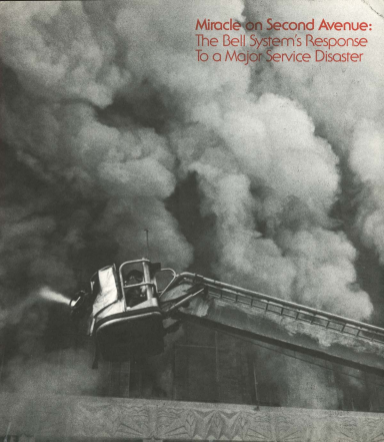


*Miracle on Second Avenue:
The Bell System's Response
To a Major Service Disaster*



It was about 12:30 a.m. on February 27, 1975 when fire and smoke began to race through a major telephone company switching center in New York City. Seventeen hours later, 170,000 telephones in Lower Manhattan were silent, and the New York Telephone Company faced a major service catastrophe.

But New York Telephone did not meet the crisis alone. Even as the fire still was devastating cable and switching equipment, the Bell System was summoning into action its nationwide resources to restore service.

Joined by massive assistance from Western Electric, Bell Laboratories, AT&T Long Lines and other telephone operating companies, New York Telephone was able to mend its stricken facilities in just three weeks—a task that under normal circumstances would take more than a year.

It was no wonder that New York Telephone officials were calling the service restoration their "miracle on Second Avenue."

It was a miracle produced by planning, organization and cooperation.

Fire

'A MAJOR COMMUNICATIONS CATASTROPHE'

New York Telephone's 11-story Second Avenue equipment building housed 12 exchanges and five toll switching machines handling intercity and Long Island traffic.

As Bell System teams entered its smoldering ruins, they found the first-floor main distributing frame—the heart of the central office—as well as four panel-switching offices destroyed. Fire officials declared that the five-alarm blaze had begun with a short circuit in a sub-basement cable vault.

Power equipment in the basement was rendered useless by water damage, cable shafts and ducts linking the equipment floors had been demolished; carrier equipment on the second floor had been destroyed; and relays and switches on the fourth, fifth and ninth floors in some cases were operative but would require extensive, delicate cleaning.

New York Telephone President William M. Elinghaus assessed the situation as a "major communications catastrophe."

Within 24 hours, however, vital emergency service to hospitals, police and other agencies had been set up. Telephone traffic was being re-routed to make the best possible use of the nationwide network, and recorded messages informed callers into the affected exchanges that service was interrupted.

Meanwhile, equipment and people were being mobilized to move to the site for the rebuilding job.

New York Telephone President William M. Elinghaus and workers at the site. (Clockwise from top left) New York Telephone's Lee Oberst, vice president for the New York City Region, and AT&T Board Chairman John D. DeBull.



Teams of technicians from Bell Laboratories, New York Telephone and Western Electric assessed damages and determined that service could be restored in two to three weeks.

Response

AID COMES FROM BELL UNITS ACROSS THE COUNTRY

As fire still was gutting telephone equipment, the Bell System was gearing up its integrated units across the country to aid in the massive restoration efforts.

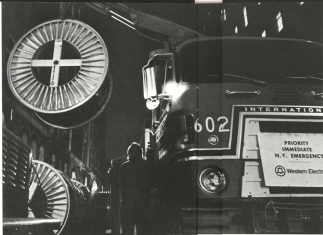
Western Electric experts studied original engineering drawings to determine what equipment would be needed, and shipments to other Bell companies were deferred until it was known what would be required in New York. Switching equipment, cable, wire and other supplies began the journey to New York from centers across the country.

At the same time, Nassau Recycle Corp., a Western subsidiary, was preparing to receive discarded material damaged by the fire for later recycling.

Mobile radio-telephone units from Bell operating companies in New Jersey, Connecticut, Pennsylvania, West Virginia and elsewhere in New York moved in to provide emergency telephone service in the affected neighborhood, and New York Telephone set up service and information centers for its customers.

Bell Laboratories experts in fire damage examined smoke-covered switching equipment to determine how it could be cleaned. Specialists in electronic switching, transmission and power concentrated on technical aspects of the restoration, including accelerating introduction of a new high-capacity transmission link between New York and New Jersey to take over most of the work of lines that passed through the Second Avenue building.

Long Lines and New York Telephone began re-routing long distance calls to maintain service into and out of the city.



(Left) Truckloads of cable head toward New York from Western Electric locations. (Below) Bell Laboratories experts analyze how to restore smoke-damaged switching equipment.



(Left) The flexibility of the nationwide telephone system assured a minimum number of delayed calls into and out of the city. (Right) Neighborhood residents make emergency calls from mobile units brought in from other Bell companies.

Rebuilding

TONS AND FEET
MEASURE THE TASK

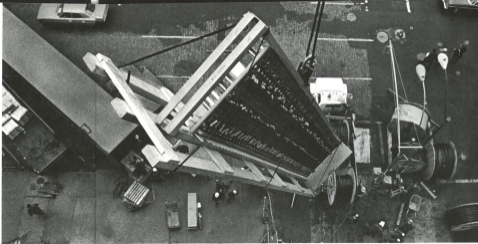
In three weeks, Bell System crews placed more than 1.2 billion feet of wire underground. More than five million wires were spliced below ground, and 8.8 million feet of cross-connector wire were used on the frames.

Some 6,000 tons of debris were removed from the building, and more than 1,350 quarts of special cleaning fluid were used to rehabilitate central office equipment.

A completely new 240-foot main distributing frame, flown in from Chicago by Western Electric, was hoisted to the third floor of the building and wired in days instead of months.

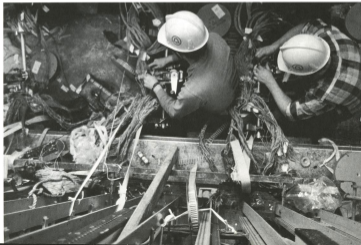
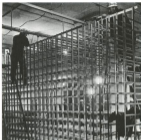
In all, more than 2,600 tons of equipment and material were shipped from Western Electric locations, including some 525,000 linear feet of exchange cable and more than 380 million conductor feet of switchboard cable and wire. Involved in the shipment were 30 trucking companies and 11 airlines.

Some 4,000 Bell System people—including a skilled force of installers, spicers, repair personnel and other craft workers—mounted an around-the-clock effort at the damaged center.



Nearly 4,000 Bell System employees work day and night to install equipment that arrives in New York City by land and air.

Support comes to crews at the site from Bell Systems men and women throughout the country. As work neared completion, Bell Labs specialists helped design procedures that enabled more than 17 million tests to be carried out quickly to assure that equipment was in proper working order.



Reaction

MEETING THE HUMAN NEEDS

While technical work progressed, New York Telephone developed unique approaches to provide emergency service and information to residents and businesses in the three-square-mile area.

Customers were able to use some 400 coin telephones in operation at storefront centers, mobile vans and special outdoor rack locations. At one point during the three-week outage, these phones were being used at least 105,000 times a day—eight times the average sidewalk coin phone usage in Manhattan.

Maps written in four languages—English, Spanish, Yiddish and Chinese—were distributed to apartment houses, stores, community centers and elsewhere to enable customers to pinpoint the locations of the coin telephones.

Two special telephone messages, one in English and one in Spanish, were set up to provide news about the service restoration effort.

A business phone center equipped with desks and telephones was opened for business and professional people affected by the fire. Customers could walk in, order their phones and transact their business, with normal charges added to their regular bills.

A special message delivery service also was introduced to aid businesses. Messages were called in to telephone operators, who transmitted name and address information for delivery by foot messengers from a city-funded youth organization.

A number of volunteers responded to a project organized by the Manhattan Chapter of the Telephone Pioneers of America. The volunteers visited blind and handicapped shut-ins in the area, ran errands for them, took messages and placed phone calls.



(Above) Telephone Pioneers place their messages. (Below) A customer transacts business at the business phone center.



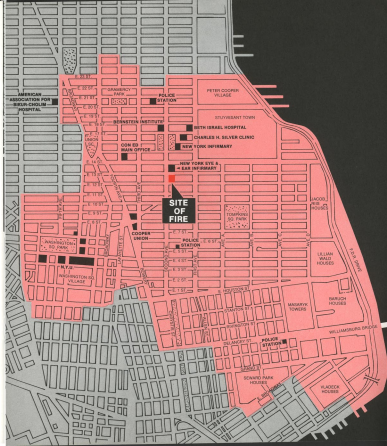
(Left) Community leaders and block association members tour the Second Avenue building to observe restoration efforts. (Below) Operators handle thousands of calls at the message delivery center.



MANHATTAN



The fire knocked out service to 200 blocks in a three-square-mile area which houses offices and stores, as well as apartment buildings. Initial emergency efforts provided service to the hospitals, police and fire departments, and other vital agencies in the neighborhood.



Restoration

SERVICE RETURNS IN THREE WEEKS

Climaxing the massive restoration job, telephone service was returned to the affected exchanges on March 21—just three weeks after the devastating fire. In terms of total telephones involved—170,000—the cutover was equivalent to turning on service for the entire state of Vermont.

About 8 that Friday night, crews began plugging in connectors and removing blocking pins. Offices were put back into service gradually ahead of the announced 11:59 p.m. restoration time to avoid overloading equipment, but it was apparent that many eager customers were checking their telephones regularly.

At the same time the Second Avenue exchanges were being reactivated, central offices throughout the country were receiving instructions to permit calls to flow once again into the 300-block area.

Barriers hung on the front of the Second Avenue building proclaimed that service was back, and a call from President Elinghaus to New York City Mayor Beame announced that "The miracle on Second Avenue has been accomplished."

The "miracle" will be remembered as part of the Bell System tradition of quick response in emergency situations.

Moreover, this latest drama underscores the strength of the highly integrated structure which permitted the "miracle" to take place.

"In the last couple of weeks I have had the opportunity to observe at first hand the strength of the organization structure that the (Justice Department's) antitrust suit seeks to destroy," noted AT&T Chairman John DeButts. "... This (service restoration) has been called a dramatic accomplishment—rightly. But only in its urgency does the teamwork demonstrated on this occasion differ from the teamwork that characterizes the Bell System's everyday job."



(Above) New York Telephone President Elinghaus notifies the mayor that service is restored. (Right) Offices are busy once again as calls start to flow and final testing and repair take place.





MIRACLE ON 2nd AVENUE

SERVICE IS BACK!

THANKS FOR YOUR PATIENCE

