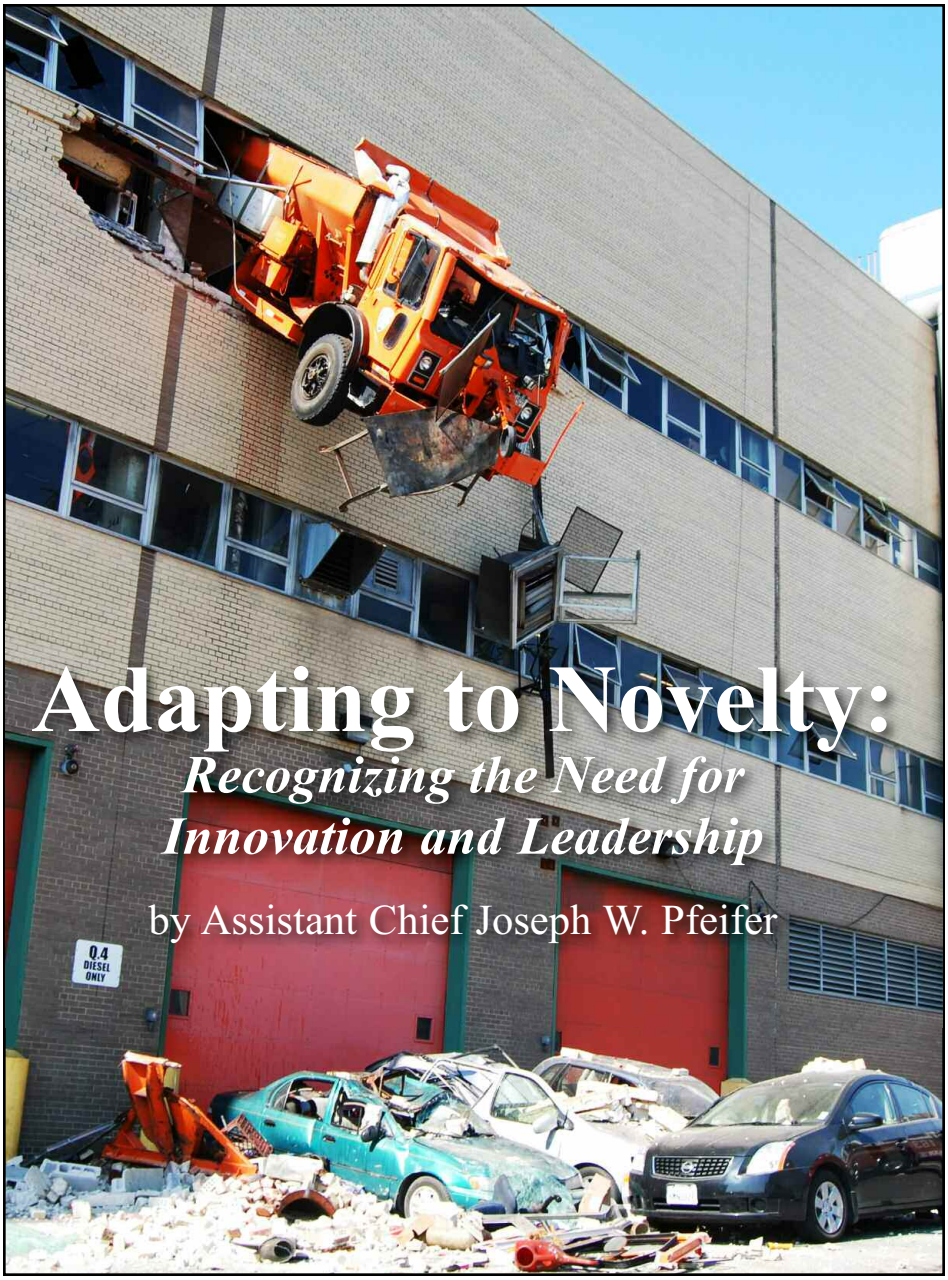

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Adapting to Novelty:

Recognizing the Need for Innovation and Leadership

by Assistant Chief Joseph W. Pfeifer

Photo #1--Sanitation salt-spreader dangles precariously out the fourth floor of the Maspeth, Queens, repair facility.

Repairs to sanitation plows and salt-spreaders usually go unnoticed, but when a truck smashes through a wall and is dangling four stories above the ground, it draws intense media attention. On August 17, 2011, at 0928 hours, a 15.5-ton truck lost control inside the Department of Sanitation's Central Repair Facility in Maspeth, Queens, and plowed through an upper floor wall. When FDNY units arrived, the driver, Robert Legall, 56, was tightly grasping the steering wheel, as three-quarters of his truck hung precariously out a window at a 45-degree angle, some 40 feet above the street. The impact of the truck showered the sidewalk and road with bricks, shattering windshields and crushing roofs of parked cars.

The driver had to be carefully and quickly rescued. Complicating this incident was the threat of the vehicle becoming dislodged and crashing to the street below, which made securing the truck a priority. The event grew in complexity as it became evident that the daunting task to get the truck back into the building would require an interdependent response from multiple agencies. Adapting to novelty required innovation, incident management and crisis leadership. This incident was a strong reminder that it is impossible to anticipate every kind of event. However, using the Fire Department's core capabilities in new combinations are the skills needed to manage novelty.

Rescue operations

Turning the corner on 52nd Road, FDNY units encountered what seemed like a scene from an action movie. Up to its rear wheels, a 30-foot, orange salt-spreader was protruding out a window, with the driver desperately holding on for dear life. Squad 288 was the first unit to arrive at this unusual incident, followed closely by the balance of the initial alarm assignment--Engines 325 and 259, Ladders 163 and 140 and Rescue 4.

Entering the building, under the direction of Captain Joseph Jardin, Squad 288 members observed the truck tipped downward with the rear section wedged between the floor and a concrete spandrel beam above. This beam on which the truck was hung up, was under lateral stress from the weight of the vehicle and showed evidence of this stress in the form surface cracks near adjacent columns. The interior size-up revealed that sanitation employees had chained the truck to a forklift to prevent it from plummeting to the street.

However, Squad 288 quickly noted that this was not going to be sufficient to stabilize the load of nearly 32,000 pounds. After conferring with Rescue 4, Squad 288 anchored a heavy-duty griphoist to an interior column and secured it to the frame of the vehicle using the device's wire rope and heavy-duty slings.

Simultaneously, Lieutenant Michael Twomey, Ladder 163, ordered the tower ladder placed to the edge of the immediate collapse zone, but in position to rescue the driver. Using the reach of the tower ladder, Ladder163's chauffeur, FF Nicholas Gonzalez, placed the bucket adjacent to the opening to the driver's door, which was torn off in the accident. Outside vent FF Michael Agliato and roof FF William Walters placed the lifesaving rope around the driver.

Following confirmation of vehicle stability from the inside, they carefully removed him from the cab of the vehicle into the bucket of the tower ladder. The lifesaving mission continued as EMS swiftly transported the victim to Elmhurst Hospital, where he was treated for minor injuries. Eyewitnesses said he was lucky not to be thrown from the vehicle to the street. With the driver rescued, the work to get the truck back into the building was only beginning and continued for the next six hours.

Command and safety

Incident command and safety were now the main concerns for Battalion Chief James Maloney, Battalion 45, who transmitted a *10-60* at 0937 hours for a major incident. Command was transitioned smoothly to Deputy Chief Stephen Kubler, Division 14. Able to view live-feed video at the Fire Department Operations Center (FDOC), Assistant Chief Joseph Pfeifer quickly responded to the scene and became the Incident Commander (IC). Chief

Kubler then was designated as the Operations Section Chief.

The scene was divided into Inside and Outside Sectors. Battalion Chief Stephen Geraghty, Rescue Operations Chief, was assigned to the Outside Sector, while Battalion Chief Donald Hayde, Rescue Battalion, was given the Inside Sector to supervise. EMS Deputy Chief Debra Cali managed emergency medical resources, while Battalion Chief Eugene Vellia, Safety Battalion, maintained site safety and reported directly to the IC.

Inside Sector

Following the rescue of Mr. Legall, the main concern for inside operations was to further secure the vehicle to additional anchoring points, sufficient to haul the vehicle into the building. The innovative plan that emerged involved supplementing Squad 288's rigging of the vehicle undercarriage with three additional wire rope-griphoist combinations; one to a structural column and each of the others to sanitation wreckers. One wrecker was lashed by slings to another sanitation vehicle positioned perpendicular to it. The other wrecker was attached to a building column. Wrecker tow cables were attached to the vehicle as a contingency to supplement and back up the griphoists.

During the rigging operation, sanitation workers were asked to remove the forklift, which initially was chained to the vehicle. Photo #2 and Figure #1 illustrate how the Rescue Battalion, Squads 288 and 252 and Rescue 4 improvised stabilization techniques to ensure the vehicle would not move.

The inside team also took steps to have sanitation engineers de-energize power to electrical conduits hanging near the truck. SOC units checked wiring with an AC TAC Stick to ensure that power was interrupted. As a safety precaution for potential leaking fuel, two engine companies were paired to maintain a charged hose-line with foam capability if needed. Members not securing the vehicle were removed to areas of safety to reduce the possibility of injury.

Outside Sector

In consultation with Chief Officers at the scene and subject matter expertise from the Special Operations Command, Chief Pfeifer requested a large crane to sling the vehicle with straps and lift it level with the fourth story. This would allow it to be pulled in by the inside team using the griphoists. The Office of Emergency Management (OEM) contacted Bay Crane to evaluate the situation and make recommendations on how best to move the heavy truck back into the building without causing further damage. The objective was to synchronize work between the inside and outside teams to accomplish this very delicate job.

According to Harvard professors Arn Howit and Dutch Leonard (2009), novel events such as this require first responders to customize standard operating procedures and improvise new ways to get the job done. This is accomplished through a cognitive process of attaining situational awareness, *assessing* conditions, *anticipating* uncertainty and *adapting* to novelty.

Incident management and crisis leadership

Adapting to novel events requires Incident Commanders to rapidly combine a single organization's vertical command model with a horizontal system to work in partnership with other agencies. It is not enough to simply co-

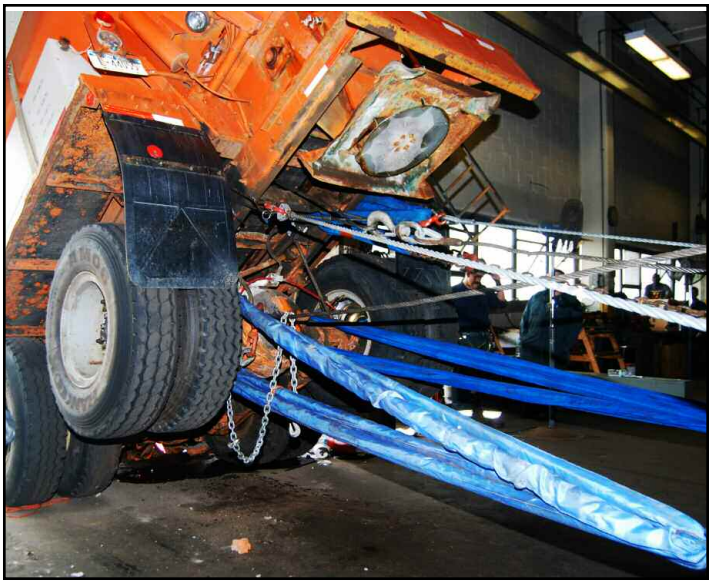
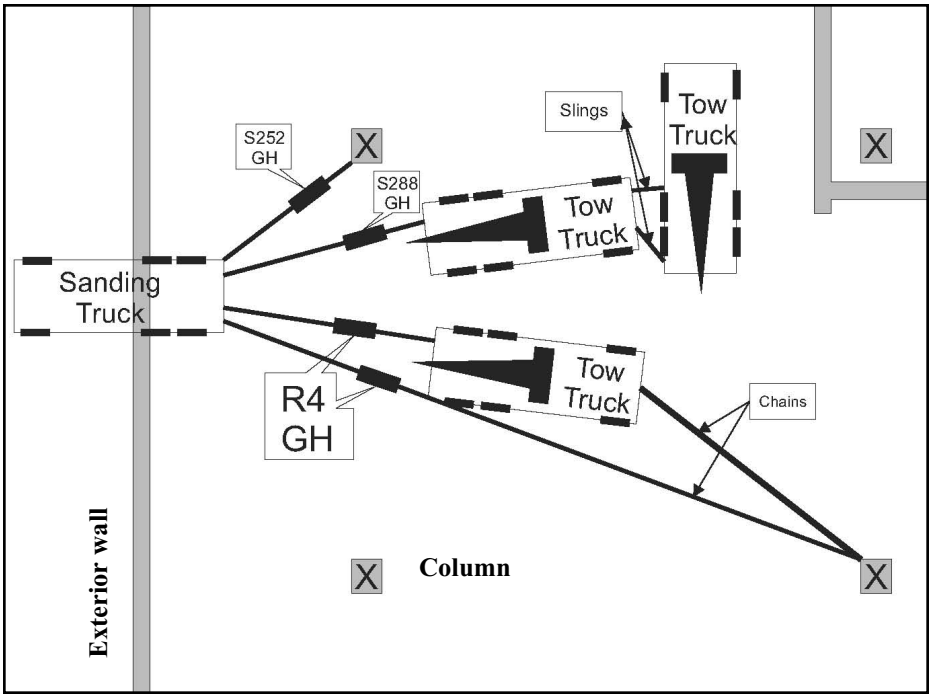


Photo #2--Firefighters used improvised rigging to secure vehicle.

act at a Command Post. Instead, key decision-makers and subject matter experts must collaborate with each other to manage the incident.

Crisis leadership is the ability to get others to recognize novelty and quickly move to a network system for command and control that connects, collaborates and coordinates an adaptive response. Accomplishing these requisites during a novel incident calls for leaders to structure their organizations to cope with the forces of a crisis and adapt the command element for both leadership and management. Those who are leading in a crisis must take the following adaptive actions:

- Hastily form networks for situational awareness by connecting to others
- Flatten command for collaboration
- Leverage core competencies to rapidly deploy and coordinate resources
- Manage the incident by using a unified system for command and control



artwork by FF Robert Salvesen, Squad 288

Figure #1--Sketch depicts innovative vehicle stabilization techniques.

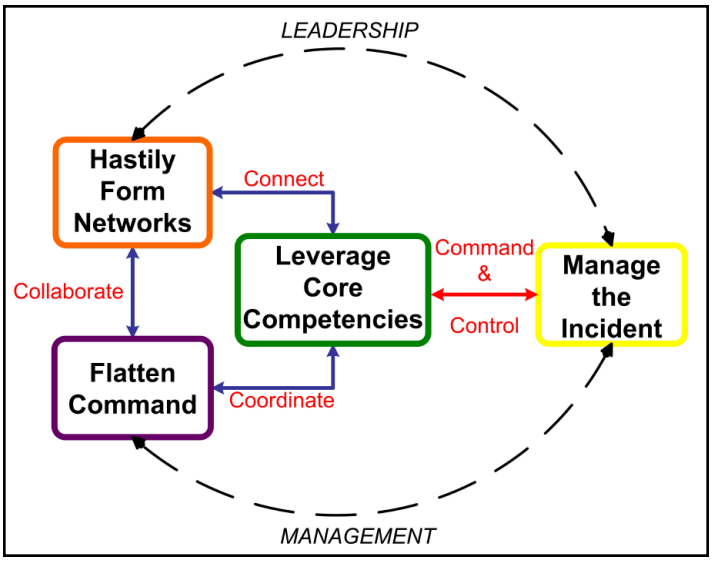


Figure #2--Crisis leadership is the art of getting others to adapt to the novelty by quickly moving to a network system for command and control that is able to connect, collaborate and coordinate to create public value.

Connect

Leadership ensures that others are plugged into information sources for situational awareness and critical decision-making. To do this, leaders quickly form networks by connecting to key decision-makers and make sure they remain in proximity to each other to take advantage of collective information and knowledge. At this incident, it was essential to connect to Sanitation Commissioner John Doherty and his Deputy Commissioners; OEM First Deputy Commissioner Calvin Drayton and his staff; Department of Buildings Deputy Commissioners Casale and Vallenchik; NYPD Inspector Lukach and Captains Josef Nolte (NYPD liaison to FDNY) and Walsh; Bay Crane foreman Rick Bernardo; representatives from utility companies; and Fire and EMS Chiefs.

Information gathered at the scene also was shared through the Borough Communication Office with the FDOC that kept Fire Commissioner Salvatore J. Cassano, Chief of Department Edward S. Kilduff and senior staff informed about the event. In this networked world of all-day news, Facebook, Twitter and YouTube, it is important to work with the media to make sure the public has an accurate understanding of what took place and what steps are being taken to mitigate the problems and return the area to normal. Leaders must excel in media communication and shape the public's view of the crisis. To fulfill their crisis leadership roles, Commissioner Doherty and Chief Pfeifer, surrounded by representatives from other agencies, held a press briefing to assure the public that the crisis was being managed.

Collaborate

Crisis leadership is about flattening command to look at an event from different perspectives, thus enabling others to discover different aspects of the same emergency. It is the responsibility of the IC to recognize when incidents cannot be managed by a single agency and then flatten the command for collective collaboration. Daniel Kahneman (2011), recipient of the 2002 Nobel Prize in Economic Science for his pioneering work on decision-making, argues that too often we create an illusion of control by focusing on what we want to do and neglect the ideas of others. This creates over confidence in one's ability and competition among response organizations. Instead, crisis leadership is the art of inviting others to collaborate and adapt to novelty. Generally, this necessitates key decision-makers to interact by being within visual and voice distance of each other.

Members are urged to review the following references:

- Gawande, A. (2010). *The Checklist Manifesto: How to get Things Right*. New York: Metropolitan Books.
- Howitt, Arnold M. & Leonard, Herman B., with David Giles (Eds.) (2009). *Managing Crisis: Response to Large-Scale Emergencies*. Washington, DC. CQ Press.
- Kahneman, D. (2011). *Thinking Fast and Slow*. New York: Farrar, Straus and Giroux.
- "The Griphoist-Tirfor," by Battalion Chief Raymond M. Downey, in the 4th/99 issue of *WNYF*.
- "Incident Management--A Key Component of the ICS," by Battalion Chief Andrew Richter, in the 3rd/2002 issue of *WNYF*.

The first action in flattening command is to introduce oneself to others who are part of the problem-solving team. Dr. Atul Gawande, surgeon at the Brigham & Women's Hospital in Boston (2010), describes how important it is for a surgical team to introduce themselves at the start of surgery. Such action grants nurses the same right as surgeons to speak up when something does not seem right. It is equally important for a unified command team to introduce themselves and exchange ideas throughout the crisis.

At the start of the first in a series of inter-agency meetings, Chief Pfeifer went around to all agency representatives, who were gathered in a semi-circle under an FDNY command tent, and introduced himself by name and role and shook hands with each one. The result was better information-sharing and collaboration.

Bay Crane riggers place a sling strap around the truck to prepare it for lifting.

Photo #3--Crane lifts vehicle level, while griphoists pull truck into building.

People felt personally part of a team and were forthcoming in voicing suggestions and concerns.

Inter-agency meetings, along with close collaboration between SOC members and the Bay Crane riggers, provided a common operational picture and a single course of action. Bay Crane brought in a 200-ton crane for the main lifting and a second 140-ton crane as a back-up if something went wrong. Riggers in the basket of one crane would sling the truck and attach it to the higher-capacity crane. The vehicle then would be slowly raised until it was level with the floor and be pulled back into the building a few inches at a time.

Coordinate

Once operations for slinging and moving the vehicle were about to start, all unnecessary personnel were moved to a safe area. Inside operations included Captain John Hopkins, Squad 252, supervising the operation of two griphoists on one side of the vehicle, as Lieutenant Robert Chuisano, Rescue 4, supervised the two griphoists on the opposite side, with Captain Jardin coordinating the actions of the two Officers. Chief Hayde positioned himself next to the crane foreman, near the front of the building. Hand signals were used between Chief Hayde and Captain Jardin, either to continue or stop hauling the vehicle into the building.

Outside operations were conducted by Chief Geraghty. He was assisted by Lieutenant Robert Maxwell, Rescue 3, who was sent to the crane operator's cab. Handie-talkies were used to coordinate movement and emergency stop. To minimize radio transmissions and ensure delivery of critical safety messages would be received, only the IC, Inside and Outside Sector Chiefs or the crane operators and Lieutenant Maxwell could talk on the radio. Each of these individuals had the authority to stop movement for operational or safety reasons.

The harmonization of lifting and pulling the vehicle required precise coordination between FDNY and Bay Crane personnel. Coordination became the means for command and control. At one point--coordinating with the crane operator--the vehicle's front tires were deflated and sheet metal cut away by SOC members to allow it to pass easily through the opening in the wall. Soap concentrate was applied to the floor to reduce friction, thus facilitating the hauling operation. After almost 30 tense minutes of crane operations, the sanitation salt-spreader was fully inside the building.

Command and control

The conditions for good incident management were enhanced by closely following the National Incident Management System (NIMS) and the City's Incident Management System (CIMS) for command and control. Since this incident was considered a partial building collapse, the Fire Department was the Incident Commander. However, as a multi-agency event, others were invited to participate in the decision-making process, which proved beneficial for a safer operation. Dispatched on the *10-60*, Battalion Chief John Donnelly, Planning Chief, created an Incident Action Plan (IAP) and distributed copies to all agencies. The early use of an IAP contributed to the professional management of the event.

One of the most important management actions at this novel event was the designation of Inside and Outside Sectors. The decentralization of command increased operational safety and allowed members to improvise and find solutions for rescuing the trapped driver and stabilizing the vehicle. Throughout the incident, agencies shared a common operating picture and FDNY resources were accounted for on the 32-inch electronic command board (ECB), which was maintained by the FieldComm Unit at the Command Post.

Key takeaway

As a novel incident increases in scale and complexity, it is important for ICs to separate management and leadership functions. Unfortunately, many Incident Commanders are seduced into the action of only managing. The same phenomenon also occurs in business with Chief Executive Officers (CEOs), who would rather run operations than take the role of leadership. Management deals with command and control issues by executing or customizing standard plans. Leadership is about stepping back and detaching from the management of the incident to analyze what is taking place and project future actions; then leaders reconnect to guide management in adapting to novelty. Here, leaders look to connect, collaborate and coordinate with others to discover innovative ways to solve unusual problems.

About the Author...

Assistant Chief Joseph W. Pfeifer is a 30-year veteran of the FDNY. He is the Chief of Counterterrorism and Emergency Preparedness. He holds Masters degrees from the Harvard Kennedy School, Naval Postgraduate School and Immaculate Conception. He is a senior Fellow at the Combating Terrorism Center at West Point and a Fellow at the Ash Center for Democratic Governance and Innovation at Harvard University. He writes regularly for WNYF.