

COMPUTER

USAGE

FALL ISSUE 1968

VOL. 3—NO. 4

COMPUTERS AND STOCKS

by James McDonald



U.S. 181.17 712.4 831.5 1001.2 2618 272

UNDER THE BUTTONWOOD TREE

Here was the scene 176 years ago.

Twenty-four merchants and traders agreed to meet under the buttonwood tree on Wall Street in Manhattan to buy and sell securities. These hardy twenty-four traded in the \$80 million bond issue that consolidated U.S. Revolutionary War debts. They also dealt in such speculative ventures as insurance company issues, Alexander Hamilton's First United States Bank, The Bank of North America and the Bank of New York.

Occasionally inclement weather—rather than any trading pressure—forced the respectable burghers inside. Thus, in 1793, the precursor of the New York Stock Exchange met regularly at the Tontine Coffee House.

Thereafter, for many years, changes were evolutionary and were assimilated without too much trouble. Gradually, however, volume increased, membership increased, share ownership broadened, communications improved, and the value of stocks soared.

Then came the post Korean War bull market. Believe it or not, average daily volume on the Big Board fifteen years ago was 1.4 million shares daily. By 1965 daily volume steadily moved along at an average of six million shares.

The new "900" ticker installed in 1964 by NYSE was capable of handling volume up to 12 million shares without falling behind. Brokers rejoiced in the commission income netted from the upsurge in volume and the market was hectic, but pretty orderly.

Cracks in the system appeared openly in 1966. Volume was considerably higher with the peak trading day seeing nearly 13.1 million shares changing hands before the closing bell.

By 1967 the resulting paper backlog and "fails" (a fail comes about when one broker does not deliver the securities he owes another within the five day settlement period) led the Board of Governors to take an unprecedented action. For nine business days in August, the most efficient securities organizations in the world closed their doors at 2:00 PM instead of the traditional 3:30 PM. The move was a clear indication that the back-office could not properly handle the volume anticipated in a normal day. Last year's average was over 10 million shares traded daily. Recently the NYSE has been handling around \$130 billion worth of stocks and bonds annually.

Still the paperwork backed up, errors in posting transactions occurred more frequently, and the dollar amount of

fails soared.

In late January, fails totaled \$5.7 billion—more than \$2 billion greater than the total only six months earlier. The Exchange went back to the 2:00 PM close this year and made it stick for six weeks.

Then came April, 1968. Sunday night, President Johnson indicated he would not seek renomination and that the U.S. would curtail bombing in North Vietnam. The first hour of trading was incredible. Before 11:00 AM, 6.06 million shares changed hands. Midweek the volume topped 51.5 million shares. Along the way the 1929 crash volume record of 16.4 million shares was shattered twice.

And a lot more was shattered—any delusion that the current state of Wall Street technology could begin to handle the load was buried in mountains of order slips, tickertape, bookkeeping entries, checks and ledgers.

THE PAPER TIGER

Probably more than any other institution, the securities markets have become the symbol of capitalism throughout the world. Public ownership of American business is at the very core of a free U.S. society, and Wall Street is the entire Western world's financial center.

Preservation of this free system depends on the abilities of financial specialists to solve the overwhelming problems. The attack on Wall Street's "Paper Tiger" was mapped out on several fronts—the exchanges, the unlisted securities markets, and the brokerage houses.

In all cases, one formidable weapon was enlisted for the front lines—electronic data processing technology. The computer had already proven its data processing capabilities in industry and government. The time was ripe for its move on Wall Street.

CENTRAL CERTIFICATE SERVICE (CCS)

One of the biggest obstacles to clearing the paperwork problem is the stock certificate—stocks must be delivered to brokers within five days of purchase. If certificates are not delivered, a "fail" occurs and a series of accounts payable and receivable result.

This summer, the New York Stock Exchange activated its computerized Central Certificate Service. Ideally, CCS works something like a regular bank checking system. Shares held in a broker's name are deposited centrally. A transfer of stock between brokers is made by computer, through a bookkeeping entry removing the shares from one account

and recording them in the account of the buying broker.

Each day the computer provides member firms with an activity statement, much like the monthly statement received by holders of checking accounts. The system also relieves brokers of the drudgery of inspecting, counting and storing stock certificates.

Limited activation of the system began alphabetically with about 320 stocks whose corporate names started with "A" through "C." These stocks accounted for about 30 per cent of the Exchange volume.

The Exchange plans to add stocks to the system steadily until about 1,200 Big Board issues are fully activated, hopefully by the end of this year. The computer project, which has been labeled "Top Priority" by Robert W. Haack, president of the Exchange, is expected to eliminate close to 75 per cent of the physical handling of stock certificates by brokers. R. John Cunningham, executive vice president of the Exchange, estimated that developmental cost for the system was close to \$5 million.

Judging from a recent report other programs are also shaping up. On September 16, the NYSE reported that the "Fail Clearance" program, carried out for all NYSE listed stocks over a period of several weeks, produced a 20 per cent reduction in dollar value (about \$290 million) in transactions overdue for settlement. A mandatory buy-in rule, which became operational August 2, for open contracts 50 days old or older in trades of stocks or bonds, resulted in settlement of 4,600 open transactions up to August 30.

The NYSE also announced the launching of a computerized program to facilitate member-firm processing of transactions in NYSE listed corporate bonds. The system will be used for over-the-counter trades in these bonds in addition to transactions on the floor of the Exchange. Scheduled to become fully operational by the end of the year, the system involves the computerized comparison of reports of buying and selling brokers to confirm specific details of their transactions. The bond comparisons began with trades of August 29, in bonds beginning with the letter "A," and will be expanded to include all corporate bond issues. The program will replace manual systems now in use at member firms.

AMEX — "FIRST WITH THE LADIES"

The American Exchange boasts a few firsts. It was the first to flash data electronically to the ticker tape, the first to formulate its own Market Index System and the first to elect women members. With that kind of record to uphold, the

AMEX has been moving right along with its EDP plans.

AMEX had to face up to soaring volume in the past three years. A total of 1.15 billion shares was traded on the American last year—an average daily volume of 4.5 million shares. Compare that with 2.7 million a day in 1966—and an estimated 6 million a day this year.

AMEX is using a computerized procedure that eliminated 46 per cent of its members fails during April through June, 1968. The clearance program (the computer complex is in the Exchange Clearing Corporation) reduces the number of open items by a process called "netting." Here's how it works: If an AMEX member firm has failed to deliver 1,000 shares of a stock and has also failed to receive 900 shares of the same stock, the computer program compares the two items and reduces them to a "net"—a fail of 100 shares. Brokerage firms receiving statements of their net are therefore free to act much more quickly in making up their fails.

Recently, Ralph S. Saul, president of AMEX, announced it would purchase its third computer to boost clearing capacity from a sustained daily volume of 10 million shares to 14 million shares a day. He also announced that the Exchange has additional space options for an expanded computer center that could handle additional tasks, including automated processing of odd lots.

OVER THE COUNTER (OTC)

The OTC market, through which most companies sell their securities, faces different problems. As a free association of independent brokers—many of whom are members of Exchange firms—the OTC is loosely structured.

The National Association of Securities Dealers (NASD), the self-policing body of the OTC, is now considering bids for a multi-million dollar computer system designed to speed trading. The log-jam in unlisted securities has plagued brokerage houses to the point where several no longer deal in nonlisted issues.

On June 13, when the market went through the ceiling and volume exceeded 21.3 million shares on the Big Board, it was virtually impossible to place orders for many unlisted stocks. The phones were jammed and dealers simply couldn't reach other dealers to make purchases.

The computerized system envisioned by the NASD for unlisted stocks would incorporate real-time computer operations and a nationwide television hookup of brokers and dealers.

The NASD system (called NASDAQ, the last two letters

