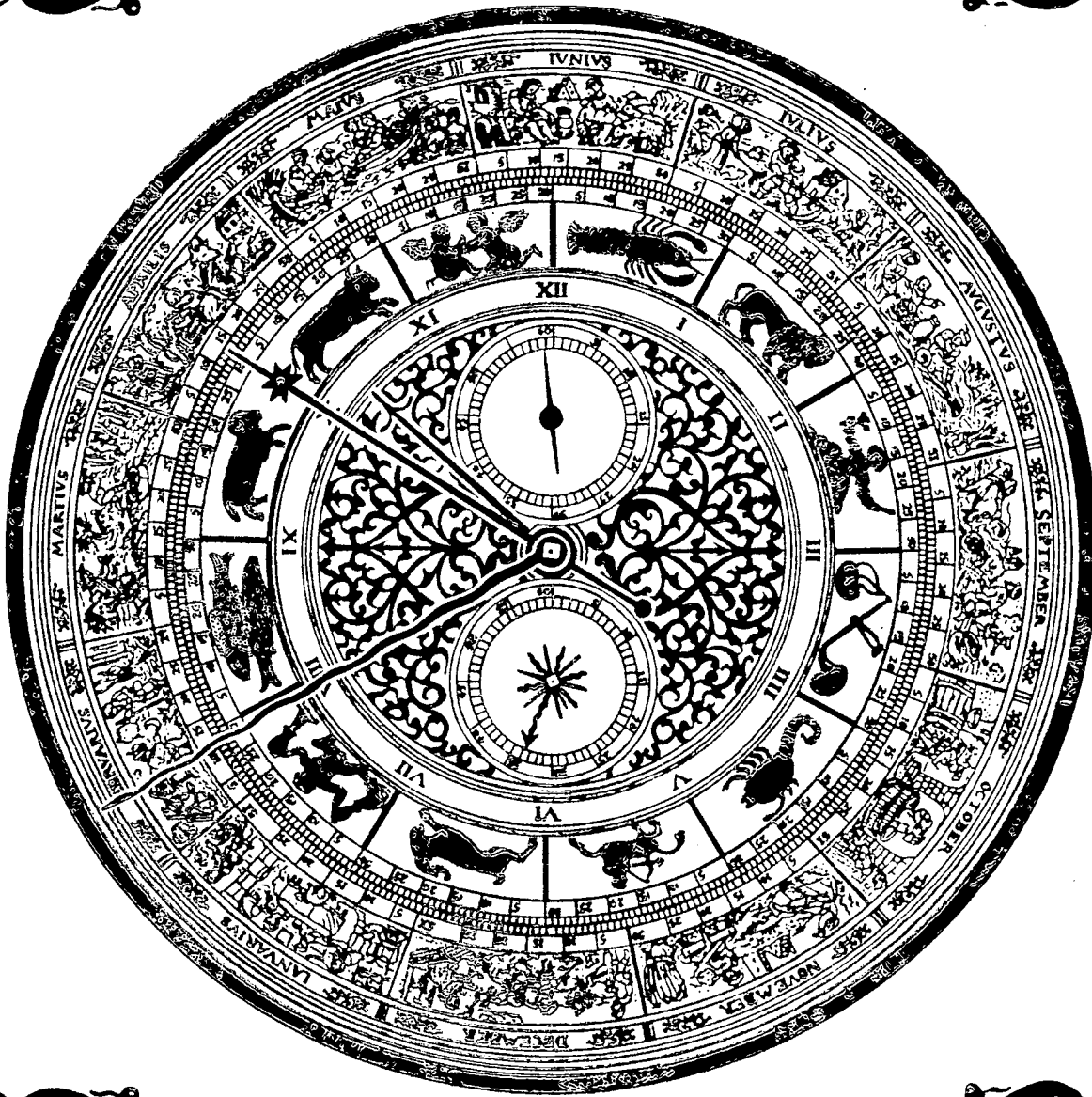
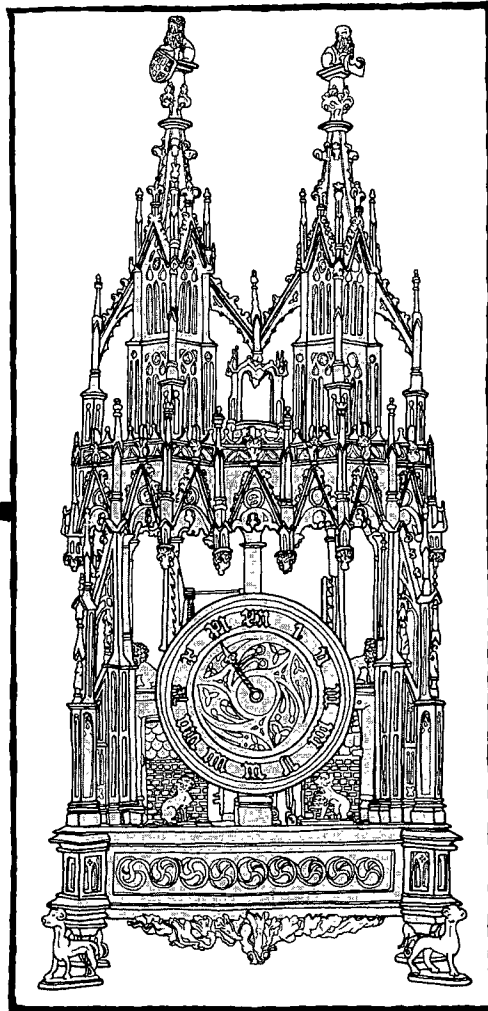


Annual Report 1980



The Depository Trust Company



The ability of Depository Trust to conduct its activities rests largely on modern computer technology, reflecting a long chain of developments in several disciplines.

Automated calculating and recordkeeping are the essence of DTC's book-entry capability. Telecommunications devices facilitate the flow of information among Participants, transfer agents, and others throughout the financial community. The ability to utilize minute intervals of time permits computers to operate in billionths of a second.

The illustrations in this report depict historical developments in each of these disciplines.

The graphic theme and appearance of this Annual Report were conceived by David S. Jobrack, Executive Assistant to the Chairman, who also acted as Creative Director throughout the production process, and wrote, edited and/or compiled the text, illustrations and captions.

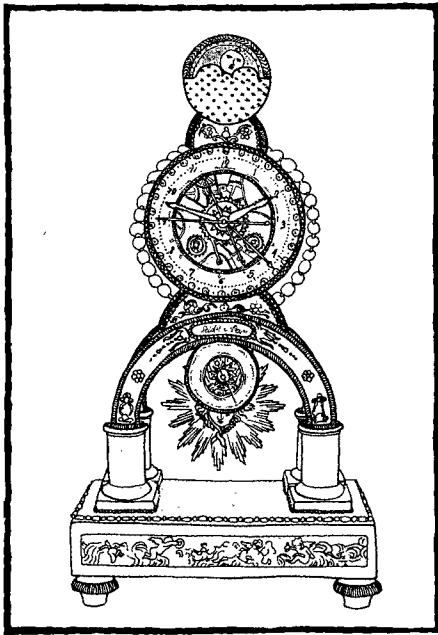
1980 Annual Report

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Highlights

At the End of the Year:	1980	1979
Participants	333	316
Broker-Dealers	249	236
Banks	78	74
Clearing Agencies	6	6
Pledges	98	101
Depository Facilities	34	33
Eligible Security Issues	14,233	13,232
	(In Billions)	
Value of Securities on Deposit	\$493	\$305
Bank Deposits	\$358	\$214
Broker-Dealer Deposits	\$135	\$ 91
Number of Shares on Deposit	13.7	9.7
Bank Deposits	7.7	5.3
Broker-Dealer Deposits	6.0	4.4
Principal Amount of Debt Securities on Deposit	\$68.7	\$41.0
Bank Deposits	\$60.0	\$33.0
Broker-Dealer Deposits	\$ 8.7	\$ 8.0
Value of Securities Pledged for Collateral Loans	\$ 6.7	\$ 6.8
Value of FAST Balance Certificates at Transfer Agents	\$162.7	\$79.8
Total for the Year:	(In Billions)	
Market Value of Book-Entry Deliveries	\$ 1,260	\$ 684
Cash Dividend and Interest Payments	\$19.3	\$12.2





A French mantel clock, circa 1800. The main face has date and day indicators in addition to hour, minute, and second hands. Separate dials show the lunar date (top) and month of the year. Made of gilt bronze, pale marble and colored enamel, this clock typifies the richness of design characteristic of late 18th-century timepieces.

Front cover: Fashioned in Nuremberg, circa 1570, this table clock of gilt bronze with iron works is the oldest known clock with a second hand. Its various dials and indicators show the position of the sun in the zodiac, the day of the week, and the date of the month, against a richly decorated background designed to please the eye of the beholder.

Page 1: Dating back to the first half of the 15th century, this lavishly ornate table clock was made for Philip the Good of Burgundy. It is the oldest extant example of a spring-driven clock with a fusee—a device to regulate the power produced by the spring.

A Message from Management

While every year sees new records set at this still-early stage of Depository Trust's growth, the new peaks in 1980 trading volumes experienced by the nation's securities markets led to more record-breaking highs this year than usual for DTC. Given the depository's role in the post-trade processing of corporate securities transactions, this is not surprising. The volumes were nonetheless impressive. In 1980, for example:

- computerized book-entry deliveries of securities among Participants rose to almost \$1.3 trillion, up 84% over 1979;
- the value of securities in our custody rose to \$493 billion at yearend, up 62% from one year earlier;
- shares of common stock on deposit rose to 13.7 billion, up by 4 billion shares from a year earlier; and
- almost 51 million securities certificates were deposited into and/or withdrawn from DTC during the year.

Yet it was not trading volume alone which established these and other processing records. Growing participation of banks in the depository—both for their own accounts and for their institutional

customers—contributed greatly to the immobilization of certificates in the depository and to the activity which occurs thereafter. Bank Participants rose to 78 this year, with more than 266 additional banks participating indirectly in DTC through correspondent relationships with a number of these direct bank Participants. The securities of other institutional clients of these banks added to these figures, as private pension funds, public retirement funds, investment companies, and insurance companies continued their gradual but ineluctable movement toward depository usage.

With 100 million share trading days commonly forecast to occur at some point in the months ahead, one can only hope that this broad institutional adaptation to a depository environment moves rapidly enough to avert significant operational problems for the financial industry should such volumes occur on a sustained basis. Both institutional self-interest and the common interest of the financial industry are at stake here: it is cost savings in trade settlements which creates institutional self-interest in DTC participation, and it is in the common interest of all parties to institutional transactions to bring about conditions which reduce processing costs and errors. Accordingly, we do and will

continue to stress use of the depository's Institutional Delivery system.

As the year closed, DTC moved toward development of the next important service it can render its Participants—a major program to provide depository services for municipal bonds, some \$350 billion of which are currently outstanding. You will hear more on this subject as 1981 unfolds.

We wish to thank the members of DTC's staff for their outstanding effort during 1980 to provide users with efficient, accurate and dependable service. Their professionalism evidenced the principle on which this service organization is based. We wish also to express our appreciation to those officers of Participants and to industry committees whose contributions helped make the quality and quantity of DTC's services to users possible.

William T. Dentzer, Jr.
Chairman & Chief Executive Officer

Conrad F. Ahrens
President & Chief Operating Officer

H History, Ownership and Policies

The Depository Trust Company (DTC) was born out of the securities industry's paperwork crisis in the late 1960s, when processing problems caused major disruption in the financial industry. Accordingly, the depository's first and continuing mandate is to provide efficient, secure and accurate post-trade processing services for transactions in U.S. securities markets.

Three concepts underlie DTC's effort to carry out this charge. First, the immobilization of its user Participants' securities in the depository reduces the need for Participants to maintain their own certificate safekeeping facilities. Second, a computerized book-entry system—in which changes of ownership interest are recorded in the depository's records—replaces costly, problem-prone physical delivery of securities for settlement. Third, the communications system through which DTC acts for its Participants with transfer agents across the country permits more efficient registration of certificates for those desiring them.

In 1968, these concepts were implemented by the New York Stock Exchange through that organization's Central Certificate Service (CCS), a securities depository established to serve NYSE member firms. Pursuant to plans developed by the *ad hoc* Banking and Securities Industry Committee in 1970-72, DTC was created in early 1973 to acquire the business of CCS and to expand the benefits of the depository approach to other areas of the financial

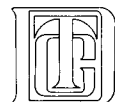
industry, particularly the bank sector.

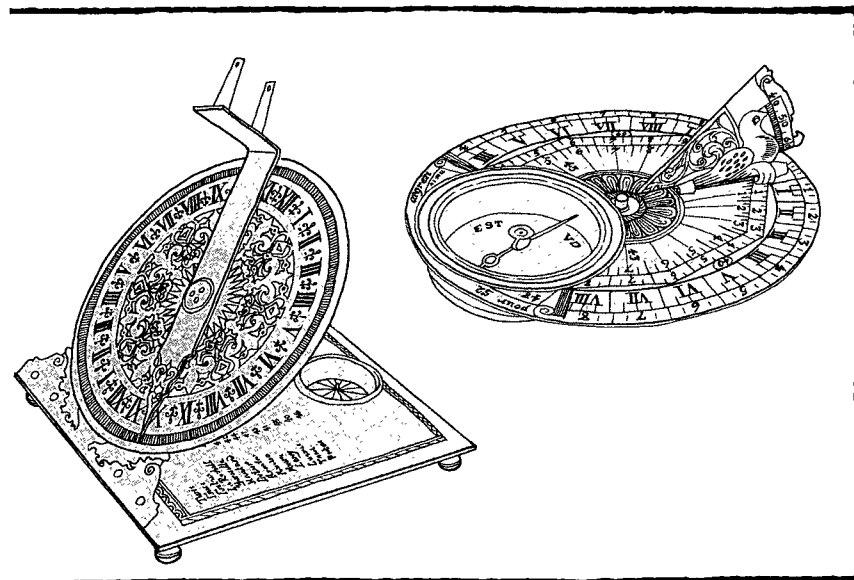
The initial sale of DTC stock by the NYSE to DTC bank Participants and other self-regulatory organizations representing broker-dealer Participants occurred on October 31, 1975, after various state laws restricting depository ownership had been amended. The stockholder base was broadened in October 1976, when the NYSE acted to give broker-dealers the right to own DTC stock directly. These actions established the nature of the depository as an organization owned by its users or their representatives.

The Governance of the Depository

The procedures for the governance of Depository Trust are carefully framed to reflect the need for objectivity in serving diverse users in the financial community.

The right to purchase capital stock of the depository is based on a formula which takes into account each Participant's use of the depository during the preceding calendar year. The calculation of use is based equally on fees paid to the depository during that





Even before the invention of the clock, it was possible to keep time with enough precision to meet the needs of the day—literally—with a sundial. Left: A silver equinoctial dial fashioned by Chapotot, a leading dialmaker of the late 17th century. The plate is inclined in the plane of the equator, while a fine thread stretched between the holes of the alidade casts the sun's shadow as a line across the appropriate marker on the face.

Right: A small horizontal sundial, circa 1730, by the dialmaker Butterfield, who did most of his work at the court of Louis XIV. The compass in the bowl permits the user to align the dial with the earth's axis.

year and the market value of long securities positions in DTC on the last business day of each month of the year. The purchase price of the DTC stock is based on its book value at yearend.

Each year, the amount of stock each participant is entitled to purchase is calculated to reflect annual variations in usage. Participants may purchase any, all, or none of the stock to which they are entitled, as they see fit.

The annual stock reallocation occurs prior to the annual stockholders' meeting in late March so that stockholders will be able to vote newly acquired shares in the election of the Board of Directors, which takes place at that meeting. Elections are conducted under a system of cumulative voting which ensures that no group controlling more than 50% of the stock can elect all Directors. Representation on the Board is thereby made available to users from various sectors of the financial community in proportion to their use of the depository.

At the conclusion of the annual reallocation of DTC stock entitlements in March 1980, elections to purchase entitlements increased the number of

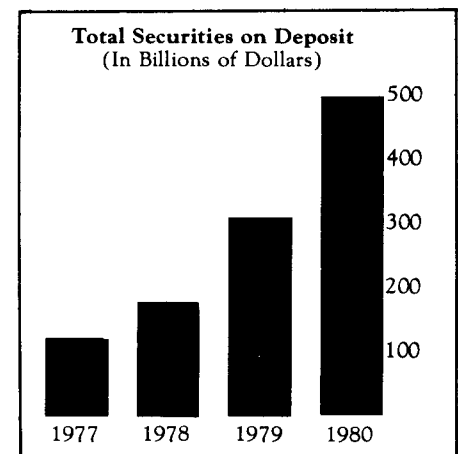
stockholders to 59, comprising 30 broker-dealers, 25 banks and 4 self-regulatory organizations and clearing agencies. The 30 broker-dealer stockholder Participants owned approximately 11% of DTC stock. The 25 bank Participants owned approximately 35% of DTC stock. The ownership interests of the self-regulatory organizations, which were required to sell stock to accommodate Participant elections to purchase, declined to approximately 42.8% for the New York Stock Exchange, 5.7% for the American Stock Exchange, and 5.7% for the National Association of Securities Dealers.

It is the depository's policy not to pay dividends to stockholders. This policy is based on the belief that distribution of depository ownership should not be viewed as an investment vehicle, but rather as a means by which diverse users may encourage DTC's responsiveness to their needs through the exercise of their voting rights. The make-up of the depository's Board of Directors reflects this effort to be, and to remain, responsive to user needs.

It is a further policy of DTC to limit profits and return to users, whether or not

they are stockholders, such revenues as the Board of Directors believes exceed the funds required for the depository's operation. Pursuant to this policy, DTC refunded \$12.1 million to users in 1980.

The Depository Trust Company is regulated by the Securities and Exchange Commission under the Securities and Exchange Act of 1934, as amended. As a member of the Federal Reserve System and a New York State limited purpose trust company, it is also regulated by the Board of Governors of the Federal Reserve System and the New York State Banking Department.



Growth in 1980

By virtually all standards, 1980 was a year of unprecedented activity for the nation's securities markets. The year was marked by a new high in average daily trading volume of almost 45 million shares on the New York Stock Exchange, and the breaking of the Dow Jones Industrial Average 1000 mark for the first time in years. Accordingly, the year brought record growth and activity for DTC as well, as the pages of this report attest. Yet the numbers themselves tell only part of the story.

As recently as a few years ago, the volumes experienced in 1980 were almost unthinkable, and the ability of the industry to process such volumes seemed doubtful. Increasing automation and management planning, however, have substantially transformed the industry since the hectic days of the late 1960s. The growth of the depository system has furnished a vital part of this capability. Thus, despite some strains, the industry coped well with the record processing loads of 1980.

High trading volume and increased institutional participation in DTC led to new highs in depository activity.

• During 1980, DTC processed over 49 million individual transactions in connection with its primary services — deposits, deliveries, pledges and withdrawals—for an average of over 197,000 transactions per business day in these services. This record volume represented a 26% jump from the prior

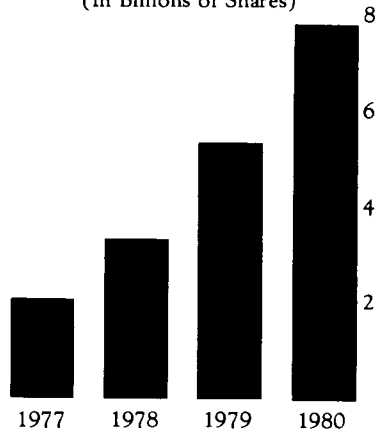
high of 39 million for 1979.

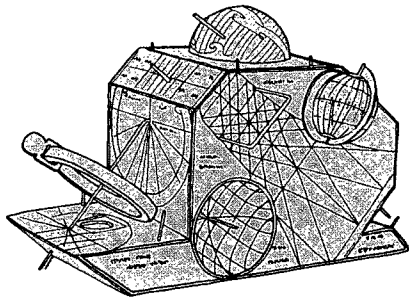
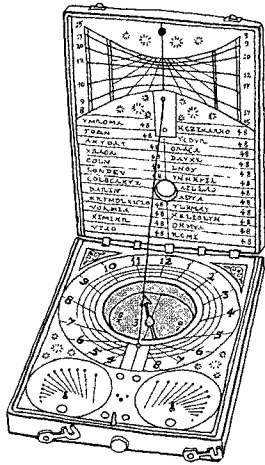
• Approximately 51 million securities certificates entered and/or left the depository during the year, up from 44 million in 1979.

• Cash dividends and interest paid to DTC on securities held for Participants rose by more than 58% in 1980, to \$19.3 billion from \$12.2 billion for 1979.

• Volume records were established in

Securities on Deposit from Banks
(In Billions of Shares)





Left: Diptych sundials used a thread stretched between the faces to cast a shadow on the appropriate time mark. The hinges between the faces allowed the user to adjust the angle to the earth's equatorial plane, while the compass in the bowl permitted alignment with the earth's axis. The upper face being free of dials and indicators, it was typically used for semi-practical embellishments. This 17th-century ivory specimen, made in Nuremberg, lists the latitudes of the local German towns where most of its use would occur.

Right: Polyhedral sundials were among the most versatile, as well as beautiful, examples of the dialmaker's art. Each surface was used to indicate some bits of data, as determined by the sun's shadow. This specimen was designed by Oronce Fine, circa 1560, but was not actually fashioned until 1617, by N.M. Gumnor of Nuremberg.

a number of DTC's services. Net deposits averaged \$805 million per business day for the month of December and \$588 million per business day for all of 1980. Cash dividends and interest received for Participants hit a single-day peak of \$887 million in December.

- The number of users of DTC's Participant Terminal System (PTS)—a cornerstone of the depository's telecommunications network—rose to 178, employing a total of 272 terminals in their various offices. The number of users and terminals rose from 140 and 188, respectively, at yearend 1979.

- DTC's Institutional Delivery (ID) system grew to include 424 full-user brokers, banks, and other institutions, up from 234 a year earlier.

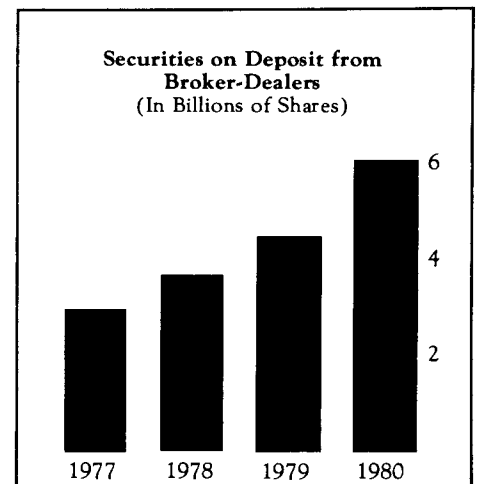
Bank participation remained a significant source of the depository's growth. The addition of 4 banks from 3 states and the District of Columbia brought the number of direct bank Participants to 78—24 headquartered in New York State and 54 in 24 other states

and the District of Columbia. At the same time, the number of banks understood to be indirect users of DTC through correspondent relationships with direct bank Participants grew to at least 266 from 170 in 1979.

By yearend 1980, DTC's securities on deposit from banks had grown to include 7.7 billion shares, with a total (equity plus debt) value of over \$358 billion, up 45% and 67% from 5.3 billion and \$214 billion, respectively, a year earlier. Forty-two individual bank Participants each had more than \$1 billion in securities on deposit. Direct and indirect Participants included 34 of the top 50 U.S. banks, and 70 of the top 100, measured by trust assets under management as reported by the Federal Reserve. Another 14 of the top 100 participated in four other securities depositories.

DTC's broker-dealer participation also contributed to the year's record growth. At yearend 1980, there were 249 broker-dealer Participants in DTC, as against 236 a year earlier. These firms are augmented by a great many others that use

DTC through the accounts of correspondent broker-dealer Participants. Broker-dealer securities on deposit included a record 6.0 billion shares, with a total (equity plus debt) value of \$135 billion, up 36% and 48%, respectively, from the 4.4 billion and \$91 billion of yearend 1979. Of the direct broker-dealer Participants, 145 had their principal bases of operations in New York State; 104 were headquartered in 24 other states and the District of Columbia.



Eligible Issues

The number of issues eligible for DTC services rose to 14,233 by the end of 1980, an increase of 1,001 from the 13,232 of yearend 1979. The expansion was part of DTC's plan to bring the benefits of book-entry delivery and certificate immobilization to an increasing portion of the securities held by Participants.

The 14,233 issues eligible at the end of 1980 comprised 3,195 common and preferred stocks listed on the New York and American Stock Exchanges; 5,663 equity issues traded over-the-counter; 4,175 issues of listed and unlisted debt securities; 388 U.S. Treasury and Federal Agency issues; 170 warrants; 399 issues represented by American Depository Receipts; 45 municipal bond issues; and 198 unit investment trusts.

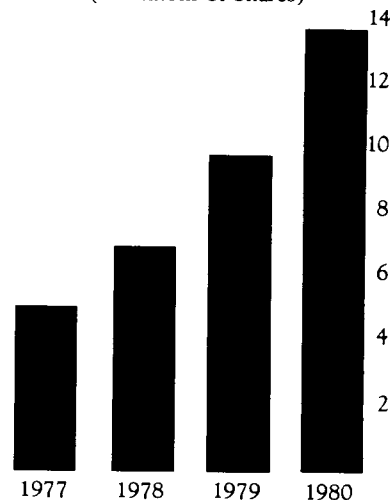
Municipal Bond Program

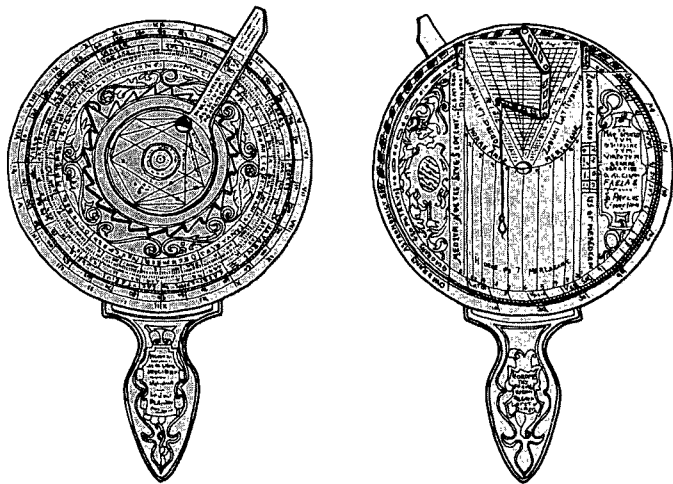
In 1980, DTC actively began to plan for a major municipal bond immobilization program in which the benefits of book-entry and the Institutional Delivery (ID) system would be made available to broker-dealers and institutions involved in the settlement of municipal securities transactions. Approximately 1.5 million municipal issues, valued at \$350 billion, are currently outstanding—the great majority in bearer form. Depository Trust Participants underwrite and hold a high percentage of these amounts.

The proposed program, outlined in mid-October for industry comment,

recognizes that custody and processing of municipal securities in bearer form, including coupon collection, present

Equity Securities on Deposit
(In Billions of Shares)



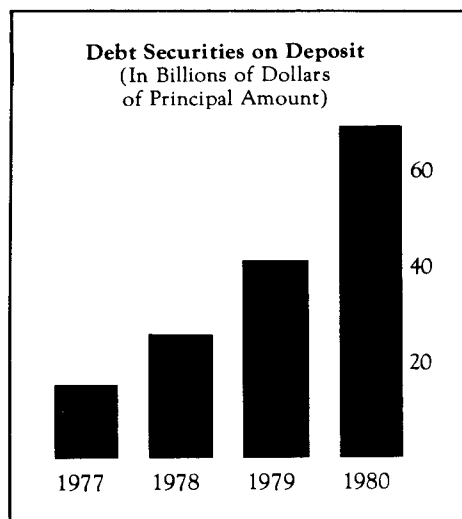


The problem of telling time at night was solved by the device known as the "star dial," or "nocturnal." The observer fixed his gaze on the North Star through the hole near the center of the disk and swiveled the movable arm until it was aligned with a reference point—usually the two "pointer" stars in the Big Dipper. The arm fell across the appropriate hour indicator, indented for identification by touch, since the instrument was designed for use in the dark. This 16th-century specimen, shown front and back, is of gilt copper, signed by D. Alcino Faelae of Verona and Io. Paulus Cimerlinus. Both craftsmen were probably monks.

problems quite different from those related to registered corporate securities. Accordingly, DTC's proposal suggested the use of one or more banks in New York and several other major cities across the U.S. as custodians for all DTC-eligible municipals in bearer form. DTC itself would hold no bearer securities in its vault. Based on a strong favorable response from Participants, the depository proceeded to explore alternatives which could lead to a major program late in 1981.

Throughout the year, DTC also continued its limited program in municipal bonds interchangeable between bearer and registered forms, adding 15 issues and bringing the number of such issues eligible for DTC services to 39. At the same time, the first fully registered municipal bond distributions by book-

entry took place when E.F. Hutton & Company Inc. used DTC's underwriting distribution service for six new issues of tax-exempt floating rate environmental improvement revenue bonds.



Outlook for Institutional Use

Institutional Market

As banks have become more familiar with depository usage and book-entry operations, they have become increasingly active in encouraging their institutional customers to authorize the deposit of their assets into the system. At the same time, an increasing number of institutional investors have initiated the deposit of their assets by so instructing their custodian banks.

Accordingly, bank deposits of their own and other institutional assets into DTC increased by over \$144 billion in 1980, or about 40% of the total of such assets deposited in DTC since its inception.

Further sharp growth is projected for the period ahead, augmented by an increased number of banks participating in DTC's system.

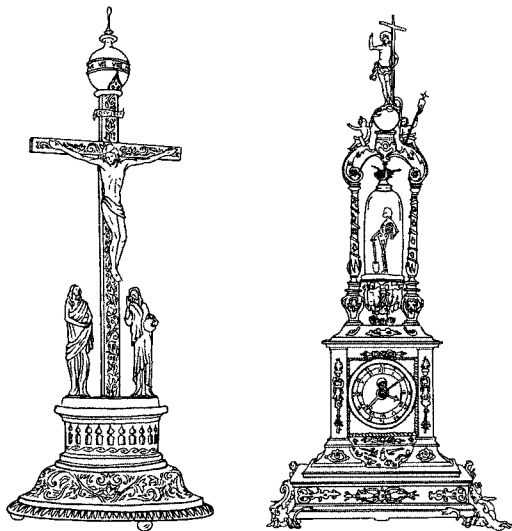
Seven major categories of institutional investors held \$1.57 trillion in total assets at yearend 1979, up from \$1.36 trillion at yearend 1978, according to the latest estimates published by the Securities and Exchange Commission. DTC estimates the depository-eligible portion of these assets at \$695 billion, or a little over 44% of the total.

As can be seen from the charts on pages 11 and 12, the potential institutional depository market is a very large one, even without the certain future eligibility for depository services of securities other than corporate equity and debt issues. What does not appear in the charts—but is on the minds of industry officials—is the extent to which the \$695 billion market in currently

eligible assets remains to be penetrated. The amount of institutional assets currently in the depository system is estimated at \$407 billion, or about 59% of what is eligible for deposit. These assets, over \$358 billion of which are on deposit with DTC and the balance distributed throughout the rest of the depository system, are in the accounts of approximately 371 U.S. banks (84 of them among the top 100 in managed trust assets) that participate in depositories directly or indirectly.

The nature of the effort required to bring more of the \$695 billion into the system varies from category to category. For example, in the categories of life insurance companies, property-liability insurance companies and state and local retirement funds (combined depository-eligible assets of \$235 billion), it is often necessary to deal with state laws and regulations which, having been developed long before there was such a thing as a depository system, contain provisions inconsistent with effective depository usage by institutions domiciled in those states. Various efforts are under way to resolve these incon-





Early clocks relied heavily on religious themes for their aesthetics. Left: A 17th-century Augsburg creation in the form of a gilt bronze crucifix. The globe at the top rotates against a fixed pointer to show the hour.

Right: An ebony, silver and partially gilt piece by Johannes Buschmann, also of Augsburg, circa 1624. The works drive a carved ivory figure of Death as a reminder of the mortality of all things.

gruities; it is expected that upwards of \$170 billion from these categories will have been placed in the depository system by 1985. The projection for the remaining categories, where regulatory problems are minor or

nonexistent, calls for over \$390 billion, or about 85% of the eligible total, on deposit by 1985.

A major continuing need is to acquaint the appropriate institutional and regulatory

personnel with the benefits of depository participation—lower costs, reduced errors, increased flexibility, and simplified operations. DTC's efforts in this direction have been focused on three institutional categories in particular: pension funds, investment companies, and insurance companies, as described below.

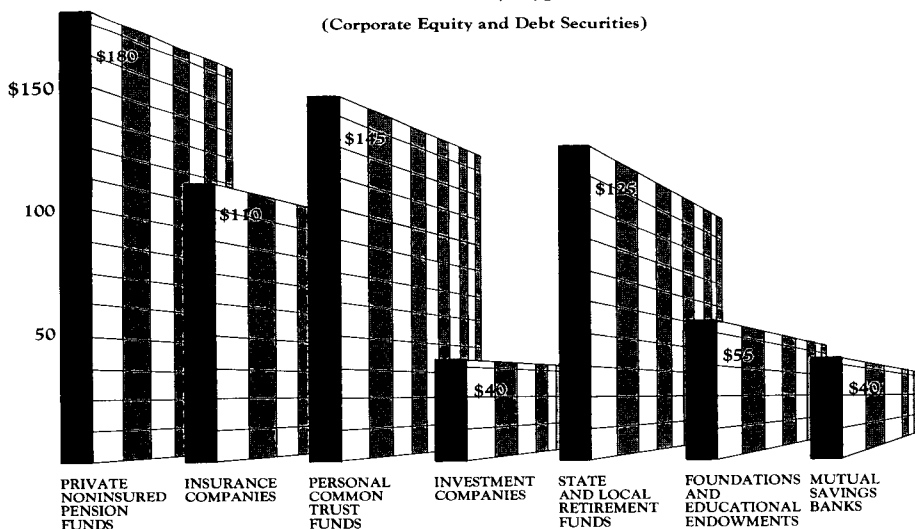
● **Deposit of Pension Fund Assets**

Private noninsured pension funds hold some \$225 billion in total assets, of which approximately \$180 billion is invested in depository-eligible securities. DTC bank Participants continued to deposit private pension fund assets into their accounts throughout 1980; it is believed that a large percentage of the \$180 billion in private pension fund assets has already been placed in the depository system by bank Participants.

The situation is otherwise for state and municipal retirement systems, which collectively hold total assets of about \$179 billion, approximately \$125 billion of which is invested in depository-eligible securities. A major obstacle to depository

Market Value of Depository-Eligible Assets in Billions of Dollars by Type of Institution

(Corporate Equity and Debt Securities)



Source: Securities and Exchange Commission estimates as of December 31, 1979

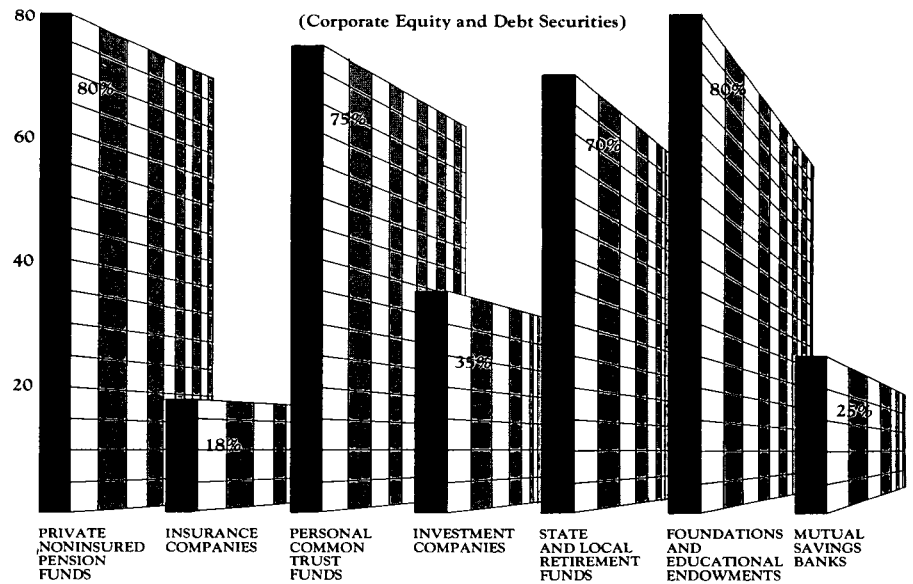
usage by state and municipal pension funds arises from the fact that these pension funds are state regulated, with each state imposing its own restrictions. Most of these restrictions were enacted long before the depository system was developed and have to be modified to permit depository usage.

Significant strides were made in 1980 to overcome these restrictions so that state and municipal retirement system assets can be placed in a depository, and a number of states authorized the deposit of their funds during the year. DTC is continuing to acquaint appropriate state personnel with the benefits of depository

participation for state pension systems.

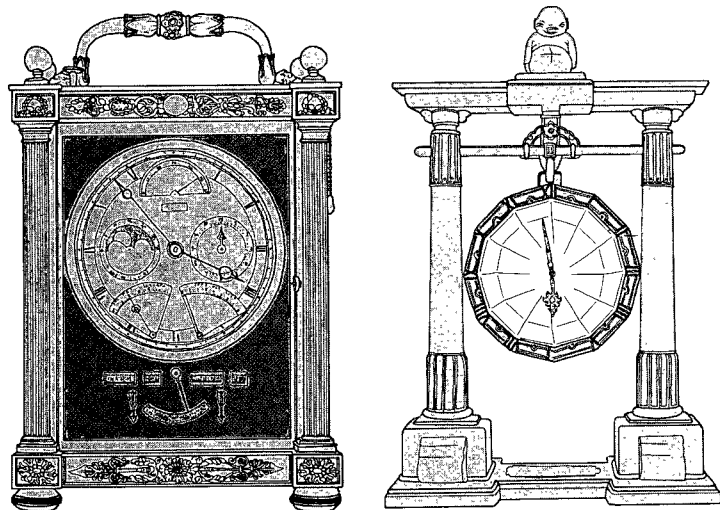
There are currently 31 states that have no regulatory or statutory bars to the use of book-entry systems and/or the depository system by state pension funds. Indeed, 25 of these states are known to have all or part of their state pension fund assets on deposit or in the process of being deposited at DTC, indirectly through their custodian banks. Another 8 states and the District of Columbia permit depository usage by state pension funds at the discretion of appropriate officials. The remaining 11 states require that pension fund assets be physically domiciled within

Depository-Eligible Assets as a Percentage of Total Assets Held by Type of Institution



Source: Securities and Exchange Commission estimates as of December 31, 1979





By the early 19th century, clocks had begun to assume a recognizably modern shape. Left: This traveling clock, by Abraham Louis Bréguet, Paris, circa 1810, indicates the second, day, date, month, year, temperature, lunar date, and the equation of time, with a wake-up alarm as well.

Right: Of similar shape but much more recent vintage, this 1925 "Mystery Clock," also of Parisian origin, features emeralds, rubies, coral, diamonds, and pearls in place of the dials and indicators of its predecessor. It was created by Cartier.

their state boundaries or be kept in the form of physical certificates wherever they may be domiciled. DTC's efforts are directed at helping eliminate such restrictions.

• Deposit of Investment Company Assets

During 1980, 44 additional mutual funds deposited the eligible portions of their portfolios into DTC through their custodian banks, bringing to 120 the number of mutual funds reported to have done so and to \$26 billion the total value of the securities believed to have been so deposited. These figures represent increases of 58% and 120%, respectively, from the comparable yearend 1979 figures of 76 funds with a value of \$11.8 billion. Much of this growth is believed to reflect the adoption of Rule 17f-4 of the Securities and Exchange Commission, under which a mutual fund's decision regarding depository usage should be made by that fund's Board of Directors and thereafter reviewed annually.

Pursuant to this rule, several additional funds laid the groundwork for 1981 depository usage by preparing proposals for action by their Boards of Directors. On the basis of these reported plans—and

the fact that \$26 billion, or only 65%, of the \$40 billion in depository-eligible assets held by investment companies according to SEC estimates has thus far been placed in the depository system—DTC expects continued growth of mutual fund deposits during the year ahead.

A list of the mutual funds reported to have authorized their custodian banks to deposit eligible portions of their assets with DTC as of yearend 1980 appears elsewhere in this report.

• Deposit of Insurance Company Assets

The total value of insurance company assets on deposit at DTC continued to increase in 1980. Nevertheless, the dollar value remains relatively small, both in comparison to the assets on deposit from other sectors of the institutional market and in relation to the total value of depository-eligible securities held by insurance companies throughout the U.S.

As in the case of public pension funds, the major obstacle to depository custody of insurance company owned securities is the framework of statutes and regulations in the various states. Many

states permit depository usage at the discretion of the state insurance commissioners, but have not yet established the necessary guidelines for supervisory review. In a number of other states the problem is statutory—frequently in the form of a requirement that the assets be physically domiciled within the state, or that they be kept in the form of physical certificates wherever domiciled.

Recognizing that state barriers have made the insurance sector of the financial industry the slowest to adapt to depositories, the National Association of Insurance Commissioners reactivated a special Task Force and established a new Advisory Committee in 1978 to encourage a resolution of the problem. Although progress in 1980 was slow, 232 insurers were reported to be using at least some depository services indirectly through their agent banks at yearend, versus a total of 128 at yearend 1979. Of these, some 172 companies have assets on deposit totaling approximately \$24.9 billion in market value, up from 94 companies with \$13.7 billion a year earlier. The others are participants in the depository's Institutional Delivery (ID) system.

Institutional Delivery (ID) System

DTC's Institutional Delivery (ID) system is a method for streamlining the delivery of, and payment for, securities transactions by institutions and all of the many activities leading to the settlement of such transactions. Its most important features are that it introduces a single entity to coordinate all of the settlement activity among brokers, institutions and custodian banks participating in the system, and that it offers convenient electronic, automated methods to accomplish this.

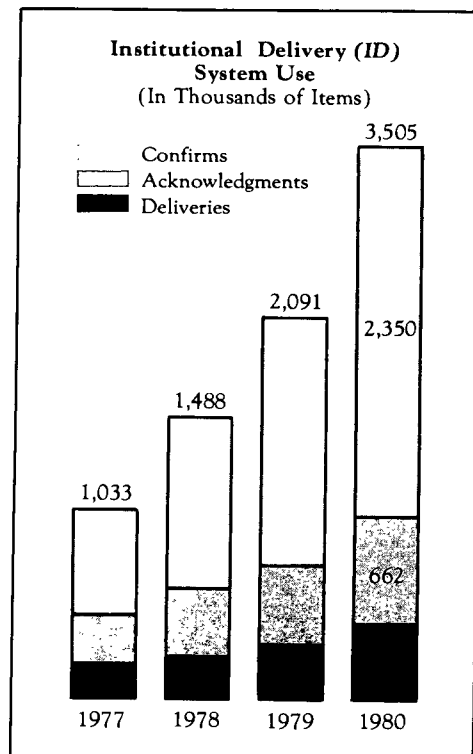
- It coordinates the many steps that have to be taken by brokers, custodian banks and investment managers from trade confirmation through final settlement, helping to insure that each party takes the right action at the right time.
- It can eliminate redundant paperwork and the delivery "fails" that lead to repeat paperwork.
- It is simple and inexpensive to phase into, and even simpler and less expensive to use.

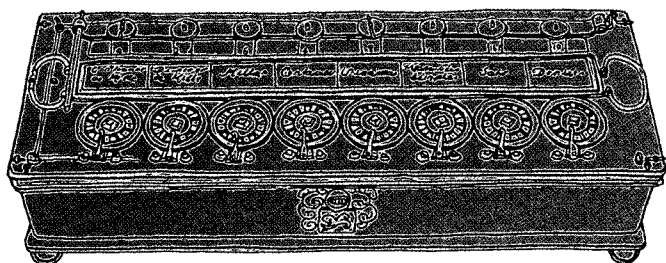
Briefly stated, the system works as follows:

(1) A broker executing an institutional trade furnishes DTC with the trade data (price, quantity, date, etc.), which the depository then passes on to the broker's customer, the institution (usually the investment manager who places trades for

a pension fund or other entity), in a form that is recognized as a legal confirmation.

(2) If the confirmation accurately reflects the institution's order, the institution sends an acknowledgment to DTC. If the confirmation is faulty (i.e., does not agree with the institution's records of its order), the institution can act early enough in the settlement cycle so that the broker can enter the proper corrections into the ID system. DTC will notify the broker of a problem concerning the trade so that the broker can contact the institution to resolve it.





In the 17th century, long before scientific and applied business mathematics went their separate ways, "automatic" calculating machines began to flower. The machine at left was devised by Blaise Pascal—noted French mathematician—in 1642, when he was nineteen. The ratcheted wheels at the bottom enabled the operator to deal with numbers of up to eight digits, labeled in French in the center panel. Answers appeared in the spaces provided at the top.

(3) Upon receipt of the acknowledgment, DTC forwards deliver/receive instructions to both the custodian bank and broker to schedule settlement.

(4) If the deliverer has enough securities in its DTC account, the depository will automatically complete the delivery by book-entry on the morning of settlement date and process the related money settlement as directed. *No physical delivery activity by any party to the trade is required.*

(5) If the deliverer does not have enough securities in its DTC account, it will be notified by DTC early in the morning on settlement date. The deliverer still has the opportunity to provide securities for delivery later on settlement date.

(6) If the security is not DTC-eligible (i.e., one of the over 14,000 issues for which DTC provides book-entry services), deliverer and receiver may use specially prepared *ID* instructions to settle the transaction outside the depository system. In such cases, though delivery must be by physical means rather than book-entry, DTC's role as a clearinghouse for instructions can help insure that delivery

and payment will be successfully completed on the first attempt.

A primary goal of the *ID* system is to increase user efficiency by eliminating most of the error and delay associated with traditional settlement methods, thereby reducing the personnel and time required by users to conduct their operations.

- Institutions no longer need send letters of instruction to their custodians to authorize each trade for settlement. The *ID* acknowledgment to one central source—DTC—eliminates the time-consuming effort of preparing individual authorizations and communicating them, through the mails or electronically or both, to multiple custodians. (In some instances, custodians may require letters of instruction subsequently, for file copy purposes only.)

- A greater certainty of trade settlement enables institutions and custodian banks to better manage their cash balances, providing early notice of funds needed and available.

- All of the labor associated with reprocessing uncompleted deliveries is

eliminated, which not only reduces the costs, but also improves the quality of service *ID* users can offer their own customers.

For these reasons and others, over 600 institutional investors, custodian banks and broker-dealers have begun full or partial use of the *ID* system and institutional investors increasingly require its use to settle their securities transactions.

ID growth was substantial in 1980, though still well short of system potential. Average monthly volume of confirmations processed through the system rose to 250,000 for the fourth quarter, up 81% from 138,000 for the comparable 1979 period. At the same time, the number of fully participating institutions increased 81%—to 424 from 234—while the number of confirms-only institutions rose 24% to 243 from 196. Fully participating institutions are those that use *ID* to receive confirmations from brokers, acknowledge them, and receive and deliver securities by book-entry. Confirms-only institutions are those that use the system only to receive confirmations; this is usually the initial stage of their *ID* system participation.

B

asic Services

There are four basic services Depository Trust performs for Participants:

- It accepts *deposits* of securities for custody;
- It makes computerized book-entry *deliveries* of securities which are immobilized in its custody;
- It makes computerized book-entry *pledges* of securities in its custody; and
- It provides for *withdrawals* of securities on a routine or urgent basis.

These services allow a Participant to place securities with DTC for safekeeping, deliver them conveniently to another party on the books of the depository, collect payment from the other party for the securities delivered, and withdraw certificates desired by any of its customers.

It is the massive use of these services by Participants that creates the economies of scale which offer low-cost processing and speed to users without sacrifice of security and accuracy. Participants instructed DTC to execute 49 million of these transactions in 1980, up from 39 million in 1979.

Increasingly, these instructions are in automated form, further reducing labor-intensive work both for Participants and for DTC.

Deposits

Deposits of certificates can be made in any eligible security issue at DTC's offices or at

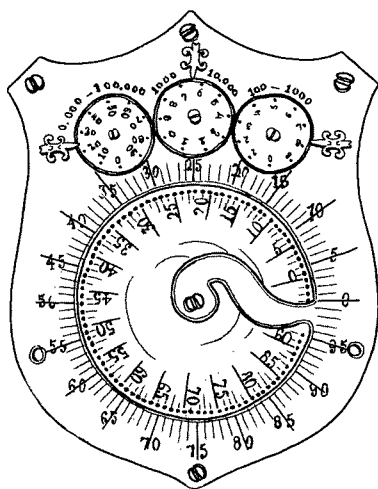
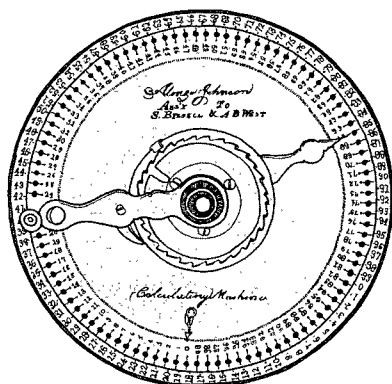
various banks across the country cooperating as DTC Depository Facilities. During 1980, DTC processed daily an average of 28,700 deposits involving 129,900 certificates, up from 24,300 deposits and 118,400 certificates in 1979.

Deliveries

Deliveries in the settlement of securities transactions may be with or without the condition of money payment, depending upon the Participant's instructions. In 1980, DTC processed more than 28 million computer book-entry deliveries among Participants with a settlement value of almost \$1.3 trillion, including deliveries between brokers and clearing corporations. This represented a substantial increase from 1979, when about 25 million deliveries were processed with a value of about \$684 billion.

DTC provides for the settlement of all deliveries when payment is desired, as well as cash dividend and interest payments distributed to Participants and other payments, through its daily settlement system. The basis of this system is a DTC settlement statement which shows each Participant's total money



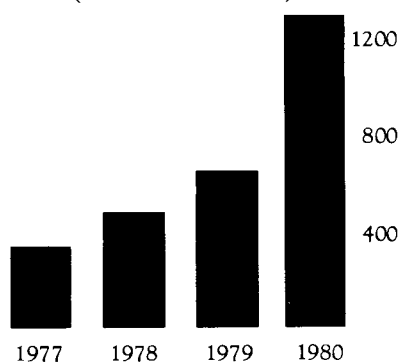


The 19th century saw a flurry of patent applications from American inventors of business-oriented calculators. Left: Alonzo Johnson's "Calculating Apparatus," Patent No. 85,229, December 22, 1868, an adding machine that kept track of the quantities already added even as it calculated the sum.

Right: Gustavus Linderoos' "Improved Adding Machine," Patent No. 140,146, June 24, 1873, boasted a limited ability to run subtotals while retaining the master total.

settlement activity by type of transaction and summarizes all transactions into a net dollar amount owed to DTC or to the Participant and paid daily.

Dollar Value of Deliveries
(In Billions of Dollars)



Pledges

This program allows Participants to make book-entry pledges of securities on deposit with DTC to banks and others who have agreed to accept pledges through DTC as collateral for bank loans or to secure letters of credit or for other purposes.

At yearend 1980, the value of outstanding pledges totaled \$6.7 billion;

18 banks each had over \$100 million in securities pledged to them on DTC's books among the 98 banks participating in this program. These figures do not include some \$2.3 billion in additional pledges to The Options Clearing Corporation by brokers and banks, primarily to meet collateralization requirements on CALL option sales.

Certificate Withdrawals

Certificate withdrawals from DTC can be accomplished in either of two ways:

(1) **Withdrawal-by-Transfer (WT)**, in which securities are transferred routinely to the name of a Participant's customer, or any other name. Normally, the newly registered certificates requested by Participants are available to them one week after DTC receives the withdrawal instructions.

(2) **Urgent withdrawals of Certificates-on-Demand (CODs)**, in which certificates are released to the requesting Participant in three hours.

In 1980, DTC processed an average of 29,000 WTs per day, for total routine withdrawal instructions of 7.3 million,

requiring 11.7 million certificates. During the same period, the depository processed an average of 8,400 urgent CODs per day, for a total of 2.1 million requests satisfied by about 4.1 million certificates.

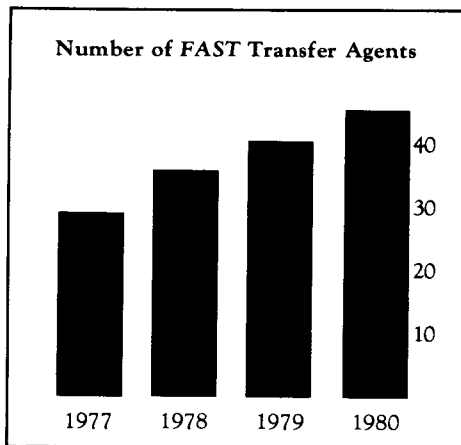
DTC's Fast Automated Securities Transfer (FAST) program provides an alternative, more economical method of processing both types of certificate withdrawals. The FAST program is described more fully in the section that follows.

Fast Automated Securities Transfer (FAST)

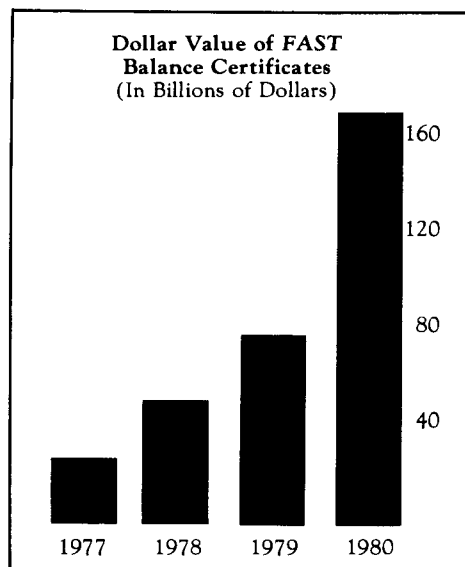
DTC initiated FAST to eliminate the cost of unnecessary creation, movement and storage of certificates needed for withdrawals.

Under the FAST program, DTC leaves securities with transfer agents in the form of balance certificates registered in the depository's nominee name—Cede & Co. The balance certificates are adjusted daily for DTC deposit and withdrawal activity.

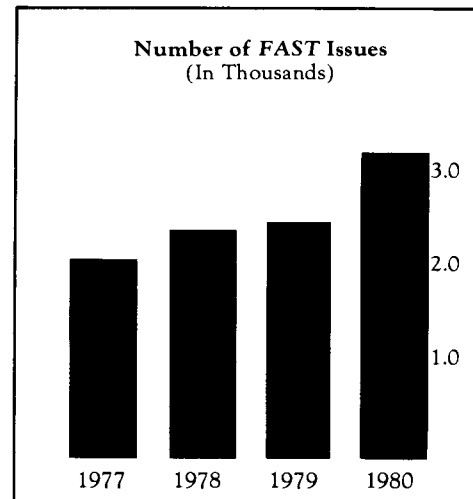
There are two parts to the FAST program. The Withdrawal-by-Transfer (WT) portion of the program is designed for routine withdrawals; agents can fulfill Participant requests within normal transfer turnaround time, usually three business days.



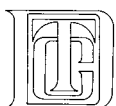
The Certificate-on-Demand (COD) portion of FAST is designed to include urgent withdrawals, as well as routine WTs. Transfer agents who subscribe to the COD part of FAST must make the COD certificates

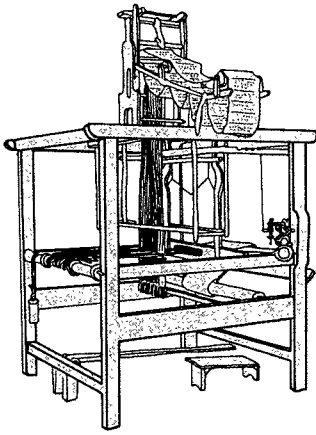


requested by Participants available to DTC overnight, and twice each business day on two hours' notice. Because it covers all types of withdrawals, this part of the program permits DTC to eliminate its entire vault supply of Cede & Co. certificates in the issues subject to the program. However, some Cede & Co. certificates in FAST issues must be retained by the depository for CODs when agents perform only routine FAST withdrawals in those issue



FAST confers a number of benefits on all parties involved in the issuance and transfer of securities. Transportation, handling and insurance costs are substantially reduced by the elimination of regular shipments of large-value certificates between transfer agents and DTC. The cost of researching dividend claims is also reduced, and proxy voting made easier, by FAST CODs, since Cede & Co. certificates no longer must be





The 19th century also witnessed the development of "automatic" machine controls. The Jacquard loom, invented by Joseph Marie Jacquard in 1804, utilized punched paper cards to control a weaving loom—a technique still practiced in the textile industry.

issued and circulated throughout the financial industry. In addition, corporations and transfer agents enjoy reduced certificate issuance costs by the elimination of hundreds, and sometimes thousands, of certificates for each issue annually. Since the inception of the program, for example, the issuance of over 2.4 million Cede & Co. certificates which would have been required to replenish DTC's vault inventory was avoided.

At yearend 1980, 45 transfer agents held balance certificates valued at \$163 billion in 3,162 issues. The comparable prior-year figures were 40 transfer agents holding 2,459 issues valued at \$80 billion. This growth means that FAST withdrawals are possible in about 22% of DTC-eligible issues.

As of December 31, 1980 the following 14 agents participated in the full FAST program, holding \$126 billion in 2,104 issues.

- BankAmerica Securities Services Company of New York
- Bank of New York (The)

- Bankers Trust Company
- Chase Manhattan Bank, N.A. (The)
- Citibank, N.A.
- First Jersey National Bank
- Girard Bank
- Manufacturers Hanover Trust Company
- Marine Midland Bank
- Morgan Guaranty Trust Company of New York
- Registrar and Transfer Company
- Schroder (J. Henry) Bank & Trust Co.
- Security Pacific National Bank
- Third National Bank in Nashville

The following 31 agents, participating on a WT-only basis, held \$37 billion in 1,058 issues.

- American National Bank and Trust Company of Chicago
- American Telephone & Telegraph Company
- AmeriTrust Company
- Bank of America National Trust and Savings Association
- Chemical Bank
- Citizens and Southern National Bank (The)

- Connecticut Bank and Trust Company (The)
- Conoco Inc.
- Fidelity Union Trust Company
- First & Merchants National Bank
- First National Bank of Atlanta (The)
- First National Bank of Boston (The)
- First National Bank of Chicago (The)
- First Pennsylvania Bank, N.A.
- First Union National Bank of North Carolina
- GTE Shareholders Services, Inc.
- Hartford National Bank and Trust Company
- Irving Trust Company
- Litton Industries
- Maryland National Bank
- National Bank of Detroit
- New England Merchants National Bank
- North Carolina National Bank
- Northwestern Trust Company
- Riggs National Bank of Washington, D.C. (The)
- Santa Fe Industries, Inc.
- State Street Bank and Trust Company
- United California Bank
- United Missouri Bank of Kansas City
- United States Trust Company of New York
- Wachovia Bank and Trust Company, N.A.

Ancillary Services

DTC's ancillary services flow out of its custody of securities for Participants. They are designed to permit the owners of securities to receive benefits and exercise rights of ownership despite immobilization of certificates and to diminish the need for Participants to handle physical certificates.

The most important of these services are dividend and interest collection, provision for voting rights, collateralization of options, dividend reinvestment, voluntary offerings, and distribution of underwritings.

These and other services are described more fully in the paragraphs that follow.

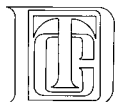
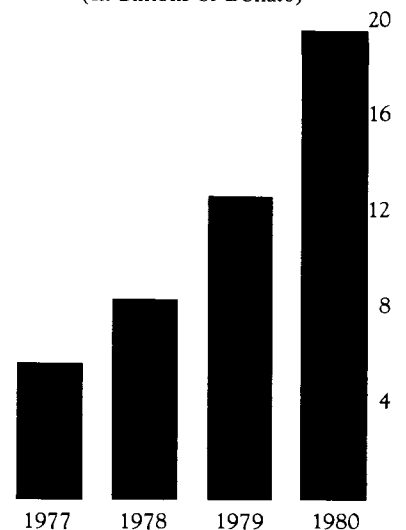
Dividends

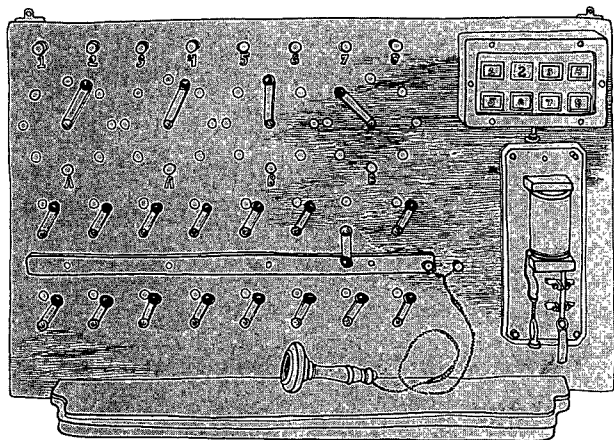
In 1980, DTC received over \$19.3 billion of cash dividend and interest payments for credit to Participants' accounts. This amount represented over 29,000 individual payments to DTC from approximately 900 bank and corporate paying agents. Applicable to most of the more than 14,000 securities issues eligible for deposit in DTC, these payments resulted in 1.6 million individual line items of credit to Participant accounts. Stock dividends received for Participants amounted to 936 million shares.

The ease with which DTC accomplished this volume of processing evidences the efficiency of the depository's highly automated system. The benefits of this system to DTC users are substantial. Organizations that do not use a depository are faced with the prospect of handling a

multitude of checks, coming from many points in the United States and Canada, with all of the associated mail problems, underpayments and other discrepancies, complicated by the need to claim dividends from other parties and to undertake all of the communications, correspondence and follow-up expense associated with that task.

Cash Dividends and Interest
(In Billions of Dollars)





The great bulk of computer telecommunications takes place through the telephone network that covers virtually the entire United States. Extensive as it is, this network is only a little over 100 years old. The first commercial telephone switchboard, shown here at left, went into operation in New Haven, Connecticut in 1878 to service 21 customers who were able to communicate with each other over a grand total of eight lines.

DTC's system spares Participants the trouble of dealing with these tasks and the expense of maintaining the necessary facilities for doing so. Surveys indicate that Participants also tend to receive cash dividends and interest payments more quickly through DTC than if payments were received directly from paying agents. The depository's successful effort in 1980 to increase the collection of such payments on payable date is continuing in 1981.

Voting Rights

Depository Trust arranges for deposited securities to be registered in the name of its nominee, Cede & Co., for three major reasons: (1) To permit prompt determination of whether the deposited certificates are indeed transferable, or whether they are subject to a "stop transfer" order, counterfeit, or otherwise not negotiable. If such a problem is found to exist, DTC can quickly take the appropriate steps to obtain replacement securities from the depositing Participant. (2) To permit re-transfer, when necessary, in the simplest

and quickest manner possible. (3) To permit DTC to ensure the proper and timely allocation of dividends, distributions and voting rights to depositors.

Given these reasons for holding securities in the depository's nominee name, one of DTC's primary objectives has been to avoid being a barrier to communications between issuers and beneficial owners. Indeed, in some cases, the existence of DTC may assist the corporate issuer in keeping up with changes in the ownership of its voting stock. The depository's Security Position Listing Report lists the number of shares of the issue on deposit with DTC itemized by Participant; prior to the existence of the depository, many of the shares now included in this report would have been represented by certificates that might have circulated by endorsement for prolonged periods before being re-registered. Security Position Listings are automatically sent to each issuer, free of charge, once each year, indicating Participant positions as of the record date for the issuer's annual meeting. Issuers may also obtain interim listings on a daily, weekly,

monthly or dividend-record-day basis, upon request and for a modest fee.

DTC's Participant Proxy Contact List specifies the name and address of each DTC Participant, together with the name and telephone number of the individual responsible for handling proxies there. The Contact List is updated and reprinted four times a year and sent to issuers free of charge.

DTC's Omnibus Proxy provides for the exercise of voting rights and for direct communications between issuers and Participants holding their voting securities. In effect, the Omnibus Proxy is an assignment—Cede & Co., the shareholder of record, assigns to each Participant the voting rights associated with the shares in that Participant's DTC account as of record date. DTC sends the Omnibus Proxy (together with a list identifying the Participant assignees) to the issuer after the record date for the shareholders' meeting at which the votes may be cast. At the same time, DTC notifies each shareholder Participant that the Omnibus Proxy has been sent to the issuer and of the number of shares the Participant is entitled to vote.

Upon completion of these steps—which normally take place in a single day soon after record date—DTC is removed from the chain of communications between issuer and beneficial owners. Each Participant is able to ask the issuer or its agent directly for whatever quantity of proxy material it needs to discharge its obligations to beneficial owners and each issuer is able to contact Participants directly. These communications occur in the same manner as if DTC did not exist.

Voluntary Offerings

DTC offers several services related to voluntary offerings, each designed to keep securities immobilized in the depository during periods when Participants have the right to surrender them to agents for cash and/or other securities. Use of these services grew substantially in 1980. The services themselves are as follows.

- **Conversions**

DTC's conversion procedures allow Participants to use book-entry methods to surrender convertible debt and equity securities in their depository accounts for same-day credit in the underlying securities, usually common stock. Participant processing expense is thereby reduced, while the costs of financing transactions during the interval when the certificates would otherwise be at the conversion agent are eliminated. Almost 600 convertible issues are eligible for this service; approximately \$2.5 billion of

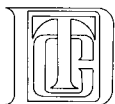
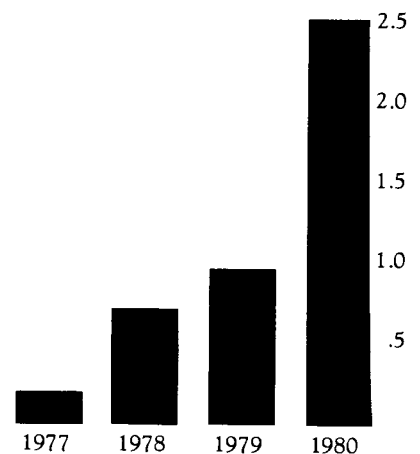
book-entry securities conversions were completed in 1980.

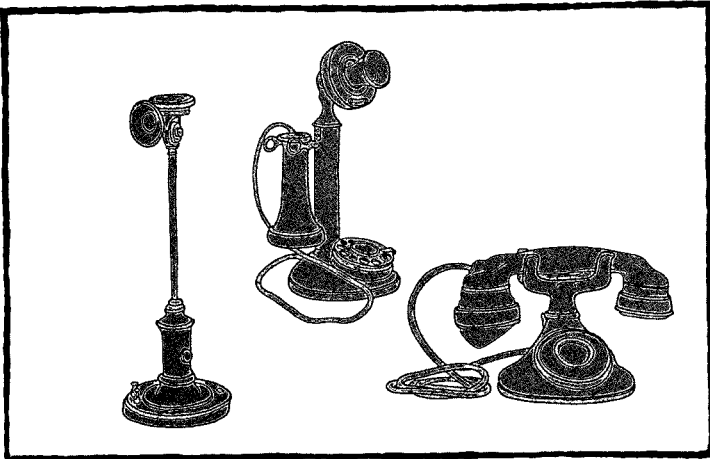
- **Exchange and Tender Offers**

In 1978, Depository Trust processed the first tender offer which employed book-entry procedures, passing through to Participants payments of almost \$13 million for common stock that had been tendered to the offeror's agent bank through DTC.

In 1980, 38 offers were completed by book-entry, involving 24 agents from thirteen states. The 38 offers included four in which the book-entry program was used to elect a payment option under a mandatory reorganization plan. The handling of these 38 offers brought the value of offerings processed through the program since its inception to \$865

Estimated Common Stock Value (\$ Billions) From Conversions of Convertible Securities Through DTC





The early history of the telephone was marked by a rapid series of advances. Left: The first long-distance transmitter, 1886. Center: The first dial telephone, 1919. Right: The first desk set with combined receiver-transmitter in a cradle, 1928.

million and the number of agents to 32. It is expected that these agents will use this service again for future offers.

The 38 offers processed in 1980 constituted 17% of the total number of offers that could have been accepted by book-entry procedures, up from the 6% of 1979. Nevertheless, 27 agents who could have used the service during 1980 failed to do so. The loss caused by the lack of provision for, or use of, the service is the cost created by the unnecessary withdrawal of securities from the book-entry environment. Agents, issuers and depository Participants thereby incur increased processing costs. In some cases, Participants also lose timely use of cash payments and, where acceptances are prorated by agents, timely use of returned shares. Accordingly, DTC will continue its efforts to bring additional agents into the program in 1981; support from more investment bankers at the planning stages will assist these efforts.

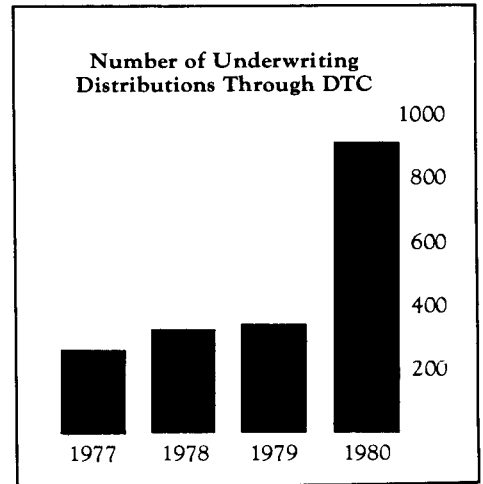
● **Redemption of Floating Rate Notes and Rollovers of Government Securities**
DTC Participants may redeem floating rate notes and other securities with similar repayment options by means of instructions to the depository, the cash proceeds being credited to their DTC settlement accounts. Participants with maturing U.S. Treasury bills on deposit can also use DTC to reinvest, or "roll over," the proceeds into new bills issued on the maturity date. Although the number of transactions effected through these two

services is not large, the services themselves are considered useful by Participants in that they reduce the expense associated with exception processing.

Distribution of Underwritings

The DTC service for the book-entry distribution of and payment for securities offered in public underwritings showed vigorous growth in 1980, its fifth full year of operation. The service was used by 40 managing underwriters to distribute \$40 billion of the total value of 900 issues. In 1979, the service handled 342 issues for 32 managers with \$17 billion distributed through DTC. The 1980 distributions comprised 408 issues of debt and 492 of equity, with values of \$24 billion and \$16 billion, respectively.

DTC's underwriting distribution service is designed to benefit underwriters and issuers, in addition to broker and bank Participants. Underwriters realize lower financing costs by the elimination of day loans and, in the case of distant closings, overnight or weekend loans. Issuers are afforded substantial reductions in the issuance and transfer of certificates. Bank and broker Participants receiving book-entry deliveries benefit through the elimination of the endorsement, microfilming, packaging, delivery and receipt of certificates and associated documents, as well as the rapid delivery turnaround normally associated with the use of book-entry.



Options

Use of DTC's interface with The Options Clearing Corporation (OCC) increased at a rapid pace throughout 1980. By yearend, 54 banks and 36 broker-dealers had securities "pledged" to satisfy OCC requirements, as compared with 47 banks and 35 broker-dealers at the end of 1979. The total value of securities pledged was more than \$2.3 billion, up 109% from the \$1.1 billion of yearend 1979.

● **The "Third-Party Pledge System"**
offered by DTC is an alternative to the escrow receipt method, in which a bank holds securities in an escrow account, issuing a receipt which can be used in lieu of the securities to satisfy segregation requirements for the writer's CALL option. Under the Third-Party Pledge

System, banks may pledge to OCC securities on deposit at DTC. One major improvement over the escrow receipt method is that changes in the quantity of shares pledged do not require release and re-issuance of escrow receipts, nor do changes in the option series to be collateralized. In the former case, the amount of shares pledged is simply increased or reduced, as required, while in the latter the pledgor merely submits a "rollover" form supplied by OCC. In addition, processing is simplified because there are no repeated movements of paper among the parties to the transaction. And, finally, since certain shareholders' equity limits of the escrow receipt method do not apply, any bank depository member may use the pledge method to the full extent that it has the securities to pledge.

In 1979, OCC began a major effort to persuade banks and broker-dealers to abandon the use of escrow receipts in favor of the Third-Party Pledge System. By the end of 1980, 76% of the value of securities collateral with OCC from all sources was under the Third-Party Pledge System.

In April 1980, the Securities and Exchange Commission approved a rule change proposed by OCC which established a Third-Party Pledge System for PUTS. The rule provides for a situation in which a PUT writer has deposited cash with a bank and the bank has invested the cash in U.S. Treasury bills. Under these circumstances, the PUT writer may instruct the bank to deposit the T-bills with a securities depository and then pledge them

to OCC for the account of the OCC clearing member carrying the writer's short position. OCC then reduces the clearing member's margin requirements accordingly.

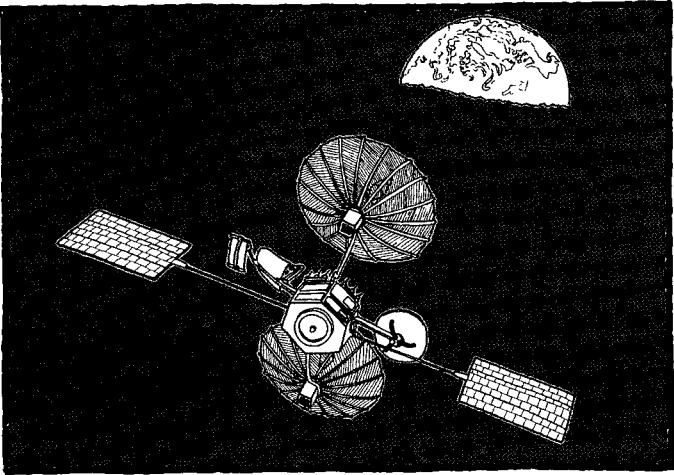
• **DTC's payment order service**, which went into full operation early in 1979, enables banks and broker-dealers to use DTC's settlement system to collect option contract premiums from other Participants, whether such premiums are related to third-party pledges, releases or rollovers of collateral with OCC. The service is designed to contribute significantly to user convenience in offering options services to clients.

Dividend Reinvestment

DTC's Dividend Reinvestment Service (DRS) completed its fourth full year of operation in 1980.

Launched in December 1976 with a single dividend reinvestment plan offered by American Telephone & Telegraph Company, DRS had grown to include 63 participating plans by yearend 1980. It helped generate almost \$291 million of new capital for participating issuers through dividend reinvestments in 1980, up from 43 plans and \$191 million in 1979. Almost \$82 million of these dividends were reinvested during the fourth quarter of 1980 alone, marking the fifteenth consecutive quarter-to-quarter increase in Participant use of this service since its implementation, and capping the three years

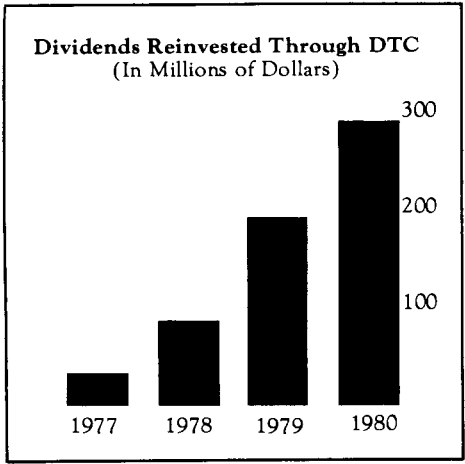




With the advent of the space age, electronic common carriers literally took to the skies, affording users global communications capabilities by means of satellite relay. Shown here is one of the four satellites in Western Union's Tracking and Data Relay Satellite System, built by TRW Inc. The shared use of devices of this type requires minutely precise computer timekeeping.

of extraordinary growth depicted in the accompanying chart.

The purpose of DRS is to allow those Participants who wish to reinvest all or part of their dividends in a security that is subject to an issuer's reinvestment plan to do so by book-entry, without withdrawing the underlying shares from their DTC accounts. The advantages to Participants are significant. Without DRS, a Participant would have to either refrain from depositing or withdraw from the depository



prior to record date those securities in which dividends might be reinvested, even if a definite decision had not yet been reached. In either case, the certificates involved would have to be handled on an exception basis and the benefits of certificate immobilization through depository usage would be partially defeated. In addition, Participants themselves would have to arrange for reinvestment of dividends through the various plan administrators, and then handle both the certificates for the stock thereby purchased and the checks for cash in lieu of fractional shares. With DRS, these cumbersome and duplicative tasks are eliminated as between Participant and plan administrator, and replaced by a far more flexible and less costly set of largely automated book-entry transactions with DTC.

Special Order-Out

In 1979, with the cooperation of DTC, the National Securities Clearing Corporation (NSCC) developed a new service designed to substantially reduce

the delays that brokers normally experience when delivering physical securities to institutional customers around the country. This service, which is known as Special Order-Out, permits the delivery of certificates on settlement day to institutions in 12 cities; another 12 cities will be added to the network in the near future.

Under the Special Order-Out service, brokers who are members of NSCC and DTC may use the depository's urgent COD withdrawal procedure to order physical securities out of DTC on the afternoon before settlement day, in anticipation of DTC book-entry receipt of those securities on settlement day. NSCC then ships the certificates to the designated cities for availability on settlement day if book-entry receipt at DTC has occurred as anticipated. Prior to the service, brokers had to wait until positions had been established on the depository's books on settlement day before initiating the withdrawal for subsequent shipment via courier to the remote city, thereby delaying delivery until the day after settlement day, at best.

The Automation of Depository Services

A continuing priority at DTC has been the automation of internal depository operations and of the channels of communication which link DTC with Participants, other users, and transfer agents. Major emphasis has been given to automating the receipt and processing of Participant instructions and to DTC reporting back to Participants. The depository reduces its operating costs by such means and, more important, Participants can reduce their own processing costs; moreover, all parties gain through the reduction of errors caused by manual procedures.

The systems DTC uses to communicate with others fall into three major categories—the Participant Terminal System (PTS), Automated Participant Interface (API), and Computer Communications Facility (CCF), each of which is described below.

Participant Terminal System

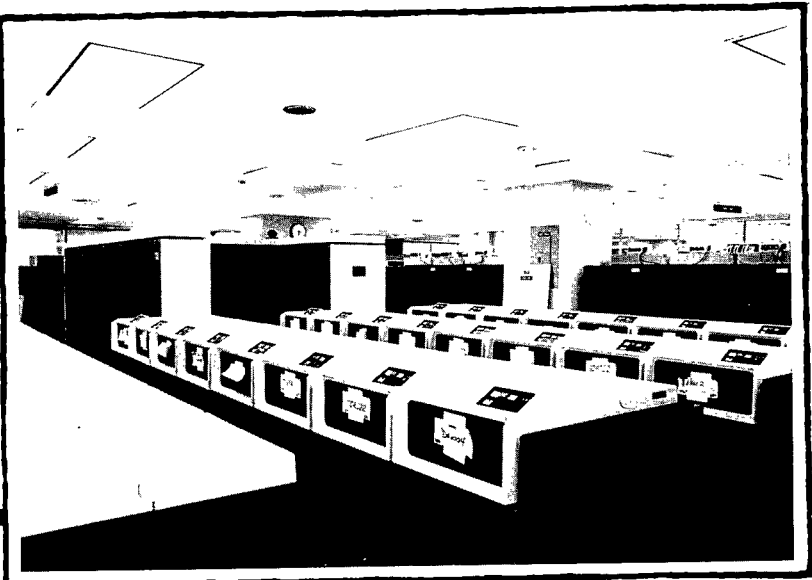
The depository's Participant Terminal System (PTS) is a network of computer terminal stations located in Participants' offices throughout the United States and tied directly to DTC's computers. Participants use their terminals to communicate instructions, inquiries and other messages to DTC and to receive messages and reports from DTC via the printer with which each terminal is equipped. The direct link between

Participants and the depository afforded by PTS speeds and eases the communications process, replacing the preparation and delivery of hard-copy instructions and reports. This is particularly useful for Participants located outside New York City.

During 1980, the number of terminals in Participants' offices increased to 272 from 188 a year earlier, while the average daily number of total transactions—including inquiries and messages, as well as instructions for specific transactions—grew 91% to almost 172,000 at yearend from over 90,000 a year earlier. (For the full year, daily volume averaged 131,000, up 85% from 71,000 a year earlier.) Among these types of transactions, the average daily number of Deliver Orders rose to 28,000 from 22,000, representing about 65% of the depository's total Deliver Order volume; the average daily number of COD urgent withdrawals increased to 6,800 from slightly under 5,500, representing approximately 81% of total COD volume; and pledges of collateral averaged 660 per day at yearend, or some 26% of the depository's overall pledge volume. Now that releases of collateral are provided for under a pilot program, expansion of this program will increase pledges of collateral by PTS.

The steady growth of PTS since its inception in 1975 reflects the many benefits it accords its users. In addition to its capabilities for processing instructions, PTS facilitates improved money management by allowing the quick





Some of the disk drives for DTC's IBM 3033 computer. In the background, the mainframe itself, central processing unit of the depository's book-entry system.

turnaround or reclamation of deliveries. It is also a major aid in the prompt balancing of settlement statements and—through the capability it provides for the verification of CUSIP numbers, issue eligibility, Participants' security positions at DTC and similar information—the avoidance of costly errors.

Automated Participant Interface

Many of DTC's Participants have large volumes of depository activity for which input through PTS would not be economical. But the underlying data have already been captured by their computers in a form readable by DTC's computers. The Automated Participant Interface (API) allows DTC Participants or their data processing service bureaus who are able to produce depository instructions by computer to enter those instructions directly into DTC's computer system by means of hand-delivered or transmitted magnetic tapes instead of by clerically processed paper forms. API capabilities currently include magnetic tape instructions for routine Withdrawals-by-Transfer, Deliver Orders, and Deposits.

• Magnetic Tape Transfer Instructions

Under this program, DTC is able to (1) receive customer name Withdrawal-by-Transfer (WT) instructions from Participants in magnetic tape form, (2) process the tapes through its own computers, and (3) deliver or transmit the resulting DTC output tapes to transfer agents for automated processing through the transfer agents' computer systems.

Such a system offers substantial advantages to all concerned, replacing more costly and error-prone processing procedures. By yearend 1980, the number of Participants submitting transfer instructions in magnetic tape form had grown to 64, accounting for approximately 72% of DTC's average daily transfer volume of about 29,000 instructions for over 46,000 certificates.

The ability to process incoming tapes through DTC's computers and deliver or transmit the resulting output to transfer agents for automated processing dates back to 1979, when the depository developed an analytical program which enabled its computers to accept nonstandard transfer data from Participants and restructure the great majority of them into a standard record

for transfer agents. In November 1979, two FAST transfer agents began using the reformatted tapes—American Telephone & Telegraph Company, which acts as its own agent, and Citibank, N.A. Early in 1980, another FAST agent, Manufacturers Hanover Trust Company, began to participate in the program. During the third quarter of 1980, the program was further augmented by the addition of a fourth agent—GTE Shareholders Services Incorporated (GTESS), a subsidiary of General Telephone and Electronics Corporation, which acts as its own FAST agent.

• Magnetic Tape Deliver Orders

Under the Deliver Order (DO) portion of API, Participants can input delivery instructions to DTC on magnetic tape for either day- or night-cycle processing. Still relatively small, the program comprises one bank, three broker-dealer Participants, and a service bureau that provides recordkeeping services for brokers and other financial institutions. At yearend 1980, the volume of regular delivery instructions received on tape under this program accounted for 6% of DTC's total DO volume.

• Magnetic Tape Deposits

The most recent addition to API, the capability of accepting deposit instructions on magnetic tape, was developed to simplify the deposit process while reducing errors. Initiated as a pilot service in 1979, it moved beyond the pilot stage in 1980, though usage is still relatively low as a percentage of DTC's total deposit volume. Further growth is expected in 1981.

Computer Communications Facility

Though use of magnetic tape substantially reduces the manual processing and associated costs of accepting Participants' instructions, it does not eliminate them entirely, since the tapes themselves must be physically handled. Moreover, physical delivery of tapes presents problems for Participants outside the New York City area.

In order to deal with these problems and prepare the next steps in the automation of depository processing, DTC has designed a Computer Communications Facility (CCF) to be used for direct computer-to-computer communications between DTC and Participants. This facility will allow for eventual transmission of instructions from Participants' computers to DTC's computers and for transmission of certain DTC data from DTC's computers to Participants' computers, making use of DTC-supplied software.

During 1980, CCF was developed to the point where some Participants' computers were able to request DTC's computers to identify DTC-eligible issues and depository Participants, and DTC's computers were able to provide the information, through direct computer-to-computer exchanges. In addition, one Participant—Bankers Trust Company—was able to submit Deliver Orders, and DTC was able to process them during its day-cycle and report back automatically to the Participant's computer and PTS terminal.

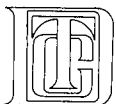
DTC's plans call for significant development of CCF capabilities during the year ahead. Early efforts will focus on expanding the applications of CCF to other Participants and other depository services. Ultimately, DTC hopes to use the same facility to communicate with other entities in addition to Participants, such as other depositories, transfer agents and Pledges.

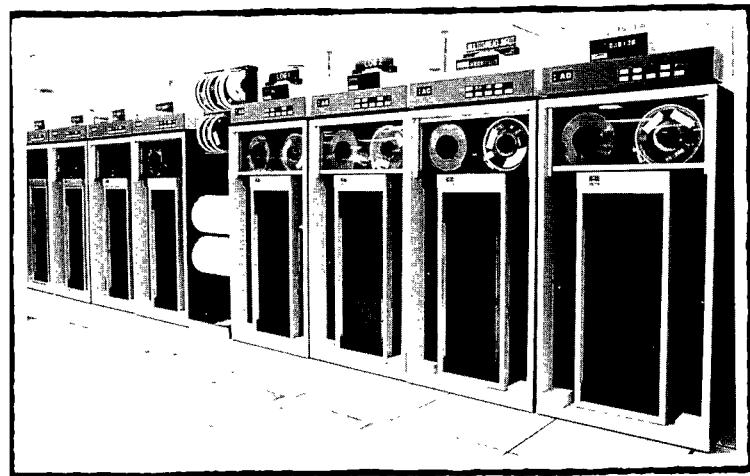
Other Automation Developments

In addition to various developments in the growth of DTC's automated services for Participants in 1980, other significant developments occurred in the depository's automated capabilities.

• Computer Processing Power

In mid-1980, DTC installed an IBM 3033 Central Processing Unit as its new primary processing system, replacing an IBM 3032,





DTC maintains extensive capabilities for processing magnetic tape instructions for a variety of automated functions. Left, some of the tape drive units dedicated to this purpose.

which was used thereafter for testing and backup. The new system approximately doubles operational capacity; its availability goes a long way toward preparing DTC for the extremely large processing volumes widely expected to occur during the early 1980s.

● **Disaster Recovery Planning**

In late 1980, DTC completed its arrangements with a disaster recovery center located in a city other than New York for an alternate site for the depository's computer operations in the event that the premises at 55 Water Street were to become unusable for any reason. Under the arrangement, the center will make available enough compatible computer hardware to supply DTC's needs if the emergency is of a short-term nature, or a raised-floor, computer room shell in which DTC can install its own hardware if the duration of the problem is longer-term. Taken together with the availability of duplicate software and master files in a secure off-premises location, and other steps to be completed soon, the new arrangement will give DTC the capability of resuming data processing operations

following an emergency without waiting until its 55 Water Street facilities are repaired.

● **Computer Output on Microfiche**

In 1979, DTC developed the capability for producing certain computer output reports on microfiche for distribution to Participants and for internal DTC use at significant savings in handling and record storage requirements. During 1980, DTC's microfiche output increased 62%. Growth is expected to accelerate in 1981 and beyond, as the number of reports DTC is capable of producing in this form continues to expand.

● **Optical Scanning Capability**

Substantial progress was registered during the year in the development of optical scanning equipment as an alternative to key-entering certain data, thereby permitting substantial cost savings. Newly installed equipment was brought to an acceptance recognition level of 96% of certain documents, and the volume of documents scanned rose to approximately 37,000 daily at yearend. Based upon this success, additional applications will be pursued in 1981.

I Interfaces in a National Clearance and Settlement System

Depository Trust's interfaces with other clearing agencies—both clearing corporations and other securities depositories—constitute a major element in the national system for the clearance and settlement of securities transactions. These interfaces enable participants in various clearing agencies to use their securities positions in one location to settle transactions in other clearing corporations and with users of other depositories by book-entry deliveries. This arrangement eliminates the inter-regional movement of securities certificates, thereby contributing to their further immobilization.

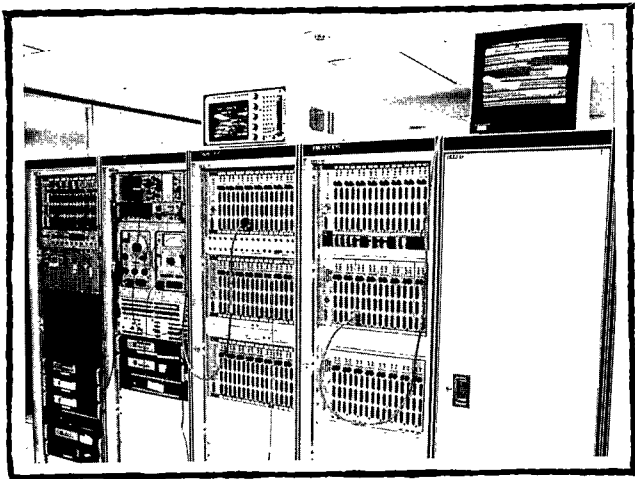
Depository Trust maintains a close interface with the National Securities Clearing Corporation (NSCC) in New York. Broker-dealer Participants in DTC may use their positions at DTC to settle with other broker-dealers whose transactions are cleared by NSCC.

DTC also has interfaces with Midwest Securities Trust Company, New England Securities Depository Trust Company, Pacific Securities Depository Trust Company, and Philadelphia Depository Trust Company. An important facility made possible by these relationships is the "third-party" delivery service which permits a sole member of any one of these depositories to settle transactions with any member of DTC, eliminating the requirement that a member

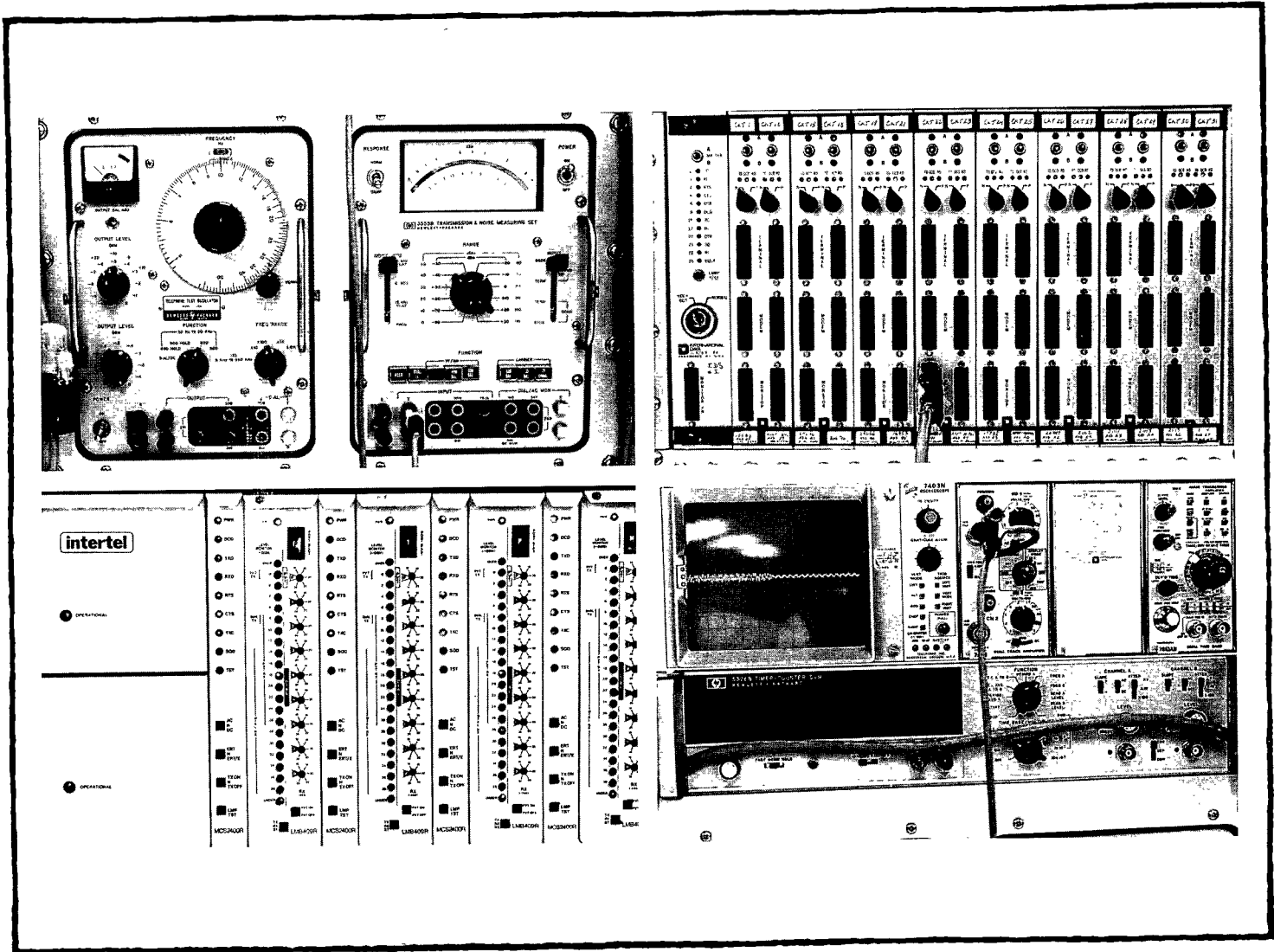
belong to both depositories in order to effect such settlements.

An additional interface—with The Options Clearing Corporation—is described elsewhere in this report.





Some of the test and monitoring equipment in DTC's telecommunications control area, nerve center of the Participant Terminal System (PTS), and the Computer Communications Facility (CCF).



P rotection for Participants' Securities

Depository Trust is the world's largest custodian of corporate stocks and bonds. Its record holdings and activity—and their steady growth—reflect the fact that the depository's program of safeguards is widely regarded as the most comprehensive yet developed to monitor the movement and custody of securities. DTC's unique system rests upon the extensive internal controls, physical security, repeated internal and external audits, insurance coverage, multimillion-dollar protective Participants Fund, and other features described below. Its effectiveness is perhaps best evidenced by three facts.

- In the 13 years since the inception of the Depository Trust system, it has transferred ownership of securities worth approximately \$4 trillion.

- There has never been a claim against the DTC Participants Fund.

- There has never been a claim against DTC or its insurers for the negotiation of missing certificates.

I nternal Controls

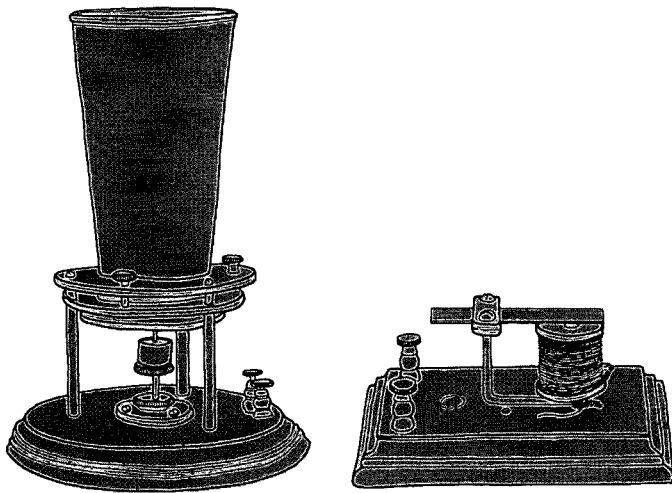
DTC's internal control system is designed to record the movements and location of every individual certificate in DTC's custody, from the time it is received, through its processing to and from transfer agents, through its entry into and delivery from the vault. The records required by this system are also used to resolve processing errors, facilitate reconciliation and audits and for similar purposes. The key features are as follows.

- Automated certificate-number control is DTC's single most important safeguard. A unique computerized record cross-indexes each certificate by issue, number, denomination and date of receipt, permitting maintenance of control and rapid reconstruction of paperflow regardless of volume. The data available from this record provide an important tool in reconciliation, research and the collection of dividend and interest payments. Auditing is also facilitated, with the auditors accounting for certificates by denomination and certificate number, when comparing physical certificates to computer-generated inventory listings.

- Certificates deposited with DTC normally are quickly transferred into the depository's nominee name, Cede & Co. This step permits prompt determination of certificate validity, i.e. that the certificate is not subject to a "stop-transfer" order or otherwise defective. It also enhances control over the collection of dividends and interest.

- Large denomination "jumbo"





It was through the instrument on the left that Alexander Graham Bell issued the first communication ever spoken by electric telephone, on March 10, 1876. His words, "Mr. Watson, come here; I want you," re-emerged through the tuned-reed receiver at right.

certificates are used to consolidate many of the securities on deposit. Because of their high value, "jumbos" are extremely difficult for unauthorized persons to negotiate, and the risk of loss is thereby further reduced.

- DTC places restrictive endorsements on the back of certain "jumbo" certificates to further preclude their negotiation by unauthorized persons.
- Certificates remain in non-negotiable form while in DTC's custody.
- Microfilm records of certificates and their related documentation are made upon receipt into or delivery out of the depository. The film is developed on premises to ensure the capture of all information while the certificates are still in the processing stream.
- Duplicate computer files of all transactions are maintained in separate storage locations, including one remote rural site, permitting prompt reconstruction of files in the event that a processing interruption were to occur. DTC also maintains comprehensive files of

original documents and production reports in addition to the duplicate computer files and microfilm records.

Additionally, proposed significant changes to the internal control system are tested by DTC's internal auditors and independent accountants.

Physical Security

DTC's physical security system is an extremely sophisticated one, encompassing both electronic and physical devices, a large security force and other security professionals.

The salient features of the system include the following:

- An access control mechanism, including floor-to-ceiling steel turnstiles, inhibits unauthorized entry into data processing areas. Entry is restricted to employees with specially encoded photo identification cards, who must also key in an individualized numerical password to secure admission. The turnstiles are monitored by closed circuit television; a record of all entries and

exits is maintained.

- A surveillance system of closed circuit television cameras and video monitors provides complete coverage of the vault and other securities processing areas.
- A silent alarm system is strategically located at points throughout the securities processing areas. Vibration alarms are installed to signal any attempt to forcibly penetrate the vault. A modern smoke and heat detection and fire control system protects the vault and computer sites. Systems interruptions or malfunctions themselves trigger independent malfunction alarms that alert the Security Department.
- A security force monitors the television surveillance, access control, and fire control systems, screens all persons entering and leaving security areas, and determines the contents of all packages.
- A modern underground vault on DTC's premises contains most of the securities deposited with it. Other securities are kept in the form of balance certificates maintained by qualifying transfer agents.

- Registered securities delivered to or received from transfer agents and other parties are required to be in non-negotiable form.

- Special waste paper treatment and disposal methods help to prevent the escape of certificates or usable written information from secured processing areas.

Securities Recordkeeping

DTC uses a double-entry recordkeeping system to control securities positions. Every transaction in a Participant's account is recorded and the physical location of underlying certificates—at DTC, with transfer agents, at other depositories, or in transit—is identified. These records are also used as a source for internal reports and reports to Participants, and by the depository's Reconciliation Division to locate and correct any differences with Participant records.

User Verifications

Among the most effective depository safeguards is the continuous verification of DTC records by users, based on their own records of activity with the depository.

Each morning, Participants and Pledges receive a daily report itemizing and summarizing the previous day's activity in their accounts. These reports start with the opening balance of securities in each issue in which there was a transaction and go on to list each transaction in that issue on that day and the closing balance of

securities in that issue after accounting for all transactions. Daily reports of cash transactions are also available. Under the depository's Rules, Participants are required to report any differences between their own records and the depository's statements. DTC has a research staff to help reconcile any differences.

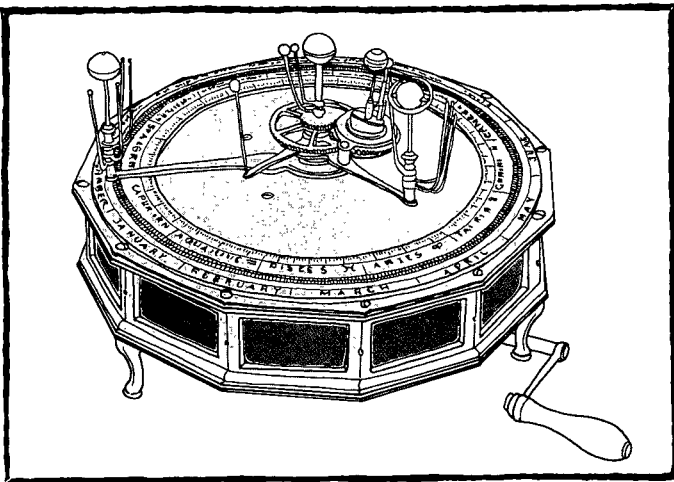
In addition, each Participant and Pledge receives a monthly position statement showing the status of all of its securities positions, including those in which there may not have been any transactions. Participants and Pledges are required to confirm the accuracy of their monthly position statements in writing, within 10 business days after the statement has been made available to them. Failure to confirm can result in a fine under the depository's Rules. These continual confirmations protect the integrity of the DTC system and encourage a high degree of cooperation at the operational level between the depository and its users.

Internal and External Audit

The securities records of Depository Trust are tested both by DTC's internal auditors and by Price Waterhouse & Co., the depository's independent accountants. Through their combined efforts, all securities issues in DTC's vault are counted at least once a year.

The internal audit program focuses on DTC's certificate processing, data processing, and financial operations. Certificate inventory control includes





Mechanical planetariums were much in vogue toward the end of the 18th century when, at least until the discovery of Uranus in 1781, the solar system was generally supposed to consist of six planets. The specimen shown is of particular interest because of an error: the positions of Jupiter and Saturn are transposed, with Jupiter wrongly placed in the outermost orbit. Mercury, Venus, Earth, and Mars are in their correct positions.

daily counts of all certificates in selected issues in the vault, so scheduled that each issue will be counted at least once a year by DTC's internal or external auditors. To ensure that issues are not selected for counting in a predictable sequence, a random method of selection is used. In addition, special counts of high-value certificates are conducted more frequently. DTC's Auditor submits to the Audit Committee of the Board of Directors monthly reports which summarize the status of his work. The Committee consists of four Directors charged with the responsibility of supervising the Auditor and the Auditing Department and reviewing and approving the internal audit program.

During the course of the year, among other things, Price Waterhouse & Co. performs the following in connection with its examination of DTC's financial statements:

- tests securities records and positions;
- tests all significant changes in internal controls and operating procedures;
- tests controls for the safeguarding of

securities, dividends, data processing, and other depository operations;

- issues a Report on Internal Accounting Control, which is available to Participants, Pledgees, and their accountants, upon request; and
- issues a Memorandum on Principal Procedures and Internal Control Surrounding Securities Held for Others, which is also available upon request, and is prepared especially for the use of Participants' independent accountants.

DTC's Audit Committee also reviews the scope of the auditing procedures of the independent accountants, directly receiving all reports issued by such accountants to the depository, and meets with them periodically to discuss the results of their work.

Insurance

The insurance coverage available for securities deposited in DTC is among the most extensive of any private institution in the financial industry.*

Specifically, insurance is available in the following amounts per event:

- A. Losses Occurring on Premises:**
1. \$75 million coverage under Primary and Excess Blanket Bonds; plus
 2. \$5 million Lost Instrument Bond Premium Policy, covering premiums for purchase of lost instrument bonds for securities losses in excess of \$75 million.
- B. Losses Occurring in Transit by Messenger or Armored Car Carrier:**
1. Primary coverage of
 - (a) \$5 million under Air Courier Messenger Policy covering securities lost in transit via Brink's or Wells Fargo Armored Service Corporation; and
 - (b) \$200 million In-Transit coverage provided by the insurer of the armored car carrier service used by DTC; and
 - (c) \$75 million under Primary and Excess Blanket Bonds for securities lost while in the custody of messengers;

*The description of insurance protection set forth in this section includes summaries of the terms of DTC's insurance policies and Rules and Procedures, to which reference should be made for complete statements on these subjects.

2. Excess coverage of
 - (a) \$75 million under Primary and Excess Blanket Bonds for securities lost while in the custody of an armored carrier;
 - (b) \$20 million under Excess In-Transit Bond covering securities losses in excess of \$75 million when securities are in the custody of messengers, and in excess of \$275 million when securities are in the custody of an armored car carrier;
 - (c) \$5 million under Armored Car and Messenger Policy covering securities losses in excess of \$95 million when securities are in the custody of messengers, and in excess of \$295 million when securities are in the custody of an armored car carrier;
 - (d) \$5 million under Lost Instrument Bond Premium Policy covering premiums for the purchase of lost instrument bonds for securities losses in excess of \$100 million when securities are in the custody of messengers, and in excess of \$300 million when securities are in the custody of an armored car carrier.

C. Losses Occurring in the Mail:

1. \$10 million under Mail Policy covering securities lost after having been sent via registered mail;
2. \$10 million under Mail Policy covering securities lost after having been sent via United States Postal Service Express Mail Service, Option 1 (Door-to-Door) and Post Office-to-Addressee service;
3. \$250,000 under Mail Policy covering securities lost after having been sent via First Class Mail.

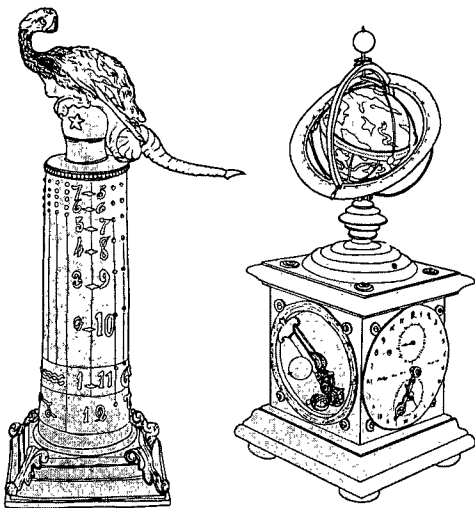
Still more protection is available to bank and broker-dealer Participants with

their own standard blanket bond coverage, in the form of riders to their policies providing that such bonds will cover securities held by DTC for the account of the Participant. A bank or broker-dealer with such a rider to its blanket bond would be reimbursed by its own insurer (to the extent of the coverage provided by the rider) for its *pro rata* share of uninsured securities losses by DTC in the unlikely event that such losses were to exceed DTC's insurance coverage.

Participants Fund

The Participants Fund is a reserve fund contributed by Participants and maintained by DTC to satisfy losses not





Left: This 17th-century sundial is set by turning the dragon until its tail extends over the current sign of the zodiac. The shadow then indicates time according to the raised scale on the side of the column.

Right: P.M. Hahn, of Kornwestheim, constructed this astronomical clock in 1780. Hedging his bets, the craftsman included mechanical representations of both the Copernican and Ptolemaic views of the solar system. In the former (lower left face), the earth circles the sun and the moon circles the earth. In the latter (mounted on top of the clock), both sun and moon orbit an oversized earth, happily located at the center of the universe.

covered by DTC's insurance. DTC's Rules provide that any such loss would normally be charged initially against undivided profits or retained earnings, but permit the Board of Directors instead to elect to charge it to the Participants Fund.

Should a loss be suffered by DTC due to the failure of a Participant to satisfy its obligations to DTC, such loss would first be charged to that Participant's contribution to the Participants Fund. If the loss were in excess of that Participant's contribution (or if the loss were sustained for reasons other than a Participant's failure), the excess may then be charged to the contributions of other Participants to the Participants Fund on a *pro rata* basis.

DTC's Rules provide that, in the event of any charge against a Participant's

contribution to the Participants Fund (whether *pro rata* or otherwise), the Participant is required to make an additional contribution to the Participants Fund in an amount equal to the charge.

To date, no charges of any sort have ever been made to the Participants Fund of either DTC or its predecessor organizations.

Protective Procedures

Other depository procedures are also available to protect Participants. DTC's Rules provide a variety of remedies to minimize the possibility of loss arising from the unexpected insolvency of a Participant. In the event of signs of a Participant's operational or financial

inadequacy, or advice to that effect from self-regulatory organizations or others, DTC carefully monitors that Participant's further activity, implementing such protective remedies as events warrant.

Regulatory Examinations

The Depository Trust Company is a limited purpose trust company organized under the banking laws of New York State and a member of the Federal Reserve System. As such, DTC undergoes unannounced annual examinations by the New York State Banking Department and the Federal Reserve Bank of New York, which report their findings to DTC's Board of Directors.

Officers of The Depository Trust Company



The senior officers of DTC: Arnold Fleisig (left), William F. Jaenike, Edward J. McGuire, Jr., John P. Crowley, Conrad F. Ahrens, Thomas J. Lee, William T. Dentzer, Jr. (seated).

William T. Dentzer, Jr.
Chairman and Chief
Executive Officer

Conrad F. Ahrens
President and Chief
Operating Officer

Senior Vice Presidents
John P. Crowley
Arnold Fleisig
William F. Jaenike
Thomas J. Lee

Secretary/Counsel
Edward J. McGuire, Jr.

Vice Presidents
Nicholas J. Arrigan
Robert A. Dick
Dennis J. Dirks
Michael Fedorochko
Charles J. Horstmann
Joseph J. Marino
Frank Petrillo
James V. Reilly
Nishan G. Vartabedian

Comptroller
Michael A. Agnes

Treasurer
John P. Crowley

Auditor
Thomas F. Coleman

Director of Security
Michael T. Mullen

Assistant Secretary
Donna Grant Reilly

Assistant Treasurer
Leonard A. Miele

Committees of the Board of Directors

Nominating Committee
Jon A. Bulkley
Donald L. Calvin
Daniel P. Davison

Audit Committee
Joseph A. Vitanza
Frank E. Dominach, Jr.
Benjamin L. Lubin
Charles C. Smith

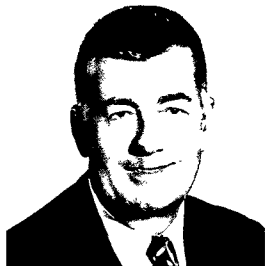
Compensation Committee
Allan L. Sher
Richard B. Fisher
Carl W. Klemme*



The Board of Directors



William T. Dentzer, Jr.
Chairman and Chief Executive Officer, The Depository Trust Company



Conrad F. Ahrens
President and Chief Operating Officer, The Depository Trust Company



Thomas A. Bigelow
Executive Vice President-Operations, Wells Fargo Bank, National Association



Jon A. Bulkley
President and Co-Chief Executive Officer, Moseley, Hallgarten, Estabrook & Weeden Inc., and President, Securities Settlement Corporation



Donald L. Calvin
Executive Vice President, Market Development and Public Affairs, New York Stock Exchange



Daniel P. Davison
President and Chief Executive Officer, United States Trust Company of New York



Frank E. Dominach, Jr.
Executive Vice President and Director at Bache Halsey Stuart Shields Incorporated



William S. Ederly
Chairman and President, State Street Boston Corporation, State Street Bank and Trust Company



Richard B. Fisher
Managing Director and member of the Management Committee of Morgan Stanley & Co. Incorporated



C. Richard Justice
Senior Vice President, National Association of Securities Dealers, Inc.



Carl W. Klemme*
Executive Vice President, Morgan Guaranty Trust Company of New York



Benjamin L. Lubin
Managing Partner, Bruns, Nordeman, Rea & Co.



Allan L. Sher
Executive Vice President, Finance & Administration, Merrill Lynch, Pierce, Fenner & Smith Incorporated



Charles C. Smith
Executive Vice President, Administration, Bankers Trust Company



Joseph A. Vitanza
Senior Executive Vice President, Drexel Burnham Lambert Incorporated

*Retired from the Board of Directors as of December 31, 1980

1980 In Retrospect

The full year's growth of DTC's various services is described elsewhere in this report. The particular events or activities mentioned below are some of the major milestones that the depository experienced in the year just ended.

DTC Activity Records

Throughout DTC's operations, activity rose to record levels during 1980, reflecting both the extremely high trading volume that prevailed during the year and the continued growth of depository usage. On average, there were over 197,000 transactions processed in DTC's major services each business day of the year, with a peak daily average of just under 220,000 transactions throughout the fourth quarter. In 1979, the average daily number of transactions was 166,000. In round numbers, the daily average figures

for 1980 included 28,700 deposits, 124,900 book-entry deliveries, 29,000 Withdrawals-by-Transfer, 8,400 urgent COD withdrawals, 2,500 pledges of collateral, and 4,400 releases of collateral.



Ushered by Howard Levison, DTC Director, Systems and Computing (left), Raymond L. Braun, First Vice President, and Walter E. Lamb, Senior Vice President, both of Shearson Loeb Rhoades Inc., review the processing area for incoming magnetic tape deposit instructions.

Net Deposit Growth: A Full Month at \$805 Million per Day

DTC's net deposit growth surged to a record 508 million shares for the month of December and 4 billion shares for all of 1980, far exceeding the prior record of 444 million shares for June 1979 and 2.8 billion shares for the full year.

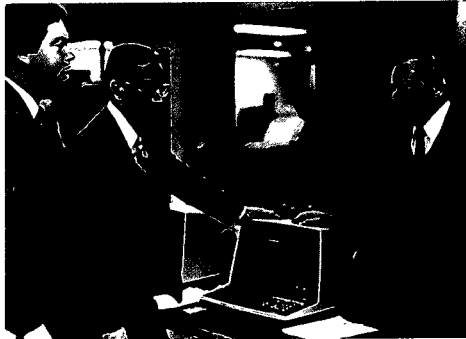
In addition, December 1980 deposits included debt securities in the face amount of approximately \$2 billion, bringing the combined market value of





Reviewing operations in DTC's deposit section: Nishan G. Vartabedian, DTC Vice President, Participant Services (left), Theodore P. Klingos, Second Vice President, and William B. Aimetti, Vice President and Group Executive, both of The Chase Manhattan Bank, N.A., and Joseph J. Marino, DTC Vice President, Operations.

debt and equity net deposits to a record total of \$17.7 billion for the month, or \$805 million per business day. The comparable figures for June 1979 were \$15.7 billion for the month, or \$750 million per business day.



Carmine D'Onofrio, Vice President, Citibank, N.A., viewing activity in DTC's Dividend Department, flanked by Valentine Stevens, Director, Participant Services (left), and Frank Petrillo, Vice President, Dividends, both of DTC.

Cash Dividends and Interest: \$887 Million in a Single Day

DTC's cash dividend and interest processing operation posted a new single-day high on December 10, 1980, when a record \$887 million of dividends and interest was received and credited to Participants' accounts, far exceeding the prior record of \$674 million set on December 10, 1979. For all of 1980, dividend and interest payments soared to \$19.3 billion from \$12.2 billion for 1979. Both sets of figures reflect the large increase in the number of shares and bonds on deposit with DTC during 1980.

At the same time, the percentages of payments received on payable date and in immediately-available funds also improved. Of the value of all such payments received

from dividend disbursing agents in 1980, approximately 67% was received on payable date and approximately 76% was in immediately-available funds. Comparable 1979 figures were 58% and 68%, respectively. The improvement in dividend payment performance was especially marked toward the end of the year. For the month of December, on-time performance climbed to 76%, with 83% in immediately-available funds, from 70% and 80%, respectively, a year earlier.

A New Dividends Refund Policy

DTC implemented a new policy commencing June 1, providing for monthly refunds to Participants of depository income from the overnight investment of cash dividend, interest, and reorganization payments ("dividends payments") to DTC. Under the old policy, DTC included such investment income with income from all other sources in determining total excess income subject to refunds to users at yearend, with the size of each refund payment based on the share of service fees paid by the user.

The growing amount of investment income from dividends payments prompted the modification of DTC's refund policy. The depository credits dividends payments to Participants' accounts as part of its daily settlement activity, all of which is in clearinghouse (next-day) funds. Since it is not yet



Participant Terminal System (PTS) reports are studied by Robert C. Saunoras, Vice President, Stock Loan Representative (left), Richard W. Terrell, Vice President and Assistant Operations Manager, Michael R. Brennan, Vice President, Operations (seated, left), and Joseph R. Hruban, General Partner, all of Mesirow & Company, in the firm's Chicago, Illinois headquarters.





New methods for handling future volumes of customer name withdrawals are considered by Dennis J. Dirks, DTC Vice President, Operations (left), Ralph S. Roth, Vice President, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Raymond J. Riley, Vice President, Manufacturers Hanover Trust Company, and Robert A. Dick, DTC Vice President, Applications Development.

practical for DTC to pay Participants in federal (same-day) funds with the dividends payments realized in immediately-available funds the same day, the depository is doing the next best thing; it is passing on to its Participants their *pro rata* shares, based on all dividends payments to Participants each month, of depository income from the overnight investment of these payments.

At yearend 1980, cumulative dividends investment income refunds to Participants totaled \$4.4 million for the June-December period.

In October, the depository began to suspend refunds of dividends investment income to Participants whose procedures for paying dividends to DTC do not meet the standard of payment on payable date

in immediately-available funds. Suspended refunds are included with operating income and investment income from other



A discussion of PTS participation at the offices of Lewco Securities Corp.: Leonard A. Marotta, Senior Vice President of Lewco (left), James McGreevey, Senior Securities Officer at DTC, and Paul J. DiBenedetto, Assistant Vice President of Lewco.

sources in determining excess income subject to DTC's general refund to Participants.

A Record General Refund

DTC's refund of excess 1980 income to Participants climbed to a record \$12.1 million for 1980, more than double the \$5.8 million of 1979, and equal to approximately 23% of the service fees paid to DTC by its users in 1980. The magnitude of the refund reflects a combination of unprecedented high-activity volume and higher-than-anticipated investment income. This general refund, together with the monthly dividends investment income refunds to Participants of \$4.4 million, brought total 1980 refunds by DTC to users to \$16.5 million.

Book-Entry Deliveries: A 4.5-Billion-Share Month

High volume in the nation's securities markets, increased institutional participation in the depository system, and an increase in the number of DTC-eligible issues to an all-time high of 14,233 propelled DTC's book-entry delivery volume to a new monthly record in December 1980. Average daily deliveries jumped to 145,000—up 18% from the average for the first eleven months of 1980 and 46% from the 1979 daily average. At the same time, the average daily number of shares delivered rose to 205 million—up 27% from the previous eleven-month average and 106% from the 1979 average. Altogether, 4.5 billion shares were delivered through DTC in December and 41.4 billion, valued at \$1.26 trillion, in all of 1980.

ID Task Force Established

The year's first peak in securities trading volume, which occurred during the first quarter, demonstrated more clearly than ever the efficacy of the Institutional Delivery (*ID*) system in reducing the occurrence of DK (Don't Know) rejected trades during periods of high activity. Indeed, studies indicate that the DK rate becomes disproportionate in tripartite trade settlements—involving trading institution, clearing bank and executing



Institutional Delivery (*ID*) system activity is reviewed by J. Richard Clark, Operations Officer (left), Larry W. Rinne, Assistant Vice President, and Henry R. Snyder, DTC Unit Supervisor (seated), all of Mellon Bank, N.A., at the bank's terminal in its main offices in Pittsburgh, Pennsylvania.





John M. Lanning, Jr., Director of Participant Services at DTC (left), Terence F. Cooke, Comptroller and Manager of Operations, and Richard L. Carpenter, Jr., Manager, Foreign Investment Department, both of Brown Brothers Harriman & Co., and Richard Porzio, Director and ID Product Manager of DTC, discuss Brown Brothers' experience with the transmission of Institutional Delivery (ID) system confirmations to overseas destinations.

broker—the very type of situation for which the ID system was designed.

To encourage enhanced use of ID throughout the investment community, DTC formed a special Task Force, with the cooperation of the Securities Operations Division of the Securities Industry Association, comprising both DTC employees and personnel temporarily assigned to the project from broker-dealer depository Participants. With training completed by the middle of the fourth quarter, the Task Force moved into full operation at the end of the year. In addition to a general effort to familiarize potential users with the benefits of ID and encourage them to participate in the system, the Task Force also helps new users through their start-up phase and as long as necessary thereafter to insure both

proper usage and the full benefit of ID use. Early targets for orientation include the top 200 money managers in the industry, comprising unaffiliated firms, broker-dealer-affiliated firms and bank investment management departments.



Reviewing DTC's Computer Communications Facility (CCF) program: Thomas J. Lee, Senior Vice President, Systems and Computing, DTC (left), Thomas F. Price, Senior Vice President, Bankers Trust Company, and Nicholas J. Arrigan, Vice President, Technical Support, DTC.

Report of Independent Accountants

To the Board of Directors of The Depository Trust Company

In our opinion, the accompanying statement of condition and the related statements of revenues and expenses and undivided profits and of changes in financial position present fairly the financial position of The Depository Trust Company (the "Company") at December 31, 1980 and 1979, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles consistently applied. Our examinations of these statements 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, including the physical examination and confirmation of selected securities held for others by the Company.

Price Waterhouse & Co.

153 EAST 53RD STREET
NEW YORK, NEW YORK
FEBRUARY 3, 1981



The Depository Trust Company
Statement of Condition

	December 31,	
	1980	1979
Assets		
Cash	\$ 58,977,000	\$ 16,883,000
Repurchase agreements (Note 1)	156,318,000	120,735,000
U.S. Government securities (Note 1)	6,176,000	6,182,000
Receivables:—		
Participants:		
For settlements	5,800,000	11,321,000
For services	5,729,000	3,675,000
Affiliates	323,000	458,000
Dividends, interest and other (Note 5)	5,789,000	5,679,000
Prepaid expenses and deposits	494,000	744,000
Equipment and leasehold improvements, less accumulated depreciation of \$3,002,000 in 1980 and \$2,259,000 in 1979	3,622,000	2,968,000
Leased property under capital leases, less accumulated amortization of \$4,929,000 in 1980 and \$3,567,000 in 1979 (Note 7)	8,178,000	6,511,000
Contributions to Participants Fund, callable on demand (Note 3)	<u>208,565,000</u>	<u>106,488,000</u>
	<u>\$459,971,000</u>	<u>\$281,644,000</u>
Liabilities and stockholders' equity		
Liabilities:—		
Drafts payable (Note 1)	\$ 76,226,000	\$ 58,359,000
Accounts payable and accrued expenses	6,070,000	4,508,000
Payable to Participants:		
On settlements	29,871,000	15,085,000
On receipt of securities	23,540,000	12,986,000
Dividends and interest received (Note 5)	97,665,000	68,464,000
Payable to affiliates	1,540,000	1,458,000
Obligations under capital leases, including \$1,620,000 in 1980 and \$1,275,000 in 1979 due within one year (Note 7)	7,922,000	6,344,000
	<u>242,834,000</u>	<u>167,204,000</u>
Participants Fund (Note 3):		
Deposits received	4,170,000	3,829,000
Contributions callable on demand	<u>208,565,000</u>	<u>106,488,000</u>
	<u>212,735,000</u>	<u>110,317,000</u>
Stockholders' equity:		
Capital stock—authorized, issued and outstanding, 18,500 shares of \$100 par value	1,850,000	1,850,000
Surplus (Note 1)	555,000	528,000
Undivided profits	<u>1,997,000</u>	<u>1,745,000</u>
	<u>4,402,000</u>	<u>4,123,000</u>
	<u>\$459,971,000</u>	<u>\$281,644,000</u>

The accompanying notes are an integral part of the financial statements.

The Depository Trust Company
Statement of Revenues and Expenses and Undivided Profits

	For the years ended December 31,	
	1980	1979
Revenues:		
Services to Participants (Note 4)	\$56,285,000	\$44,546,000
Interest income	18,494,000	9,807,000
Services to affiliates (Note 4)	831,000	743,000
	<u>75,610,000</u>	<u>55,096,000</u>
Less—Refunds to Participants (Note 2)	16,468,000	5,800,000
	<u>59,142,000</u>	<u>49,296,000</u>
Expenses:		
Employee costs	35,296,000	29,221,000
Rent, maintenance and utilities	5,115,000	4,745,000
Data processing rentals and supplies	3,968,000	3,301,000
Charges from affiliates (Note 4)	3,899,000	3,150,000
Professional and other services	2,630,000	2,286,000
Amortization and interest on capital leases	2,050,000	1,528,000
Depreciation and amortization	796,000	571,000
Other expenses (Note 6)	5,109,000	4,136,000
	<u>58,863,000</u>	<u>48,938,000</u>
Excess of revenues over expenses and refunds		
	279,000	358,000
Undivided profits, beginning of year	1,745,000	1,423,000
Transfer to surplus (Note 1)	(27,000)	(36,000)
Undivided profits, end of year	<u>\$ 1,997,000</u>	<u>\$ 1,745,000</u>



The accompanying notes are an integral part of the financial statements.

The Depository Trust Company
Statement of Changes in Financial Position

For the years ended
 December 31,
 1980 1979

Financial resources were provided by:

Operations:

Excess of revenues over expenses and refunds	\$ 279,000	\$ 358,000
Noncash charges (credits) included in expenses—		
Depreciation and amortization	796,000	571,000
Amortization on capital leases	1,362,000	980,000
Other operating items, net	(90,000)	(103,000)
Resources provided from operations	<u>2,347,000</u>	<u>1,806,000</u>
Increase in payable to Participants	54,541,000	27,168,000
Increase in drafts payable	17,867,000	50,871,000
Decrease in receivable from Participants	3,467,000	—
Capital lease obligations incurred	3,029,000	1,200,000
Increase in accounts payable and accrued expenses	1,564,000	955,000
Increase in cash contributions to Participants Fund	341,000	251,000
Decrease (increase) in receivable from affiliates	135,000	(115,000)
Increase in payable to affiliates	82,000	281,000
Decrease in dividends, interest and other receivables	26,000	1,717,000
Other, net	221,000	36,000
	<u>83,620,000</u>	<u>84,170,000</u>

Financial resources were used for:

Additions to leased property under capital leases	3,029,000	1,200,000
Purchases of equipment and leasehold improvements	1,469,000	1,675,000
Capital lease payments	1,451,000	1,092,000
Increase in receivable from Participants	—	5,388,000
	<u>5,949,000</u>	<u>9,355,000</u>

Net increase in cash, repurchase agreements and U.S. Government securities during the year

77,671,000 74,815,000

Cash, repurchase agreements and U.S. Government securities, beginning of year

143,800,000 68,985,000

Cash, repurchase agreements and U.S. Government securities, end of year

\$221,471,000 \$143,800,000

The accompanying notes are an integral part of the financial statements.

The Depository Trust Company

Notes to Financial Statements

December 31, 1980 and 1979

Note 1—Summary of Significant Accounting Policies

(a) Securities on deposit

Securities held by the Company for Participants, which aggregated approximately 13.7 billion share units (\$493 billion at market value) at December 31, 1980 and 9.7 billion share units (\$305 billion at market value) at December 31, 1979, are not recorded in the accompanying financial statements. Cash dividends and interest received or due on such securities and in process of distribution or awaiting claim are recorded in the statement of condition.

(b) Equipment and leasehold improvements

Equipment and leasehold improvements are recorded at cost. Equipment is depreciated over estimated useful lives (generally eight years), principally on the sum-of-the-years-digits method. Leasehold improvements are amortized on a straight-line method over the lives of the related leases, which are less than the useful lives of the improvements.

(c) Leases

Leased property under capital leases,

principally data processing equipment and related facilities, is amortized on a straight-line basis over the lease term and interest expense is accrued on the basis of the outstanding lease obligations.

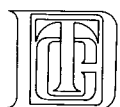
(d) Pension plan

The Company's eligible employees are included in the defined benefit pension plan of New York Stock Exchange, Inc. and its subsidiary companies. Pension costs charged to expense and paid to New York Stock Exchange, Inc. in 1980 for funding were \$1,159,000 (1979—\$979,000) and comprise normal costs and amortization over ten years of unfunded prior service costs. The value of the assets of the pension plan of New York Stock Exchange, Inc. at December 31, 1980 exceeded the vested liability thereof.

In 1980, the Financial Accounting Standards Board issued Statement No. 36 (FAS36), Disclosure of Pension Information, which requires financial statement disclosure of certain additional information relating to defined benefit pension plans. Information required pursuant to FAS36 was not available for 1980 on a separate company basis.

(e) Marketable securities

Repurchase agreements represent U.S. Government and U.S. Government Agency securities purchased under agreements to resell at current prices, generally over periods of three days or less. These agreements are recorded at cost and interest is accrued as earned. U.S. Government securities are recorded at amortized cost, which approximates market value.



The Company invests available federal funds in repurchase agreements and at the same time makes disbursements against such in clearinghouse funds. The resulting drafts payable are eliminated the next business day when the repurchase agreements are converted back to cash.

(f) Income taxes

Provision is made for income taxes applicable to revenues and expenses reported in the financial statements in periods which differ from those in which they are subject to taxation. Investment tax credits on property acquired and leased are applied, when available, under the flow-through method as a reduction of the income tax provision when the property is placed in service.

(g) Surplus

Transfers to surplus of 10% of excess of revenues over expenses and refunds will be made annually until such time as surplus equals 65% of capital stock as required by the New York State Banking Law.

Note 2—Organization and Ownership

The Company is a limited purpose trust company providing central securities depository and related services to the securities, banking and related industries. At December 31, 1980, New York Stock

Exchange, Inc. owned approximately 43% of the capital stock of the Company, with the remainder owned by the American Stock Exchange, National Association of Securities Dealers and certain Participants or their representatives. A Stockholders Agreement provides for an annual reallocation of the entitlement to purchase outstanding capital stock by eligible Participants or their representatives based on relative depository activity of Participants during the prior year.

Pursuant to a policy adopted by the Board of Directors in 1975, the Company does not pay dividends to stockholders, but refunds to its Participants each year revenues in excess of current needs. In addition, an agreement with New York Stock Exchange, Inc. prior to the adoption of this policy (see Note 4) precludes payment of cash dividends in any year in excess of 6% of stockholders' equity as at the close of the preceding year until such time as the Company satisfies its obligations under this agreement.

Effective June 1, 1980, the Board modified the Company's general refund policy to provide also for a monthly refund to Participants of income earned from the overnight investment of cash dividends, interest, and reorganization

payments to the Company for Participants. Such monthly refunds totaled \$4,368,000 in 1980. Total refunds to Participants amounted to \$16,468,000 in 1980 (1979-\$5,800,000).

Note 3—Participants Fund

Participants in the depository are required to contribute to the Participants Fund amounts which relate to their activity in the depository. The Fund is available to secure the Participants' obligations to the Company, and certain uninsured losses, if such should occur, could be charged to the Fund. Required contributions are received in cash or are callable on demand and secured by securities of the United States or instrumentalities of the United States, states and political subdivisions and certain eligible nonconvertible registered corporate debt securities.

Note 4—Transactions with Affiliates

The Company is party to an agreement to purchase software and software related improvements from New York Stock Exchange, Inc. The terms of the agreement provide for the Company to pay 6.5% of its gross revenues from services during the period January 1, 1976 to June 30, 1983, up to a maximum payment of \$13,500,000. Amounts expensed, which totaled \$3,605,000 in 1980 (1979—

\$2,856,000), are determined monthly and paid quarterly. Through December 31, 1980, \$12,878,000 has been recorded with respect to such agreement, leaving a remaining payment of \$622,000.

Revenues from Participants (net of refunds) for 1980 include \$2,933,000 (1979—\$3,237,000) received from National Securities Clearing Corporation, an affiliate of New York Stock Exchange, Inc. Of this amount, \$2,767,000 (1979—\$3,200,000) was related to services for continuous net settlement deliveries. Additionally, for certain clerical services, the Company received \$324,000 (1979—\$299,000) from National Securities Clearing Corporation.

Note 5—Dividends and Interest on Securities on Deposit

The Company receives cash and stock dividends and interest on securities registered in the name of its nominee which it distributes to the owners of the securities. Amounts received on securities withdrawn before the record date but not transferred from the name of the Company's nominee cannot be distributed unless claimed by the owners of the securities. At December 31, 1980, cash dividends and interest payable amounted to \$97,665,000, of which \$43,217,000 was distributed to Participants on the next business day and \$54,448,000 was held pending claim by the record date owners of the applicable securities; stock dividends payable and unclaimed (which are not recorded in the accompanying

financial statements) totaled \$57,055,000 at market value, representing amounts received by the Company after June 30, 1977. Unclaimed dividends received prior to July 1, 1977 have been transferred to New York State in accordance with abandoned property laws.

Cash dividends and interest receivable at December 31, 1980 amounted to \$5,337,000 and have been reduced by allowances of \$154,000 for possible losses. Stock dividends receivable (which are not recorded in the accompanying financial statements) amounted to \$52,835,000 at market value, of which \$47,643,000 was collected by January 15, 1981. An accrual of \$31,000 has been established for estimated losses on such receivables.

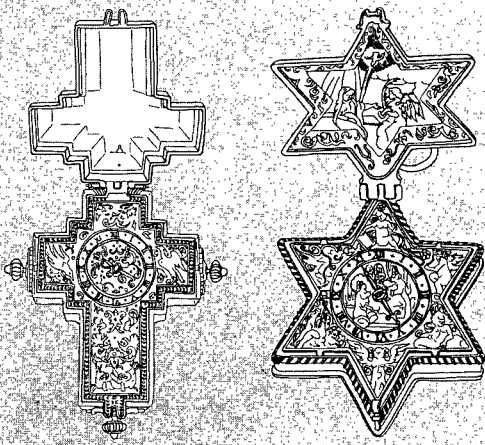
Note 6—Income Taxes

Income taxes are included in other expenses. The net income tax provision for 1980 and 1979 is summarized as follows:

	<u>1980</u>	<u>1979</u>
Current:		
Federal	\$ 3,000	\$ 1,000
Investment tax credits	(3,000)	(1,000)
State and local	8,000	8,000
Deferred		
(State and local)	<u>91,000</u>	<u>106,000</u>
	<u>\$99,000</u>	<u>\$114,000</u>

At December 31, 1980, the Company has available for federal income tax purposes





Watches made their appearance considerably later than clocks, but also stressed religious themes during their early history. Left: A Cross Watch by Conrad Kreizer, Strasbourg, circa 1600, with gold, enamel, and rock crystal for adornment.

Right: A Necklace Watch of gold, enamel, rock crystal, and pearls, circa 1625, fashioned in the shape of a six-pointed star.

investment tax credit carryforwards of \$505,000, of which \$23,000 expires in 1984, \$121,000 expires in 1985, \$174,000 expires in 1986 and \$187,000 expires in 1987, and a new jobs credit carryforward of \$40,000 which expires in 1985.

Note 7—Leases and Other Commitments

Capital leases—See Note 1 regarding the treatment of capital leases. The following is a schedule by year of future minimum lease payments under capital leases, together with the present value of the net minimum lease payments as of December 31, 1980:

Year ending December 31:	
1981	\$2,377,000
1982	2,289,000
1983	2,047,000
1984	1,638,000
1985	794,000
1986-1989	960,000
Total minimum lease payments	10,105,000
Less—Amount representing interest	2,183,000
Present value of net minimum lease payments (including current installments of \$1,620,000)	<u>\$7,922,000</u>

Operating leases—The Company leases improved office space, substantially all of which as a subtenant of New York Stock Exchange, Inc. These leases are accounted for as operating leases and provide for base rentals and escalations, plus increases in rental escalations subsequent to 1980. Presented below are the future minimum rental payments required under operating leases having initial noncancellable lease terms in excess of one year as of December 31, 1980:

Year ending December 31:	
1981	\$ 3,047,000
1982	3,047,000
1983	2,954,000
1984	2,868,000
1985	2,829,000
1986-1988	<u>3,828,000</u>
Total minimum payments required	<u>\$18,573,000</u>

Rent expense in 1980 was \$3,215,000 (1979—\$3,064,000) for office space and \$2,358,000 (1979—\$2,071,000) for data processing equipment.

See Note 4 for the commitment under the software package agreement.

Participants †

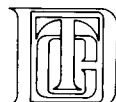
Banks (78)

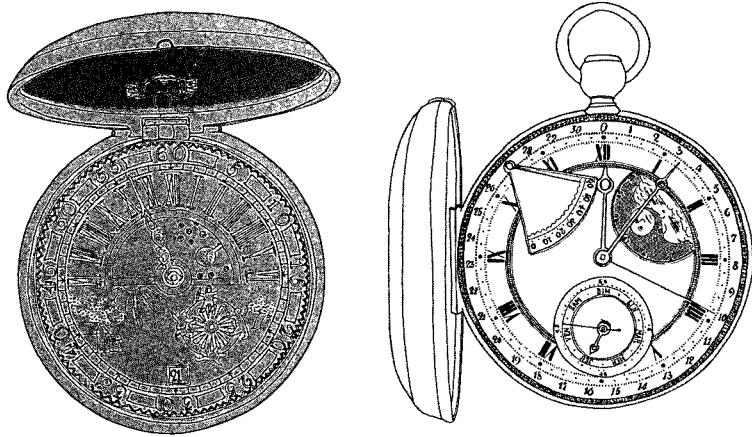
AmeriTrust Company
BankAmerica Securities Services
Company of New York
Bank of America National Trust and Savings
Association
Bank of New York (The)
Bank of Tokyo Trust Company (The)
Bankers Trust Company
Boston Safe Deposit and Trust Company
Bradford Trust Company
Brown Brothers Harriman & Co.
Central Fidelity Bank, N.A.
Central National Bank of Cleveland
Chase Manhattan Bank, N.A. (The)
Chemical Bank
Citibank, N.A.
Citizens and Southern National Bank (The)
Citizens Fidelity Bank and Trust Company
Connecticut Bank and Trust Company (The)
Daiwa Bank Limited (The), New York Agency
Equitable Trust Company (The)
European American Bank and Trust Company
Fidelity Bank (The)
Fidelity Union Trust Company
Fiduciary Trust Company of New York
Fifth Third Bank (The)
First American Bank, N.A.
First-City National Bank of Binghamton, N.Y.
First Jersey National Bank
First Kentucky Trust Company (The)
First & Merchants National Bank
First National Bank in Dallas
First National Bank in Palm Beach
First National Bank in St. Louis
First National Bank of Atlanta (The)
First National Bank of Birmingham
First National Bank of Boston (The)
First National Bank of Chicago
First National Bank of Colorado Springs
First National Bank of Maryland (The)
First National Bank of Minneapolis
First Pennsylvania Bank, N.A.
First Tennessee Bank N.A. Memphis
First Union National Bank of North Carolina
Hartford National Bank and Trust Company
Indiana National Bank (The)
Industrial National Bank of Rhode Island
Irving Trust Company
Lincoln First Bank of Rochester
Manufacturers Hanover Trust Company
Manufacturers National Bank of Detroit
Manufacturers and Traders Trust Company
Marine Midland Bank
Maryland National Bank
M&I Marshall & Ilsley Bank
Mellon Bank, N.A.
Mercantile-Safe Deposit and Trust Company
Merchants National Bank & Trust

Company of Indianapolis
Michigan National Bank—Grand Rapids
Morgan Guaranty Trust Company of New York
National Bank of Australasia Limited (The),
New York Agency
National Bank of Detroit
National Bank of North America
National Westminster Bank Limited
New England Merchants National Bank
North Carolina National Bank
Northwestern National Bank of Minneapolis
Riggs National Bank of Washington, D.C. (The)
Shawmut Bank of Boston, N.A.
State Street Bank and Trust Company
Swiss Bank Corporation—New York Branch
Texas Commerce Bank, N.A.
Toledo Trust Company (The)
Trust Company Bank
United Bank of Denver, National Association
United States Trust Company of New York
United Virginia Bank
Wachovia Bank and Trust Company, N.A.
Wells Fargo Bank, National Association
Zions First National Bank

Broker-Dealers (247½)

ABD Securities Corporation
Adams, Harkness & Hill, Inc.
Adler, Coleman & Co.
Advest, Inc.
AGAR, Inc.*
Agora Securities, Inc.
Alger (Fred) & Company, Incorporated
Allen & Company Incorporated
Alstead, Strangis & Dempsey Incorporated*
American Securities Corporation
Ames (A.E.) & Co., Incorporated*
Anderson & Strudwick, Incorporated *
Arnhold and S. Bleichroeder, Inc.
Asiel & Co.
Atlantic Capital Corporation
Bache Halsey Stuart Shields Incorporated
Bacon, Whipple & Co.
Baird, Patrick & Co., Inc.
Baird (Robert W.) & Co. Incorporated
Battery Park Settlement Corporation
Bear, Stearns & Co.
Beauchamp & Co.
Becker (A.G.) Incorporated
Bedford Partners
Bell & Beckwith
Benton, Newman, Mosca & Co.
Bernstein (Sanford C.) & Co., Inc.
Blair (William) & Company
Blunt Ellis & Loewi Incorporated
Boettcher & Company
Bradford Broker Settlement, Inc.





Watches grew more sophisticated throughout the 18th and 19th centuries. Left: A pocket watch, by M. Marcou, Amsterdam, circa 1700. A hand indicates the minutes, while the hours are shown by a miniature sun traveling through the cutout during daytime, and a miniature moon at night. The date appears in the square at center bottom.

Right: Fashioned by Abraham Louis Bréguet, Paris, between 1820 and 1825, this gold and silver watch is shock-resistant, self-winding, and equipped with its own scale for checking spring tension. It shows the day of the week, the date, and the phase of the moon, each on its own dial, as well as the time of day.

Bradford (J.C.) & Co.
 Branch, Cabell & Co.
 Brandt (Robert) & Co.
 Brown (Alex.) & Sons
 Brown & Company Securities Corporation*
 Bruns, Nordeman, Rea & Co.
 Burgess & Leith Incorporated
 Burns Fry and Timmins Inc.
 Burns, Pauli & Co., Inc.*
 Cantor, Fitzgerald & Co.
 Cantor (S.B.) & Co., Inc.*
 Capital Shares, Inc.*
 Carmley Corporation
 Carolina Securities Corporation
 Carr Securities Corporation
 Carr & Thompson, Inc.*
 Cartwright (L.) & Co.*
 Chicago Corporation (The)
 Christopher (B.C.) & Company
 Coburn & Meredith, Inc.*
 Colin, Hochstin Co.
 Conklin, Cahill & Co.
 Conning & Co.
 Cosentino & DeFelice, Inc.*
 Cowen & Co.
 Craig-Hallum, Inc.
 Dain Bosworth Incorporated
 Daiwa Securities America, Inc.
 Davenport & Co. of Virginia, Inc.
 Davis (Shelby Cullom) & Co.
 de Cordova, Cooper & Co.
 Deltec Securities Corporation*
 Denton & Company, Inc.*
 Dillon, Read & Co. Inc.
 Doff & Co., Inc.
 Dominick Investor Services Corporation
 Donaldson, Lufkin & Jenrette Securities Corporation
 Drexel Burnham Lambert Incorporated
 Drysdale Securities Corporation
 Easton & Co.
 Eberstadt (F.) & Co., Inc.
 Edwards (A.G.) & Sons, Inc.
 Elkhorn & Co.
 Engler & Budd Company*
 Eppler, Guerin & Turner, Inc.
 Equity Securities Trading Co., Inc.*
 Ernst & Co.
 EuroPartners Securities Corp.
 Evans & Co., Inc.
 Exchange Services, Inc.*
 Execution Services Incorporated
 Fagenson & Co., Inc.
 Fahnstock & Co.
 Ferris & Company, Incorporated*
 Financial America Securities, Inc.*
 First Albany Corporation
 First Birmingham Securities Corporation*

First Boston Corporation (The)
 First Jersey Securities, Inc.
 First Manhattan Co.
 First Southwest Company
 Foster & Marshall Inc.
 Frances (E.G.) Co., Inc.
 Frank (Walter N.) & Co.
 Frankel (Wm. V.) & Co., Inc.*
 Freehling & Co.
 Fried (Albert) & Co.
 Gintel & Co.
 Goldberg Securities
 Goldman, Sachs & Co.
 Gowell Securities Corp.*
 Gradison & Company Incorporated
 Granger & Company
 Gruntal & Co.
 Gruss (Oscar) & Son Incorporated
 Haupt, Andrews, Fraiman & Hug
 Hawthorne Securities Corporation*
 Henderson Brothers, Inc.
 Herzfeld & Stern
 Herzog, Heine, Geduld, Inc.
 Hill, Thompson, Magid & Co., Inc.*
 Hilliard (J.J.B.), Lyons (W.L.), Inc.
 Hirshon, Roth & Co.
 Howard, Weil, Labouisse, Friedrichs Incorporated
 Hudson (R.S.) & Co., Inc.*
 Hummer (Wayne) & Co.
 Hutton (E.F.) & Company Inc.
 Icahn & Co., Inc.
 Illinois Company Incorporated (The)
 Ingalls & Snyder
 Institutional Equity Corporation
 Interstate Securities Corporation
 Jacobson (Benjamin) & Sons
 Janney Montgomery Scott Inc.
 Jefferies & Company, Inc.
 Jones (Edward D.) & Co.
 Josephthal & Co. Incorporated
 Kalb, Voorhis & Co.
 Kaufmann, Alsborg & Co.
 Kidder, Peabody & Co. Incorporated
 Kingsley, Boye & Southwood, Inc.
 Krieger (Henry) & Co.
 LaBranche & Co.
 Laidlaw Adams & Peck Inc.
 Lasker, Stone & Stern
 Lawrence (Cyrus J.) Incorporated
 Lawrence, O'Donnell & Co.
 Lazard Frères & Co.
 Lewco Securities Corp.
 Mabon, Nugent & Co.
 Madoff (Bernard L.)
 Manley, Bennett, McDonald & Co.
 Marcus & Company
 Marcus Schloss & Co., Inc.

Marks (Carl) & Co., Inc.
 Masten (A.E.) & Co., Incorporated
 May & Gannon, Inc.*
 Mayer & Schweitzer, Inc.
 McCourtney-Breckenridge & Company*
 McDonald & Company
 McLeod Young Weir Incorporated
 Meehan (M.J.) & Company
 Merrill Lynch, Pierce, Fenner & Smith Incorporated
 Mesirow & Company
 Mitchel, Schreiber, Watts & Co., Inc.
 MKI Securities Corp.
 Montgomery Securities
 Moore & Schley, Cameron & Co.
 Morgan, Keegan & Company, Inc.
 Morgan, Olmstead, Kennedy & Gardner, Incorporated
 Morgan Stanley & Co. Incorporated
 Muir (John) & Co.
 Muller & Company, Inc.
 Murphey, Marseilles & Smith
 Murphy, Durieu & Naddell
 Neuberger & Berman
 New Japan Securities International, Inc.
 Newhard, Cook & Co. Incorporated
 Nick (J.F.) & Co.
 Nomura Securities International, Inc.
 Norris & Hirschberg, Inc.*
 Oppenheimer & Co., Inc.
 Paine, Webber, Jackson & Curtis Incorporated
 Parker, Weissenborn & Moynahan, Inc.*
 Pasternack Securities
 Pforzheimer (Carl H.) & Co.
 Piper, Jaffray & Hopwood, Incorporated
 Pitfield, Mackay & Co., Inc.
 Prescott, Ball & Turben
 Purcell, Graham & Co., Inc.
 Q & R Clearing Corporation
 Quinn (E.J.) & Co., Inc.*
 Rauscher Pierce Refsnes, Inc.
 Raymond, James & Associates, Inc.
 Reaves (W.H.) & Co., Inc.
 Reich & Co., Inc.
 Rice Securities, Inc.
 Richardson Securities, Inc.
 Riviere Securities Corporation*
 Robb, Peck, McCooey & Co., Inc.
 Robertson, Colman, Stephens & Woodman
 Robinson-Humphrey Company, Inc. (The)
 Rodman & Renshaw, Inc.
 Roney (Wm. C.) & Company

* NSCC Sponsored Account
 † As of December 31, 1980
 ‡ Includes only those which have given permission for use of their names.

Ross (Arthur H.), Inc.
 Rotan Mosle Inc.
 Rothschild (L.F.), Unterberg, Towbin
 Roulston and Company, Inc.
 Rowland (R.) & Co., Incorporated
 Ryan (John J.) & Co.*
 Sade & Co.
 Salomon Brothers
 Schapiro (M.A.) & Co., Inc.
 Scherck, Stein & Franc, Inc.*
 Seasongood & Mayer*
 Securities Settlement Corporation
 Seligman Securities, Inc.
 Shaine (H.B.) & Co., Inc.
 Shearson Loeb Rhoades Inc.
 Simon (I.M.) & Co.
 Smith Barney, Harris Upham & Co.,
 Incorporated
 Smith (E.H.) Jacobs & Co.*
 Source Securities Corporation
 Southwest Securities, Inc.
 Spear, Leeds & Kellogg
 Steichen (R.J.) & Company*
 Stern & Kennedy
 Sterne, Agee & Leach, Inc.
 Stifel, Nicolaus & Company Incorporated
 Stillman, Maynard & Co.
 Stokes, Hoyt & Co.
 Streicher (J.) & Co.
 Stuart Brothers
 Stubro, Incorporated
 Sutro & Co. Incorporated
 Swiss American Securities Inc.
 Thomson McKinnon Securities Inc.
 Thrift Trading, Incorporated*
 Tompane (A.B.) & Co.
 Tucker, Anthony & Day (R.L.), Inc.
 Tweedy Browne Clearing Corporation
 Vincent (Burton J.), Chesley & Co.
 Viner (Edward A.) & Co., Inc.
 Wagner, Stott & Co.
 Weber, Hall, Sale & Associates, Inc.
 Wechsler & Krumholz, Inc.
 Weiss, Peck & Greer
 Wellington & Co.
 Wheat, First Securities, Inc.
 Whitney Goadby Inc.
 Wien (M.S.) & Co., Inc.
 Williams (Jerry), Inc.*
 Witter (Dean) Reynolds Inc.
 Wood Gundy Incorporated
 Wreszin, Prosser, Romano & Co.
 Yamaichi International (America), Inc.

Clearing Agencies (6)

Midwest Securities Trust Company
 National Securities Clearing Corporation
 New England Securities Depository Trust
 Company
 Options Clearing Corporation (The)
 Pacific Securities Depository Trust
 Company
 Philadelphia Depository Trust Company

DTC Stockholders (59 †)

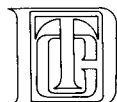
The full list of 1980 DTC stock-
 holders, in order of their holdings,
 is as follows:

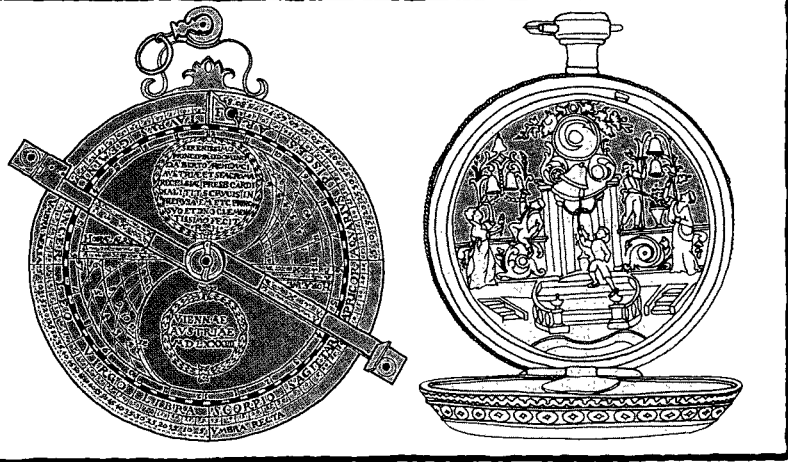
New York Stock Exchange, Inc.
 Bankers Trust Company
 Merrill Lynch & Co., Inc.
 Citibank, N.A.
 American Stock Exchange, Inc.
 National Association of Securities Dealers, Inc.
 The Chase Manhattan Bank, N.A.
 Manufacturers Hanover Trust Company
 The Bank of New York
 Morgan Guaranty Trust Company of New York
 United States Trust Company of New York
 Irving Trust Company

Wells Fargo Bank, National Association
 Marine Midland Bank
 Goldman, Sachs & Co.
 Chemical Bank
 Northwestern National Bank of
 Minneapolis
 State Street Bank and Trust Company
 Salomon Brothers
 A.G. Edwards & Sons, Inc.
 Mellon Bank, N.A.
 The Citizens and Southern National Bank
 Morgan Stanley & Co. Incorporated
 First & Merchants National Bank
 Lewco Securities Corp.
 Donaldson, Lufkin & Jenrette Securities
 Corporation
 The First Boston Corporation
 Alex. Brown & Sons
 Edward A. Viner & Co., Inc.
 Hartford National Bank and Trust Company
 The Connecticut Bank and Trust Company
 Shawmut Bank of Boston, N.A.
 Arnhold and S. Bleichroeder, Inc.
 The Equitable Trust Company
 Burgess & Leith Incorporated
 F. Eberstadt & Co., Inc.
 Maryland National Bank
 Wood Gundy Incorporated
 Whitney Goadby Inc.
 Bradford Trust Company
 First Wall Street Settlement Corporation
 Oscar Gruss & Son Incorporated
 Kingsley, Boye & Southwood, Inc.
 First Jersey National Bank
 Carl Marks & Co., Inc.
 Carl H. Pforzheimer & Co.
 LaBranche & Co.
 Boettcher & Company
 Prescott, Ball & Turben
 The Fidelity Bank
 Stillman, Maynard & Co.
 W.H. Reaves & Co., Inc.
 Pitfield, Mackay & Co., Inc.
 Fagenson & Co., Inc.
 J.F. Nick & Co.
 The First National Bank of Atlanta
 Stock Clearing Corporation
 Mitchel, Schreiber, Watts & Co., Inc.
 Mayer & Schweitzer, Inc.

Depository Facilities(34 †)

Atlanta, Georgia
 Citizens and Southern National Bank (The)
 First National Bank of Atlanta (The)
 Baltimore, Maryland
 First National Bank of Maryland (The)
 Birmingham, Alabama
 First National Bank of Birmingham
 Boston, Massachusetts
 New England Securities Depository
 Trust Company
 Shawmut Bank of Boston, N.A.
 State Street Bank and Trust Company
 Charlotte, North Carolina
 First Union National Bank of North Carolina
 Cleveland, Ohio
 AmeriTrust Company
 Dallas, Texas
 First National Bank in Dallas
 Republic National Bank of Dallas
 Denver, Colorado
 United Bank of Denver, National Association
 Hartford, Connecticut
 Connecticut Bank and Trust Company (The)
 Hartford National Bank and Trust Company
 Houston, Texas
 Houston National Bank
 Indianapolis, Indiana
 Merchants National Bank & Trust
 Company of Indianapolis





Left: This gilt brass nocturnal was dedicated to Albert, Archduke of Austria, in 1584.

Right: An early 19th-century automaton watch of gold and enamel, probably made in Geneva. When the ring is pressed, the human figures move about striking at the bells in the design, while chimes sound from the mechanism within.

Jersey City, New Jersey
 First Jersey National Bank
Los Angeles, California
 Security Pacific National Bank
 Wells Fargo Bank, National Association
Louisville, Kentucky
 Citizens Fidelity Bank & Trust Company
 First Kentucky Trust Company (The)
Milwaukee, Wisconsin
 First Wisconsin Trust Company
Minneapolis, Minnesota
 First National Bank of Minneapolis
 Northwestern National Bank of Minneapolis
Nashville, Tennessee
 United American Bank
Philadelphia, Pennsylvania
 Fidelity Bank (The)
 Provident National Bank
Pittsburgh, Pennsylvania
 Mellon Bank, N.A.
Providence, Rhode Island
 Industrial National Bank of Rhode Island
Richmond, Virginia
 First & Merchants National Bank
Rochester, New York
 Lincoln First Bank of Rochester
St. Louis, Missouri
 First National Bank in St. Louis
 Mercantile Trust Company National Association
San Francisco, California
 Wells Fargo Bank, National Association

Pledgeses (98†)

Algemene Bank Nederland N.V., New York Branch
 Amalgamated Bank of New York (The)
 Ameritrust Company (The)
 Arizona Bank (The)
 Banca Commerciale Italiana, Chicago Branch
 Bank Leumi Trust Company of New York
 Bank of America, National Trust and Savings Association (Los Angeles)
 Bank of America National Trust and Savings Association (San Francisco)
 Bank of New York (The)
 Bank of Nova Scotia (The)
 Bank of Tokyo Trust Company (The)
 Bankers Trust Company
 Banque de Paris et des Pays-Bas
 Barclays Bank International Limited
 Boatmen's National Bank of St. Louis (The)
 Bradford Trust Company
 Brown Brothers Harriman & Co.
 California First Bank
 Canadian Imperial Bank of Commerce
 Central National Bank of Cleveland

Chase Manhattan Bank, N.A. (The)
 Chemical Bank
 Citibank, N.A.
 Citizens Fidelity Bank and Trust Company
 Citizens and Southern National Bank (The)
 Connecticut Bank and Trust Company (The)
 Continental Illinois National Bank and Trust Company of Chicago
 Credit Lyonnais, New York Branch
 Credito Italiano
 Crocker National Bank
 Daiwa Bank Limited (The), New York Agency
 Detroit Bank & Trust Company (The)
 Equitable Trust Company (The)
 European-American Bank & Trust Company
 Fidelity Bank (The)
 First American Bank, National Association
 First Jersey National Bank
 First & Merchants National Bank
 First National Bank in Dallas
 First National Bank in St. Louis
 First National Bank of Arizona
 First National Bank of Atlanta (The)
 First National Bank of Chicago
 First National Bank of Louisville
 First National Bank of Maryland (The)
 First National Bank of Minneapolis
 First National Bank of Oregon
 First Pennsylvania Bank, N.A.
 First Union National Bank of North Carolina
 Fuji Bank and Trust Company (The)
 Harris Trust and Savings Bank
 Hartford National Bank and Trust Company
 Houston National Bank
 Indiana National Bank (The)
 Irving Trust Company
 Lincoln First Bank of Rochester
 Lloyds Bank California
 Manufacturers Hanover Trust Company
 Manufacturers National Bank of Detroit
 Marine Midland Bank
 Maryland National Bank
 Mellon Bank, N.A.
 Mercantile-Safe Deposit and Trust Company
 Mercantile Trust Company National Association
 Merchants National Bank & Trust Company of Indianapolis
 Morgan Guaranty Trust Company of New York
 National Bank of Detroit
 National Bank of North America
 National Westminster Bank Limited
 New England Merchants National Bank
 North Carolina National Bank
 Northern Trust Company (The)
 Northwestern National Bank of Minneapolis
 Pittsburgh National Bank

Provident National Bank
 Republic National Bank of Dallas
 Republic National Bank of New York
 Royal Bank of Canada (The), New York Agency
 Royal Bank & Trust Company (The)
 Sanwa Bank Limited (The)
 Seattle First National Bank
 Security Pacific National Bank
 Shawmut Bank of Boston, N.A.
 State Street Bank and Trust Company
 Sumitomo Trust & Banking Co., Ltd. (The)
 Swiss Bank Corporation, New York Branch
 Swiss Credit Bank
 Texas Commerce Bank National Association
 Toledo Trust Company (The)
 Toronto-Dominion Bank (The)
 Union Bank of Switzerland, New York Branch
 Union First National Bank of Washington
 United Bank of Denver, National Association
 United California Bank
 United States Trust Company of New York
 United Virginia Bank
 Wachovia Bank and Trust Company, N.A.
 Wells Fargo Bank, National Association

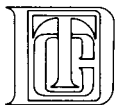
Banks Reported to be Participating in the Depository on an Indirect Basis (266†‡)

Alabama
 Central Bank of Birmingham
 First Alabama Bank of Huntsville, N.A.
Alaska
 Alaska National Bank of the North, Fairbanks
 Alaska Statebank, Anchorage
 National Bank of Alaska, Anchorage
Arizona
 Harris Trust Company of Arizona, Scottsdale
 Valley National Bank, Phoenix
California
 California Canadian Bank, San Francisco
 City National Bank, Beverly Hills
 Lloyds Bank California, Los Angeles
 Mechanics Bank of Richmond
 Trust Company of California (The), Los Angeles
 Trust Company of the West, Los Angeles
Colorado
 Central Bank of Denver
 Colorado National Bank, Denver
 First National Bank in Boulder
 First National Bank of Denver (The)
 First National Bank of Englewood (The)
 First National Bank in Grand Junction

* NSCC Sponsored Account
 † As of December 31, 1980
 ‡ Includes only those which have given permission for use of their names.

First National Bank in Loveland
 Greeley National Bank, Greeley
Connecticut
 Citytrust, Bridgeport
 Connecticut National Bank (The), Bridgeport
 New England Bank & Trust Company, Enfield
 Putnam Trust Company of Greenwich
 State National Bank of Connecticut, Bridgeport
 Union Trust Company, New Haven
 Westport Bank & Trust Company
Delaware
 Bank of Delaware, Wilmington
 Farmers Bank of the State of Delaware,
 Wilmington
 Wilmington Trust Company
District of Columbia
 American Security Bank, N.A.
 National Bank of Washington (The)
Florida
 American Bank & Trust Company at
 Fort Lauderdale
 Barnett Bank of Jacksonville, N.A.
 Barnett Banks Trust Company, N.A.,
 Jacksonville
 Century National Bank of Broward,
 Fort Lauderdale
 Exchange Bank and Trust Company of Florida
 (The), Tampa
 First Bank and Trust Company of Boca Raton
 First Marine Bank and Trust Company
 of The Palm Beaches
 First National Bank of Florida, Tampa
 First National Bank of Fort Myers
 First National Bank of Venice
 First National Bank and Trust Company
 of Naples
 First National Bank and Trust Company of
 Riviera Beach
 Flagship Bank of Tampa
 Flagship National Bank of Miami
 Florida Bank of Fort Lauderdale
 Florida Bank and Trust Company of Daytona Beach
 Florida First National Bank of Jacksonville
 Florida First National Bank of Ocala
 Florida First National Bank of Pensacola
 Florida First National Bank of Vero Beach
 Florida National Bank of Gainesville
 Florida National Bank of Lakeland
 Florida National Bank of Miami
 Florida National Bank at Orlando
 Florida National Bank of Palm Beach County
 Florida National Bank of St. Petersburg
 Gulfstream American Bank and Trust,
 N.A., Fort Lauderdale
 Gulfstream First Bank and Trust
 Company, N.A., Boca Raton
 Landmark First National Bank
 of Fort Lauderdale
 Lee County Bank, Fort Myers
 National Bank of Sarasota
 National Trust Company (The), Fort Myers
 Peoples Bank of Lakeland
 Royal Trust Bank of Miami
 Southeast Bank of Broward
 Southeast Bank of Jacksonville
 Southeast Bank of New Smyrna
 Southeast Banks Trust Company, N.A., Miami
 Southeast First Bank of Largo
 Southeast First National Bank of Miami
 Southeast First National Bank of Sarasota
 Southeast National Bank of Bradenton
 Southeast National Bank of Deerfield
 Southeast National Bank of Naples
 Southeast National Bank of Orlando
 Sun Bank of Miami
 Sun Bank of Ocala
 Sun Bank of St. Lucie County
 Sun Bank of Volusia County
 Sun Bank and Trust Company of St. Petersburg
 Sun First National Bank of Dunedin
 Sun First National Bank of Lake County
 Sun First National Bank of Orlando

Sun First National Bank of Palm Beach County
 Venice Nokomis Bank & Trust Company, Ver
Georgia
 Columbus Bank and Trust Company
 National Bank of Georgia, Atlanta
Hawaii
 Bishop Trust Company, Ltd., Honolulu
 First Hawaiian Bank, Honolulu
 Hawaiian Trust Company, Ltd., Honolulu
Idaho
 Idaho Bank and Trust Company, Pocatello
 Idaho First National Bank (The), Boise
Illinois
 Pioneer Bank and Trust Company, Chicago
 Springfield Marine Bank
Indiana
 Anderson Banking Company, Anderson
 Citizens National Bank of Evansville
 First Bank and Trust Company of South Bend
 First National Bank of Richmond (The)
 Lincoln National Bank and Trust Company,
 Fort Wayne
 Peoples Bank and Trust Company, Indianapolis
 Peoples Trust Bank, Fort Wayne
 Purdue National Bank of Lafayette
 St. Joseph Bank and Trust Company, South Be
Iowa
 Iowa—Des Moines National Bank
 Merchants National Bank of Cedar Rapids (Th
Kansas
 Brotherhood Bank and Trust Company,
 Kansas City
 Union National Bank of Wichita
Louisiana
 Hibernia National Bank in New Orleans (The)
Maine
 Canal National Bank, Portland
 Casco Bank & Trust Company, Portland
 Maine National Bank, Portland
 Merchants National Bank of Bangor
Massachusetts
 Arlington Trust Company, Lawrence
 Berkshire Bank and Trust Company, Pittsfield
 B.M.C. Durfee Trust Co., Fall River
 Cambridge Trust Company
 First Agricultural Bank, Pittsfield
 Framingham Trust Company
 Guaranty Bank and Trust Company, Worcester
 Mechanics National Bank, Worcester
 Pacific National Bank of Nantucket
 Plymouth Home National Bank, Brockton
 South Shore National Bank, Quincy
 Union National Bank, Lowell
 United States Trust Company, Boston
Michigan
 American National Bank and Trust
 Company of Michigan, Kalamazoo
 Ann Arbor Trust Company
 Commercial and Savings Bank of
 St. Clair County, St. Clair
 Detroit Bank & Trust
 First National Bank & Trust Company
 of Michigan, Kalamazoo
 National Bank of Jackson
Minnesota
 IDS Benefit Trust Company, Minneapolis
 Marquette National Bank of Minneapolis (The)
 Midland National Bank of Minneapolis, Minne
 Northwestern National Bank of St. Paul
Mississippi
 First National Bank of Jackson
Missouri
 First National Bank of Kansas City
 Guaranty Trust Company of Missouri
 (The), Dayton
 St. Louis Union Trust Company
 Traders Bank, Kansas City
 United Missouri Bank of Kansas City, N.A.
Montana
 Northwestern Bank of Helena
Nebraska
 First National Bank and Trust Company of Lin





Far larger than watches, automaton clocks offered craftsmen the room to engage in extremely intricate showmanship. "Diana on the Centaur," Augsburg, circa 1600, was made of silver and gilt fitted with gems and enamel. The clock rolls across the table on its ebony base when the hour strikes, and the centaur rolls his eyes and fires his bow, while Diana and the dogs nod approvingly.

First Northwestern Trust Company of
Nebraska, Omaha

National Bank of Commerce, Lincoln

Nevada
First National Bank of Nevada, Reno
Security National Bank of Nevada, Reno

New Hampshire
Bank of New Hampshire
National Association, Concord

New Jersey
Citizens First National Bank of Ridgewood
City Trust Services National
Association, Elizabeth

First National Bank of New Jersey, Totowa
First National Bank of Princeton (The)
First National State Bank of New Jersey,
Newark

National State Bank (The), Elizabeth
New Jersey Bank, N.A., Paterson
New Jersey National Bank, Trenton
Somerset Trust Company, Somerville
Summit and Elizabeth Trust Company, Summit
United Counties Trust, Elizabeth
United Jersey Bank, Hackensack

New Mexico
Bank of New Mexico (The), Albuquerque

New York
Chemung Canal Trust Company, Elmira
Empire National Bank, Middletown
Key Trust Company, Albany
Long Island Trust Company, Garden City
Oneida National Bank and Trust Company
of Central New York (The), Utica
Savings Banks Trust Company, New York
Security Trust Company, Rochester
St. Lawrence National Bank (The), Canton
Tompkins County Trust Company, Ithaca

North Carolina
Bank of North Carolina, N.A., Jacksonville
Carolina First National Bank, Lincolnton
Central Carolina Bank and Trust Company, Durham
Independence National Bank, Gastonia
Northwestern Bank (The), North Wilkesboro
Southern National Bank of North
Carolina, Lumberton
United Carolina Bank, Monroe
United Carolina Bank, Whiteville

North Dakota
Bank of North Dakota, Bismarck

Ohio
BancOhio National Bank, Columbus
Bank One of Columbus, N.A.
Bank One Trust Company, N.A., Columbus
First National Bank of Cincinnati (The)
First National Bank of Toledo
Huntington National Bank of Columbus (The)
Second National Bank of Warren (The)
Third National Bank & Trust
Company (The), Dayton

Winters National Bank and
Trust Company, Dayton

Oklahoma
Bank of Oklahoma, National Association, Tulsa
F & M Bank & Trust Company (The), Tulsa
First National Bank and Trust
Company of Oklahoma City (The)
First National Bank and Trust Company of Tulsa (The)
Liberty National Bank and Trust
Company of Oklahoma City (The)
Utica National Bank & Trust Company, Tulsa

Oregon
First National Bank of Oregon, Portland
Oregon Bank (The), Portland

Pennsylvania
American Bank and Trust Company of
Pennsylvania, Reading
Bank of Pennsylvania, Reading
Commonwealth National Bank (The),
Harrisburg
Continental Bank, Norristown
Dauphin Deposit Bank & Trust
Company, Harrisburg

Equibank, N.A., Pittsburgh
First Seneca Bank and Trust Company, Oil City
First Valley National Bank, Bethlehem
Frankford Trust Company, Philadelphia
Hamilton Bank, Lancaster
Marine National Bank, Erie
McDowell National Bank of Sharon
Merchants National Bank of Allentown (The)
Northeastern Bank of Pennsylvania
Northern Central Bank, Williamsport
Security Bank & Trust Company, Stroudsburg
Security-Peoples Trust Company, Erie
Southeast National Bank of Pennsylvania,
West Chester

Third National Bank and Trust
Company of Scranton
United Penn Bank, Wilkes-Barre
Union Bank and Trust Company of Eastern
Pennsylvania, Bethlehem
Union National Bank of Pittsburgh (The)

Rhode Island
New England Trust Company, Providence
Old Stone Bank, Providence
Washington Trust Company (The), Westerly

South Carolina
Bankers Trust of South Carolina, Columbia
Citizens and Southern National Bank
of South Carolina, Columbia
First National Bank of South Carolina, Columbia
Southern Bank and Trust Company,
Greenville

Tennessee
Park National Bank (The), Knoxville
Union Planters National Bank of Memphis

Texas
Austin National Bank

Bank of the Southwest, Houston
First City Bank of Dallas
First City National Bank of Houston
First International Bank in Houston, N.A.
First National Bank of Amarillo (The)
Frost National Bank, San Antonio
Houston National Bank
Mercantile National Bank at Dallas
Republic National Bank of Dallas
Southern National Bank of Houston

Utah
Tracy-Collins Bank and Trust Company,
Salt Lake City

Vermont
First Vermont Bank and Trust Company,
Brattleboro

Virginia
Bank of Virginia Trust Company, Richmond
First American Bank of Virginia, McLean
National Bank of Fairfax (The)
Virginia National Bank, Norfolk

Washington
Bellingham National Bank (The)
Frank Russell Trust Company, Tacoma
Old National Bank of Washington, Spokane
Pacific National Bank of Washington, Seattle
Peoples National Bank of Washington, Seattle
Seattle Trust & Savings Bank

West Virginia
Charleston National Bank (The)

Wisconsin
Citizens Trust Company (The), Sheboygan
First National Bank and Trust Company
of Racine
Kellogg-Citizens National Bank of Green Bay
Marine Bank of Beaver Dam
Marine Bank of Madison
Marine National Bank of Neenah
Marine Trust Company (The), Milwaukee
Merchants & Savings Bank, Janesville
Peoples Marine Bank of Green Bay
Security Marine Bank of Madison
Valley Trust Company, Appleton
West Bend Marine Bank

Investment Companies Reported to be Using Depository Services (118 †)

(Listed by Custodian Bank)

BANK OF NEW YORK (THE)
Adams Express Company
Alpha Fund, Inc.
Charter Fund, Inc.

† As of December 31, 1980. Includes only those which have given permission for use of their names.

Drexel Burnham Fund (The)
Fundamerica of Japan, Inc.
General Electric S & S Program Mutual Fund
Lehman Corporation (The)
Merrill Lynch Capital Fund, Inc.
Merrill Lynch Special Value Fund
National Securities Balanced Fund
National Securities Bond Fund
National Securities Dividend Fund
National Securities Growth Fund
National Securities Income Fund
National Securities Preferred Fund
National Securities Stock Fund
Petroleum & Resources Corporation
Unified Accumulation Fund
Unified Growth Fund
Unified Income Fund
Unified Mutual Shares

BANKERS TRUST COMPANY
Elfun Trusts

BOSTON SAFE DEPOSIT AND TRUST COMPANY
IPI-Income & Price Index Fund
Johnston Capital Appreciation Fund
Johnston Income Fund

CHASE MANHATTAN BANK, N.A. (THE)
AMCAP Fund, Inc.
American Balanced Fund, Inc.
American Mutual Fund, Inc.
Bond Fund of America, Inc. (The)
Bond Portfolio for Endowments, Inc.
Endowments, Inc.
Growth Fund of America
Income Fund of America
Investment Company of America (The)
New Perspective Fund, Inc.
RCM Growth Equity Fund

FIRST JERSEY NATIONAL BANK
Anchor Growth Fund, Inc.
Fundamental Investors, Inc.
Merrill Lynch Basic Value Fund, Inc.
Merrill Lynch Equi-Bond Fund, Inc.

FIRST NATIONAL BANK OF BOSTON (THE)
Beacon Growth Fund
Colonial Fund (The)
Colonial Growth Shares
Colonial Option Income Fund

FIRST NATIONAL BANK OF MINNEAPOLIS
Common Stock Fund of State Bond & Mortgage Co.
Diversified Fund of State Bond & Mortgage Co.
IDS Bond Fund, Inc.
IDS New Dimensions Fund, Inc.
Investors Variable Payment Fund, Inc.
Investors Selective Fund, Inc.
Progress Fund, Inc.

HARTFORD NATIONAL BANK AND TRUST COMPANY
Value Line Fund, Inc. (The)
Value Line Income Fund, Inc. (The)
Value Line Leveraged Growth Investors, Inc.
Value Line Special Situations Fund, Inc. (The)

MERCHANTS NATIONAL BANK AND TRUST COMPANY OF INDIANAPOLIS
Liquid Green Trust

NEW ENGLAND MERCHANTS NATIONAL BANK
American Dual Vest Fund
Tudor Hedge Fund

NORTHWESTERN NATIONAL BANK OF MINNEAPOLIS
IDS Growth Fund, Inc.
IDS Progressive Fund, Inc.
Investors Stock Fund, Inc.

RIGGS NATIONAL BANK OF WASHINGTON, D.C. (THE)
Aetna Income Shares, Inc.
Aetna Variable Encore Fund, Inc.
Aetna Variable Fund, Inc.
Washington Mutual Investors Fund, Inc.

SHAWMUT BANK OF BOSTON, N.A.
Directors Capital Fund, Inc.
Energy Fund Incorporated
Fidelity Fund, Inc.
Gateway Option Income Fund
Guardian Mutual Fund, Inc.
Partners Fund, Inc. (The)

STATE STREET BANK AND TRUST COMPANY
Explorer Fund, Inc.
Federated Option Income Fund, Inc.
Financial Bond Shares, Inc.
Financial Daily Dividend Shares
Financial Daily Income Shares, Inc.
Financial Dynamics Fund, Inc.
Financial Industrial Fund, Inc.
Financial Industrial Income Fund, Inc.
INA High Yield Investments, Inc.
Ivest Fund, Inc.

Massachusetts Capital Development Fund, Inc.
Massachusetts Financial Bond Fund, Inc.
Massachusetts Financial Development Fund, Inc.
Massachusetts Financial High Income Trust
Massachusetts Income Development Fund, Inc.
Massachusetts Investors Growth Stock Fund, Inc.
Massachusetts Investors Trust
Merrill Lynch High Income Fund, Inc.
Morgan (W.L.) Growth Fund, Inc.
Price (T. Rowe) Growth Stock Fund, Inc.
Price (Rowe) New Era Fund, Inc.
Price (Rowe) New Horizons Fund, Inc.
Price (Rowe) New Income Fund, Inc.
Putnam Growth Fund
Putnam Option Income Trust
Qualified Dividend Portfolio I
Qualified Dividend Portfolio II
Scudder Common Stock Fund
TDP & L Investment Account A
Trustees' Commingled Equity Fund
Vanguard Fixed Income Securities Fund, Inc. - High Yield
Vanguard Fixed Income Securities Fund, Inc. - Investment Grade
Vanguard Index Trust, Inc.
Variable Stock Fund, Inc.
Wellesley Income Fund, Inc.
Wellington Fund, Inc.

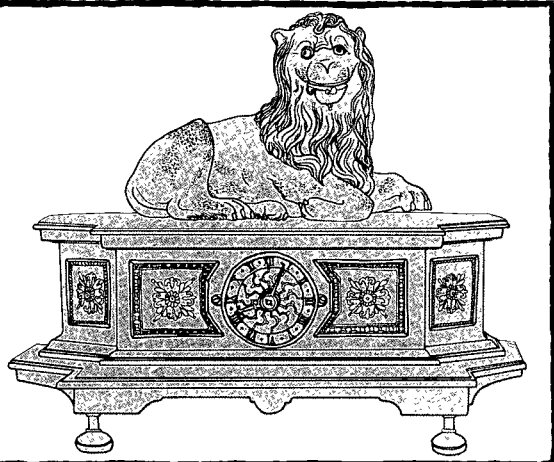
TEXAS COMMERCE BANK, N.A.
American National Bond Fund, Inc.
American National Growth Fund, Inc.
American National Income Fund, Inc.
Commerce Income Shares, Inc.
Industries Trend Fund, Inc.
Investment Quality Interest, Inc.
Pilot Fund, Inc.

UNITED BANK OF DENVER, N.A.
Bank Stock Fund, Inc.
Janus Fund, Inc.
One Hundred Fund, Inc. (The)
One Hundred and One Fund, (The)

Institutions Participating Full in the Institutional Delivery (ID) System (383†)

A. Sarasin & Cie, Banquiers (Basel, Switzerland)
Aetna Casualty and Surety Company (The)
(Hartford, Connecticut)
Aetna Income Shares Inc. (Hartford, Connecticut)
Aetna Life and Casualty Co. (The)
(Hartford, Connecticut)





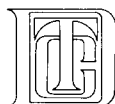
The "Lion" automaton of Augsburg, circa 1600, moves its eyes back and forth as the clock ticks, much as a pendulum swings in more commonplace models. The mouth moves when the hour strikes.

- etna Life Insurance and Annuity Company (Hartford, Connecticut)
 etna Life Insurance Company (The) (Hartford, Connecticut)
 etna Life Insurance - Separate Accounts (Hartford, Connecticut)
 etna Variable Encore Fund, Inc. (Hartford, Connecticut)
 etna Variable Fund, Inc. (Hartford, Connecticut)
 etna Pension Fund (Asheville, North Carolina)
 etna National Bank of the North (Fairbanks, Alaska)
 etna Statebank (Anchorage, Alaska)
 etna Bank & Trust Company (Monroe, North Carolina)
 etna Bank and Trust Co. of Pa. (Reading, Pennsylvania)
 etna National Bank & Trust Co. of Fort Lauderdale (Fort Lauderdale, Florida)
 etna Security Bank, N.A. (Washington, D.C.)
 etna Trust Company (Cleveland, Ohio)
 etna National Bank and Trust Company (Manchester, New Hampshire)
 etna Crediet - En Handelsbank N.V. (Amsterdam, The Netherlands)
 etna Banking Company (Anderson, Indiana)
 etna Madison Companies, Inc. (New York, New York)
 etna Durfee Trust Company (Fall River, Massachusetts)
 etna Ohio National Bank - Trust Department (Columbus, Ohio)
 etna in Liechtenstein (Vaduz, Liechtenstein)
 etna Landau & Kimche AG. (Zurich, Switzerland)
 etna of Delaware (Wilmington, Delaware)
 etna of New Hampshire, National Association (Concord, New Hampshire)
 etna of New York (The) (New York, New York)
 etna of Pennsylvania (Reading, Pennsylvania)
 etna of Scotland (Edinburgh, Scotland)
 etna of Tokyo Trust Company (The) (New York, New York)
 etna of Virginia Trust Company (Richmond, Virginia)
 etna Von Ernst & Cie (Berne, Switzerland)
 etna Trust - Passive Management (New York, New York)
 etna Trust - Personal Securities Services (New York, New York)
 etna Trust Company (Directed Accounts) (New York, New York)
 etna Trust Company (Trust Department) (New York, New York)
 etna Trust Company of South Carolina (Columbia, South Carolina)
 etna Marcard (Hamburg, West Germany)
 etna de la Mutuelle Industrielle (Paris, France)
 etna de L'Union Européenne (Paris, France)
- Banque Française du Commerce Extérieur (Paris, France)
 Banque Gutzwiller, Kurz, Bungener S.A. (Geneva, Switzerland)
 Banque Internationale à Luxembourg (Luxembourg)
 Banque Keyser Ullman France (Paris, France)
 Banque Leu, Ltd. (Zurich, Switzerland)
 Banque Louis-Dreyfus (Paris, France)
 Banque Migros (Geneva, Switzerland)
 Banque Privée S.A. (Paris, France)
 Banque Rothschild (Paris, France)
 Banque Scandinave en Suisse (Geneva, Switzerland)
 Banque Vernes et Commerciale de Paris (Paris, France)
 Banque Worms (Paris, France)
 Barnett Banks Trust Company, N.A. (Jacksonville, Florida)
 Batterymarch Financial Management Corporation (Boston, Massachusetts)
 Bayerische Vereinsbank International S.A. (Luxembourg)
 Bellingham National Bank (The) (Bellingham, Washington)
 Berliner Handels - Und Frankfurter Bank (Frankfurt, West Germany)
 Bishop Trust Co. Ltd. (Honolulu, Hawaii)
 Bordier & Cie (Geneva, Switzerland)
 Boston Safe Deposit and Trust Company (Boston, Massachusetts)
 Bounty Management Corporation (Boston, Massachusetts)
 Breisach Pinschoff Schoeller (Vienna, Austria)
 Brolliet & Cie (Geneva, Switzerland)
 Brotherhood Bank & Trust Company (Kansas City, Kansas)
 Buffalo Savings Bank (Buffalo, New York)
 Buffalo Savings Bank - Life Insurance (Buffalo, New York)
 Bullock Fund (New York, New York)
 California Canadian Bank - Trust Department (San Francisco, California)
 Cambridge Trust Company (Cambridge, Massachusetts)
 Canadian Fund (New York, New York)
 Carolina First National Bank (Lincolnton, North Carolina)
 Casco Bank & Trust Company (Portland, Maine)
 Case Western Reserve University/AmeriTrust Company of Cleveland (Cleveland, Ohio)
 Case Western Reserve University/Central National Bank of Cleveland (Cleveland, Ohio)
 Case Western Reserve University/National City Bank of Cleveland (Cleveland, Ohio)
 Central Bank of Denver (Denver, Colorado)
 Central Carolina Bank & Trust Company (Durham, North Carolina)
 Central Fidelity Bank, N.A. (Richmond, Virginia)
- Central National Bank of Cleveland (Cleveland, Ohio)
 Century Capital Associates (New York, New York)
 Chase Manhattan Bank, N.A. (The) (New York, New York)
 Chase Manhattan Bank (Switzerland) (New York, New York)
 Chase Manhattan Index Fund (New York, New York)
 Chemung Canal Trust Company (Elmira, New York)
 Citibank, N.A. (New York, New York)
 Citibank, N.A. - PPB Security Services (New York, New York)
 Citizens & Southern National Bank (Atlanta, Georgia)
 Citizens & Southern National Bank of South Carolina (Columbia, South Carolina)
 Citizens Fidelity Bank & Trust Company (Louisville, Kentucky)
 Citizens First National Bank of New Jersey (Ridgewood, New Jersey)
 Citizens National Bank of Evansville (The) (Evansville, Indiana)
 Citizens Trust Company (The) (Sheboygan, Wisconsin)
 City National Bank (Beverly Hills, California)
 Citytrust (Bridgeport, Connecticut)
 Colorado National Bank (Directed Accounts) (Denver, Colorado)
 Colorado National Bank (Trust Department) (Denver, Colorado)
 Columbus Bank and Trust Company - Trust Department (Columbus, Georgia)
 Commercial Loan Insurance Corp. TF Alaska Director of Insurance Depository Account (Milwaukee, Wisconsin)
 Connecticut National Bank (The) (Bridgeport, Connecticut)
 Conservet Management Company (Boston, Massachusetts)
 Continental Bank (Norristown, Pennsylvania)
 Credit Commercial de France (Paris, France)
 Cumberland Advisors, Pty. (Vineland, New Jersey)
 Daiwa Bank Ltd. (The) (New York, New York)
 Darier & Cie (Geneva, Switzerland)
 Delbrück & Co., Privatbankiers (Cologne, Germany)
 Den Norske Creditbank (Oslo, Norway)
 Deseret Trust Company (Salt Lake City, Utah)
 Die Erste österreichische Sparkasse (Vienna, Austria)

† As of December 31, 1980. Includes only those which have given permission for use of their names.

Dividend Shares Inc. (New York, New York)
 Eagle Management and Trust Company (Houston, Texas)
 Edinburgh American Assets Trust Ltd. (Edinburgh, Scotland)
 Effectenbank-Warburg Aktiengesellschaft (Frankfurt, West Germany)
 Endowment Management & Research Corporation (Boston, Massachusetts)
 Equibank, N.A. (Pittsburgh, Pennsylvania)
 Equitable Life Assurance Society of the United States (New York, New York)
 Equitable Life Insurance Co. (McLean, Virginia)
 Equitable Trust Company (Baltimore, Maryland)
 Exchange Bank & Trust Company of Florida (Tampa, Florida)
 Explorer Fund, Inc. (Valley Forge, Pennsylvania)
 Farmers Bank of the State of Delaware (Dover, Delaware)
 Fidelity Bank Funds Management Clearing (Philadelphia, Pennsylvania)
 Fidelity Bank Investment Advisory Service (Philadelphia, Pennsylvania)
 Fidelity Bank of Pennsylvania (Philadelphia, Pennsylvania)
 Fidelity Union Trust Company (Newark, New Jersey)
 Fifth Third Bank (The) (Cincinnati, Ohio)
 First Agricultural Bank (Pittsfield, Massachusetts)
 First Alabama Bank of Huntsville N.A. - Trust Department (Huntsville, Alabama)
 First American Bank, N.A. (Washington, D.C.)
 First Bank and Trust Company of Boca Raton, N.A. (Boca Raton, Florida)
 First Bank and Trust Company of South Bend (South Bend, Indiana)
 First City Bank of Dallas (Dallas, Texas)
 First-City National Bank of Binghamton (Binghamton, New York)
 First International Bank in Houston (Houston, Texas)
 First Kentucky Trust Company (Louisville, Kentucky)
 First Marine Bank and Trust Company (Lake Worth, Florida)
 First Marine Bank and Trust Company (Riviera Beach, Florida)
 First & Merchants National Bank (Richmond, Virginia)
 First National Bank and Trust Company of Oklahoma City (The) (Oklahoma City, Oklahoma)
 First National Bank and Trust of Racine (Racine, Wisconsin)
 First National Bank in Dallas (Dallas, Texas)
 First National Bank in Palm Beach (Palm Beach, Florida)
 First National Bank of Birmingham (Birmingham, Alabama)
 First National Bank of Boston (The) (Boston, Massachusetts)
 First National Bank of Colorado Springs (The) (Colorado Springs, Colorado)
 First National Bank of Denver (The) (Denver, Colorado)
 First National Bank of Florida (Tampa, Florida)
 First National Bank of Maryland (Baltimore, Maryland)
 First National Bank of Minneapolis (Minneapolis, Minnesota)
 First National Bank of New Jersey (Totowa, New Jersey)
 First National Bank of Richmond (The) (Richmond, Indiana)
 First National Bank of South Carolina (Columbia, South Carolina)
 First National Bank of Venice (Venice, Florida)
 First Union National Bank of North Carolina (Charlotte, North Carolina)
 First Valley Bank (Bethlehem, Pennsylvania)
 Fisher Controls Company (Marshalltown, Iowa)

Flagship Bank of Tampa (Tampa, Florida)
 Flagship National Bank of Miami - Trust Department (Miami, Florida)
 FMR Investment Management Services, Inc. (Boston, Massachusetts)
 Frank Russell Trust Company (Tacoma, Washington)
 Franklin Management Corp. (Boston, Massachusetts)
 General Electric Pension Trust (Stamford, Connecticut)
 Girozentrale und Bank der Osterreichischen Sparkassen AG. (Vienna, Austria)
 Grantham, Mayo, Van Otterloo & Co., Inc. (Boston, Massachusetts)
 Greenwell (W.) & Company (London, England)
 Gulf Life Insurance Company (Jacksonville, Florida)
 Gulfstream American Bank and Trust Co., N.A. (Fort Lauderdale, Florida)
 Gulfstream First Bank and Trust Co., N.A. (Boca Raton, Florida)
 Guyerzeller Zurmont Bank AG. (Zurich, Switzerland)
 Hartford National Bank and Trust Company (Hartford, Connecticut)
 Hartford Steam Boiler Inspection and Insurance Company (Hartford, Connecticut)
 Hentsch & Cie (Geneva, Switzerland)
 Hibernia National Bank (New Orleans, Louisiana)
 Hill Samuel & Co. Limited (London, England)
 Houston National Bank (Houston, Texas)
 Huntington National Bank of Columbus (The) (Columbus, Ohio)
 IBM Corp. Equity Investments (Armonk, New York)
 IDS Bond Fund, Inc. (Minneapolis, Minnesota)
 IDS Growth Fund, Inc. (Minneapolis, Minnesota)
 IDS New Dimensions Fund Inc. (Minneapolis, Minnesota)
 IDS Progressive Fund Inc. (Minneapolis, Minnesota)
 Idaho First National Bank (The) (Boise, Idaho)
 Indiana National Bank (Indianapolis, Indiana)
 Industrial National Bank of Rhode Island (Providence, Rhode Island)
 International Brotherhood of Teamster Chauffe Warehousemen and Helpers of America - Defense Fund (Washington, D.C.)
 International Brotherhood of Teamster Chauffe Warehousemen and Helpers of America - Ge Fund (Washington, D.C.)
 Investors Selective Fund (Minneapolis, Minnesota)
 Investors Stock Fund Inc. (Minneapolis, Minnesota)
 Investors Variable Payment Fund Inc. (Minneapolis, Minnesota)
 Iowa-Des Moines National Bank (Des Moines, Iowa)
 Irving Trust Company (New York, New York)
 Ivest Fund Inc. (Valley Forge, Pennsylvania)
 Jennison Associates (New York, New York)
 John Hancock Mutual Life Insurance Company (Boston, Massachusetts)
 Kärntner Sparkasse (Klagenfurt, Austria)
 Key Trust Company (Albany, New York)
 Laing & Cruickshank (London, England)
 Landmark First National Bank of Fort Lauderdale (Fort Lauderdale, Florida)
 Lee County Bank (Fort Myers, Florida)
 Lincoln First Bank of Rochester (Rochester, New York)
 Lincoln National Bank and Trust Company (Fort Wayne, Indiana)
 Liquid Green Trust (Indianapolis, Indiana)
 Lloyds Bank California (Pasadena, California)
 Lloyds Bank International (France) Limited (Paris, France)
 Lloyds Bank International Limited (Geneva, Switzerland)
 Long Island Trust Company (Garden City, New York)
 MGIC Assurance General Custody (Milwaukee, Wisconsin)
 MGIC Investment Corp. (Milwaukee, Wisconsin)





Left: When the hour strikes on this late 16th-century German automaton, the knight's head turns and his scepter lifts, as the dog jumps and the horse's eyes roll.

Right: Moving its wings, rolling its eyes, opening its beak, and whistling, this automaton Parrot Clock marks the hour by dropping an appropriate number of pellets onto its ebony base. Its uninhibited gusto reflects the Rabelaisian spirit of its time and place of origin—Augsburg, circa 1600.

Back cover: In the age before the establishment of time zones by international convention, each city kept its own local time and it was often difficult to know what time it was more than a few miles away. Andreas Gärtner solved this problem for his hometown of Dresden in 1730. Dresden time is shown in the large face at center; another 360 faces show what time it is for every degree of longitude around the globe. All 361 faces turn around stationary pointers, in the craftsman's sole concession to the limitations of then-current technology.

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| <p>[&I Marshall & Ilsley Bank
(Milwaukee, Wisconsin)
Manufacturers Hanover Trust Company
(New York, New York)
Manufacturers National Bank of Detroit
(Detroit, Michigan)
Manufacturers and Traders Trust Company
(Buffalo, New York)
Marine Bank (Erie, Pennsylvania)
Marine Midland Bank (New York, New York)
Marine Trust Company, N.A. (The)
(Milwaukee, Wisconsin)
Marquette National Bank of Minneapolis (The)
(Minneapolis, Minnesota)
Maryland National Bank (Baltimore, Maryland)
Maryland State Retirement Systems
(Baltimore, Maryland)
Massachusetts Capital Development Fund, Inc.
(Boston, Massachusetts)
Massachusetts Financial Bond Fund
(Boston, Massachusetts)
Massachusetts Financial Development Fund
(Boston, Massachusetts)
Massachusetts Financial High Income Trust
(Boston, Massachusetts)
Massachusetts Financial Services Company
(Boston, Massachusetts)
Massachusetts Income Development Fund, Inc.
(Boston, Massachusetts)
Massachusetts Investors Growth Stock Fund, Inc.
(Boston, Massachusetts)
Massachusetts Investors Trust
(Boston, Massachusetts)
Massachusetts Mutual Life Insurance Company
(Springfield, Massachusetts)
Massachusetts Mutual Life Insurance Company -
Equities (Springfield, Massachusetts)
McDowell National Bank of Sharon
(Sharon, Pennsylvania)
Mechanics Bank of Richmond (The)
(Richmond, California)
Mellon Bank, N.A. (Pittsburgh, Pennsylvania)
Mercantile-Safe Deposit & Trust Company
(Baltimore, Maryland)
Mercantile Trust Company, N.A.
(St. Louis, Missouri)
Merchants & Savings Bank
(Janesville, Wisconsin)
Merchants National Bank & Trust Company
(Indianapolis, Indiana)
Merchants National Bank & Trust Company
(Security Custody Department)
(Indianapolis, Indiana)
Merchants National Bank of Allentown (The)
(Allentown, Pennsylvania)
Merchants National Bank of Bangor
(Bangor, Maine)
Merchants National Bank of Cedar Rapids
(The) - Trust Division
(Cedar Rapids, Iowa)
Messieurs Hottinguer & Cie (Paris, France)</p> | <p>Metropolitan Bank and Trust Company
(Tampa, Florida)
Migros Bank Basel (Basel, Switzerland)
Migros Bank Zurich (Zurich, Switzerland)
Monsanto Savings & Investment Plan
(St. Louis, Missouri)
Monthly Income Shares (New York, New York)
Morgan (W.L.) Growth Fund, Inc.
(Valley Forge, Pennsylvania)
Morgan Guaranty Trust Company
(New York, New York)
Morgan Guaranty Trust Company (Trust and
Investment Division) (New York, New York)
Mortgage Guaranty Insurance Corp.
(Milwaukee, Wisconsin)
Mortgage Guaranty Insurance Corp. ITF
Alaska Director of Insurance Account
(Milwaukee, Wisconsin)
Nation-Wide Securities Co., Inc.
(New York, New York)
National Bank of Alaska (Anchorage, Alaska)
National Bank of Commerce (Lincoln, Nebraska)
National Bank of Detroit - Bank Investment
Division (Detroit, Michigan)
National Bank of Detroit - Trust Investment
Department (Detroit, Michigan)
National Bank of Fairfax (The)
(Burke, Virginia)
National Bank of Georgia (The)
(Atlanta, Georgia)
National Bank of Westchester
(Rochester, New York)
National Central Bank (Lancaster,
Pennsylvania)
National Trust Company (The)
(Fort Myers, Florida)
New England Mutual Life Insurance Company
(Boston, Massachusetts)
New England Trust Company
(Providence, Rhode Island)
New Jersey Bank National Association
(Paterson, New Jersey)
New Jersey National Bank
(Trenton, New Jersey)
New York Venture Fund, Inc.
(Santa Fe, New Mexico)
Nomura Securities International, Inc.
(New York, New York)
North Carolina National Bank
(Charlotte, North Carolina)
Northeastern Bank of Pennsylvania
(Scranton, Pennsylvania)
Northern Central Bank (Williamsport,
Pennsylvania)
Northwestern National Bank of Minneapolis
(Minneapolis, Minnesota)
Oneida National Bank & Trust Company of
Central New York (The) (Utica, New York)
Pacific National Bank of Nantucket
(Nantucket, Massachusetts)
Paul Revere Equity Management Company (The)</p> | <p>(Greenwich, Connecticut)
Peoples Bank & Trust Company
(Indianapolis, Indiana)
Peoples Bank of Lakeland (Lakeland, Florida)
Pictet & Cie. (Geneva, Switzerland)
Pierson, Heldring & Pierson N.V.
(Amsterdam, The Netherlands)
Pioneer Bank & Trust Company
(Chicago, Illinois)
Plymouth Home National Bank
(Brockton, Massachusetts)
Premco-West Coast (Greenwich, Connecticut)
Prudential Insurance Company of America
(Newark, New Jersey)
Purdue National Bank of Lafayette
(Lafayette, Indiana)
Putnam Advisory Company, Inc. (The)
(Boston, Massachusetts)
Qualified Dividend Portfolio I
(Valley Forge, Pennsylvania)
Qualified Dividend Portfolio II
(Valley Forge, Pennsylvania)
RCM Growth Equity Fund, Inc.
(San Francisco, California)
Republic National Bank of Dallas
(Dallas, Texas)
Retirement & Family Protection Plan,
International Brotherhood of Teamsters
(Washington, D.C.)
Riggs National Bank of Washington, D.C. (The)
(Washington, D.C.)
Rothschild Bank A.G. (Zurich, Switzerland)
Royal Trust Bank of Miami, N.A.
(Miami, Florida)
Schoeller & Co. Bank Aktiengesellschaft
(Vienna, Austria)
Seattle Trust & Savings Bank
(Seattle, Washington)
Second National Bank of Richmond (The)
(Richmond, Indiana)
Second National Bank of Warren (The)
(Warren, Ohio)
Security Bank and Trust Company
(Stroudsburg, Pennsylvania)
Security Trust Company of Rochester
(Rochester, New York)
Shawmut Bank of Boston, N.A.
(Boston, Massachusetts)
Société Bancaire Barclays (Suisse) S.A.
(Geneva, Switzerland)
South Shore National Bank
(Quincy, Massachusetts)
Southeast Banks Trust Company
(Miami, Florida)
Southeast National Bank of Pennsylvania (The)
(West Chester, Pennsylvania)
Southern Bank & Trust Company
(Greenville, South Carolina)
Southern Methodist University Endowment Fund
(Dallas, Texas)
Southern National Bank of North Carolina</p> |
|--|--|--|

(Lumberton, North Carolina)
 St. Louis Union Trust Company
 (St. Louis, Missouri)
 State National Bank of Connecticut
 (Bridgeport, Connecticut)
 State Street Bank and Trust Company
 (Trust Division) (Boston, Massachusetts)
 State Street Research & Management Company
 (Boston, Massachusetts)
 Strauss Turnbull & Co. (London, England)
 Summit and Elizabeth Trust Company
 (Summit, New Jersey)
 Swiss Bank Corporation (New York Branch)
 (New York, New York)
 Swiss Volksbank, Geneva
 (Geneva, Switzerland)
 Swiss Volksbank, Zurich
 (Zurich, Switzerland)
 Teachers Insurance & Annuity
 Association (New York, New York)
 Teamsters Affiliates Pension Plan
 (Washington, D.C.)
 Third National Bank & Trust Company
 (Dayton, Ohio)
 Third National Bank and Trust Company of
 Scranton, Pennsylvania
 Tompkins County Trust Company
 (Ithaca, New York)
 Tracy-Collins Bank and Trust
 (Salt Lake City, Utah)
 Treasurer of the State of North Carolina
 (Raleigh, North Carolina)
 Trust Company Bank (Atlanta, Georgia)
 Trust Company of the West
 (Los Angeles, California)
 Trustees' Commingled Equity Fund
 (Valley Forge, Pennsylvania)
 Union Bank and Trust Company of Eastern
 Pennsylvania (Lehigh Valley, Pennsylvania)
 Union Bank of Switzerland (Basel, Switzerland)
 Union Bank of Switzerland (Berne, Switzerland)
 Union Bank of Switzerland (Chiasso, Switzerland)
 Union Bank of Switzerland (Geneva, Switzerland)
 Union Bank of Switzerland (Lausanne, Switzerland)
 Union Bank of Switzerland (Lugano, Switzerland)
 Union Bank of Switzerland (Zurich, Switzerland)
 Union National Bank (Lowell, Massachusetts)
 Union National of Wichita (Wichita, Kansas)
 Union Trust Company (New Haven, Connecticut)
 Union Trust Company (Stamford, Connecticut)
 United Bank of Denver, N.A. (Denver, Colorado)
 United Carolina Bank - Whiteville
 (Whiteville, North Carolina)
 United Jersey Bank
 (Hackensack, New Jersey)
 United States Trust Company of Boston
 (Boston, Massachusetts)
 United States Trust Company of New York
 (New York, New York)
 United Virginia Bank (Richmond, Virginia)
 University of Rochester (Rochester, New York)
 Utica National Bank & Trust Company
 (Tulsa, Oklahoma)
 Valley Trust Company (Phoenix, Arizona)
 Value Line Fund, Inc. (New York,
 New York)
 Value Line Income Fund, Inc.
 (New York, New York)
 Value Line Leverage Growth Fund, Inc.
 (New York, New York)
 Value Line Special Situations Fund, Inc.
 (New York, New York)
 Vanguard Fixed Income Securities
 Fund, Inc. - High Yield (Valley
 Forge, Pennsylvania)
 Vanguard Fixed Income Securities
 Fund, Inc. - Investment Grade
 (Valley Forge, Pennsylvania)
 Vanguard Index Trust, Inc.
 (Valley Forge, Pennsylvania)
 Venice Nokomis Bank & Trust Co.
 (Venice, Florida)
 Virginia National Bank (Norfolk, Virginia)
 Vontobel (J.) and Co. Bankiers (Zurich,
 Switzerland)

Wachovia Bank and Trust Company, N.A.
 (Winston-Salem, North Carolina)
 Washington State Accident Fund (Olympia,
 Washington)
 Washington State Accident Reserve Fund
 (Olympia, Washington)
 Washington State Agriculture College
 Permanent Fund (Olympia, Washington)
 Washington State Employees Retirement
 Fund (Olympia, Washington)
 Washington State Judicial Retirement
 Fund (Olympia, Washington)
 Washington State Law Enforcement Officers
 and Fire Fighters Fund
 (Olympia, Washington)
 Washington State Medical Aid Fund
 (Olympia, Washington)
 Washington State Normal School Permanent
 Fund (Olympia, Washington)
 Washington State Patrol Retirement Fund
 (Olympia, Washington)
 Washington State Permanent Common School
 (Olympia, Washington)
 Washington State Scientific School
 Permanent Fund (Olympia, Washington)
 Washington State Teachers Pension Reserve
 Fund (Olympia, Washington)
 Washington State Teachers Pension Reserve
 Fund/613 (Olympia, Washington)
 Washington State Teachers Retirement Fund
 (Olympia, Washington)
 Washington State Teachers Retirement
 Fund/612 (Olympia, Washington)
 Washington State University Permanent
 Fund (Olympia, Washington)
 Washington State Volunteer Fireman's Relief
 and Pension Fund (Olympia, Washington)
 Wellesley Income Fund, Inc. (Valley Forge,
 Pennsylvania)
 Wellington Fund Inc. (Valley Forge,
 Pennsylvania)
 Wells Fargo Advisors (San Francisco,
 California)
 Wells Fargo Bank, National Association
 (San Francisco, California)
 Wells Fargo Institutional Trust-Directed
 (San Francisco, California)
 Wells Fargo Personal Trust-Directed
 (San Francisco, California)
 Westport Bank & Trust Co. (The
 (Westport, Connecticut)
 Windsor Fund, Inc. (Valley Forge,
 Pennsylvania)
 Winters National Bank and Trust Co.
 (Dayton, Ohio)

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