



Fire Hydrants Along the Way



Charleston
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Facts & Figures...



- June 18, 2011, will be the four-year anniversary of the Sofa Super Store fire in Charleston, South Carolina.
- The City of Charleston is working to turn the site of where the fire occurred into a memorial for the nine Charleston firefighters who perished there.
- The June 18, 2007, fire at the Super Sofa furniture store claimed the lives of firefighters Mike Benke, Billy Hutchinson, Louis Mulkey, Mark Kelsey, Brad Baity, Michael French, Earl Drayton, Brandon Thompson and Melvin Champaign.

The Memorial



- Charleston will create a grass-covered, landscaped site with unique memorial markers for the nine fire fighters, replacing what is now a parking lot and a field where simple markers hold small flags.
- The plan calls for grading the site, laying down sod with an irrigation system and a perimeter hedge, installing a lighted 25-foot flag pole with a marker explaining what happened there, and laying a crushed granite path from the parking area to the flagpole. The flagpole will be circled by benches, and unique markers placed where each of the nine firefighters died.
- The markers, which are being created by Master Firefighter Donny Boyd from Montgomery County Fire Rescue (MD), will feature diamond plate aluminum, each of which will serve as a holder for a flag and flowers.



CFD Headquarters



- This is a picture of the existing headquarters. The long-term plan for the site calls for a large, new building that will surround a permanent memorial garden on three sides. The building will be 25,000 to 32,000 square feet with space for firefighter training, public education programs and a new headquarters for the Charleston Fire Department.



The Fire



- At the Sofa Super Store blaze, a loading dock fire spread through the building filled with highly combustible furniture. The cause was never determined, although investigators have said a carelessly discarded cigarette was the likely cause.
- The final report of the National Institute of Standards and Technology calls for national building and fire codes to require sprinklers for all new commercial retail furniture stores regardless of size, and for existing retail furniture stores with any single display area of greater than 2,000 square feet.



Post Incident Findings



- The following facts & figures are from the **FIREFIGHTER FATALITY INVESTIGATIVE REPORT**, Sofa Super Store, 1807 Savannah Highway, Charleston, South Carolina, June 18, 2007, City of Charleston, Post Incident Assessment and Review Team Phase II Report.
- The report states water supply issues played a very significant role at the Sofa Super Store fire and contributed to the loss of the nine firefighters.



Post Incident Findings



The established practice in the Charleston Fire Department called for the first arriving engine company at a structure fire to position close to the fire scene and begin the attack using water from the on-board tank. The second arriving engine company would prepare to lay a supply line from the attack engine to a hydrant. In many cases the second engine would back into position near the first engine and stand-by to lay a supply line, if needed.



Post Incident Findings



- The Charleston Fire Department did not use large diameter hose for supply lines; the standard hose load on engine companies provided only a single bed of 2-1/2 inch hose that could be used as a supply line. This arrangement severely limited the volume of water that was available for fire attack.



Post Incident Findings



- Senior officers attempted to compensate for the inadequate supply lines by repeatedly calling for “more pressure” from the pumpers that were connected to hydrants. The preoccupation with water supply problems distracted the command officers from effectively managing the overall incident.
- Friction loss calculations demonstrate that the 2-1/2 inch supply lines were incapable of delivering the desired flows and the problem could only be solved by stretching additional supply lines – preferably using large diameter hose.



Post Incident Findings



- During later stages of the incident, several master streams were set-up and the resulting demand exceeded the volume available from the water mains and hydrants in the West Ashley area.
- The hydrants were capable of supplying all of the attack lines that were deployed during the first 30 minutes, if appropriate supply lines had been established.



Post Incident Findings



- Most of the water problems were related to inadequate supply lines and inexperienced pump operators. The single, 2-1/2 inch supply lines that were used by the Charleston Fire Department could not deliver the flows that were required to conduct an effective fire attack, even if fire hydrants had been closer to the scene.
- The hydrant in the photo was one of the closest to the front of the building and is about 1500-feet from the scene, which is across busy Savannah Highway.



Post Incident Findings



- The engineers who were operating Engines 10 and 11 both stated that their supply lines were pulsating and attributed this condition to cars driving over the lines. Witnesses suggested that both pumps were cavitating due to inadequate flows in their supply lines.



Summary



- Water supply operations are a vital function at almost every fire incident.
- The lack of an effective water supply operation will drive command level decision-making and will have a direct outcome on the incident.
- To have an effective water supply operation, people, training, and equipment are needed in the right combination.
- May we learn from those who have perished before us – God Bless the folks at the Charleston FD.

Never Forget - June 18, 2007





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