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Money is such a routine part of our daily lives that we take for granted the processes that move money from one party to another in the course of business. A major source of our strength lies in the ability to move money across the United States quickly and efficiently with the safeguards that assure proper receipt and payment.

The Treasury and the Federal Reserve have a close working relationship in developing and maintaining systems that respond to the growing need for financial interdependence between all segments of our society. Over the past few years, development of Electronic Accounting and Cash Management systems described in this booklet have taken place to meet the many problems with today's money management. The systems developed provide tools for management to control and account for the large cash resources entrusted to the Government by American taxpayers.

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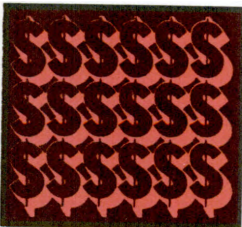


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FOREWORD

Money Management has become increasingly important to the Treasury with today's growth in Government and correspondent spending needs and income and borrowing capacities. Automated systems are required to be developed to more rapidly confirm the Nation's financial position as a step toward improving the decision-making process. Earlier availability of more accurate and reliable financial data is the Keystone upon which sound decision making rests. In recognition of this need, the Congress enacted the Legislative Reorganization Act of 1970 and the Congressional Budget and Impoundment Control Act of 1974, addressing the issue of developing improved fiscal, budgetary and financial management systems.

The Treasury, like other organizational units in its attempt to improve its financial systems, has been faced with the problem of ever increasing amounts of paper work in connection with its role as the Government's central financial control arm. The problem does not stem so much from any imposition of official record keeping — on the contrary, the recording process only serves to highlight the volume of paper used to consummate financial transactions. Amplifying the problems is the rapidly expanding population and economy that demands financial services which



proportionally increase Treasury's workload. Were the present system of accounting for the collection and disbursement of monies to remain in effect, the alternatives would be either to hire additional work force with associated costs to perform the repetitive tasks of handling the financial paper work or to allow the reporting and record-keeping functions to lag extended time periods behind the actual date the financial transactions were consummated. In today's economic environment, neither of these alternatives is acceptable. Congressional needs have required shorter time frames for disclosure of Federal financial transactions. The change of the Government's fiscal year also required accelerated year-end reporting. Demands for improved reporting and creation of the Congressional Budget Office attest to the growing concern for earlier and better financial data.

To meet these needs, the Department of the Treasury, Bureau of Government Financial Operations, is actively engaged in the development of Electronic Accounting and Cash Management systems to enhance control over governmental resources. This report has been prepared to inform the reader of a portion of the Treasury's role in Government finances and the developmental efforts underway to improve its financial management responsibilities.



ELECTRONIC ACCOUNTING AND CASH MANAGEMENT

Government Financial Operations

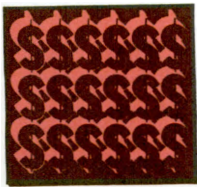
The agencies of Government act to some degree like divisions in a large corporation. Each of these agencies has a specific mission and charter, and, in the course of carrying out that mission and charter, has a need to disburse and receive funds. The Treasury Department, as the Government's financial organization, estimates Federal cash needs; receives, keeps, and disburses funds; and provides the accounting and record keeping necessary for overall governmental financial control. In a given year, about one trillion dollars flows into and out of Federal Government accounts.

Payments (disbursements) are authorized by Government agencies for a variety of reasons. For example, every month, millions of recurring payments are made to recipients of social security and veterans' benefits; non-recurring or one-time payments are made, such as those to Government contractors or grantees of Federal programs, and both recurring and non-recurring payments are made to manage the federal debt (Treasury and agency securities) as well as purchase federal securities for Government investment accounts. Government disbursing offices issue

approximately 750 million checks for these payments each year as well as provide sources of funds and accounting control over government cashiers that accommodate cash and letter of credit payments. In addition, Federal Reserve Banks and Branches acting as Treasury Fiscal Agents accommodate similar disbursing activities for primarily federal debt management.

Deposits (receipts) are received by the U.S. Treasury on behalf of Federal Government agencies for many types of financial transactions such as fees, taxes, debt issuance proceeds, and the sale of security investments. These deposits are made to the account of the U.S. Treasury at Federal depositories throughout the country including Federal Reserve Banks and certain designated commercial banks.

To provide control over these Federal disbursing and collecting operations, and to meet the responsibility for financial reporting to Congress and to the public, Treasury maintains a comprehensive system of central accounts which serve to monitor and record the Government's financial transactions. Figures 1 and 2 illustrate this cash financial flow described above.



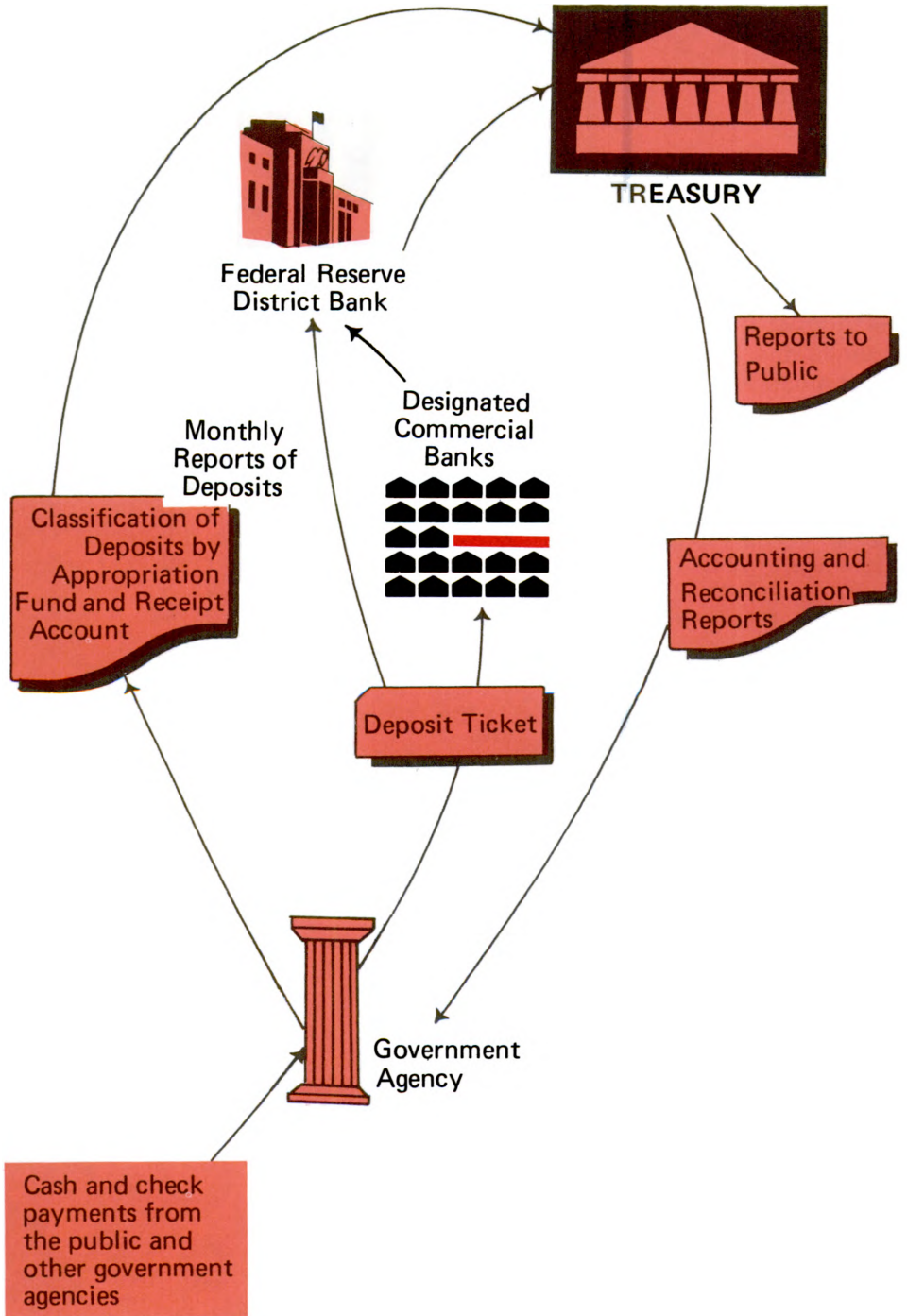


Figure 1
Collection Flow

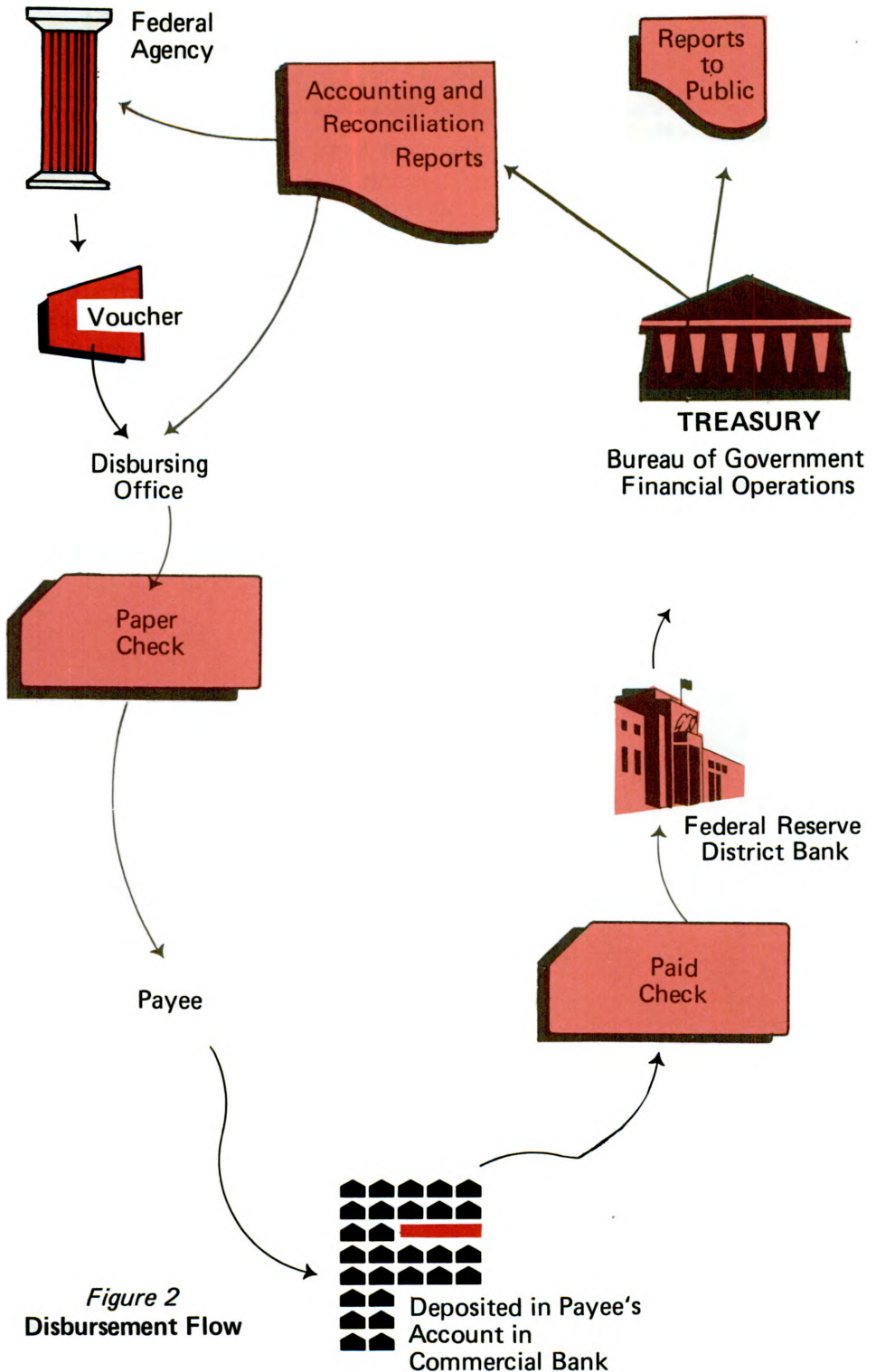
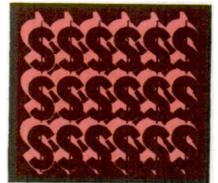


Figure 2
Disbursement Flow

Integrated into this cash flow system lies the budgetary control system that associates every disbursement and collection to the authorizing appropriation, fund or receipt account established by the Treasury in recognition of Congressional intentions cited in legislative public laws and resolutions. Together, the cash monitoring and interrelated budgetary control systems form the nucleus of the Treasury Governmentwide Accounting Information Management System. The system organizationally integrates the financial results of Congressional appropriation and receipt authorizations; executive, legislative, and judicial program agencies payments and collections and associated obligation and accrual processes; Federal Reserve, commercial depository and Treasury offices banking and custody operations; and disbursing and collecting officers accountability functions for cash held outside Treasury accounts. Figure 3 illustrates these relationships.



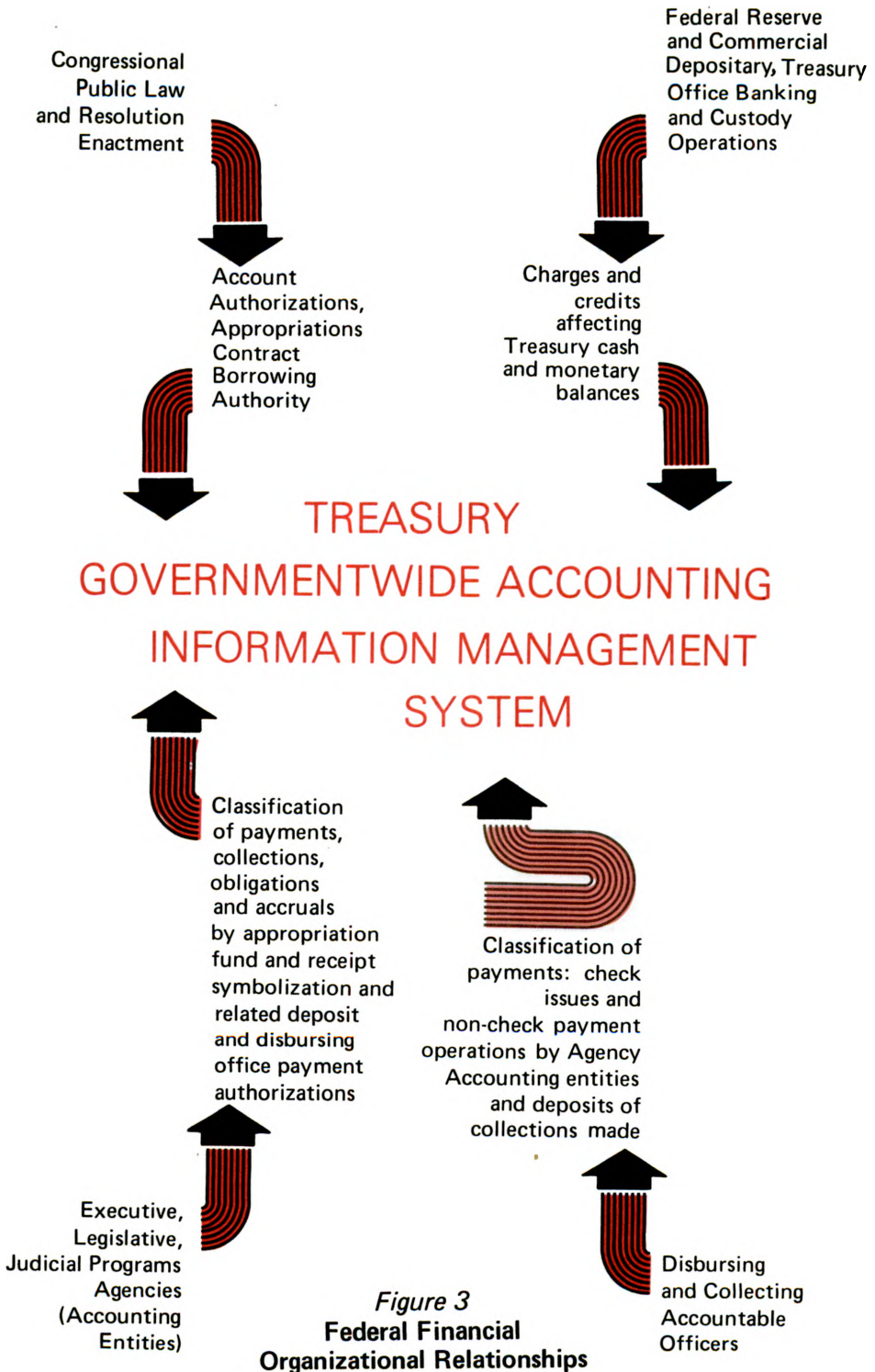
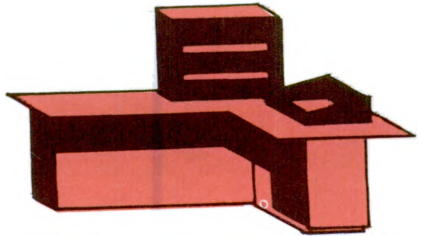


Figure 3
**Federal Financial
Organizational Relationships**



Development of Electronic Accounting and Cash Management Systems

To improve the effectiveness of the aforementioned financial operations, the Bureau of Government Financial Operations, over the past several years, has been developing automated systems for accounting and cash management. These systems are designed to reduce the dependence on the check as the primary vehicle for disbursements; automate the deposit process for collections; and more effectively monitor and control the flow of Federal funds providing more timely and accurate financial data.

Five such program efforts are currently in operation or under development within the scope of the Treasury Governmentwide Accounting Information Management System.

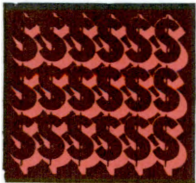
- The Central Accounting Data Management System (CADM) automates the processing of all Federal financial transactions into a central system of accounting results associated to budgetary results: surplus; deficit; appropriation fund and receipt account maintenance; obligation data and Federal assets and liabilities of both a cash and accrual nature.
- The Treasury Asset Accountability System (TAAS) automates the maintenance of Treasury cash and monetary assets held in Federal depositories (Federal Reserve Banks, Branches, and commercial bank depositories) and Treasury offices (Mints, Assay Offices, and Fort Knox Bullion Depository).

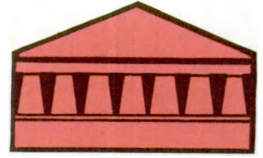
- The Deposits in Transit System (DIT) automates the collection of Federal monies through reconciliation of agency reporting of deposits made and Federal depositories reporting of related increases in cash balances.
- The Simplified Intragovernmental Billing and Collection System (SIBAC) automates intragovernmental payments and collections without the issuance of separate billing, payment, and deposit documents.
- The Treasury Financial Communication System (TFCS) automates the process of generating certain non-recurring payments and speeds the process of receipt of Government deposits and the associated accounting control.

All of the above systems vary in stages of completion from conceptual design, to full-scale operational implementation and utilization.

The remainder of this document describes the Treasury Financial Communication System currently operational in initial prototype design established to provide the basic structure for future system development.

In addition, the TFCS through its telecommunications development effort, provides the mechanism for the future telecommunications needs associated to financial data retrieval of the CADM, TAAS, and DIT systems described above.





Treasury Financial Communication System (TFCS) Highlights

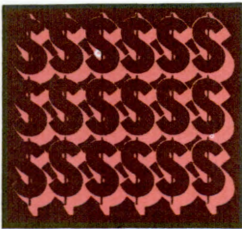
In September 1976, the Treasury Department began operation of a computer-to-computer communications link between Treasury, Bureau of Government Financial Operations, and the Federal Reserve Bank of New York and through the New York Federal Reserve Bank into the Federal Reserve Communication System or "Fedwire". Key features of the system include:

- Video terminal-based processing of many Government financial transactions including:
 - generation of certain non-recurring (one-time) payments, that are advantageous to the Government.
 - receipts of Government deposits; and
 - transfer of Government balances among depositaries.
- A comprehensive accounting and audit control mechanism to streamline financial record keeping and reporting providing direct access to up-to-the minute status of Federal funds available to meet Government disbursement needs.

In its initial installation, the system will handle payments initiated by Treasury's Washington Disbursing Center as well as accept payments from any Fedwire correspondent terminating such receipt/deposit message traffic at the Treasury, Bureau of Government Financial Operations in

Washington, D.C. Future plans provide for expansion of the system to other Government disbursing offices. In addition, this expansion will include automatic switching of deposit messages from Treasury to those Government agencies which require immediate information to support their cash management needs. On-line monitoring by Treasury cash management staff with automated transfer to Treasury available fund balances between Federal depositaries is also planned.

Work began on developing the system in July 1975. A predecessor system linking a Teletype terminal in Treasury to the Fedwire system, had been in operation since December 1974. Prior to 1974, fund transfer involved methods similar to Western Union Teletype processes requiring totally manual operations at the Federal Reserve Banks and Treasury to reconcile and account for the receipt or disposition of funds involved.





Treasury/Federal Reserve Communications System

The Treasury system is linked by computer into the Federal Reserve's Fedwire¹ system which is a nationwide communications network interconnecting the twelve Federal Reserve banks and their branches as shown in Figure 4.

Commercial banks which are members of the Federal Reserve system (approximately 6,000 of the 14,000 banks in the U. S.) are connected to the Fedwire through their Federal Reserve district banks. These member banks also act as correspondents for the non-member commercial banks thus allowing fund movement to virtually all banking institutions. Treasury's link into Fedwire as well as those for member banks is shown in Figure 5. It includes:

- the Treasury computer which is connected to the Federal Reserve Bank of New York and is also connected by terminals to Government agencies and disbursing offices;
- the New York Federal Reserve Bank computer is connected to member commercial banks in that district and is also linked to Fedwire's Culpeper Switch in Culpeper, Virginia;
- the Culpeper Switch, the heart of the Fedwire network, is connected to all twelve Federal Reserve Banks and branches throughout the country; and finally
- the Federal Reserve district banks which are connected to member commercial banks in their districts (presently only approximately 300 banks are connected on-line to the Fedwire system, the remainder are notified of fund movement via telephone communication from FRB's).

¹A further explanation of the Fedwire system is covered in the Federal Reserve publication "The Culpeper Switch."

Figure 4
Federal Reserve
Communication System

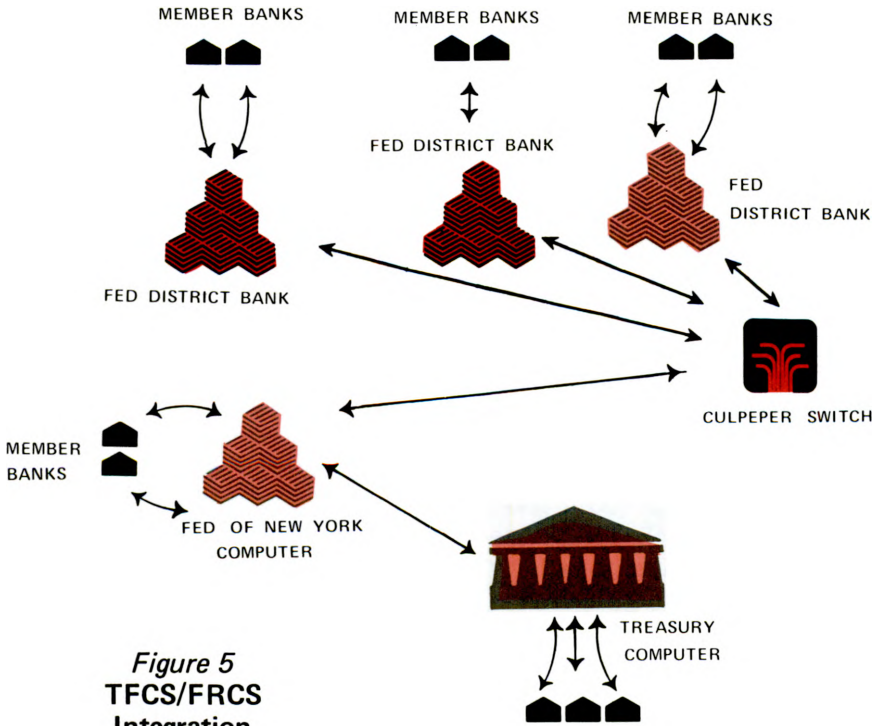
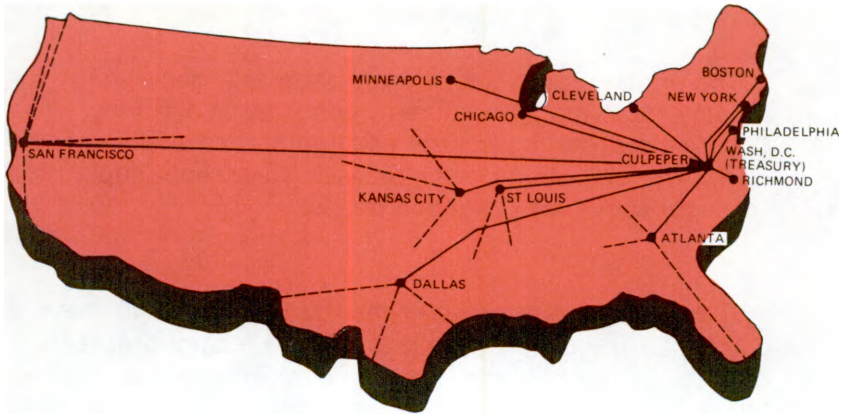


Figure 5
TFCS/FRCS
Integration

Treasury Financial Communication System

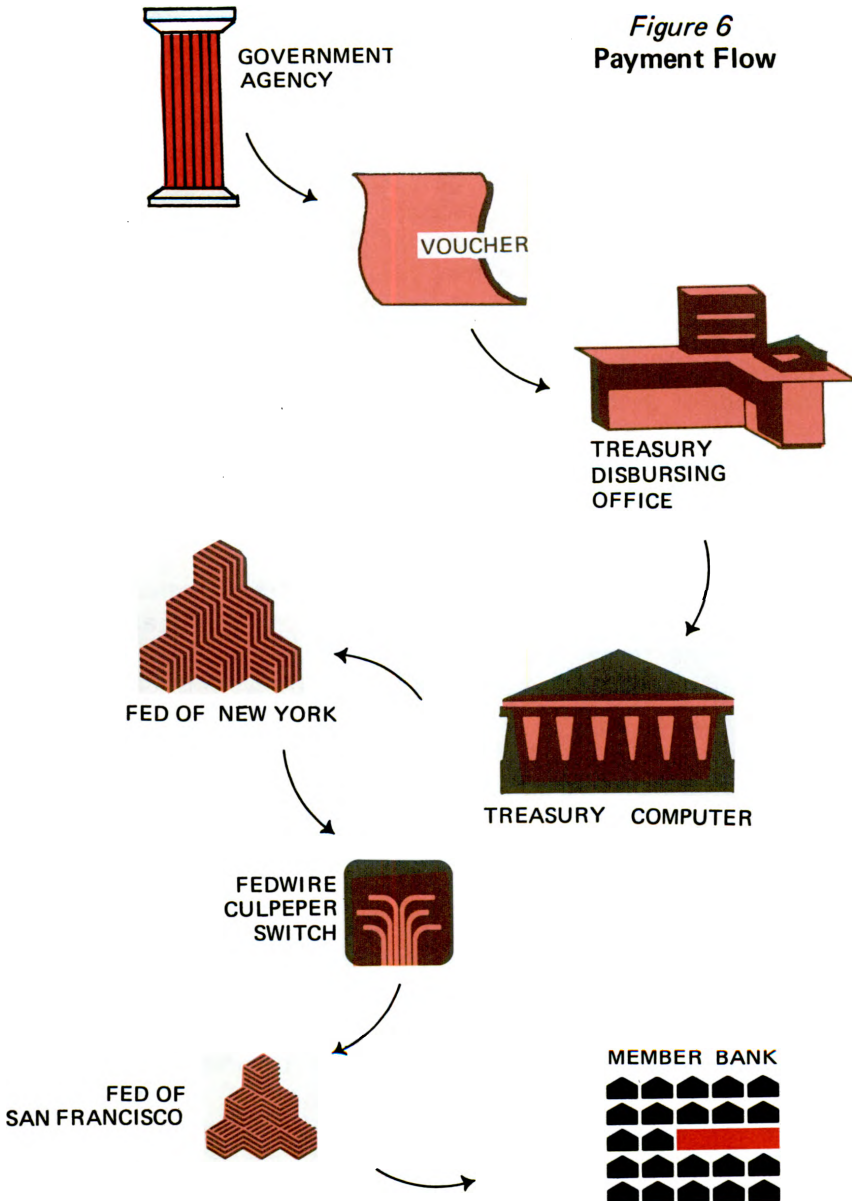
The primary functions of the system are; generating payments, receiving government deposits, monitoring cash flow and automating central accounting and auditing functions. The operations and processing concepts supporting these functions are described below.

GENERATING PAYMENTS

In the past, when government agency wanted to make a payment (for example, to a grantee of a federal program), it created a voucher and sent it to a Treasury disbursing office. The disbursing office processed the voucher and created a government check which was then mailed directly to the payee. Under the TFCS, when the voucher is received by the disbursing office, a government clerk using a video display terminal will generate a payment message to the payee's bank in a standard Fedwire format and transmit it immediately to the Federal Reserve Bank of New York. Each message undergoes extensive editing and error checking to insure validity before it leaves the Treasury system. At the same time the Federal Reserve credits that member bank's reserve account and charges the Treasury account at the Federal Reserve. In cases where the member bank is outside the New York FRB district, the New York FRB will forward the message to the appropriate Federal Reserve district bank and from there to the member bank. This entire process takes place in a matter of seconds. An example of this type of funds transfer is shown in Figure 6.

At the same time that the payment message is being generated and validated at the Treasury disbursing office, the TFCS system automatically performs the required accounting (in the above instance, charging the particular disbursing office account and reducing the Treasury balance at the New York Federal Reserve Bank) and creates an audit trail for later reconciliation to FRB and disbursing office reporting of daily government financial activities undertaken.

Figure 6
Payment Flow

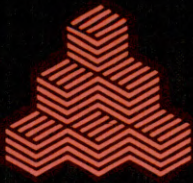


RECEIVING DEPOSITS

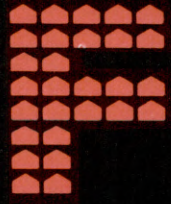
Deposits are monies received by the U. S. Government such as repayment of government loans, proceeds of the sale of Public Debt securities or government agency collections (for example, sale of gold and admission fees to our national parks). To trace the path of this inflow of cash to the government, let's use the example of the sale of gold. A commercial bank, which may have purchased gold on its own account or on behalf of one of its customers, will have its reserve account at its Federal Reserve district bank charged with the purchase amount; that same amount will be credited to the account of the U. S. Treasury at the New York Federal Reserve Bank. A deposit message, giving notice of the increase in this account, is sent through Fedwire to the New York FRB which, in turn, automatically forwards the message to Treasury's system. This flow is shown in Figure 7.

When the deposit message is received by Treasury, the system automatically credits the account of the agency receiving the funds and records the increase of available Treasury funds at the New York FRB. Also, as in the case of payments, the system builds the audit trail for later reconciliation. When a problem is experienced in automatically identifying the recipient agency (if a code is missing or incorrect in the message) a Treasury terminal operator using a video display terminal will intervene to interpret the message so that continued automated processing can take place. The entire deposit process also takes place in a matter of seconds.

In the future expansion of the system, some agencies will be immediately notified, via a computer terminal, of the originator and amount of the funds inflow, thus enhancing awareness and decision making ability for financial operations.



F E D OF CHICAGO



CULPEPERSWITCH



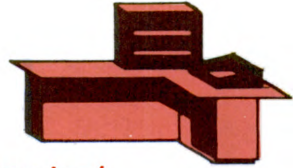
F E D OF NEW YORK



TREASURY COMPUTER



Figure 7
Deposit Flow



Account Monitoring And Control

During the daily payment generation and deposit message processing operations, system status and maintenance is constantly being monitored. Through direct access capabilities, Treasury management may interrogate the system to ascertain information such as: the Treasury position with the New York Federal Reserve Bank with respect to fund movement in and out of Treasury's account; disbursement and deposit position with regard to government disbursing office payment requests and agency accounting entities collection confirmation; and reconciliation of Federal Reserve Bank, disbursing office and agency accounting results to insure all entities properly handled funds movement correctly within their accounting and reporting systems.

Beyond the application of accounting data monitoring and control, the system also is designed to monitor its own performance in terms of terminal response time, system diagnostics of all on-line site interconnection in terms of system readiness, line functions, etc., status of message traffic (e.g., payments created, verified, acknowledged as processed by the Fedwire system), deposit messages confirmed to correct agency accounting entities and messages held in suspense awaiting corrective action due to deficient data transmitted by initiating Fedwire corresponding organizations. Systems performance security monitoring is also controlled within the system acknowledging security violations with regard to user password identification and associated transaction processing, legal terminal application processing, including illegal attempted accessing from foreign non-system terminals.

Although prototype in initiation, the system design has been broad in scope providing attention to: user demands for improved operator efficiency, the most current accounting and audit reconciliation process and security performance control to assure the safeguard of the financial resource moving over the system.

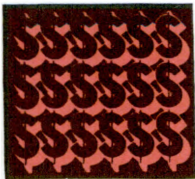
Summary

Through the TFCS system Treasury has taken advantage of the latest telecommunications and computer technologies to streamline government funds movement. This has the dual effect of providing more timely information on available Treasury funds balances throughout the country — an important element of responsive financial management and control; as well as reducing the operating costs associated with record management relating to collection and disbursement operations.

The TFCS system, as initially implemented, provides the capability for future system growth which will include:

- expansion of payment initiation points within Treasury and to other government corporations and agencies;
- extension of remote communications facilities for deposit receipt to additional Treasury and other government end points; and
- expansion of message traffic to permit enhanced communication and monitoring of Federal funds movement.

As an important component of a larger governmentwide accounting system, the TFCS system enhances Treasury's ability to produce integrated government financial results and to better meet its financial reporting responsibilities.



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