ROTM September 2013
ROTM: "Swift Water Rescue of 2 Adults, 2 Children"
(06-122) (Topical Relation: Swiftwater Rescue)

Changes in the fire service over the past few decades have created a unique set of challenges for fire departments to take an all hazards approach to emergency mitigation. With specialized rescues becoming more prevalent for fire department response, firefighters must have a broader skill set to be successful with these new types of calls for service. Swiftwater and flood response calls can be some of the most technically challenging in the realm of specialized rescue. More unpredictable variables can exist with swiftwater that can lead to a much more deadly situation than in most other hazardous scenarios firefighters' face.

Report number **06-0122** describes how an already dangerous situation can become rapidly worse.

"An Engine and Ladder company was dispatched to assist a family of 4 from their cabin after they were trapped by mudslides and high water. Crews were forced to hike approximately ¾ mile to reach the family. The gear needed to affect the rescue would have to be carried in by the team. The family was found on the far bank of a swollen river near a fork. This was in a fire denuded canyon of the (name withheld) Mountains. Swiftwater tactics would be needed to remove the family to safety. The 4-member family, included an 8-week old male infant, an 18-month old female, and the parents. They were not cooperative with the fire department and the local sheriff volunteer mountain rescue team (name deleted) after they called 9-1-1 requesting assistance. A "tension diagonal" system was established by using a line gun and directing the father to tie a tensionless anchor on the far bank. Three firefighters "zipped" across the river with pfd's and helmets for the adults. We then began rigging for the rescue. A highline Tyrolean system with an inflatable rescue boat on tether was rigged to shuttle the victims to safety. Manpower was used to pull the rope traversing the raging creek. While moving the victims, the boat flipped in the middle, dumping one (department deleted) FD USAR/swiftwater rescue firefighter, the mother, and the 8-week old baby into the river."

It is obvious that this crew is very familiar and well versed in swift water operations. It cites lessons learned from previous experiences and discusses several technical aspects of swiftwater rescue. Notice that even though this organization is well trained and prepared, unexpected circumstances can happen such as the boat overturning and the rescuers and victims being swept into the water. One of which happens to be a 8 week old child which only heightens the sense of urgency. After reviewing this near miss (06-0122), read through NFPA 1670 Standard on Operations and Training for Technical Search and Rescue Incidents as well as your department's policies and procedures for swift water rescue incidents and consider the following:

1. Does your department have areas that are in flood plains that can create swift water movement during excessive rains?
2. What areas in your jurisdiction have access issues that could force you or your department to move large quantities of rescue equipment or remove a victim over a long distance?

3. Are rapid intervention teams operations and/ or multiple safety points downstream discussed in your operating guideline or in your swift water training?
4. What PPE do you and your crew consider donning during swift water rescues? Is structural turnout gear still worn? Does your department have access to wet and/or dry suits?
5. When is the decision to "go" versus "reach" or "throw" made in your department and who would be responsible for making that decision? Is your department capable of making entry into a swift water scenario?

Related Reports – Topic Relation: Swift Water Rescue

05-0421 **08-0611** **08-0301** **08-0519**

09-0793 **08-0033** **10-0098**

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Note: The questions posed by the reviewers are designed to generate discussion and thought in the name of promoting firefighter safety. They are not intended to pass judgment on the actions and performance of individuals in the reports.

National Fire Fighter Near-Miss Reporting System
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National Fire Fighter Near-Miss Report

Report Number: 06-0000122
Report Date: 02/26/2006 23:08
Synopsis: Swift water rescue of 2 adults, and 2 children

Event Description

An Engine and Ladder company was dispatched to assist a family of 4 from their cabin after they were trapped by mudslides and high water. Crews were forced to hike approximately ¾ mile to reach the family. The gear needed to affect the rescue would have to be carried in by the team.

The family was found on the far bank of a swollen river near a fork. This was in a fire denuded canyon of the (name withheld) Mountains. Swiftwater tactics would be needed to remove the family to safety. The 4-member family, included an 8-week old male infant, an 18-month old female, and the parents. They were not cooperative with the fire department and the local sheriff volunteer mountain rescue team (name deleted) after they called 9-1-1 requesting assistance.

A "tension diagonal" system was established by using a line gun and directing the father to tie a tensionless anchor on the far bank. Three firefighters "zipped" across the river with pfd's and helmets for the adults. We then began rigging for the rescue. A highline Tyrolean system with an inflatable rescue boat on tether was rigged to shuttle the victims to safety. Manpower was used to pull the rope traversing the raging creek. While moving the victims, the boat flipped in the middle, dumping one (department deleted) FD USAR/swiftwater rescue firefighter, the mother, and the 8-week old baby into the river.

Four downstream rescue points had fortunately been established prior to engaging in the rescue. These personnel were able to rescue the firefighter after he washed into the upstream side of a large midstream tree, a strainer, using throw bags and self-rescue methods taught in Swiftwater Rescue Technician training courses. This skill is required for all rescue personnel assigned to the department's USAR and swiftwater rescue teams.

However, the mother, wearing a fire department-issued PFD and rescue helmet that was donned prior to getting into the IRB, and baby, attached to the mother in a papoose-style harness, were swept downstream into a deep canyon on the opposite side of the river. Several firefighters pursued, running along the shoreline to head them off.

The Rescue Group Supervisor, a USAR Company captain ended up being the one firefighter in the best position to intervene with the two remaining victims. He is swiftwater-rescue trained and was wearing full swiftwater rescue PPE including a dry suit, which is a critical issue in this situation and a Lesson Learned form a previous rescue. As he ran downstream along the banks of the river, he reported to the I.C. that a Rapid Intervention situation was in progress, with multiple victims. He passed

command to another member and handed him his portable radios just prior to entering the water to conduct a Contact Rescue. The command post was 1 mile away, downstream at a dam.

At a point where the mother and baby struck a sand bar in the current, the USAR captain, formerly the Rescue Group Supervisor, conducted a very rapid water crossing. He ran diagonally downstream across the river, which at that point was waist deep and moving approximately 12-15 mph, in a situation that would normally require a methodical shallow water crossing. Ordinarily, a line abreast, line astern, or single rescuer with pike pole/tripod method would be used. He encountered a rocky bottom and flood/flash flooding conditions, with boulders rolling underneath the water and trees and debris being swept past.

Another Swiftwater Rescue/USAR firefighter attempted to support the primary rescuer by extending a rope across, anchored by personnel on the shoreline, in order to provide some sort of a handhold for the return trip. However, the speed and ferocity of the current and debris caused the rope to submerge and hang up several times. However, this firefighter did not give up, and continued to provide assistance for the primary rescuer.

The primary rescuer made it to the mother and instructed her to give him the baby. The baby was crying strongly but suffering from deep hypothermia from long exposure to the elements even before the mishap. He instructed the mother to remain on the sandbar until he could return for her. The priority at this point was to remove the 8-week old baby from the water by carrying him in a shallow-water-crossing operation back to the near shore. He managed to cross diagonally and upstream, high-stepping in a very methodical manner to avoid tripping or being swept away with the baby in his arms.

The primary rescuer handed the baby to a waiting firefighter, who in turn handed the baby up the sloped river bank to a waiting firefighter form another department. He carried the baby 1/2 mile to a local station for re-warming prior to hiking the hypothermic baby out of the canyon. The ambulance was nearly a mile hike away. To reach the ambulance, he had to hike along a flooding mountain road that was being hit by active mudslides that blocked access for all vehicles in the driving rain.

Meanwhile, another firefighter from (department name deleted) entered the water to assist the primary rescuer in any way possible. He was not equipped with swiftwater rescue PPE and was not formally trained in SW ops. As the primary rescuer made his way back across the river to the mother, the other firefighter also entered and joined the other USAR/SW firefighter. Together, they placed the mother in the middle of a "line astern" crossing configuration, and methodically made their way back to safety.

During this part of the operation, other firefighters, who had been involved with the upstream Rapid Intervention operation and others who ran into the canyon in support

after the Rapid Intervention situation, established additional downstream safety positions in case there were any further mishaps.

All personnel and victims were accounted for, and both victims were transported to the hospital for treatment. The main injuries were hypothermia. There were no fatalities.

Lessons Learned
1. Risk vs. gain is always a prime consideration when deciding to engage in rescue or to "protect in place"
In this incident, the children were both suffering from hypothermia. Their exposure to the rain and storm conditions, and their entrapment with no other option for rescue made it imperative to attempt a rescue. The roads were impassable, the weather and terrain prevented any potential for helicopter rescue, and darkness would arrive in a few hours.

2. Safe crossing locations must be scouted.
Personnel scouted upstream and downstream for 1/2 mile or more before determining there was no safe "shallow water crossing" potential. Therefore, they shot a line across the river with a line-throwing gun. The father was instructed how to create a tensionless anchor, which was used to establish the "tension diagonal" system. Three USAR/Swiftwater firefighters, wearing dry suits and other PPE, then hooked their webbing straps and carabineers to the tension diagonal line, and entered the water, which propelled them across the river.

3. Preplanning is important.
This was the site of a similar rescue just 11 months earlier with the same Engine and Truck Company, and the same Rescue Group Supervisor/USAR captain as well as the same SAR team. Therefore, even though not assigned to this area of the County, the USAR captain/Rescue Group was familiar with this location.

Demographics
Department type: Paid Municipal
Job or rank: Captain
Department shift: 24 hours on - 24 hours off
Age: 43 - 51
Years of fire service experience: 24 - 26
Region: FEMA Region IX
Service Area: Urban

Event Information
Event type: Non-fire emergency event: auto extrication,technical rescue,emergency medical call,service calls,etc
Event date and time: 01/09/2005 12:00
Hours into the shift: 0 - 4
Event participation: Involved in the event

Do you think this will happen again? Yes
What were the contributing factors? Individual Action, Weather
What do you believe is the loss potential? Life threatening injury, Minor injury