Foam Operations at Overturned Diesel Tanker in Queens

by Battalion Chief Steven San Filippo

Members of Haz-Mat Company 1--wearing crash rescue fire gear for flash protection--prepare to off-load product from overturned diesel tanker at Queens Box 9302, Northern Boulevard/Van Wyck Expressway, at Hopper Street, November 29, 2007 (inset). Other Firefighters stand by with foam lines at the ready.

photo by Battalion Chief Steven San Filippo

A tanker containing roughly 5000 gallons of diesel fuel overturned on an off-ramp from the Van Wyck Expressway, near the Shea Stadium Marina, at approximately 1400 hours on November 29, 2007. Battalion Chief Steven San Filippo was notified of the transmission of a 10-86 for this incident. While monitoring the Department radio as he was responding, the Chief was made aware that the tanker was not on fire, but had overturned and the truck tanks were compromised, spilling 1000 to 2000 gallons of product.

On arrival and with the possibility of confronting a flowing fuel fire at the accident, then-Deputy Assistant Chief John Acerno ordered Chief San Filippo and the two foam coordinators--Battalion Chiefs Larry Blieka, Battalion 53, and Patrick Horne, Battalion 39--to set up a large-scale foam operation. The following units responded on the 10-86 and operated as part of the foam group:

- Engine 294 with Foam Carrier 294
- Engine 260 with Foam Carrier 260
- Engine 324 with Satellite 4
- Engine 238 with Foam Tender 1
- Two Purple K units--Engine 326 and Engine 229

Chief San Filippo discovered that the off-ramp area had limited access to hydrants. The hydrant used by Engine 324 (Satellite 4) basically was the only water supply for FDNY units. Since Engine 324 was supplying water to the operation, members had to deviate from the normal large-scale foam operation that incorporates the built-in FIMM (Foam Injection Metering Device) on Engine 324's 2000-gpm pumper.

Since the six Satellites are a very important part of the foam system, they are required to carry the equipment needed for a large-scale foam operation. Some of the foam equipment they carry includes 500- and 1000-gpm foam nozzles, fittings, 100-foot lengths of five-inch hose and a portable FIMM, which was very valuable at this operation.

Engine 273 arrived first-due and initially set up a foam hand-line, which remained in place throughout the operation. After consulting with Chief Acerno and then the units involved in the foam group, it was decided to leave Engine

Queens Box 22-8922, 9000-Gallon (Mixed Load) Tanker Fire

Foam operations posed a bigger challenge at the March 3, 2008, tanker fire on the Van Wyck Expressway/North Conduit Avenue than the November 29, 2007, incident that had no fire. At this operation, a tanker carrying a mixed load of 9000 gallons of diesel fuel and gasoline severely tested the FDNY and its foam delivery system and capabilities.

The driver of the tanker, traveling west on North Conduit Avenue and approaching the entrance to the Van Wyck Expressway, appeared to lose control on a severe turn. The first-due companies and foam units realized the importance of setting up a large-scale foam operation to deal with the tanker, as well as the need for foam hand-lines to extinguish the flowing fire that was approaching the Van Wyck overpass. On arrival, these units realized the importance of providing a foam blanket at the base of the off-ramp, which extinguished the flowing fire and prevented the overpass from becoming an exposure problem.

One of the unique issues with this fire was the dispatch of Kennedy Airport's crash vehicle. This unit originally assumed the fire was on airport property. Seeing that was not the case, the members recognized the need for its services and provided foam (AFFF) and Purple K capabilities.

Lessons learned

- Since the need for foam operations can happen at anytime, members should be very familiar with their unit's capabilities. Multi-unit drills can develop and enhance this knowledge.
- Accurate and quick size-up can prevent unnecessary delays. Initial responding units realized the need for foam and transmitted the appropriate signals immediately.
- All units that participate in semi-annual foam drills (Satellites, foam carriers and tenders) are knowledgeable and expected to provide the IC on the scene with their unit's capabilities. Quick employment of your unit can make a tremendous difference.
- At this operation, use of the Port Authority's crash vehicles played a significant role in assisting the FDNY. AFFF provided a quick knockdown. However, the inability to maintain a foam blanket required use of FDNY's fluoroprotein to extinguish the flowing fire.

324 on the hydrant, supplying water to Engine 273.

Because of their initial position, Engine 273 became the unit that placed the portable FIMM. Placing the portable FIMM on their pumper enabled members to proportion concentrate supplied to them from the Foam Tender at three percent. In reality, they took the place of Engine 324's Satellite pumper at this operation. Engine 273 stretched a 3 1/2-inch line from their pumper to Tower Ladder 138 and affixed a 500-gpm nozzle on their bucket, giving them the capability to supply finished foam on the overturned tanker.

Additionally, since the tanker was overturned at the top of the ramp, Engine 294 with Foam Carrier 294 and Engine 229 with their Purple K unit were placed adjacent to the bottom of the ramp. This gave FDNY the ability not only to supply foam on the tanker with Tower Ladder 138, but also to provide a pool of foam at the base of the ramp should the run-off ignite. If this had happened, Foam Carrier 294 could have provided finished foam and Engine 229's Purple K apparatus could have extinguished active flaming with Purple K powder.

To round out this operation, which was brought under control at 1844 hours, Engine 260 positioned their foam carrier to re-supply Foam Tender 1--if necessary--and Engine 326 positioned their Purple K apparatus adjacent to the ramp, upwind on the exposure #4 side of the tanker, ready to deploy Purple K if it had been required. All units that responded to this incident performed well, per their training.

Lessons learned

- Transmit the signal 10-86 early into the incident.
- Proper deployment/positioning of foam units was ensured to access the off-ramp.
- Semi-annual training prepared foam units (carriers, Satellites, tenders) for operations such as this one.
- Correct placement of diking material can limit the hazard. Due to the position of the tanker in the middle of the ramp, sand (which was used for diking purposes) was placed close to the truck instead of at the base of the ramp to restrict the spread and size of the hazard.
- Strategically positioning the Purple K apparatus provided protection for members and a quick knockdown if the product had ignited.
- Anticipate hydrant problems. At this operation, the availability of hydrants was severely limited (only one hydrant) to provide adequate water for foam operations. Satellite 4 (Engine 324, a 2000-gpm pumper) was connected to the hydrant and the portable FIMM was placed on the Engine 273 apparatus to provide the proper proportioning.

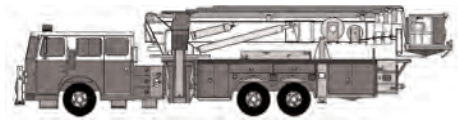
Note: Normally, Satellites use FIMM that is built into the apparatus or portable FIMM carried by the Satellite to proportion foam. Although not a normal evolution, this operation provided adequate finished foam to complete the task at hand.

Members are urged to read the following *WNYF* articles:

- "Diking and Foam Operations Combat Tanker Truck Fire in the Bronx," by Deputy Chief Kevin Butler, in the 4th/2006 issue.
- "Foam Operations on the Bruckner Expressway," by Battalion Chief Steven San Filippo, in the 4th/2006 issue.
- "A Primer on Purple K," by Battalion Chief Steven San Filippo, in the 1st/2008 issue.

About the Author...

Battalion Chief Steven San Filippo is a 30-year veteran of the FDNY. Currently, he is assigned to Operations as the Foam Manager. He completed the West Point Counter-Terrorism leadership and Fire Officers Management Institute (FOMI) programs. He is attending John Jay College, studying for a bachelor's degree in fire and emergency. He is also a member of the Department's Incident Management Team that responded to New Orleans for Hurricane Katrina. He is a frequent writer for WNYF.



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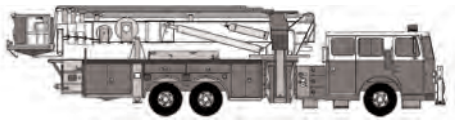

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