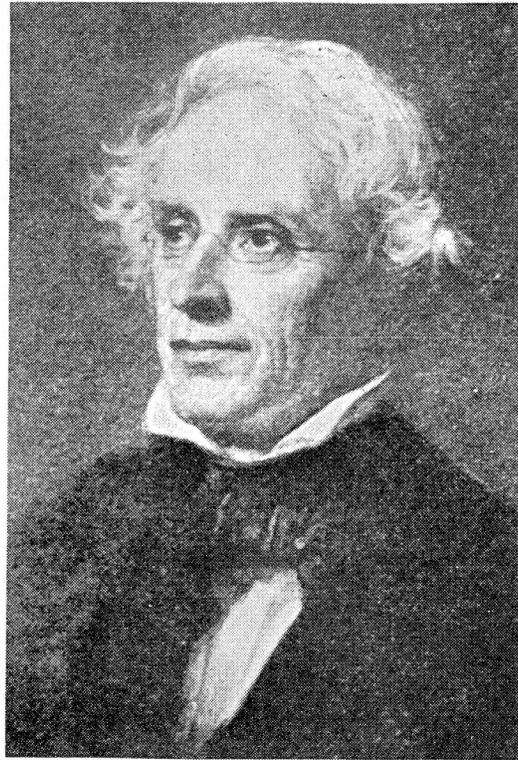


Centennial Morse



of Telegraph

Samuel F. B. Morse

ON May 24, the centennial of the Morse telegraph was celebrated in Washington, D. C., and Baltimore, Md., by re-enacting the scene of May 24, 1844, when the first message, "What Hath God Wrought," was sent by telegraph between the Chamber of the Supreme Court, in the capitol at Washington, and an office in the Baltimore & Ohio station in Baltimore. E. E. Norris, president, Southern, was at the key on May 24, when the sending of the message to Baltimore was re-enacted, and it was received by R. B. White, president, Baltimore & Ohio and formerly president of the Western Union Telegraph Company. Six former telegraphers who are now senators or congressmen also sent messages.

The ceremonies at Baltimore included the unveiling of a commemorative plaque at the Mt. Clare station of the B. & O. and an exhibit of historical and modern rolling stock there. A Liberty ship was also launched at the Baltimore shipyards, christened "Samuel F. B. Morse" by Leila Livingston Morse, his granddaughter.

On the evening of May 24, a dinner was held at the Hotel Statler, Washington, which was presided over by A. N. Williams, president, Western Union Telegraph Company. Mr. Williams read a message from President Roosevelt, which stated:

Congress, industry and the railroads celebrate 100th anniversary of sending of first message between Washington, D. C., and Baltimore, Md.

"The invention of the telegraph gave to all mankind the means with which to conquer space and time in the transmission of information from one corner of the globe to another. During the century which followed, electrical communication has served to bring all of the peoples of the world increasingly close to each other."

Jesse H. Jones, secretary of commerce; James L. Fly, chairman, Federal Communications Commission; Major General Harry C. Ingles, chief of the Army Signal Corps; and Rear Admiral Joseph R. Redman, chief of Navy communications, outlined the part that the telegraph and electrical communication in general have played in war and peacetime pursuits.

R. B. White Speaks

President White of the Baltimore & Ohio, spoke as follows at the ceremonial dinner:

"Most of you know that Samuel F. B. Morse, the inventor of the telegraph, never had sufficient funds of his own to perfect his invention or prove its worth. The father of his intimate friend, Alfred Vail, advanced enough to enable him to make working models, but Morse had to struggle for about five years with Congress before the \$30,000 grant was made to enable him to make a convincing demonstration. Even with this sizable sum assured, it was not enough to buy a right-of-way for the wire line. The B. & O. was then the only railroad running into Washington. Morse had frequently ridden over it and knew that it was an ideal right-of-way for his circuits.

"Fortunately its president, Louis McLane, was a man of wide experience in world affairs. Previous to becoming president of the B. & O. he had been United States Minister to England, Secretary of State and also Secretary of the Treasury. When Morse asked for the franchise, McLane urged his board of directors to grant it, and this was done, with proper provisions to safeguard the railroad and give it the privilege of free communication over the line so long as it did not interfere with commercial telegraph business. The B. & O. also co-operated in other ways, such as the granting of travel rights

on its trains for Morse and his workers, at low rates.

"With Ezra Cornell, later founder of Cornell University, helping him with the engineering, Morse started laying his line from Baltimore. The first method was to put the telegraph wire in a leaden pipe and lay it in a trench 20 inches deep and 2 inches wide. The trench was dug with a plow especially built at the Mt. Clare shop of the B. & O. in Baltimore, and the plow was hauled by 20 oxen. Nine miles out from Baltimore at the old horse car relay house of the B. & O. where Morse and some of his companions were quartered, the insulation of the wires failed and Morse found

that he would have to adopt the overhead wire system. So instead of being buried in the right of way of the B. & O., the wires were strung along its right of way over which they carried the prophetic first message, 'What Hath God Wrought!'

The Magnetic Telegraph Line

"The somewhat co-incidental co-operation of the 'magnetic telegraph line,' as the Washington-Baltimore line was then called, and of the B. & O., developed by force of circumstances and logic into perhaps the closest tie-up ever made by any two great industries. For from the prece-

dent established in 1844 grew the historic co-ordination of telegraph and railroad. It was a happy circumstance. Each industry complements the other and strengthens it. For many years the railroads handled a large part of the telegraph's commercial operation. Thousands of railroad employees have also worked at the same time for the telegraph.

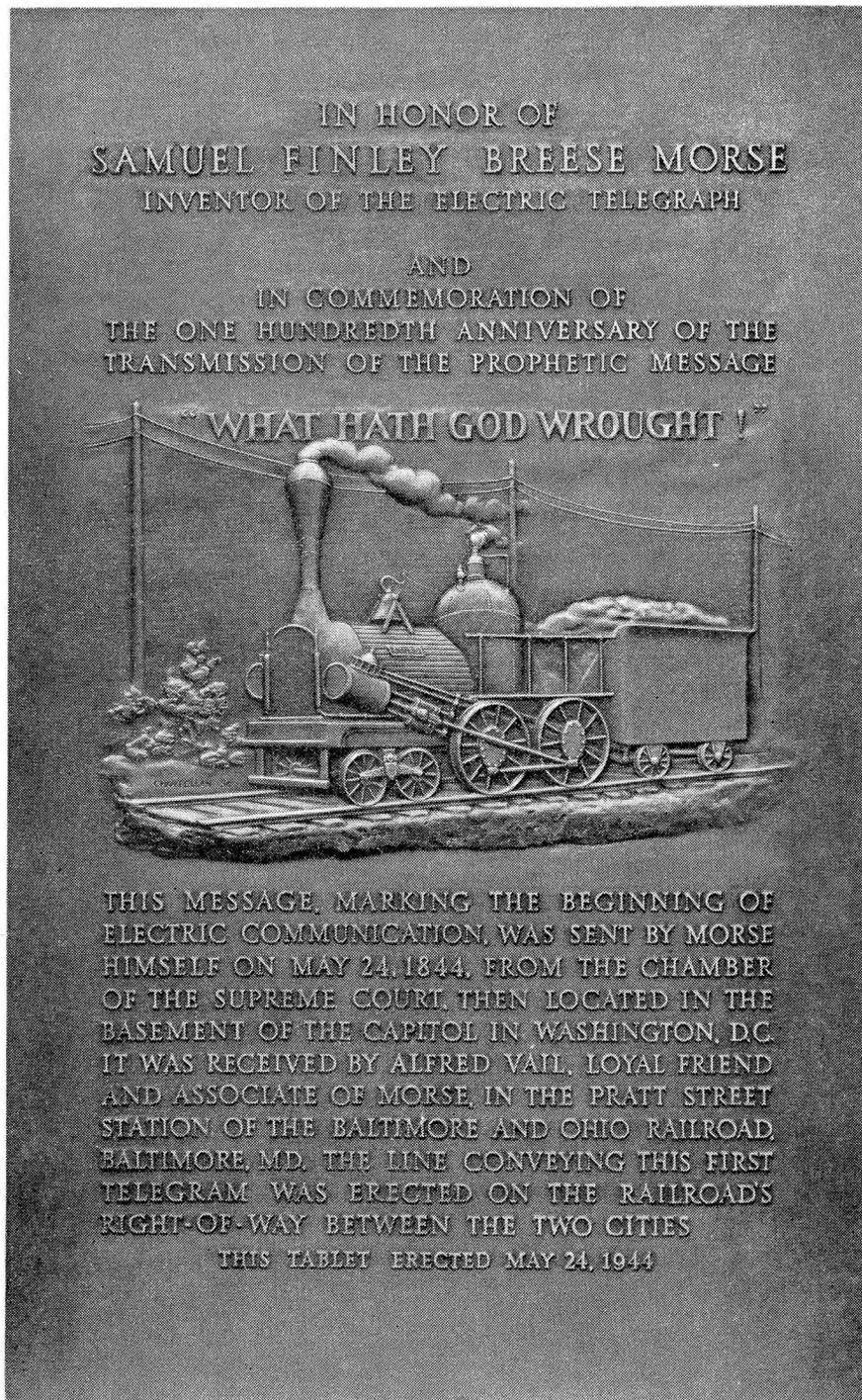
"The B. & O. was identified importantly with the telegraph in another way. In the early eighties the Baltimore & Ohio Telegraph Company, which was owned by this railroad, had about 50,000 miles of land line, and owned lines running from Boston in the east to Galveston in the southwest, with interlacing lines covering a large part of the United States east of the Rockies. This vast network later became an important part of the lines comprising the system now operated by the Western Union Telegraph Company. Other railroads also had extensive ownership of the commercial telegraph companies. Gradually the railroads gave up the commercial telegraph business, but to this day the historic paralleling of the railroad by the first telegraph line is followed over thousands of miles of railroad in this country, which, incidentally, possesses about two-thirds of all the telegraph lines in the world.

"During the Century of the Telegraph, the railroads have provided a fertile field for research and technical development in the art of electric communication. In fact, the whole system of railroad operation as we know it today was developed around the telegraph where it continues to function importantly in the movement of traffic.

"Hand in hand the telegraph and the railroads have come down through the last century, and judging from present day indications the railroads will continue to be a prime proving ground for new developments in communications. For the basis of good railroad operation is information, and the basis of good information is speedy communication."

Samuel Finley Breese Morse

Samuel Finley Breese Morse, the inventor of the Morse telegraph, was born at Charlestown, Mass., on April



THIS MESSAGE, MARKING THE BEGINNING OF ELECTRIC COMMUNICATION, WAS SENT BY MORSE HIMSELF ON MAY 24, 1844, FROM THE CHAMBER OF THE SUPREME COURT, THEN LOCATED IN THE BASEMENT OF THE CAPITOL IN WASHINGTON, D.C. IT WAS RECEIVED BY ALFRED VAIL, LOYAL FRIEND AND ASSOCIATE OF MORSE, IN THE PRATT STREET STATION OF THE BALTIMORE AND OHIO RAILROAD, BALTIMORE, MD. THE LINE CONVEYING THIS FIRST TELEGRAM WAS ERECTED ON THE RAILROAD'S RIGHT-OF-WAY BETWEEN THE TWO CITIES

THIS TABLET ERECTED MAY 24, 1944

Tablet erected to commemorate the memory of Samuel F. B. Morse, and the 100th anniversary of the telegraph

27, 1791. By the time he was 14 years of age, Morse was quite an accomplished artist, and while at Yale, he helped to support himself by painting portraits of faculty members and students. During his college course he studied such limited information as was then available concerning electricity. After his graduation from Yale in 1810, he went to England to study art, returning to America in 1816. One of his most famous art works is a full-length painting of General Lafayette, which now hangs in the New York City Hall.

In 1829, Morse went to Europe to continue his art studies. While in France he noticed the Chappe's semaphore system of communication, in which semaphore arms were set at various angles to denote words. Messages were thus transmitted from one tower to another on clear days.

While returning from France on the packet Sully in October, 1832, Morse heard Dr. Charles T. Jackson of Boston, Mass., discuss new discoveries in electro-magnetism. The electro-magnet had recently been discovered by Joseph Henry at Albany, N. Y., and Dr. Jackson, explaining this to the travelers, said, "It consists of a piece of iron bent in the shape of a horseshoe and wound with wire. When an electric current is sent through the wire, the magnet will pick up a small bar of iron. Electricity travels instantly through the entire length of wire, and causes the magnet to act."

Records His First Ideas

Morse, already thinking in terms of communication, is reported to have commented to the effect that "If the presence of electricity can be made visible in any part of the circuit, I see no reason why intelligence may not be transmitted instantaneously by electricity." His drawings and notes on this subject, made that night in his artist sketch book, have been preserved and are in the National Museum in Washington, D. C.

In 1835, Morse began work as professor of the Literature of Arts and Design of New York University, for which he received no salary but collected fees from his students, and was provided with quarters. During the winter of 1835-36, he built his

first telegraph equipment, including sending and receiving instruments. By September, 1837, Morse had developed his idea and instruments sufficiently to conduct a demonstration over 1,700 ft. of wire in a room at the New York University.

Help from His Friends

One of his friends, Alfred Vail, convinced his father, Stephen Vail, to advance \$2,000, and the use of machine shop facilities to build a set of telegraph instruments of sound design and workmanship. Three miles of wire was run around the factory at Morristown, N. J., and on January

6, 1838, the equipment operated successfully in a test to transmit the message "A patient waiter is no loser." Other demonstrations were made in New York and Philadelphia. A test including 10 miles of wire strung around a room in the capital at Washington was made in the presence of President Martin Van Buren and members of his cabinet. A bill introduced in Congress in 1838 for an appropriation for the construction of an experimental line between cities, failed to pass. Financed by a third partner, F. O. J. Smith, Mr. Morse took his telegraph to Europe but no foreign government would construct an extensive test. After returning to



MOUNT CLARE STATION BALTIMORE AND OHIO RAILROAD BALTIMORE, MARYLAND

OPENED IN 1830 THIS RAILROAD STATION
HAS BEEN IN CONTINUOUS SERVICE EVER SINCE

ON JULY 4, 1828, THE FIRST STONE OF THE B & O
RAILROAD WAS LAID ABOUT ONE MILE WEST OF THIS
SPOT THIS MARKED THE BEGINNING OF THE CON-
STRUCTION OF AMERICA'S FIRST PUBLIC RAILROAD

HERE IN 1829 PETER COOPER, INVENTOR,
IRON MASTER, EDUCATOR AND PHILANTHROPIST
CONSTRUCTED THE TOM THUMB, FIRST AMERICAN-
BUILT LOCOMOTIVE TO BE OPERATED ON A RAILROAD

FROM THIS POINT THE FIRST RAILROAD PASSENGER
TRAINS TO BE OPERATED IN AMERICA CARRIED
EXCURSIONISTS ON SHORT TRIPS, BEGINNING JANUARY
7, 1830. HERE ALSO, ON MAY 24, 1830, BEGAN THE FIRST
OPERATION OF PASSENGER TRAINS ON A REGULAR
SCHEDULE IN THE UNITED STATES. THREE TRAINS A
DAY RAN IN EACH DIRECTION BETWEEN BALTIMORE
AND BELICOTT'S MILLS, THIRTEEN MILES DISTANT

THIS TABLET ERECTED MAY 24, 1944

Tablet erected May 24, 1944,
in original Mount Clare
station building of the B. &
O. in Baltimore, Md., which
is still used by the railroad
after more than a century

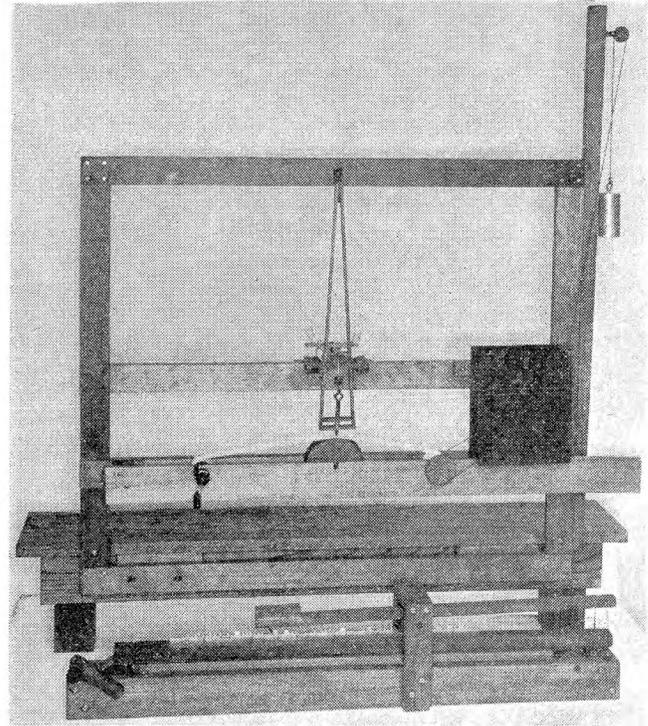
the United States he went to Washington. Finally in 1843, a bill was passed to appropriate \$30,000 to build an experimental line between Washington and Baltimore.

Louis McLane, president of the Baltimore & Ohio, a railroad then 16 years old, saw the possibilities of the telegraph as an aid in railroad operation, and granted Morse permission to use the railroad right-of-way for the construction of the new telegraph line between Washington and Baltimore. The original plan was to use insulated wire laid underground by a special plow designed by Ezra Cornell, a man who later became prominent in the telegraph field and was founder of Cornell University. Because of defects in the insulation on the wire, the underground construction was abandoned in favor of line wires on poles. The work progressed, and by the time of the Whig convention in Baltimore, May 1, 1844, the line was completed from Washington to Annapolis Junction, 22 miles. Washington was awaiting the news of the Whig presidential nomination. Delegates returning from Baltimore were bringing the news by train. When they arrived at Annapolis Junction, Vail got the news of Henry Clay's nomination for president and flashed it to Washington over the new telegraph line. Then newspapers began giving the telegraph favorable comment so that by the time of the opening of the entire Washington-Baltimore line, on May 24, this publicity had established the event as the big news of the day.

First Telegraph Office

As the Government had sponsored the construction of the line, Congress also granted permission for establish-

A replica of Morse's earliest apparatus, built in 1835, which used ribbon of paper to record dots and dashes automatically. It was successful, but it was never used commercially



ment of the first Washington telegraph office in a government building and Morse set up his instruments in the Capitol. The other end of the line was established in the railroad station of the Baltimore & Ohio in Baltimore, and Vail was in charge there.

The opening day found an important crowd gathered in the small Supreme Court chamber in the Capitol. Henry Clay, who had started his campaign for the presidency, was there. Dolly Madison, wife of James Madison, fourth president of the United States, also was in attendance.

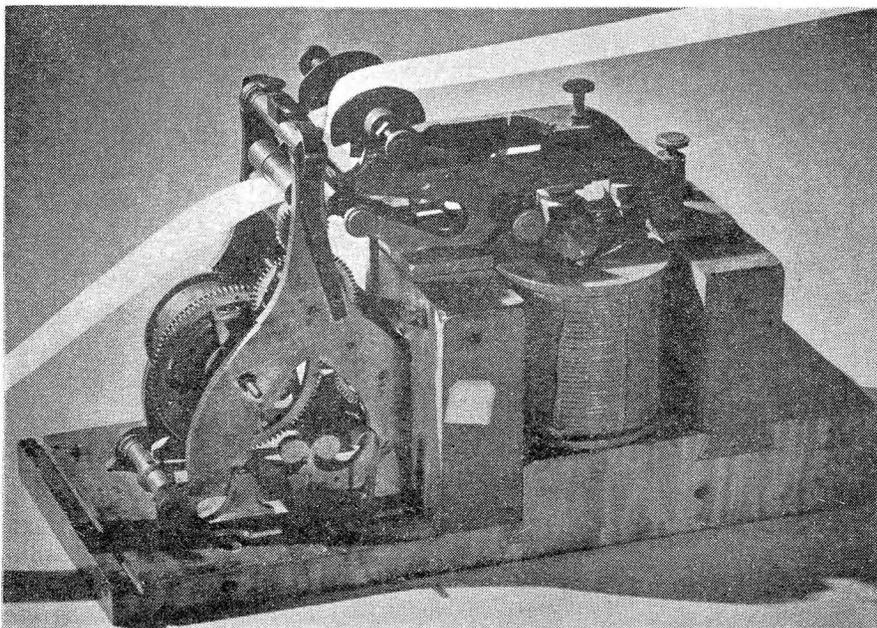
Morse sat down and tested the telegraph key shortly before 8 a.m. and a few minutes later Miss Ellsworth arrived with the first message.

She and her mother had selected it several days before from the Bible. At 8:45 a.m. Morse began slowly tapping out the message. When Vail received it in Baltimore he exhibited it to the gathering there and immediately sent it back to Washington, where it was received with cheers.

The Telegraph As An Industry

It remained for private enterprise to make the benefits of the telegraph available to the world. Morse, Cornell and Smith began selling stock to finance the extension of the system. It was not long before they found enough farsighted business pioneers to finance the project, and the first line was extended to New York City in 1846. While doing this, they began licensing groups to build lines to other cities. Practically every city in the country became interested, and a number of short lines, all privately owned, were constructed.

The early Morse telegraph receivers actually recorded messages on paper tape in dots and dashes. In fact it was not until 1856 and later that operators learned that they could receive messages by ear. In 1846, Royal E. House patented a printing tele-



This is one of the telegraph receivers used on May 24, 1844

graph system which would receive more than fifty words a minute in Roman letters instead of dots and dashes. This system was placed in use in the next five years on several important eastern lines. In 1851, a Rochester, N. Y., group of men, headed by Judge Samuel L. Selden, and Hiram Sibley, formed a company known as the New York and Mississippi Valley Printing Telegraph Company, and bought the rights to extend

they had was from Ezra Cornell who controlled the Erie and Michigan Telegraph line running from Buffalo to Milwaukee, and having contracts giving it important connections with the East, West, and South. It was, therefore, with Cornell that they next proposed consolidation. This consolidation took place on April 4, 1856.

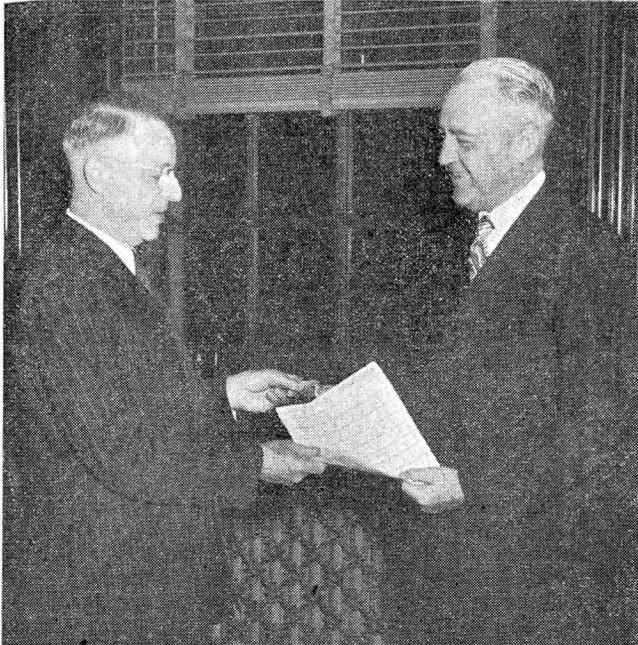
They began to buy a number of the dozen smaller lines in the mid-west, under a special enabling act passed by

operated under the corporate name of the Magnetic Telegraph Company, was acquired by the American Telegraph Company in 1859. American became a part of Western Union in 1866.

Telegraph for Train Orders

In the early days, train movements were authorized by timetables, there being no means for communication to authorize trains to move at variance with the timetable. In the course of the extension of early telegraph communication a line was constructed along the Erie Railroad between Jersey City, N. J., and Port Jervis, offices being established in the railroad stations at the various towns. In 1851, Charles Minot, general superintendent of the Erie Railroad, was on board an eastbound train that was waiting at Monroe for a scheduled timetable meet with a westbound train. Mr. Minot went to the telegraph office and learned that the westbound train was a half hour or more late. He then sent a telegram to the agent at Turner, the next station to the east, ordering the westbound train to wait there. Mr. Minot then prevailed upon the engineman of the eastbound train to proceed from Monroe to Turner. Thus, for the first time, the meeting point between two trains was fixed by train order. This practice of authorizing train movements by train orders was extended rapidly on the railroads, until telegraph is now used on 77,374 miles of road and the telephone on 149,294 miles.

The centennial celebration was conducted under the auspices of the Association of American Railroads, the Western Union Telegraph Company, the International Telephone & Telegraph Corporation, the R. C. A. Communications, Inc., and the American Telephone & Telegraph Company.



President R. B. White, Baltimore & Ohio, former president of the Western Union Telegraph Company, buys the first sheet of telegraph centennial commemorative stamps

the House system west of New York state. House was an original member of the board, and all operations were to be by printing telegraphy. This company was formed for the express purpose of building a telegraph line from Buffalo, N. Y., to St. Louis, Mo., but money ran low by the time the line reached Louisville and business began with only that amount of line.

Buffalo & Louisville, Ky.

By this time 50 companies were operating short lines in various parts of the country. Messages were transferred from one line to another, or relayed through several systems. The consequent delay and expense were discouraging to the public, and by the time the New York & Mississippi Valley Printing Telegraph Company was operating, many short line companies were losing money and facing bankruptcy.

Selden and Sibley recognized this weakness of the infant industry and developed a plan for consolidating many of these small companies and establishing a national system, with a uniform tariff and a uniform standard of service. The strongest opposition

the New York State Legislature. Cornell proposed that the name of the company be changed to the Western Union Telegraph Company, to indicate the union of the Western lines into one system. Sibley soon became president of the company which continued to acquire competing lines.

The original Morse Telegraph Line between Washington and Baltimore, and later New York City, which was

