

Trade Center had been the target of terrorist attacks before 9/11. At 12:18 P.M. on February 26, 1993, a 1,500-pound bomb stashed in a rental van was detonated on a parking garage ramp beneath the Twin Towers. The explosion killed six people, injured about 1,000 more, and exposed vulnerabilities in the World Trade Center's and the city's emergency preparedness.⁵

The towers lost power and communications capability. Generators had to be shut down to ensure safety, and elevators stopped. The public-address system and emergency lighting systems failed. The unlit stairwells filled with smoke and were so dark as to be impassable. Rescue efforts by the Fire Department of New York (FDNY) were hampered by the inability of its radios to function in buildings as large as the Twin Towers. The 911 emergency call system was overwhelmed. The general evacuation of the towers' occupants via the stairwells took more than four hours.⁶

Several small groups of people who were physically unable to descend the stairs were evacuated from the roof of the South Tower by New York Police Department (NYPD) helicopters. At least one person was lifted from the North Tower roof by the NYPD in a dangerous helicopter rappel operation—15 hours after the bombing. General knowledge that these air rescues had occurred appears to have left a number of civilians who worked in the Twin Towers with the false impression that helicopter rescues were part of the WTC evacuation plan and that rescue from the roof was a viable, if not favored, option for those who worked on upper floors. Although they were considered after 1993, helicopter evacuations in fact were not incorporated into the WTC fire safety plan.⁷

To address the problems encountered during the response to the 1993 bombing, the Port Authority spent an initial \$100 million to make physical, structural, and technological improvements to the WTC, as well as to enhance its fire safety plan and reorganize and bolster its fire safety and security staffs.⁸

Substantial enhancements were made to power sources and exits. Fluorescent signs and markings were added in and near stairwells. The Port Authority also installed a sophisticated computerized fire alarm system with redundant electronics and control panels, and state-of-the-art fire command stations were placed in the lobby of each tower.⁹

To manage fire emergency preparedness and operations, the Port Authority created the dedicated position of fire safety director. The director supervised a team of deputy fire safety directors, one of whom was on duty at the fire command station in the lobby of each tower at all times. He or she would be responsible for communicating with building occupants during an emergency.¹⁰

The Port Authority also sought to prepare civilians better for future emergencies. Deputy fire safety directors conducted fire drills at least twice a year, with advance notice to tenants. "Fire safety teams" were selected from among civilian employees on each floor and consisted of a fire warden, deputy fire wardens, and searchers. The standard procedure for fire drills was for fire wardens