent interest added.
The next obligation against the net assets is future annuities payable to the present retirees developed by using actuarial projections based on life expectancies of the retirees, earnings of the fund, and what would be owed to their beneficiaries.
Balance of the net assets available for current contributing members retiring in the
future. .885
$\$ 5.329$
Liabilities on account of:
Present value of past contributions by members. $\$ 1.718$
Present value of future contributions by members.
Present value of annuities payable to present retirees, beneficiaries and their sur-
vivors.
Present value of annuities that will be required from the State and school districts to pay annuities to active contributing members when they retire.
B. Total Liabilities
8.594
$\$ 16.280$
Uncovered Liabilities (A-B):
$\$ 10.951$
Less: Money planned to be received for service rendered after June 30, 1981
By contributing members
By State and school districts.

$$
3.552
$$

C. Total to be received from members, State and school districts.
D. Net Uncovered Liabilities (B-C)
C. Total be received from members, State and school districts. . $\$ 5.644$

Less: Interest on Commonwealth deficit not counted in the financial reserves.
Unfunded Accrued Liabilities
$\$ 5.237$

## Statistical Section

## REVENUES BY SOURCE

## Ten Years

| Fiscal <br> Year | Members <br> Contributions <br> $(000)$ | Employers <br> Contributions <br> $(000)$ | Investment <br> Income <br> $(\mathbf{0 0 0 )}$ | Other <br> Income <br> $(\mathbf{0 0 0})$ | Total <br> Revenue <br> $(\mathbf{0 0 0 )}$ |
| :---: | :---: | :---: | :---: | :---: | ---: |
| 1982 | $\$ 180,562$ | $\$ 501,025$ | $\$ 435,888$ | - | $\$ 1,117,475$ |
| 1981 | 175,306 | 478,859 | 351,220 | - | $1,005,385$ |
| 1980 | 161,330 | 396,839 | 307,216 | - | 865,385 |
| 1979 | 148,644 | 379,056 | 255,636 | - | 783,336 |
| 1978 | 143,089 | 345,205 | 224,246 | $\$ 4,588$ | 717,128 |
| 1977 | 147,760 | 328,984 | 216,265 | 1,519 | 694,528 |
| 1976 | 130,962 | 257,671 | 192,509 | 1,299 | 582,441 |
| 1975 | 109,876 | 285,355 | 179,738 | 1,417 | 576,386 |
| 1974 | 102,990 | 201,951 | 158,725 | 1,131 | 464,797 |
| 1973 | 95,482 | 178,834 | 170,354 | - | 444,670 |

## EXPENSES BY TYPE <br> Ten Years

| Fiscal | Benefits | Refunds | Disabilities | Lump Sum | ve | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Paid (000) | Paid (000) | Paid <br> (000) | Payments <br> (000) | Expense (000) | Payments (000) | Expense (000) |
| 1982 | \$450,863 | \$19,206 | \$18,795 | \$53,199 | \$5,892 | \$ 5,052 | \$553,007 |
| 1981 | 435,498 | 18,216 | 13,817 | 43,021 | 5,130 | 7,000 | 522,682 |
| 1980 | 417,782 | 18,503 | 13,891 | 27,865 | 3,504 | 5,886 | 487,431 |
| 1979 | 333,989 | 18,957 | 9,663 | 28,026 | 3,441 | 5,920 | 399,996 |
| 1978 | 309,474 | 17,845 | 8,770 | 15,934 | 3,259 | 11,370 | 366,652 |
| 1977 | 299,499 | 15,322 | 7,832 | 10,713 | 2,850 | 9,059 | 345,275 |
| 1976 | 316,462 | 12,212 | 6,395 | 190 | 2,708 | 18,385 | 356,352 |
| 1975 | 229,333 | 13,990 | 5,253 | - | 1,942 | 1,118 | 251,636 |
| 1974 | 210,635 | 14,450 | 5,988 | - | 1,642 | 2,245 | 234,960 |
| 1973 | 194,505 | 12,819 | 3,667 | - | 1,229 | 1,939 | 214,159 |

# AVERAGE BENEFIT PAYMENT 

Fiscal Year
Ending
1982
1981
1980
1979
1978

| Superannuations |  |
| :---: | ---: |
| Members | Pverage <br> Payment |
| 58,273 | $\$ 6,631.36$ |
| 56,523 | $6,666.30$ |
| 54,876 | $6,724.60$ |
| 53,353 | $5,467.79$ |
| 51,247 | $5,456.52$ |

Disability Average
Members Payment 3,153 $\$ 5,960.99$
2,893 4,631.91
$2,770 \quad 5,014.80$
2,534 3,813.34
$2,383 \quad 3,680.24$

## V

Withdrawals Average
Members Payment
7,801 \$4,484.43
$8,034 \quad 4,060.24$
6,526 $\quad 4,030.19$
5,174 3,910.32
$4,048 \quad 4,059.04$

## FUNDING RATIO <br> Ten Years

| Fiscal <br> Year | A <br> Net <br> Assets | B <br> Actuarial <br> Liability |
| :---: | :---: | ---: |
| $80 / 81$ | $\$ 5,329,191,040$ | $\$ 5,237,200,000$ |
| $79 / 80$ | $4,846,487,728$ | $3,762,533,000$ |
| $78 / 79$ | $4,468,533,935$ | $3,518,955,000$ |
| $77 / 78$ | $4,085,193,326$ | $2,786,981,000$ |
| $76 / 77$ | $3,734,717,447$ | $2,556,078,157$ |
| $75 / 76$ | $3,385,464,774$ | $2,394,463,697$ |
| $74 / 75$ | $3,159,376,063$ | $2,280,016,562$ |
| $73 / 74$ | $2,834,625,640$ | $2,331,662,102$ |
| $72 / 73$ | $2,604,788,656$ | $1,656,635,207$ |
| $71 / 72$ | $2,374,277,884$ | $1,720,329,116$ |

$\left.\begin{array}{cc}\begin{array}{c}\text { C } \\ \text { Reserve } \\ \text { Requirements } \\ \text { (A+B) }\end{array} & \begin{array}{c}\text { D } \\ \text { Funding } \\ \text { Ratio }\end{array} \\ \mathbf{( \mathbf { A } \div \mathbf { C } )}\end{array}\right\}$

# RATIO OF UNFUNDED ACCRUED LIABILITIES TO ACTIVE MEMBERS' PAYROLL 



The above method tracks the unfunded accrued liability in relationship to the total wages paid annually to the active members of this System. The ratio will increase for every increase in benefits to be paid at some future time when the active members retire, or, for benefit increases accruing to the retired members in the future; and, the wages do not increase proportionately in support of the benefits accruing.
Using 1972 as a base, the annual payroll has increased 2.0 times, 1981 over 1973, whereas, the unfunded accrued liability has increased 3.0 times, 1981 over 1973. The unfunded accrued liability is increasing at a faster rate than the annual payroll, the common denominator upon which contributions to the System are based for funding this liability.
The unfunded accrued liability index peaked in 1981 as the result of the unfavorable five-year experience, 1975 to 1980 , under a set of actuarial assumptions that had to be adjusted for separations due to withdrawals, death, disability, and service retirement. The actual rates of salary increases during the five year period covered were in excess of the expected increases to be granted. The actuarial assumptions for the ensuing five-year period were also adjusted to reflect the 1975 to 1980 experience. The anticipated funding plan projects increases in the employer rate to bring funding to a level to meet these obligations over approximately five years.

The 25 -year projection has the unfunded accrued liability increasing until the year 1993 in a 7 percent inflation environment with benefits at current levels. After 1993, the unfunded liability is projected to decrease to a minor amount in the year 2001.

## RATIO OF NET RECEIPTS RETAINED <br> T0 <br> TOTAL RECEIPTS



It is important that a net receipt position be held in order to fund the unfunded accrued liabilities of this System. If disbursements continue to increase at a rate commensurate with the ten-year period used in this chart, through liberalization of benefits with increases in the unfunded accrued liabilities, a net receipt position will not be held without substantial increases in the employer rate of contribution.

It is contemplated, however, that the recently passed legislation permitting investments in areas of opportunity heretofore denied the System will assist in keeping the employer rate reasonable.

## CASH FLOW <br> FISCAL YEAR 1981-82

| Receipts | Millions |
| :---: | :---: |
| State Contributions | \$ 265.0 |
| Reporting Unit Contributions | 242.2 |
| Employees' Contributions | 171.5 |
| Installment Purchase of Service, etc. | 13.0 |
| Investment Income | 459.1 |
| Total | \$1,150.8 |
| Disbursements |  |
| Annuity Payments, Disabilities, Death |  |
| Benefits | \$ 472.2 |
| Refunds and Option 4 | 72.0 |
| Transfers | 7.0 |
| Administrative Expenses | 6.1 |
| Service Fees, Investment |  |
| Expenses Paid | 2.9 |
| Total | \$ 560.2 |
| Increase in Fund (Cash basis) | \$ 590.6 |



## Investment Portfolio Section

## INCOME BY SOURCE <br> Ten Years



NO. OF
SHAFES
EOOK VALUE MAFKET VALUE

## COMMON STOCK

| ABEOTT LABORATORIES AIR FRODUCTS \& CHEMICALS |
| :---: |
| ALUMINUM CO DF AMEEICA |
| AMERICAN HOME FROLUUCTS |
| AMERICAN HOSFITAL SUPFLY |
| AMERICAN INTL GROUF- |
| AMERICAN TEL \& TEL CO |
| ATLANTIC RICHFIELII CO. |
| GAKER INTERNATIONAL CORF' |
| bandiag Inc |
| EEATRICE FOOLS CO |
| HLACK AND IECKEF |
| H \& R ELIOCK |
| BRIOWN-FORMAN *E* |
| GRUSH WELIMAN |
| GURNIIY CORFORATION |
| CIGNA (CONN GEN INS) |
| CAFFENTEK TECHNOLOGY |
| CATEFFILLAF TFACTOR CO |
| CHESEBROUGH-FONDIS INC |
| COCA COLA CO |
| COOPER LABS |
| CROWN CORK |
| IIEEFE AND CO. |
| IIGITAL EQUIFMENT CORF' |
| DK F'EFFPER CO |
| HOW CHEMICAL CO |
| IFESSER INLIUSTRIES INC |
| IUUFONT IE NEMOURS (E I) <br> TUN AND BRALISTREET CORFOKATION |
|  |  |
|  |
|  |
| EXXON CORF CAF - STI OIL |
| FIFST EANK SYS INC CAF |
| INTEF-FIRST CORF |
| FIRST INTERSTATE EANCORF' |

500,000.00 $625,000.00$ 675,000.00 $628,100.00$ 350,000.00 100,000.00 550,000.00 605,000.00 372,900.00
45,000.00 452,900.00 400,000.00 45,000.00 $50,000.00$ 40,000.00 55,000.00 200,000.00 10,000.00 318,150.00 $684,100.00$ 200,000.00 40,000.00 35,000.00 515,000.00 $60,000.00$ 65,000.00 264,500.00 771.600.00 291:200.00 $60,000.00$ $500,000.00$ 250,000.00 701,600.00 $110,600.00$ $500,000.00$ 350,000.00

9,108,425.00 18,373,594.14 $18,435,236.50$ 19,125,638.62 11,803,116.50 5,440,600.00 31,050,861.32 14,911,494.39 12,852,998.50 1,098,600.00 11,249,030.00 8,883,830.20
1,629,837.50
1,501,020.00
1,457,375.00
1,003,100.00
6,620.184.00
346,400.00
15,607,499.60
17,029,808.43
8,955,699.18
1,183.262.50
946,075.00
14,302,513.62
5,173,725.00
808.450.00
$10,313,176.34$
15,452,269.93
11,949,451.95
4,118,975.00
34,349,116.21
8,477,477.50
15,867,732.86
4,741,687.50 10,525,438.25
9,655,177.00
$14,312,500.0$ 18,984,375.0 15,356,250.0 23,789,287.5 15,487,500.0 6,262,500.0 28,050,000.0 $22,309,375.0$ 8,856,375.0 1,125,000.0 8,774,937.5 5,350,000.0 1,260,000.0 1,743,750.0 1,620,000.0
1,024,375.0
7,675,000.0
352,500.0
11,811,318.7
22,233.250.0
6.750:000.0

1,170,000.0
831,250.0
12,875,000.0
4,192,500.0
804,375.0
5,488,375.0
13,792,350.0
9.609,600.0

4,035,000.0
36,875,000.0
11,187,500.0
19,469,400.0
3,276,525.0
11,625,000.0
8,575,000.0

| NO. OF | EODK | MARKET |
| :---: | :---: | :---: |
| SHARES | VALUE | VALUE |

## COMMON STOCK

```
GANNETT CO
GENEFAL ELECTRIC CO
GENEFAL MOTOFS CORP
gEORGIA PACIFIC CORF
GEOSOURCE INC
gETTY OIL CO
GILIIINGS & LEWIS
GREAT LAKES CHEMICAL
HALLIFURTON CO
H J HEINZ CD
HEWLETT FACKARII CO
HILLENERANI INIUSTRIES
HOSFITAL COFF OF AMERICA
INGERSOLL RAND CO
INTL BUS MACH CORF
INTL FLAVORS & FRAG INC
INTERNATIONAL MIN & CHEM CORF
JOHNSON & JOHNSON
KENNAMETAL INC
KIMEERLY CLAFKK CO
LEE ENTERFFISES
LIEERTY NAT. INS. HOLIING CO.
LILLY (ELI) & CO
LONGS IIRUG
LORAL CORFORATION
LUBFIZOL
R H MACY & CO
MEFCK & CO
MILTON ERAILLEY
MINNESOTA MINING ANII MFG
MONSANTO CO
F'ARKEF-HANNIFIN COFF
FENNY (J C. ) CO
FHIEFO (ENGELHARII MIN & CHEM)
```

500,000.00
386,000.00
248,400.00
75.000.00

20,000.00
150,000.00
40,000.00
20,000.00
$250,000.00$ $60,000.00$
$645,200.00$
70,000.00
247,000.00
400,000.00
57,300.00
475,000.00
555,212.00
275,000.00
$600,000.00$
22,000.00
375:000.00 30,000.00 50,033.00
100,000.00
55.000.00

15,000.00
450,000.00
$51,500.00$
89,000.00
55,000.00
410,000.00
141,600.00
35,000.00
275,000.00
275,000.00

12,450.962.50
19,946.547.60 12,994,476.40 2,108,973.00 721,041.60
7,739,712.50 853,800.00 699,175.00
7.696,414.96

1,864,200.00
13,178,616.48
1,641,350.00
7.283.577.50

15,104,066.50
4,100,258.50
31,149,856.10
12,915,330.44
9,335,112.50
16,163,370.00 730,002.50
16.525.362.50 850.525.00

1,592.793.55
5,078.555.00
1,547,262.50 402,900.00
14,103.187.50 1,894,072.50
5,803.408.76
1,094,662.50
$22,1,34,554 \cdot 13$
8,958.659.59 658,350.00
11,496,287.89
9,890.979.04

16,250,000.0
24,559,250.0
11,084,850.0
1,050,000.0
867,500.0
7,462,500.0
650,000.0 617,500.0 7,031,250.0
1,950,000.0
27,421,000.0
1,767,500.0
7,163,000.0
7,550,000.0
2,578,500.0
28.796.875.0

11,520,649.0
7,287.500.0
23,700,000.0
$629,750.0$
$22,546,875.0$
768.750.0

1,138,250.7
5,725,000.0
1,608,750.0
491,250.0
8,887,500.0 1,957,000.0 6,007:500.0 1,017,500.0
21,832,500.0
8,336,700.0 595,000.0
10,312,500.0
6,393,750.0

## COMMON STOCK

FHILIF MORRIS INC
FHILLIFS FETROLEUM CO
FFENTICE-HALL INC
FROCTOR \& GAMELE \& CO
RAYTHEON
ROLLINS INC
RUBBERMAID
SCOTTY\S INC
SMITHKLINE BECKMAN CORF
SNAF-ON TOOLS CORFOFATION
SOUTHLIOWN
SQUAFE II CO
STANIAFD OIL CO CALIFORNIA
STANDARD OIL CO IND
TEKTRONIX INC
TEXAS EASTERN CORF
TEXTRON INC
TIMES MIRROF CO
UNION CAMP CORF
UNION F'ACIFIC CORF
UNITEL TECHNOLOGIES
UNITED TELECOMMUNICATIONS
WACHOUIA COFF'
WEYERHAEUSER CO
WOODS FETROLEUM
TOTAL COMMON STOCK

## FREFERKELI STOCK

COOFER IND INC $\$ 2.90 \mathrm{CON}$
WYFHS 2.80 CUM CON 1.2121
TOTAL FREFERREI STOCK

| 200,000.00 | 10,204,075.00 | 10,250,000.0 |
| :---: | :---: | :---: |
| 491,800.00 | 15,044,112.50 | 14,631,050.0 |
| 40,000.00 | 971,500.00 | 1,080,000.0 |
| 350,000.00 | 28,343,267.11 | 29,050,000.0 |
| 400,000.00 | 16,223,497.50 | 14,350,000.0 |
| 100,000.00 | 1,551,387.50 | 1,412,500.0 |
| 15,000.00 | 544,300.00 | 592,500.0 |
| 50,000.00 | 967,475.00 | 900,000.0 |
| 309,900.00 | 15,602,832.80 | 19,872,337.5 |
| 50,000.00 | 954,887.50 | 1,206,250.0 |
| 15,000.00 | 562,637.50 | 592,500.0 |
| 230,000.00 | 6,173,220,70 | 5,778.9750.0 |
| 375,000.00 | 7,420,284.00 | 11,343,750.0 |
| 300,000.00 | 13,398,199.02 | 12,562,500.0 |
| 200,000.00 | 10,002,038.00 | 10,975,000.0 |
| 140,000.00 | 6,692,850.00 | 6,755,000.0 |
| 335,000.00 | 9,129,396.55 | 6,239,375.0 |
| 300,000.00 | 9,071,334.00 | 12,000,000.0 |
| 356,600.00 | 19,336,000.00 | 15,422,950.0 |
| 558,000.00 | 14,358,080.00 | 19,599,750.0 |
| 59,000.00 | 2,108,220.00 | 2,315,750.0 |
| 411,700.00 | 7,520,258.00 | 6,998,900.0 |
| 157,600.00 | 3,861,310.05 | 3,900,600.0 |
| 348,600.00 | 11,433,530.82 | 8,845,725.0 |
| 15,000.00 | 314,262.50 | 300,000.0 |
| 732.095.00 | 856,846,238,14 | 871,466,805. |

## 踏

| $120,000.00$ | $4,749,812.50$ | $4,020,000.0$ |
| ---: | ---: | ---: |
| $46,000.00$ | $2,246,825.00$ | $1,587,000.0$ |
| $166,000.00$ | $6,996,637.50$ | $5,607,000.0$ |


| DESCRIPTION |  | MATURITY DATE | INTRST RATE | PAR value | BOOK value | MARKET VALUE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MUNICIPALS |  |  |  |  |  |  |
| CASS TWP | SCHUYLKILL CO | 2/01/83 | 2.000 | 5,000.00 | 5,000.00 | 4,681.20 |
| CASS TWP | SCHUYLKILL CO | 2/01/84 | 2.000 | 5.000 .00 | 5,000.00 | 4.246.00 |
| CASS THP | SCHUYLKILL CO | 2/01/85 | 2.000 | 5.000.00 | 5,000.00 | 3,859.70 |
| CASS TUP | SCHUYLKILL CO | 2/01/86 | 2.000 | 5,000.00 | 5,000.00 | 3.516.90 |
| CASS TWP | SCHUYLKILL CO | 2/01/87 | 2.000 | 5.000.00 | 5,000.00 | 3,212.65 |
| CASS TUP | SCHUYLKILL CO | 2/01/88 | 2.000 | 5,000.00 | 5.000 .00 | 2,928.10 |
| CASS TWP | SCHUYLKILL CO | 2/01/89 | 2.000 | 5.000 .00 | 5,000.00 | 2.672.25 |
| CASS THP | SCHUYLKILL CO | 2/01/90 | 2.000 | 5.000 .00 | 5,000.00 | 2,442.70 |
| CASS TWP | SCHUYLKILL CO | 2/01/91 | 2.000 | 8,000.00 | $8,000.00$ | 3.579.36 |
| Mt Carmel | tup nthumberland | 12/01/82 | 3.000 | 11.000.00 | 11,000.00 | 11,000.00 |
| Mt Carmel | TUP NTHUMBERLAND | 12/01/83 | 3.000 | 10.000.00 | 10.000.00 | 8,894.00 |
| total | mun IC IPALS |  |  | 69.000.00 | 69,000.00 | 51,032.86 |

## CORPORATE - BANK

| INTER-AM | DEV |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| INTER-AM | DEV |  |  |  |
| INTER-AM | DEV | ban |  |  |
| INTL BANK | FOR | R | 8 | D |
| INTL BANK | FOR | R | 8 | D |
| INTL BANK | FOR | R | 8 | D |
| INTL BANK | FOR | R | 8 | D |
| INTL BANK | FOR | R | 8 | D |
| INTL BANK | FOR | R | 8 | D |


| $10 / 01 / 95$ | 8.62 |
| ---: | :--- |
| $7 / 15 / 01$ | 8.75 |
| $6 / 01 / 02$ | 8.37 |
| $2 / 01 / 90$ | 4.50 |
| $7 / 01 / 91$ | 5.37 |
| $4 / 01 / 92$ | 5.375 |
| $9 / 01 / 93$ | 5.875 |
| $3 / 15 / 94$ | 6.50 |
| $10 / 01 / 94$ | 6.3 |

## CORPORATE - FINANCIAL

avco financial services inc AVCO FINANCIAL SERVICES INC avCO FINANCIAL SERVICES INC AVCO FINANCIAL SERVICES INC BANKERS TRUST NEW YORK CORP BANKERS TRUST NEW YORK CORP BENEFICIAL CORP BENEFICIAL CORP BENEFICIAL CORP
BENEFICIAL CORP

| 5 | $6,500,000.00$ | $4,746,824.23$ | $3,937,505.00$ |
| ---: | ---: | ---: | ---: |
| 0 | $7,500,000000$ | $5,325,943.96$ | $4,343,625.00$ |
| 5 | $7,750,000.00$ | $7,392,511.84$ | $4,972,090.00$ |
| 0 | $19,234,000.00$ | $17,165,751.72$ | $10,496,763.16$ |
| 5 | $12,652,000000$ | $11,191,190.96$ | $6,926,843.48$ |
| 5 | $11,400,0000.00$ | $9,756,907.54$ | $6,019,314.00$ |
| 5 | $5,000,0000.00$ | $4,446,307.30$ | $2,648,650.00$ |
| 0 | $5,000,000.00$ | $4,988,816.98$ | $2,749,800.00$ |
|  | $30,388,0000.00$ | $27,290,539.53$ | $16,260,314.92$ |
|  |  |  |  |
|  | $105,424,000.00$ | $92,304,794.06$ | $58,354,905.56$ |

$$
\begin{array}{rr}
3,500,000.00 & 3,253,878.65 \\
1,879,000.00 & 1,649,409.67 \\
3,500,000.00 & 3,493,629.42 \\
5,108,000.00 & 4,171,274.99 \\
13,050,000.00 & 11,802,797.58 \\
5,100,000.00 & 4,029,868.90 \\
4,104,000.00 & 2,683,615.77 \\
18,956,000.00 & 13,309,6522.52 \\
3,000,000.00 & 1,954,830.88 \\
4,727,000.00 & 3,529,779.51
\end{array}
$$

2,108,750.00 979.428 .75 2,086.875.00 3,888,465.00 7.438 .500 .00 2.996 .250 .00 2.123.820.00 9,004.100.00 $1,530,000.00$
$3,403,440.00$

| DESCRIPTION | MA TUR ITY DATE | INTRST RATE | $\begin{aligned} & \text { PAR } \\ & \text { VALUE } \end{aligned}$ | BOOK value | MARKET <br> VALUE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CORPORATE - FINANCIAL |  |  |  |  |  |
| BENEFICIAL CORP | 11/01/90 | 5.000 | 27,189,000.00 | 23,736,901.81 | 13,968,348.75 |
| BENEFICIAL CORP | 5/15/93 | 4.750 | 15,905,000.00 | 12,809,787.84 | 8,310,362.50 |
| BORG WARNER ACCEP CORP | 6/01/01 | 6.000 | 12,650,000.00 | 6,054.511.78 | $4,870.250 .00$ |
| C I T FIN CORP | 6/01/95 | 9.500 | 6.000 .000 .00 | 4,571,733.09 | 3,900,000.00 |
| C I T FINANCIAL CORP | 6/15/05 | 11.500 | 19,750,000.00 | 14,036,168.11 | 14.170.625.00 |
| CHARTER N Y CO (IRVING BANK) | 8/01/91 | 5.750 | 7.783.000.00 | 6.556.991.18 | $5.681,590.00$ |
| ChEmical bank N Y trust co | 1/01/92 | 5.875 | 3,000,000.00 | 2,996,198.98 | 1.713.600.00 |
| CITICORP | 3/15/07 | 8.450 | 19,400,000.00 | 16,942,528.65 | 10,985,250.00 |
| COMMERCIAL CREDIt CO | 4/01/93 | 7.750 | 7.750 .000 .00 | 7,348,231.38 | $4,795,312.50$ |
| DEERE (JOHN) CREDIT CO | 4/30/98 | 7.500 | 8,522,000.00 | 6,829,416.47 | 4,740,362.50 |
| Fidelity bank cap notes | 9/01/92 | 6.125 | 5,578,000.00 | 5,195,760.34 | 3.883 .682 .50 |
| FORD MOTOR CREDIT CO | 11/15/91 | 7.500 | 4.600 .000 .00 | 4,204,695.30 | 2.484,000.00 |
| FORD MOTOR CREDIT CO | 4/01/99 | 8.700 | 8,000,000.00 | 7.892.021.93 | 4,060,000.00 |
| FORD MOTOR CREDIT CO | 7/15/93 | 7.875 | 13,832,000.00 | 13,448,960.29 | 7,175,350.00 |
| FORD MOTOR CREDIT CO | 1/15/01 | 9.750 | 12,750,000.00 | 12,695.751.43 | 7,203,750.00 |
| FORD MOTOR CREDIT CO | 6/01/01 | 9.125 | 25,100,000.00 | 24,698.087.57 | 13,334.375.00 |
| FORD MOTOR CREDIT CO | 3/15/87 | 9.750 | 2,625,000.00 | 2,230,561.63 | 1,873.593.75 |
| FORD MOTOR CREDIT CO | 3/15/04 | 9.850 | 15,500,000.00 | 15,500.000.00 | 8,350,625.00 |
| FORC MOTOR CREDIt CO | 6/15/89 | 9.450 | 7.000 .000 .00 | 5,223.780.66 | $4.830,000.00$ |
| general electric credit corp | 8/01/87 | 9.750 | 3.800 .000 .00 | 3.285,805.62 | 3.249 .000 .00 |
| GENERAL ELECTRIC CREDIT CORP | 9/15/91 | 13.625 | $5,000,000.00$ | 4.520.765.00 | $4.750,000.00$ |
| GENERAL ELECTRIC CREDIT CORP | 11/01/01 | 5.500 | 68,418,000.00 | 28,622.366.21 | 29.077,650.00 |
| GENERAL MOTORS ACC CORP MED TERM | 10/15/84 | 13.500 | 5,500,000.00 | 5,536,883.31 | 5,241,060.00 |
| GENERAL MOTORS ACC CORP MED TERM | 4/16/84 | 13.500 | 20,000,000.00 | 20,107,956.28 | 19,307,000.00 |
| GENERAL MOTORS ACCEPTANCE CORP | 8/01/88 | 6.250 | 2.000 .000 .00 | 1.459,695.07 | 1.327 .500 .00 |
| GENERAL MOTORS ACCEPTANCE CORP | 9/01/92 | 7.125 | 24,350,000.00 | 16,984,004.11 | 14,640,437.50 |
| GEAERAL MOTORS ACCEPTANCE CORP | 11/01/98 | 7.850 | $4.500,000.00$ | 2,596,498.71 | 2,475,000.00 |
| GENERAL MOTORS ACCEPTANCE CORP | 6/01/99 | 8.875 | 9,900,000.00 | 6,311.187.01 | 5,841,000.00 |
| GENERAL MOTORS ACCEFTANCE CORP | 10/15/96 | 8.125 | 9,125,000.00 | 6.119.793.49 | 5,589,062.50 |
| GENERAL MOTORS ACCEPTANCE CORP | 7/15/87 | 10.875 | 2,000,000.00 | 1,779,298.24 | 1,699000000.00 |
| GENERAL MOTORS ACCEPTANCE CORP | 10/15/82 | 14.250 | 8,500,000.00 | 8,481,687.28 | 8,4499,370.00 |
| GENERAL MOTORS ACCEPTANCE CORP | 4/19/83 | 14.250 | 7,750,000.00 | 7.719.903.32 | 7,660,410.00 |
| HOUSEHOLD FINANCE CORP | 1/01/89 | 4.750 | 2,500,000.00 | 2,500,000.00 | 1,458,500.00 |
| HOUSEHOLD FINANCE CORP | 7/01/91 | 4.500 | 16.212,000.00 | 13,568,090.15 | 7,619,640.00 |
| HOUSEHOLD FINANCE CORP | 9/15/93 | 4.875 | 26,909,000.00 | 20,555,352.89 | 11.839,960.00 |


| DESCRIPTION | MATURITY DATE | INTRST RATE | PAR <br> VALUE | Book value | market VALUE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CORPORATE - FINANCIAL |  |  |  |  |  |
| HOUSEHOLD FINANCE CORP | 10/01/97 | 7.500 | $6,300,000.00$ | 4,339.225.96 | 3,583,125.00 |
| HOUSEHOLD FINANCE CORP | 10/01/86 | 7.850 | 4,440,000.00 | 3,558,731.12 | 3,352,200.00 |
| I T T FINANCIAL CORF | 6/15/03 | 8.875 | 14,200,000.00 | 10,288.411.00 | 10,827,500.00 |
| MFGRS \& TRADERS TRUST CO | 6/01/90 | 4.750 | 1.100.000.00 | 900.824.66 | 706.750.00 |
| MARINE MIDLAND BANKS INC | 4/01/94 | 8.125 | 1,000,000.00 | 997.669.47 | $510,000.00$ |
| MARINE MIDLAND BANKS INC | 3/01/03 | 7.625 | 900,000.00 | 803.250.71 | $432,000.00$ |
| MARINE MIDLAND CORP | 7/15/89 | 5.000 | 12,500,000.00 | 10,405,623.31 | 6,625,000.00 |
| J P MORGAN 8 CO CONV. | 11/01/98 | 4.750 | 2,000,000.00 | 1.474.643.31 | 1.260 .000 .00 |
| NORTHWEST BANCORP | 10/15/90 | 5.125 | 5,000,000.00 | 4.626.521.98 | 2,650.000.00 |
| $\checkmark$ C PENNEY FINANCIAL CORP | 9/15/91 | 7.875 | 3.093.000.00 | 2,209.710.01 | 1,987,252.50 |
| $J$ C PENNEY FINANCIAL CORP | 10/15/94 | 10.200 | 2,300,000.00 | 1,730,304.39 | 1,569,750.00 |
| the phila nat ional bank | 3/01/92 | 5.500 | 4.000 .000 .00 | 3,347,131.83 | 2.720,000.00 |
| TENNESSEE VALLEY BANCORP INC | 1/01/99 | 8.500 | 2,000,000.00 | 1,993.399.15 | 1,880,000.00 |
| TRANSAMERICA FINANCIAL CORP | 3/01/99 | 9.875 | $6.000,000.00$ | 4,488,121.66 | $4,020,000.00$ |
| UNITED CALIF BANK CAP NOTES | 1/15/90 | 4.500 | 3,000,000.00 | 2,875,012.34 | 2.006.250.00 |
| UNITED VA BANKSHARES | 9/15/97 | 7.750 | 500,000.00 | 436.407 .06 | 272,500.00 |
| WELLS FARGO \& CO | 1/15/83 | 11.550 | 15,000,000.00 | 15,000,000.00 | 14,718,750.00 |
| TOTAL CORPORATE - FINANCIAL |  |  | 585,655,000.00 | $462,475,100.98$ | 351,237,373.75 |
| CCRPORATE - INDUSTRIAL |  |  |  |  |  |
| ALLIED CHEMICAL CORP | 11/01/91 | 5.200 | 17,500,000.00 | 15,469,372.84 | 11,637,500.00 |
| ALUMINUM CO OF AMERICA | 5/15/00 | 9.450 | 6,000,000.00 | 4, 353,832.57 | 3,840,000.00 |
| ALUMINUM CO OF AMERICA | 11/15/96 | 7.000 | 46,924,000.00 | 26,144.494.42 | 25,808.200.00 |
| american can co | 7/15/97 | 6.000 | 4,000,000.00 | 3,543,648.05 | 1,865,000.00 |
| AMERICAN CYANAMID | 4/15/01 | 7.375 | 5,251,000.00 | 3.430,370.81 | 2.678.010.00 |
| AMERICAN MEDICAL INTL CONV | 11/15/01 | 9.500 | 7,000,000.00 | 6,852,314.73 | 6.125 .000 .00 |
| ANHEUSER BUSCH INC | 2/01/99 | 7.950 | 8,000,000.00 | 5,521,836.19 | 4.240 .000 .00 |
| ANHEUSER-BUSCH INC | 4/01/05 | 9.200 | 5,000,000.00 | 3,221,095.47 | 3.150 .000 .00 |
| ARMCO STEEL CORP | 7/15/92 | 5.900 | 10,375,000.00 | 9,719.963.29 | 6,691.875.00 |
| ARMCO STEEL CORP | 9/01/01 | 8.500 | 5,750,000.00 | 5,659,632.56 | 3,392,500.00 |
| ATLANTIC RICHFIELD CO | 5/15/97 | 5.625 | 16,966,000.00 | 15,039.642.26 | 7.974.020.00 |
| ATLANTIC RICHFIELD CO | 12/01/91 | 7.000 | 18,000,000.00 | 11,798,913.63 | 10.912.500.00 |
| BETHLEHEM STEEL CORF | 1/01/90 | 4.500 | 14,270,000.00 | 12,400,055.67 | 7.242,025.00 |
| BETHLEHEM STEEL CORP | 1/15/92 | 5.400 | 31,142,000.00 | 28,215,508.64 | 16,505,260.00 |


| DESCRIPTION | MATURITY DATE | INTRST RATE | PAR VALUE | b00k VALUE | market value |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CCRPORATE - INDUSTRIAL |  |  |  |  |  |
| big three industries conv | 4/15/06 | 8.500 | 5,500,000.00 | 4,207.842.06 | 3.740,000.00 |
| BROWN GROUP INC | 1/15/98 | 7.375 | 4.150,000.00 | 4,110,786.43 | 2.080,187.50 |
| CATERPILLAR TRACTOR CO CONV | 6/30/00 | 5.500 | 1,500,000.00 | 1,500,000.00 | 1,102,500.30 |
| Cities service co | 11/01/97 | 6.125 | 6.741,000.00 | 6,120,230.34 | 3,648,566.25 |
| CIties service co | 8/01/99 | 6.625 | 24,418,000.00 | 18,300,190.70 | 12,941,540.00 |
| CYPRUS MINES CORP | 4/15/01 | 8.500 | 14.100,000.00 | 14.113.162.39 | 8,601,000.00 |
| DAYTON HUDSON CORP | 11/15/91 | 15.250 | 17.100,000.00 | 17,706.332.34 | 17.335,125.00 |
| DEERE \& CO | 3/01/00 | 8.450 | 12.400.000.00 | 8,881,760.13 | 6,789,000.00 |
| DEERE \& CO | 11/15/02 | 8.000 | 25,190,000.00 | 16,877,471.55 | 13,728,550.00 |
| DIAMOND SHAMR OCK | 12/15/01 | 7.700 | 11,310,000.00 | 7,014,803.34 | 5,768,100.00 |
| DOH CHEMICAL CO | 11/01/00 | 8.900 | 13.800 .000 .00 | 11,020,619.27 | 8,711,250.00 |
| DOW CHEMICAL | 7/15/02 | 7.400 | 6,000,000.00 | 3,924,729.54 | 3.067.500.00 |
| E I DUPONT DENEMOURS \& CO | 12/01/01 | 6.000 | 89,771,000.00 | 43,005,209.11 | 40,172.522.50 |
| EATCN CORP | 12/01/03 | 7.875 | 13.700,000.00 | 12,956,665.57 | 6,593,125.00 |
| PHIERO (ENGELHARD MIN \& CHEM) | 8/01/05 | 11.750 | 16.634,000.00 | 13,372.590.80 | 12,392,330.00 |
| ExxON PIPELINE Co | 10/15/00 | 8.875 | 6.000 .000 .00 | 3.864,700.32 | 3,780,000.00 |
| Exxon plpeline co | 3/01/01 | 8.250 | 17,180,000.00 | 12.395.758.93 | 10,136,200.00 |
| FORD MOTOR CO | 1/15/94 | 7.850 | 7.000,000.00 | 4,310,089.07 | 3,613,750.00 |
| FORE MOTOR CO | 8/01/04 | 9.150 | 20,000,000.00 | 19,955,830.42 | 11,000,000.00 |
| FORD MOTOR CO | 4/01/90 | 14.250 | 4,000,000.00 | 3,650,271.06 | 3,360,000.00 |
| GENERAL FOODS CORP | 6/15/01 | 6.000 | 24,800,000.00 | 12,186,321.46 | 11,253,000.00 |
| goodyear tire \& RUBBER CO | 9/15/97 | 7.350 | 6,260,000.00 | 6,167,427.66 | 3,192,600.00 |
| GULF OIL CORP | 11/15/95 | 8.500 | 8,000,000.00 | 5,263,764.21 | 5,170,000.00 |
| hanna mining co | 12/15/90 | 4.750 | 2,000.000.00 | 1,707.920.01 | 1,300,000.00 |
| HARSCO CORP | 4/01/92 | 5.500 | 6.360.000.00 | 6,027,918.94 | 4,332,750.00 |
| HUGHES TOOL CO CONV | 12/15/06 | 9.500 | 3,000,000.00 | 2,520,645.24 | 2.317.500.00 |
| INLAND STEEL CO | 4/15/99 | 8.875 | $3.500,000.00$ | 3,344,441.93 | 2,012.500.00 |
| INLAND STEEL CO | 9101/00 | 9.500 | 10,000,000.00 | 9, 957,583.64 | 5,950,000.00 |
| INTL TEL \& TEL CORP | 7/01/01 | 6.500 | 42,824,000.00 | 20,625,529.17 | 19,270,800.00 |
| K-mart corp (S S Kresge cos conv | 7/15/99 | 6.000 | 1.600,000.00 | 1,572,389.50 | $1.020,000.00$ |
| KENNECOTT COPPER COKP | 5/01/01 | 7.875 | 24,500,000.00 | 23,753,882.35 | 12,740,000.00 |
| KEYETONE INTOL INC-CONV. | 10/01/05 | 8.500 | 700.000.00 | 707.618.66 | 647.500.00 |
| LIGGETT GROUP INC | 5/01/97 | 7.600 | 20,822,000.00 | 12,425,575.30 | 12,076,760.00 |
| J R MCDERMOTT \& CO INC | 3/15/04 | 9.625 | 10,000,000.00 | 9,978,328.62 | 6.125,000.00 |




## CORPORATE - UTILITIES

----------------------------

ALABAMA POHER COMPANY
ARIZONA PUBLIC SERVICE CO
ARIZONA PUBLIC SERVICE CO ARIZONA PUBLIC SERVICE CO BROOKLYN UNION GAS CO central maine power co CENTRAL TELEPHONE COMPANY
CENTRAL TELEPHONE CO OF ILL central vermont public service CEATRAL VERMONT PUBLIC SERVICE central vermont public service CENTRAL VERMONT PUBLIC SERVICE columbia gas system inc columbia gas system inc COLLMBIA GAS SYSTEM INC COLUMBIA GAS SYSTEM INC COLUMBIA GAS SYSTEM INC COLUMBIA GAS SYSTEM INC COLUMBIA GAS SYSTEM INC collmbia gas system inc COMMONWEALTH EDISON CO CONSOLIDATED EDISON CO N Y CONSOLIDATED EDISON CO N Y CONSOLIDATED EDISON CON Y CONSOLIDATED NAT GAS CO
CONSUMERS POWER CO
CONSUMERS POWER CO IST MTG
DAYTON POWER \& LIGHT CO

| 5/01/87 | 4.625 | 1,000,000.00 | 999.598.78 | 633.750 .00 |
| :---: | :---: | :---: | :---: | :---: |
| 12/01/92 | 4.400 | 4,000,000.00 | $4,000,000.00$ | 1,769,200.00 |
| 9/01/93 | 4.500 | 2,500,000.00 | 2,500,000.00 | 1,078.500.00 |
| 8/01/90 | 4.625 | $2,000,000.00$ | 2,002,442.21 | 1.042.500.00 |
| 4/01/90 | 4.625 | 1,500,000.00 | 1,504,716.77 | 798.750.00 |
| 5/01/87 | 4.875 | 490,000.00 | 488.402 .40 | 317.275.00 |
| 10/01/97 | 7.600 | 3,000,000.00 | 3,000,000.00 | 1,597.500.00 |
| 4/01/93 | 6.750 | 2.150.000.00 | $2.150,000.00$ | 1.197.765.00 |
| 5/01/87 | 4.875 | 1,105,000.00 | 1,105,000.00 | 694,603.00 |
| 5/01/93 | 7.000 | 2.000.000.00 | 2,000,000.00 | 1.070.400.00 |
| 4/01/95 | 10.625 | 2,940,000.00 | 2,940,000.00 | 2,059,470.00 |
| 7/01/99 | 8.500 | 3,000,000.00 | 3,000,000.00 | 1,696.500.00 |
| 5/01/89 | 4.625 | 12,538,000.00 | 11,300,713.27 | 7,460.110.00 |
| 10/01/89 | 4.625 | 5,180,000.00 | 4,615,917.91 | 3.010.875.00 |
| 5/01/90 | 4.625 | 7,979,000.00 | 7,257,263.41 | 4,418,371.25 |
| 10/01/90 | 4.875 | 6,062,000.00 | 5,538,674.69 | 3,402,297.50 |
| 10/01/93 | 7.000 | 4.000 .000 .00 | 3,717,104.19 | 2,330,000.00 |
| 3/01/97 | 7.500 | 7.600,000.00 | 7,519,826.16 | 4,085.000.00 |
| 6/01/97 | 7.500 | 10,800,000.00 | 10,556,946.14 | 5,886,000.00 |
| 10/01/97 | 7.500 | 14,091,000.00 | 11,474,690.49 | 7.732.436.25 |
| 11/01/96 | 5.750 | 3,000,000.00 | 3,000,000.00 | 1,357.500.00 |
| 6/01/93 | 4.400 | 7,000,000.00 | 7.000,000.00 | 2.943.500.00 |
| 10/01/92 | 4.375 | 1,310,000.00 | 1,316,308.89 | 6129425.00 |
| 10/01/98 | 6.850 | 3,000,000.00 | 3,000,000.00 | 1,548,750.00 |
| 5/01/97 | 7.625 | 10,250,000.00 | 9,814,947.49 | 5,816.875.00 |
| 6/01/02 | 7.500 | 3,500,000.00 | 3,504,161.61 | 1,750,000.00 |
| 10/01/02 | 7.500 | 1,000,000.00 | 769,460.94 | $505,000.00$ |
| 6/01/93 | 4.450 | 4.000.000.00 | $4,000,000.00$ | 1.746.400.00 |


| CESCRIPTION | MATURITY DATE | $\begin{aligned} & \text { INTRST } \\ & \text { RATE } \end{aligned}$ | PAR value | B00K <br> VALUE | MARKET <br> VALUE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CORPORATE - UTILITIES |  |  |  |  |  |
| delmarva power and light co | 8/01/02 | 7.500 | 2,500,000.00 | 2,508.391.81 | 1.193.750.00 |
| DETROIT EDISON CO | 8/15/87 | 4.875 | 4,000,000.00 | 4,000,000.00 | 2.469.200.00 |
| detroit edison co | 10/01/98 | 6.400 | 5,000,000.00 | 4,993,275.32 | 2,175,000.00 |
| detroit ed co gen \& ref mtg bd | 1/15/03 | 7.500 | 10,000,000.00 | 10,024,403.99 | 4.650 .000 .00 |
| duke pouer company | 8/01/92 | 4.250 | 3,000,000.00 | 2.996.530.29 | 1,398,750.00 |
| EQUITABLE GAS Co | 3/01/86 | 4.625 | 2,244,000.00 | 2,244,000.00 | 1.591.893.60 |
| EQUITABLE GAS CO | 9/01/92 | 6.250 | 2.012.000.00 | 2,012,000.00 | 1,090,504.00 |
| FLCRIDA POWER \& LIGHT CO | 8/01/92 | 4.500 | 2,250,000.00 | 2,259,651.64 | 1.071.562.50 |
| GENERAL TEL \& ELEC CORP | 12/01/91 | 6.250 | 7.000 .000 .00 | 6.733.443.43 | 4.138 .750 .00 |
| GEN TEL CO CALIF 1St MTG BDS | 12/01/91 | 4.625 | 2.000,000.00 | 1,563,811.17 | 985,000.00 |
| GEN TEL CO CALIF IST MTG BDS | 6/01/94 | 4.500 | 2,260,000.00 | 1,791,817.27 | 997.225.00 |
| GEN TEL CO CALIF IST MTG bDS | 3/01/95 | 4.500 | 5,435,000.00 | 4,636,229.11 | 2,343,843.75 |
| GEN TEL CO CALIF IST MTG BDS | 12/01/95 | 5.000 | 2,000,000.00 | 1.603,539.68 | 885,000.00 |
| GEN TEL CO CALIF IST MTG bDS | 12/01/97 | 6.750 | 4.750 .000 .00 | 4,033,615.64 | 2,404,687.50 |
| gen tel co calif ist mig bds | 12/01/01 | 7.625 | 2,200,000.00 | 1,854.380.63 | 1,100,000.00 |
| GENERAL TELEPHONE KENTUCKY | 10/01/89 | 5.250 | 1,600,000.00 | 1,600,000.00 | 917.760.00 |
| GENERAL TELEPHONE CO MICHIGAN | 3/01/88 | 4.250 | 1,000,000.00 | 1,000,000.00 | 592,000.00 |
| general telephone co michigan | 11/01/95 | 4.875 | 2,000,000.00 | 2,000,000.00 | 830.600 .00 |
| General telephone co michigan | 12/01/89 | 5.375 | 1.500.000.00 | 1,500,000.00 | 854.850 .00 |
| general telephone co michigan | 12/01/90 | 5.125 | 1,720,000.00 | 1,720,000.00 | 909.192 .00 |
| general telephone co michigan | 3/01/97 | 5.500 | 2.000,000.00 | 1,992.566.93 | 869.000.00 |
| general tel of the northuest | 9/01/98 | 6.250 | 3.000 .000 .00 | 2,989,224.06 | 1,393,200.00 |
| GENERAL TEL CO OF OHIO | 10/01/89 | 5.250 | 1,550,000.00 | 1,550,000.00 | 883.190 .00 |
| GENERAL TEL CO OF OHIO | 10/01/93 | 4.750 | 2,000,000.00 | 1,987.704.45 | 1.003.000.00 |
| general telephone co of pa | 7/01/96 | 5.625 | 1,100,000.00 | 1,100,000.00 | 494,450.00 |
| gen tel co of the southeest | 3/01/92 | 4.875 | 2,250,000.00 | 2,250,044.88 | 1.088.325.00 |
| GEN TEL CO OF THE SOUTHWEST | 1/01/91 | 5.125 | 2,250,000.00 | 2,250,037.49 | 1.184 .400 .00 |
| GEORGIA POWER COMPANY | 7/01/02 | 7.500 | 3,500,000.00 | 3,473,745.44 | 1.723.750.00 |
| GEORGIA POWER COMPANY | 12/01/02 | 7.500 | 5,000,000.00 | 4,928.295.80 | 2,318.750.00 |
| HARTFORD ELECTRIC LIGHT CO | 6/01/02 | 7.500 | 2,500,000.00 | 2,487,721.05 | 1,259,375.00 |
| INDIANA GAS CO | 10/01/86 | 5.125 | 1,500,000.00 | 1,500,000.00 | 1,075.800.00 |
| IOWA ELEC LIGHT \& POWER | 1/01/91 | 5.125 | 2.000.000.00 | 2,000,000.00 | 1,052,800.00 |
| LONG ISLAND LIGHTING CO | 4/01/93 | 4.400 | $3,000,000.00$ | 3,000,000.00 | 1,282,500.00 |
| LONG ISLANO LIGHTING CO | 9/01/02 | 7.625 | 3.000 .000 .00 | 3,006,655.52 | 1.522.500.00 |
| MASS ELECTRIC CO (WORCHESTER) | 9/01/92 | 4.375 | $3,000,000.00$ | 3,007,763.64 | 1,410,000.00 |


| OESCRIPTION | MATURITY DATE | INTRST RATE | PAR VALUE | BOOK value | MARKET <br> VALUE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CCRPORATE - UTILITIES |  |  |  |  |  |
| MICH CNSLD GAS Co | 3/15/88 | 4.500 | 6,082,000.00 | 5,313.747.35 | 3,846,865.00 |
| MICH CNSLD GAS CO | 7/15/98 | 8.125 | $4,500,000.00$ | 4.364.327.90 | 2.475.000.00 |
| missouri public service co | 3/15/97 | 6.000 | $3,000,000.00$ | 3,000,000.00 | 1,341,600.00 |
| MISSOURI PUBL IC SERVICE CO | 4/15/84 | 8.000 | 4,000,000.00 | 4,000,000.00 | 3,491,200.00 |
| PACIFIC POWER \& LIGHT CO | 9/01/90 | 5.125 | 2,500,000.00 | 2,504.776.61 | 1,371,875.00 |
| PACIFIC TEL 8 tel co ueb | 11/01/90 | 4.625 | 1,576,000.00 | 1,305,424.44 | $831,340.00$ |
| PaCific tel \& tel co | 8/15/91 | 3.625 | 1,000,000.00 | 1,006,573.70 | $470,000.00$ |
| Pacific tel \& tel co | 4/01/99 | 4.625 | 1,700,000.00 | 1,126,040.20 | 697.000.00 |
| PACIfIC TEL \& TEL CO | 5/01/00 | 4.625 | 26,652,000.00 | 19,255,116.14 | 10,860,690.00 |
| PENNSYLVANIA ELECTRIC CO | 9/01/90 | 5.000 | 1,999,000.00 | 2,013,360.73 | 1.046,976.25 |
| Penna poler and light co | 3/01/94 | 4.625 | $4,000,000.00$ | 4,015,796.76 | 1.714,000.00 |
| PHILA ELECTRIC co | 10/01/96 | 8.000 | 4,885,450.00 | 4,885,450.00 | 3.092.489.85 |
| Phila electric co | 1/15/99 | 7.500 | 7,000,000.00 | 7,000,000.00 | 3,316,250.00 |
| PHILA SUBURBAN HATER CO | 9/01/89 | 5.000 | 1,700,000.00 | 1,700,000.00 | 968.150.00 |
| PORTLAND GENERAL ELECTRIC CO | 2/01/93 | 4.625 | 823,000.00 | 823.000 .00 | 352,490.90 |
| PORTLAND GENERAL ELECTRIC CO | 6/01/93 | 4.750 | 1,649,000.00 | 1,649,000.00 | 705,277.30 |
| PORTLAND GENERAL ELECTRIC co | 4/01/94 | 4.750 | 1,253,000.00 | 1,253,000.00 | 515,985.40 |
| PORTLAND GENERAL ELECTRIC CO | 11/01/91 | 5.125 | 2,434,000.00 | 2,426.365.28 | 1,172,214.40 |
| PORTLAND GENERAL ELECTRIC CO | 6/01/90 | 5.250 | 1,320,000.00 | 1,320,000.00 | 695,112.00 |
| POTOMAC ELECT POWER CO | 6/01/91 | 3.625 | 1,000,000.00 | 1,002,800.10 | $470,000.00$ |
| PUBLIC SERVICE CO OF COLORADO | 3/01/92 | 4.625 | 2,250,000.00 | 2.250,000.00 | 1,068.975.00 |
| PUBLIC SERVICE ELEC 8 gas co | 6/01/93 | 4.375 | 1,250,000.00 | 1,042,754.75 | 579,687.50 |
| PUELIC SERVICE ELEC \& GAS CO | 8/15/96 | 7.750 | 6,409,000.00 | 6,220,102.28 | 3,605,062.50 |
| SAN JOSE UATER WORKS | 11/01/90 | 5.000 | 1,500,000.00 | 1,500,000.00 | 759,750.00 |
| SOUTH CAROLINA ELEC \& GAS CO | 6/01/91 | 5.000 | 2,250,000.00 | 2,250,000.00 | 1,145,025.00 |
| SOUTHERN CALIFORNIA GAS CO | 5/01/96 | 8.750 | 3,293,000.00 | 3,225,796.03 | 2,161,031.25 |
| Southuestern bell tel co | 8/01/97 | 4.500 | 3,750,000.00 | 3,764.492.99 | 1.551,562.50 |
| tucson gas and elec co | 2/01/95 | 4.550 | 2,000,000.00 | 2,000,000.00 | 802.600 .00 |
| UNITED GAS IMPROVEMENT CO | 7/01/88 | 4.500 | 2,749,000.00 | 2,749,000.00 | 1,613,113.20 |
| UNITED GAS IMPR OVEMENT CO | 5/15/90 | 4.750 | 1,000,000.00 | 1,007,011.35 | 561.500 .00 |
| UNITED TEL CO FLORIDA | 11/01/99 | 9.250 | 3,520,000.00 | 3,520,000.00 | 2.205.984.00 |
| UNITED TEL CO INDIANA | 9/01/90 | 5.000 | 790,000.00 | 790,000.00 | $418,700.00$ |
| UNITED TEL CO PENNA | 12/01/85 | 3.600 | 518,000.00 | 518,000.00 | 361,667.60 |
| UNITED TEL CO PENNA. | 6/01/89 | 5.000 | 770,000.00 | 770,000.00 | $439,593.00$ |
| UNITED TEL CO PENNA | 11/01/98 | 6.625 | 3.045,000.00 | 3,045,000.00 | 1,478,043.00 |


| CESCRIPTION | MATURITY DATE | INTRST <br> RATE | PAR value | BOOK VALUE | Market VALUE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CORPORATE - UTILITIES |  |  |  |  |  |
| WESTERN PA WATER CO - So PGH | 5/01/93 | 4.375 | 3,000,000.00 | 2,989,078.64 | 1.251.900.00 |
| WORCESTER CO ELEC - Mass ELEC | 10/01/85 | 3.375 | 80,000.00 | 80,044.30 | 57,600.00 |
| total corporate - utilities |  |  | 346,363,450.00 | 326,361,084.14 | 179,224,672.00 |

## RAILROADS

PACIFIC FRUIT EXPRESS EQUIP PENN CENTRAL CO - EQUIP TR PENN CENTRAL CO - EQUIP TR SOUTHERN RAIL WAY CO TEXAS \& NEW ORLEANS RR

TOTAL RAILROADS

| $3 / 01 / 83$ | 7.250 |
| :--- | :--- |
| $8 / 15 / 88$ | 7.500 |
| $8 / 01 / 84$ | 9.000 |
| $6 / 01 / 88$ | 4.625 |
| $4 / 01 / 90$ | 3.375 |


| 25,220.38 | 25,220.38 | 24.388.11 |
| :---: | :---: | :---: |
| 1,866.666.63 | 1,866.666.63 | 1,412,693.31 |
| 799,999.96 | 799.999.96 | 731.519.96 |
| $2,958.000 .00$ | 2,958,000.00 | 1,778.497.50 |
| 500,000.00 | 500,818.99 | 230.000 .00 |
| 6,149,886.97 | 6,150,705.96 | 4,177.098.88 |

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    PHILADELPHIA NATIONAL BANK
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Phila nat bank bldg
$10 / 01 / 00$
9.875
15.187.958.14
$15,187,958 \cdot 14$
10.250 .656 .71

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    UNIVERSITY OF PITTSBURGH
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UNIVERSITY OF PITTSBURGH

6/01/86
4.000
446.000 .00
$446 \cdot 000.00$
356.800 .00
U. S. TREASURY NOTES \& BONDS
U S TREASURY BONDS
$U S$ TREASURY BONDS
$U$ $S$ TREASURY BONDS
U $\subseteq$ TREASURY NOTES
U S TREASURY NOTES
U S TREASURY NOTES
U S TREASURY NOTES
U S TREASURY NOTES
U $s$ TREASURY NOTES
U S TREASURY NOTES

| $8 / 15 / 93$ | 8.625 | $5,950,000.00$ |
| ---: | ---: | ---: |
| $11 / 15 / 93$ | 8.625 | $33,950,000.00$ |
| $2 / 15 / 94$ | 9.000 | $5,130,000.00$ |
| $8 / 15 / 86$ | 8.000 | 9.750 .000 .00 |
| $5 / 15 / 88$ | 8.250 | $4,886,000.00$ |
| $5 / 15 / 85$ | 14.375 | $4,600,000.00$ |
| $11 / 15 / 85$ | 11.750 | $44,285.000 .00$ |
| $9 / 30 / 82$ | 11.875 | $8,550.000 .00$ |
| $9 / 30 / 84$ | 12.125 | $15.000,000.00$ |
| $10 / 31 / 82$ | 12.125 | $10,000,000.00$ |


| 4.489,245.34 | 4.120 .375 .00 |
| :---: | :---: |
| 26.612.103.63 | 23.425.500.00 |
| 4,000.744.63 | 3.635 .887 .50 |
| 8,252,037.70 | 7,806,093.75 |
| 3,795,246.71 | 3.716.413.75 |
| 4.600 .000 .00 | 4.559 .750 .00 |
| 44.135 .940 .44 | 40.769 .878 .13 |
| 8.533.436.83 | 8.501.906.25 |
| 15,005.273.42 | 14.231.250.00 |
| 9,996,474.31 | 9.925.000.00 |



；TREASURY BILLS
12.4600
13
13.3000
U S TREASURY EILLS

TOTAL

07／01／82
07／01／82 07／15／82 07／15／82 07／15／82 08／05／82 08／05／82 08／26／日2 09／02／日2 09／09／82 09／15／82 $09 / 16 / 82$ 09／23／日2
$6,825,000.00$
$60,000.00$
$2,860,000.00$
$5,000,000.00$
$5,000,000,00$
$18,280,000.00$
$5,000,000.00$
$10,000,000.00$
$10,000,000.00$
$5,000,000.00$
$5,000,000.00$
$10,275,000.00$
$10,000,000.00$

6．653，017．59 77.290 .00 2．769．551．71 4．841．768．06 4．945．423．61 18，010，301．45
4．844，521．63
9．700．858． 34
9．765．340．29
9．765．340．28 4．844，402．78
$4,863,032,64$
$9,993,532.08$
9．678．700．00

167．716．79 2.660 .00 77，042．04 134.794 .44 31．138．89 55，479．80 96，884．62 108，516．66 17.472 .22 17．472．22 23．936． 11 3．721．83 $3,721.83$
$21,300.00$
$90.987,740.17$
13.7500 REFURCHASE AGREEMENT
13.7500 REPURCHASE AGREEMENT
12.6500 REPURCHASE AGREEMENT
12.0000 REPO OPEN END
14.1250 REPURCHASE AGREEMENT
13.7500 REPURCHASE AGFEEMENT
14.1000 REFURCHASE AGREEMENT
14.0000 REFURCHASE AGREEMENT
12.5700 REFURCHASE AGREEMENT
14.0500 REPURCHASE AGREEMENT
14.0000 REPURCHASE AGREEMENT
$13.6250 ~ R E P U R C H A S E ~ A G R E E M E N T ~$
$13.2000 ~ R E P U R C H A S E ~ A G R E E M E N T ~$

| $07 / 01 / 82$ | $5,000,000.00$ | $5,000,000.00$ |
| :--- | ---: | ---: |
| $07 / 01 / 82$ | $5,870,000.00$ | $5,970,000.00$ |
| $07 / 02 / 82$ | $11,000,000.00$ | $11,000,000.00$ |
| $07 / 06 / 82$ | $3,038,000.00$ | $3,039,000.00$ |
| $07 / 06 / 82$ | $4,900,000.00$ | $4,900,000.00$ |
| $07 / 07 / 82$ | $6,460,000.00$ | $6,460,000.00$ |
| $07 / 07 / 82$ | $5,000,000.00$ | $5,000,000.00$ |
| $07 / 07 / 82$ | $4,935,000.00$ | $4,935,000.00$ |
| $07 / 08 / 82$ | $11,000,000.00$ | $11,000,000.00$ |
| $07 / 08 / 82$ | $9,850,000.00$ | $9,850,000.00$ |
| $07 / 12 / 82$ | $4,850,000.00$ | $4,850,000.00$ |
| $07 / 12 / 82$ | $4,887,500.00$ | $4,887,500.00$ |
| $07 / 13 / 82$ | $10,000,000.00$ | $10,000,000.00$ |
| $07 / 13 / 82$ | $8,360,000.00$ | $8,360,000.00$ |

$5,870,000.00$
11．000．000．00＊
3．038．000．00＊
4．900．000．00＊
$6,460,000.00$ $5,000,000,00$ 4，035，000．00 11.000 .000 .00 0．850．000．00＊ 9，850，000．00＊
4，850，000，00＊ 4．887．500．00＊ 0．000．000．00 8，360，000．00＊
110.763 .89 136．762．85 127．554．17

107．663．89 152.976 .39 162.541 .67 162.541 .67 126.747 .50 1215．277． 215， 143.344 .44
$92,489.15$
156.459 .72
＊Intucates no market value availarle issue priceli at cost．

| FACE RATE | SECURITY <br> DESCRTPTION | MATURITY LIATE | F＇AR UALUE | PRINCIPAL COST | MARKET UALUE | ACCRIJED <br> INTEREST |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |

## ：TERM REFO＇S

 13．3000 REPURCHASE AGREEMENT

## TOTAL

07／14／82 07／15／82 $07 / 15 / 82$ $07 / 15 / 82$ $07 / 15 / 82$ 07／16／82 0719182 07／20／B2 07／20／82 07／20／82 07ノ21／82 07／22／82 07／23／82 07／26／82 07／27／82 $07 / 27 / 82$ 07／29／82 07／30／82 08／03／82 08／06／82 08／10／92 08／11／82 $08 / 17 / 82$ 0B／20／82

11，450，000．00 5，025，000．00 3，993，750．00 4．912．500．00 5，850，000．00 $10,000,000.00$ 10.000 .000 .00 ． 7.00 .000 .00 9，775，000．00 11．850，000．00 $12,000,000.00$ $10,000,000.00$ $11,000,000.00$ $10,000,000.00$ $10,000,000.00$ $14,450,000.00$ $10,000,000.00$ $13,800,000.00$ $17,000,000.00$ 5，000．000．00 $13.950,000.00$ 20．000．000．00 12．775，000．00 10，000，000．00 $10,000,000,00$ $9,000,000.00$
$11.450,000.00$
5．025，000．00 3．993．750．00 4．912．500．00 5，850，000．00 $10,000,000,00$ $7,000,000.00$ 9．775．000．00 $11,850,000.00$ $12,000,000.00$ 10.000 .000 .00 $11,000,000.00$ $10,000.000 .00$ $10,000,000.00$ $14,450,000.00$ $10,000,000.00$ $13,800,000.00$ 17．000．000．00 $5,000 \cdot 000.00$ $13.950,000.00$ 20；000，000．00 12.775 .000 .00 $10,000,000.00$ $10,000,000.00$
$9,000,000.00$
$353.981,750.00$
$353,981,750.00$
$5,000.000 .00 \quad 4.827 .208 .33$ $5,000,000,00$
4.873 .611 .11

11，450，000．00＊ 5．025，000．00＊ 3．993，750．00＊ 4，912，500．00＊ 5，850，000．00＊ $10,000,000.00$＊ 7，000，000．00＊ 9．775．000．00＊ 11．850，000．00＊ $12,000,000.00 *$ 10．000．000．00＊ 11，000．000．00＊ 10，000，000．00＊ $10,000,000,00 *$ $14,450,000.00 \%$ 10，000，000．00＊ 13，800，000．00＊ 17，000，000．00＊ 5，000，000．00＊ 13．950．000．00＊ 20，000，000．00＊ 12，775，000．00東 10，000，000．00＊ 10，000，000．00＊ 9，000，000．00

132．247．50
151，008．23 98.335 .00 138.778 .13 175．175．00

87．111．11 92，129．38 113.760 .00 $119,000.00$ 96，000．00 127．352．50 7.944 .44 77.000 .00 99.676 .90 7．816．67 100．816．6 77．208．33 34．490．28 112，103．75 104．377．78 65.578 .33 3．905．56 97.500 .00 43.225 .00

3．798．756．45
353，981，750．00

1 COMMERICAL FAF＇ER
14．3000 CF－CONT ILLINOIS COR 07／01／82
$170,805.56$
4．827．180．55
4，873．541．66 124 ．444．45
＊INLICATES NO MARKET VALUE AVAILAELE．ISSIJE FRICEII AT COST．

: COMMERICAL PAFER

| 00 | CF |  | BANKERS TRUST | 07/01/82 |
| :---: | :---: | :---: | :---: | :---: |
| 13.9500 | CP |  | BANKERS TRUST | 07/01/82 |
| 14.1500 | CP |  | CROCKER NATIONAL | 07/01/82 |
| 14.0000 | CP |  | FHH | 07/02/82 |
| 14.0000 | CP |  | MANUILLEE | 07/02/82 |
| 14.0000 | CP |  | CHEMICAL | 07/06/82 |
| 13.9000 | CF |  | MARYLAND | 07/06/82 |
| 14.2500 | CP |  | CONT ILLINOIS COR | 07/06/82 |
| 13.9000 | CP |  | MAKSH | 07/06/82 |
| 13.3000 | CP |  | FRUD FUNL | 07/07/82 |
| 14.2500 | CP |  | CONT ILLINOIS COR | 07/08/82 |
| 14.0000 | CP |  | LIEERE | 07/08/82 |
| 14.0000 | CP |  | MANUFAC HANQUER | 07/09/82 |
| 14.0500 | CP | $-$ | ST LUCIE | 07/09/82 |
| 13.6250 | CP | - | FS CHICAGO | 07/09/82 |
| 14.2500 | CP | - | MUT EEN LIFE | 07109/82 |
| 13.9000 | CP | - | FHIERO | 07/09/82 |
| 13.7500 | CP |  | MD NAT CORP | 07/12/82 |
| 13.7500 | CP | - | MARYLAND | 07/12/82 |
| 13.7500 | CF |  | NAT CITY CEEIIIT | 07/12/82 |
| 13.7500 | CF | - | PHH | 07/12/82 |
| 13.7500 | CP | - | BURROLIGH | 07/13/82 |
| 14.8750 | $C^{\text {P }}$ | - | AUCD | 07/14/82 |
| 13.2700 | CP | ~ | MT STATES | 07/16/82 |
| 15.1900 | CP | - | CITICORF UARIABLE | 07/19/82 |
| 14.3500 | CP | - | WELLS FARGO \& CO | 07/20/82 |
| 14.7500 | CF | - | FEP OF TEXAS | 07/21/82 |
| 13.4000 | CP | - | WELLS FAFGO | 07/21/82 |
| 13.5500 | $C P$ | - | SLIFERIOR OIL | 07/22/82 |
| 13.3750 | CP | - | BANK OF AMERICA | 07/23/82 |
| 13.7500 | CP | $\sim$ | CHASE MAN | 07/26/82 |
| 14.5500 | CP | - | EMHART | 07/26/82 |
| 13.3750 | CP' | - | GEN ELIEC CF CORF | 07/28/82 |
| 14.5500 | $C^{P}$ |  | WESTINGHOUSE | 07/30/B |

7,000,000.00 3,000:000.00 5,000,000.00 10.000.000.0 $10,000,000.00$ $2,000,000.00$ $5,000,000.00$ 4.900.000.00 4,880.000.00 $10,127.209 .00$ $5,000,000.00$ 4,440,000.00 8,000,000.00 4,000,000.00 5,000,000.00 1,000,000.00 3,000,000.00 3,000,000.00 2,000,000.00 5,000,000,00 200,000.00 10,000,000.00 $5,234,606.57$ $13,000,000,00$ 20.253.166.67 6,000,000.00 10.075.000.00 7,350.000.00 $5,133,000.00$ 11,525,000.00 4,000,000.00 $10,100,000,00$ $14,232,664.53$ 10,000,000.00
2.9113.625.00
$2,918.625 .00$ $4,878,152.78$
$4,8185,277.78$ 4,770.555.56 $9,770.555 .56$
$1,953.333 .33$ 4,878,375.00 4,721,5513.33 4.761.294.00 10,000,000.00 4,817.916.67 4.331,220.00 7.779.111.11

3,901,650.00
4,888,350.69
974.666.67 2,927.025.00 2,927,912.50 1.951.875.00

4, B83.506.95 194,958.33 9,755,555.56 5,200,000.00 $12,817,906.11$ $20,000,000.00$ 5.827.800.00 9.988.313.02 9.196.867.78 4,999,691.71 11.525.000.00 3.885,416.67 9.993.965.93 14,000,000.00 9.870.666.67

| FACE RATE | SECURITY <br> DESCRIPTION | MATURITY TATE | FAR | PRINCIPAL COST | MARKET | ACCRUED |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | DESCRIPTION | IATE |  | COST | VALUE | INTEREST |

: COMMERICAL PAFER

| 14.7000 | CP | - | JP MORGAN | 07/30/82 |
| :---: | :---: | :---: | :---: | :---: |
| 13.7500 | CP | - | GEN ELECT CREDIT | 07/30/82 |
| 13.2500 | CP | - | SEARS ROEEUCK | 08/02/82 |
| 14.7500 | CP | - | FNE | 08/03/82 |
| 13.3750 | CP | - | TIMES MIRROR | 08/03/82 |
| 14.0000 | CP | - | PRUDENTIAL FUNDIN | 08/04/82 |
| 13.3750 | CP | - | AMERICAN BRANDS | 08/04/82 |
| 14,3750 | CP | - | ITT | 08/05/82 |
| 13.4000 | CP | - | GANNETT | 08/09/82 |
| 14.5500 | CP | - | LEVI STRAUSS | 08/11/82 |
| 14.2000 | CP | - | WESTINGHDUSE | 08/12/82 |
| 13.5500 | CP | - | BANK OF AMERICA | 08/12/82 |
| 14.0000 | CP | - | PACIFIC GAS | 08/12/82 |
| 13.9000 | CP | - | WESTINGHOLSE | 08/13/82 |
| 14.1250 | CP | - | BANKERS LIFE | 08/16/82 |
| 14.5000 | CP | - | BANKAMERICA CORP | 08/20/82 |
| 13.4500 | CP | - | FLUAR | 09/07/82 |
| 14.3500 | CP | - | CONT GROUP | 09/08/82 |
| 15.0000 | CP | - | PNS | 09109/82 |
| 15,0000 | CP | - | PNE | 09/09/82 |
| 14.6000 | CP | - | DUFONT | 09/10/82 |
| 13.8100 | CP | - | FLUDR | 09/13/82 |
| 14.6500 | CP | - | MERRILL LYNCH | 09/17/82 |
| 14.7000 | CP | - | BANKERS TRUST | 09/20/82 |

TOTAL

| 14.1000 | CD | - | PHILA NAT EANK | 07/02/82 | 4,835:000.00 | 4,835,000.00 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 14.6500 | CI | - | GIFARD EANK | 07/07/82 | 5,000,000.00 | 5,000.000.00 |
| 14.0000 | CD |  | CONT EANK | 07/13/82 | 175,000.00 | 175,000.00 |
| 13.9500 | CD |  | PNE | $07 / 16 / 92$ | $5.000,000,00$ | 5,000,000.00 |

$$
\begin{array}{rr}
10,000,000.00 & 9,857,083.33 \\
17,257,058.26 & 17,000,000.00 \\
14,740,847.08 & 14,475,000.00 \\
10,150,000.00 & 10,004,446.18 \\
5,100,000.00 & 4,999,576.04 \\
15,731,955.27 & 15,475,000.00 \\
10,204,000.00 & 9,999,282.25 \\
10,000,000.00 & 10,000,000.00 \\
22,900,000.00 & 22,431,186.11 \\
8,300,000.00 & 8,159,107.50 \\
12,770,000.00 & 12,523,184.29 \\
5,000,000.00 & 4,830,625.00 \\
9,700,000.00 & 9,488,755.56 \\
14,695,043.82 & 14,400,000.00 \\
10,216,000.00 & 9,999,548.50 \\
7,161,532.31 & 7,000,000.00 \\
5,000,000.00 & 4,831,875.00 \\
10,316,000.00 & 9,999,370.44 \\
3,092,783.51 & 3,000,000.00 \\
10,721,649.49 & 10,400,000.00 \\
12,392,000.00 & 11,999,999.73 \\
12,425,000.00 & 12,000,793.24 \\
10,362,664.39 & 10,000,000.00 \\
3,900,000.00 & 3,756,675.00
\end{array}
$$

$488,587,180.90$
$478 \cdot 550 \cdot 1342 \cdot 32$
: NEGOTIABLE CERT OF LEFOSIT
4.834.666.98
$4,999.169 .56$
174.919.91
$4.997,079.05$
20.416 .67 59,321.14 86.807.21 4,158.6 36,001.04 42.825.88 72,030.32
127.858.33
30.222.33
88.451. 39 49.038.89 45.391.36 28,058.53 14.422.53 39.229.17 28,784.51 1.288.66 4.467 .35 30.153.87 66,729.15 29.519.19 12.740 .00
$4 \cdot 240 \cdot 280.51$
$478,136 \cdot 340.91$
9, 858,750.00 16.989 .214 .33 $14,458,109,44$ 10,006.842.71 4,994,157.29 $15.467,352.52$ 9.988.121.63 9.855,000.00 22.403.197.23 8,159,591.67 12.518.608.36 4,824.951.39 9.482.962.50 $14,389 \cdot 223.63$ 9,994,546.92 6.999.999.97 $4.821,812.50$ 9,996,361.60 $3,003,049.83$ 10.410.572.75 12.002.478.13
11.982 .932 .31 0.003.410.98 $3.758,451.67$
$109,835.08$
$168,881.94$ 3.198.61

91,062.50

: NEODTIABLE CERT OF DEPOSIT

## $13.6000 \mathrm{CD}-\mathrm{PNB}$ 13.6500 CD MELLON BANK

## TOTAL

08/05/日2 9,000,000.00 9,000,000.00
08/06/82 13,800,000.00 13.800,000.00
37.810 .000 .00
$37,810,000.00$
973.698.930.90
$961 \cdot 285 \cdot 102.22$

| $8.986,430.53$ | 78.200 .00 |
| ---: | ---: |
| 13.779 .554 .29 | 104.650 .00 |
|  | 555.828 .13 |
|  |  |

960.877.651.40

- INDICATES NO MARKET VALUE AUAILABLE. ISSUE FRICED AT COST.


View of the State Capitol Rotunda Dome
Harrisburg, Pennsylvania

