THE BEGINNINGS

WESTERN ELECTRIC
1869 100 1969
CENTURY OF PROGRESS

Switchboard installation
in Oregon, 1900.

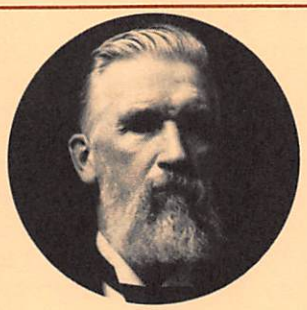
General Anson Stager, a prominent businessman of the time, joined the 10-month-old electrical equipment firm of Gray and Barton as an equal partner on November 18, 1869 . . . the birthday of what was to become the Western Electric Company.

General Stager, Professor Elisha Gray and Enos Barton each contributed $2,500. They set up shop in Chicago with five or six men to produce various electrical equipment.

In 1871 the fledgling firm was nearly wiped out, as the Chicago fire came within two blocks of the shop at 13 La Salle Street. In characteristic fashion, however, the three men turned the near disaster into a boon by supplying new electrical equipment to replace that destroyed in the blaze.

The Western Electric Manufacturing Company succeeded Gray and Barton in 1872. The new firm was incorporated with a capitalization of $150,000, and took over the facilities of Gray and Barton. Another shop was established in Ottawa, Illinois with Anson Stager as president, Stafford G. Lynch, vice-president, Enos Barton, secretary and Elisha Gray, general superintendent.

General Anson Stager.



Elisha Gray.

Enos Barton.

THE TELEPHONE

In Philadelphia in 1876 Alexander Graham Bell, 29, presented the first demonstration of an unusual instrument he called the telephone. The occasion was the Centennial Exposition. Western Electric was there also, winning five first prizes.

The following year the company began the manufacture of Elisha Gray's battery telephone. It was Western Electric's first experience with telephony. The weekly payroll topped the $1,000 mark.

The company became a subsidiary of the American Bell Telephone Company—predecessor of American Telephone and Telegraph Company—in 1881. The following year, it began manufacturing Bell telephones and equipment.

Western Electric was expanding at a rapid rate domestically and internationally. April 1882 saw the incorporation of the Bell Telephone Manufacturing Company of Antwerp—55 percent Western Electric owned. Several other foreign subsidiaries were established in countries on

Gray and Barton's 220 Kinzie St. shop, Chicago, 1872.

The No. 1 Lewis Legless Telegraph Key, Western Electric Manufacturing Co. catalogue 1878, $5.00.

Mr. Bell's first telephone—1876.

The first telephone Western Electric made for the Bell System.

four continents.

By 1925, however, it became apparent that Bell System demands on Western Electric were growing at a pace that made it impossible for the firm to give the attention required to both the System's needs and the foreign business. Therefore, the foreign companies were sold to International Telephone and Telegraph Company, Inc.

In 1901, Western Electric signed the first Standard Supply Contract. The contract, with the Bell Telephone Company of Philadelphia, provided that Western Electric would act as supplier, purchaser and repair shop for the telephone company. This was the beginning of the historic partnership that has made Western Electric the manufacturing and supply unit of the entire Bell System.

NEW PRODUCTS

Research and Development at Western Electric received official status with the organization of the Engineering Department in 1907. Between 1907 and 1925, the Engineering Department was responsible for major contributions to telephone technology, public address systems, radio, phonographs, hearing aids and sound motion pictures. The department was the forerunner of Bell Telephone Laboratories.

In April 1913, Dr. Harold Arnold of the Western Electric Engineering Department made the first high vacuum electronic tube, opening the way for coast-to-coast telephone calls. January 1915 saw the installation of the first transcontinental telephone line. In September the first radio-telephone contact was made between the coasts. In October transoceanic radiotelephony was initiated.

In December 1917, Western Electric introduced radio telephone for airplanes.

1919 saw the desk telephone equipped with a dial. The first dial service was installed in LaPorte, Indiana. (New York City didn't make it until 1922.) On October 28, 1922 it was Princeton versus Chicago in the first radio broadcast of a football game. The game, played in Chicago, came over long distance telephone lines to AT&T's WEAF, New York. The station used the standard Western Electric transmitter which had been installed in more than 30 radio stations across the country.

Until this time the installation of telephone equipment and systems equipment engineering, which determines what equipment is right for what job, had been the responsibility of the General Manufacturing Department. In December 1922 installation and systems equipment engineering were organized into a separate Installation Department.

Bell System research and development was transferred to the newly formed Bell Telephone Laboratories in January 1925. The Labs are owned jointly by Western Electric and AT&T.

The first commercial trans-Atlantic radiotelephone service began between New York and London in January 1927.

In September, 1930 Teletype Corporation, manufacturer of teletypewriters, became a subsidiary of Western Electric.

Aviators circa 1917 used early Western Electric radio equipment.

Early Western Electric motion picture sound equipment.

This Western Electric radio transmitter was the "latest thing for catching fleeing criminals," in New York—1922.

FURTHER DEVELOPMENTS

In 1937 the "300" type desk set was introduced. It was the first desk set with the bell in the base.

During World War II Western Electric was the nation's largest supplier of radar. The company produced some 57,000 units of 70 types. The first contract was signed in 1940. In February 1945 the company made its debut in the field of guided missiles. It signed a contract with the Army authorizing study of an anti-aircraft projectile. This was the beginning of the studies that led to the Nike family of missiles and to Sentinel.

The first microwave towers—to beam voice signals through the air—went up between Boston and New York in 1947. By 1951 there was a coast-to-coast microwave route.

In 1948, the first experimental transistors, designed at Bell Telephone Laboratories, were sent to military and civilian engineers for early circuit development work.

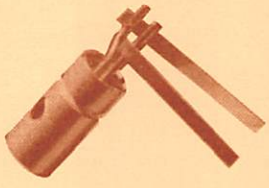
The phone that everybody recognizes, the "500" type desk set, was introduced in 1949.

In November 1949, the government asked Western Electric to take over operation of the Atomic Energy Commission's laboratory at Albuquerque, New Mexico. The company formed a non-profit subsidiary, Sandia Corporation, to run the labs. Another laboratory was established at Livermore, California in 1956.

In December 1950, Western Electric was named prime contractor for the Nike Ajax missile system.

The telephone got a dial in 1919.

The first desk telephone with the bell in the base.



An early Western Electric transistor—1952.

Touch-Tone® dialing in combination with ESS offers the telephone user speed and convenience.

Two years later, the government again turned to Western Electric. This time it was to act as prime contractor for the Distant Early Warning Line (DEW Line), a chain of radar stations stretching 3,000 miles across the Arctic Circle for detecting approaching bombers. The DEW Line was completed in 1957.

In February of 1958 the government asked Western Electric to be prime contractor for the Ballistic Missile Early Warning System. BMEWS was completed in 1963.

In 1959 the Princess® telephone was introduced. The next year, the Defense Activities Division was organized. Defense work had previously been handled by the Radio Division which was dissolved.

At the request of the National Aeronautics and Space Administration, a joint Western Electric-AT&T subsidiary, Bellcomm, Inc., was established in Washington, D.C. in 1962. Bellcomm's job is to provide systems planning support for the nation's manned space flight program.

1964 saw the introduction of telephones with Touch-Tone® dialing. In June, the Bell System began the first commercial operation of Picturephone® service between New York, Washington and Chicago.

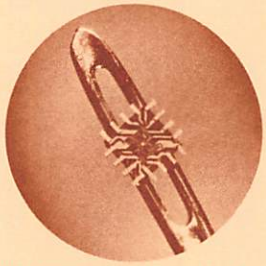
On May 30, 1965 the first electronic central office began serving customers in Succasunna, New Jersey. The Bell System expects electronic switching to be one of the most significant advances in telephone history.

In August 1965, the Trimline® telephone with the dial in the handset was introduced.

A trial period of direct dialing to Europe began in 1967. Selected subscribers, all heavy users of trans-Atlantic telephone service, were able to dial direct to London or Paris from New York.

In September 1967, Western Electric was named prime contractor for Sentinel, the Defense Department's Anti-Ballistic Missile System.

In 1968, Western Electric locations in 43 cities took part in the National Alliance of Businessmen's job program to hire the unemployed. Thus the company continued a commitment to social progress undertaken in previous years with skills and training programs in Chicago and Newark.



Miniaturization—18 diodes, four transistors, and eight resistors in a single integrated circuit.

Bell System planners expect Picturephone® to be in widespread use in the 1970's.

Western Electric-built SCAMA Board at the Goddard Space Flight Center has push-button global conference call capability.

FUTURE

The history of Western Electric is a story of constant development and innovation.

Today's world is changing so fast that it confronts us with a different landscape almost before we have become familiar with the last one. Technological changes—particularly in the field of communications—are not only opening new horizons but also coming at an ever-increasing rate. Man and corporation must struggle to keep up.

Western Electric and its Bell System partners are thinking and planning, years, decades, ahead . . . anticipating the greatly increased demands for telephone and telephone-related services. Western Electric sees future world growth as present challenge, present opportunity. The company is working, now, to insure that it will continue to provide the best communications equipment possible for its next 100 years.

Superintendent Frank Duplain and his work force outside the new Clinton and Van Buren St. shop, Chicago—1883.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM