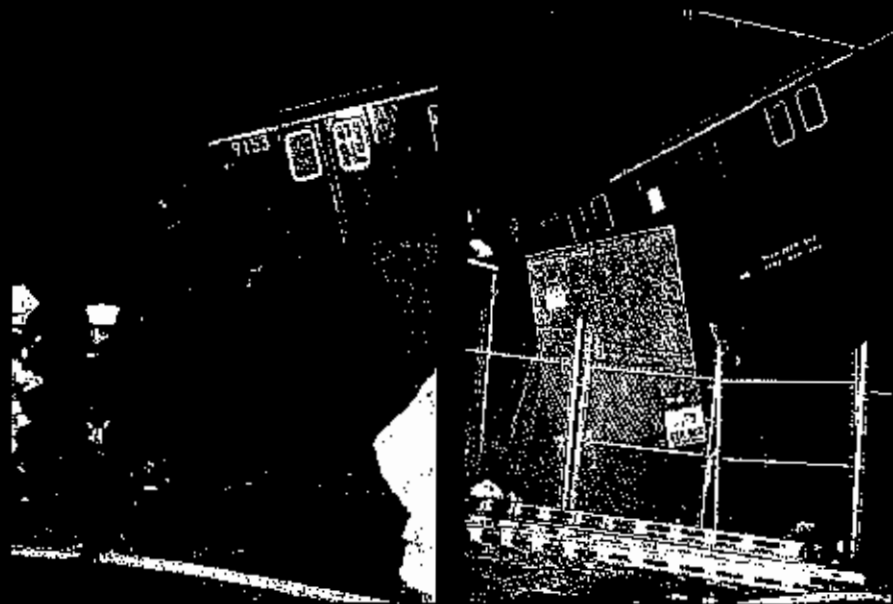


# BROOKLYN ELEVATED TRAIN DERAILMENT

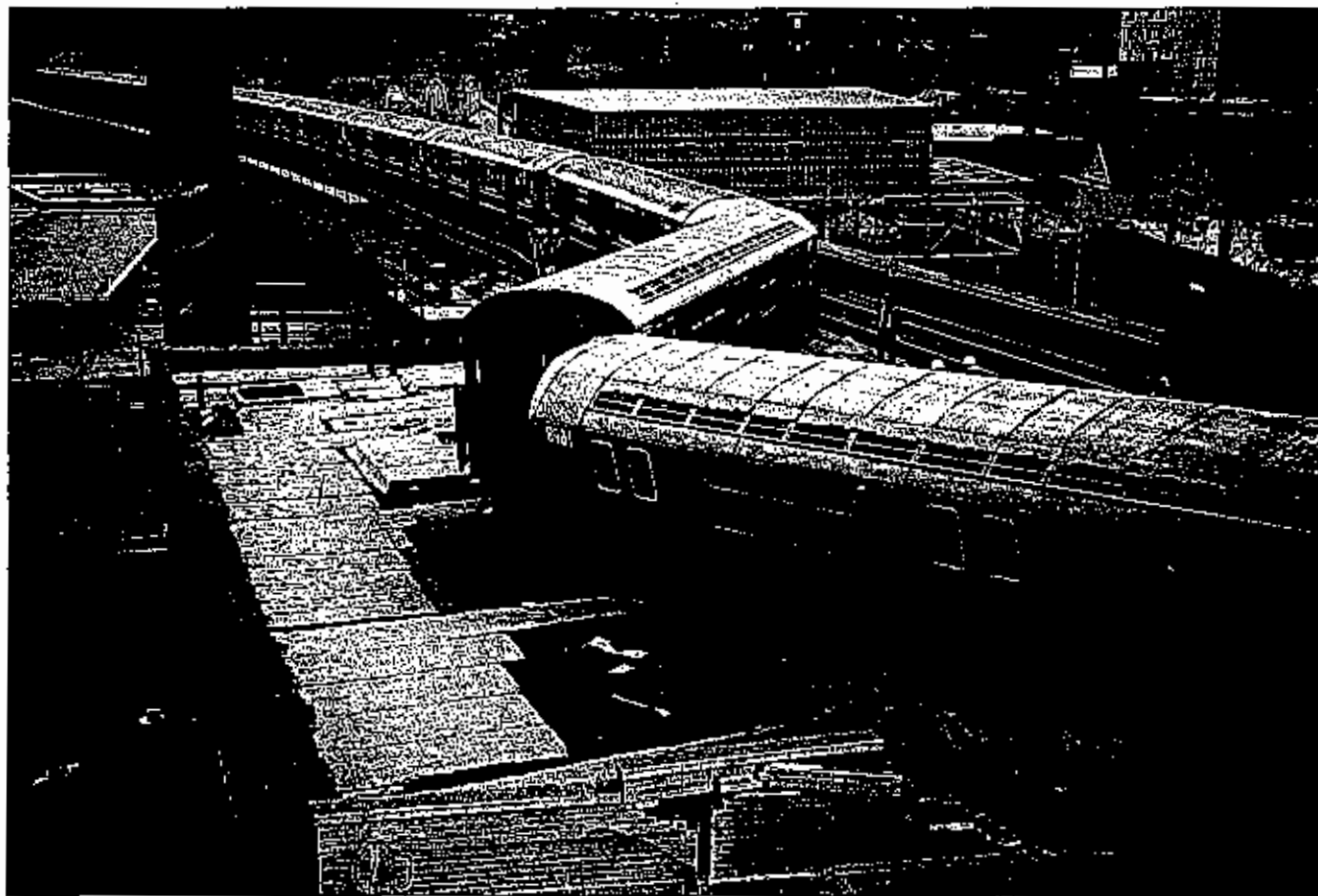


COMPILED BY MEMBERS OF RESCUE 3 OF THE  
CITY OF NEW YORK (NY) FIRE DEPARTMENT  
WHO RESPONDED TO THIS INCIDENT

At approximately 9:10 p.m. on Tuesday, February 2, 1998, a Metropolitan Transit Authority (MTA) motorman was taking his No. 2 Train to the 240th Street train yard in New York. This train consisted of 10 cars, which a search later confirmed carried no passengers. After having been given permission to "key by" a red signal, the No. 2 Train rounded a curve approximately 600 feet beyond the signal and slammed into a parked No. 4 train. The collision caused two cars to jump the track and land on the roof of an auto body garage. Two other cars landed on top of a tractor trailer container beneath the elevated tracks. The electrified "third rail" was driven through the roof of the trailer, causing a fire. Safety concerns and the fire's proximity hampered suppression efforts at this time.



Cars 3 and 4 fell onto a parked tractor trailer, bringing down with it the electrified third rail, which set the trailer contents (cardboard) on fire. (Top photo by Ray Dawney; bottom photos by Matthew P. Daly.)



The City of New York (NY) Fire Department's Rescue 3, special-called to augment the initial response, responded up White Plains Road to 239th Street. We saw four cars hanging precariously from the elevated platform. The scene eerily resembled a Hollywood action movie.

#### ASSESSMENT AND DEPLOYMENT

Captain Terry Hatton, the officer of Rescue 3, split his company into two teams. The first team consisted of the forcible entry team and himself; the second team was comprised of the roof team and

(Above) The first two cars of the moving train were thrown from the collision onto the roof of an auto body shop, causing structural damage. (Photo by Ray Downey.) (Left) Firefighters accessed the lead car to reach the injured motorman, who had to be extricated. He suffered a broken leg. (Photo by Matthew P. Daly.)

the chauffeur. Two teams were needed—one to assess the full impact of the incident, the other the number of casualties and the extent of the damage.

Through handheld radio communications, it was learned that Ladder 39 (L-39), one of the first arriving units, had located the motorman inside the train. The members of L-39 were able to access the traincar by aerial ladder. Hatton ordered the roof team to assist L-39 in assessing the motorman's condition and the methods by which he could be removed.

Simultaneously, Captain Hatton and the forcible entry team accessed the rear of the first car by placing a portable ladder on the roof of the auto body shop. The instability of the cars and the compromised structural integrity of the auto body shop led Incident Commander Deputy Chief Robert Carbo to order Hatton and his team to retreat to a safer area. Hatton repositioned his team to Furman Street, where the roof team was. The elevated train structure was inspected by the MTA and found to be undamaged.

The roof team along with L-39 began to package the patient for removal. After being fully immobilized and medically assessed, the

## REMOVING THE DERAILED TRAIN BY RAY DOWNEY

After the rescue of the train operator and the extinguishment of the fire, the incident commander had to focus on the four train cars that had fallen—two on a building and two down onto the burning trailer. Until they could be removed, the stability of the building was in question and the smoldering fire could not be extinguished.

At an interagency meeting, it was decided that the Transit Authority would bring in one of its heavy-duty cranes to remove the cars. The operation was to be done in daylight, when a clearer assessment of conditions could be made and the smoke condition caused by the burning trailer would be improved.

The plan was that the crane would be placed as close as possible to the two cars sitting on top of the trailer. The operator had very little room to maneuver and positioned the crane in the most advantageous spot. The cars had lost their wheels (known as "the trucks") on which they sit. These cars with a truck front and rear weigh up to 70 tons—each car weighs 50 tons and each truck weighs 10 tons.

After safely removing the first car, the crane was repositioned and the second car was removed. The crane operator's expertise was evident during the entire operation. He was able to move both cars, lift them up to elevated train tracks, and set them down on trucks that had been placed on the tracks. This would facilitate moving them to the train yards. Workmen had cleared the track of the remaining cars so that this operation could proceed smoothly.

The crane had to be moved around the corner to another street and positioned so that the remaining two cars could be removed from the roof of a commercial building. The area around this building had been roped off and a collapse zone had been identified.

The weight of the two cars caused serious concern that the building might collapse. If this occurred, both cars would come down into the building and onto the street. Since the initial incident had occurred during the night, the building was unoccupied. The crane operator again showed his expertise and safely removed both cars and repositioned them on the tracks. The operation had been going on all day and darkness had set in, making it much more difficult for the crane operator.

Fire department units had been standing by during the entire operation. During the removal of the cars from the top of the building, when concern about a potential collapse was great, companies were positioned in the immediate area but out of the collapse zone. A tower ladder was used as an observation post from which information was transmitted to the crane operator. FDNY members worked with Transit Authority personnel up on the tracks.

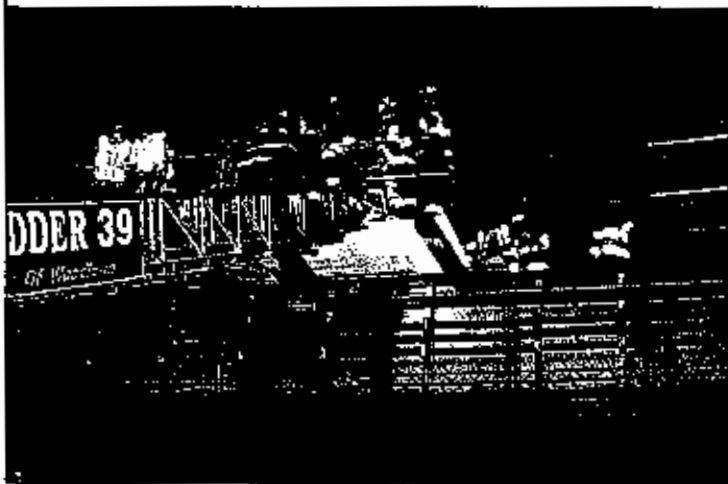
The well-coordinated operation concluded with all of the cars being safely removed and placed on trucks on the tracks. All of this was accomplished without incurring any additional damage. More importantly, the operation was injury-free for FDNY and Transit Authority personnel. ■

■ **RAY DOWNEY** is a battalion chief, chief of rescue operations, and a 36-year veteran of the City of New York (NY) Fire Department. The former captain of Rescue Company 2, he is the USAR task force leader representative to FEMA for all 26 teams and is a member of FEMA's Advisory Committee. Downey is also the author of the book *The Rescue Company*, the video *Rescue Operational Planning: Factors for Success*, and the video series *Collapse Rescue for the Fire Service*, published and produced by Fire Engineering Books and Videos.

14-year transit veteran, who had suffered a broken leg, was placed in a stokes basket and moved approximately 100 feet on the elevated track to the tip of L-39's aerial. Ladder 39 was positioned on Furman Avenue, where the trains had collided. A lowering system consisting of  $\frac{1}{2}$  nylon rope and a pompier hook, to control the safe lowering of the patient, was assembled. EMS personnel were

staged at the bottom of L-39's aerial for transport.

By this time, Transit Authority personnel had informed the IC that no other people were on the trains. As per department SOP, we still searched all cars that remained on the track. This search proved to be negative. After communicating this information to the IC, Rescue 3 was assigned to assess the damage to the elevated struc-



The packaged victim is brought to awaiting medical personnel via tower ladder and a simple rope system. (Photos by Matthew P. Dely.)

ture and the body shop, which took approximately one hour.

The two lead cars of the No. 2 train had partially come to rest on the roof of the auto body garage. This caused structural cracks and other damage to two sides of the building. The third and fourth cars of the train came to rest on the container where the fire occurred.

#### SUPPRESSION OF TRAILER CONTAINER FIRE

Approximately 2½ hours into the operation—after an hour of suppression efforts by the engine companies—the fire in the trailer container continued to burn. Rescue 3 assisted in mitigating the fire. Limited openings in the trailer prevented water streams from hitting the main body of fire. The contents of the trailer, confirmed by the owner, consisted of cardboard. There were no haz-mat or explosive concerns.

The most logical tactic would have been to open the rear doors accessible to the companies. The doors, however, added to the trailer's structural stability. With the weight of the trains, opening them could have compromised what stability there was. Although safety of the members was paramount, the fire had to be extinguished before further operations could continue. We decided to use an exothermic torch to burn two nozzle-size holes in the trailer's rear doors so that two hoselines could be inserted into the trailer without affecting its stability and that of the other cars resting on its top. The IC approved this plan, which Rescue 3 implemented. The engine companies were successful in extinguishing much of the fire in the trailer. It would continue to smolder, however. At this point, Rescue 3 had been operating for six hours.

The Police Department, Transit Authority, fire department, EMS, and Office of Emergency Management continued to assess

the scene. Rescue 3 was ordered to stand-down at approximately 4:00 a.m. and was released from the scene. We were requested back on the scene at 7:30 a.m. that morning for standby operations.

During the night, representatives from all agencies concerned had arranged with a private contractor and the Transit Authority to bring in heavy equipment to remove the cars. This was obviously a heavy rigging operation that involved two cranes, an excavator, riggers, and iron workers from the Transit Authority.

Rescue 3 and Ladder 42 (L-42) were special-called to stand by should an accident occur during the removal/salvage operations. For the next nine hours, Rescue 3 and L-42 were staged immediately outside the work area with a full cache of extrication equipment. At approximately 7:00 p.m., Rescue 1 relieved Rescue 3.

This operation was extensive and exhaustive, but it was successful for all agencies involved. No personnel were injured in the rescue effort. This can be attributed to the knowledge, experience, and concerns of the officers involved.

#### LESSONS LEARNED AND REINFORCED

As it does in all major incidents and emergencies, Rescue 3 critiqued its performance of this incident. The objective is to identify options that can be used in future operations. Lessons learned and reinforced are as follows:

- Size-up always begins at the receipt of the alarm. The information received at this time, though vague, helps in preparing for the worst-case scenario. Continuous monitoring of the radio en route contributes to the accomplishment of this goal.

- Placement of equipment and personnel is paramount; therefore strong leadership is needed throughout the operation.

- Communicating with the incident commander on a regular basis is critical. In this incident, the IC was kept informed of all Rescue 3 ongoing operations.

- Follow fire department procedures. Do not rely totally on information and equipment provided by others. Accountability for passengers and other individuals—all potential victims—is mandatory. All reports must be verified. Information provided by others, such as that regarding equipment shutdown and functionality, must be confirmed by fire department personnel. It is standard procedure in a train accident, for example, for the IC to have dispatch request at the beginning of the incident that the Transit Authority shut off all electricity in affected areas and to have dispatch confirm that the electricity in fact had been cut off, on which tracks, and which individual/badge number had authorized the cutoff.

\* \* \*

Only one serious injury was incurred in this incident. Had the train been fully occupied, however, there certainly would have been numerous casualties and, no doubt, a monumental rescue effort. This incident provided for all units involved an excellent response scenario that will prove beneficial in responding to future incidents that may present a greater life hazard. ■

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