vessels carrying a wide range of commodities including crude oils, refined petroleum products, chemicals, and other flammable and combustible products pass through annually. This volume of shipping and the close proximity of anchored vessels to the major shipping channels within the port present the potential for a major maritime disaster. With no dedicated fireboat available to the Port of Hampton Roads, alternative methods of getting personnel, equipment, and a water supply to a ship or barge on fire in the anchorage or shipping channels have been addressed by the Port of Hampton Roads, the Hampton Roads Maritime Association, and local fire departments.

The above agencies host the Hampton Roads Marine Firefighting Symposium annually. During this week-long event, various topics—including the following—relating to marine firefighting are presented:

- U.S. Coast Guard operations and responsibilities at maritime fires and emergencies.
- Safety considerations for firefighting personnel when operating at marine fires and emergencies.
- Marine terms and vessel construction.
- Marine terminal operations.
- Tug and barge operations.
- Fishing vessel fires.
- Firefighting equipment that is unique to marine fires.
- Shipboard firefighting systems.
- Setting up an incident command system for effective shipboard firefighting.
- Activating portable landing barges from the Army Reserve and dewatering operations.
- Shipboard firefighting tactics including hands-on training at the U.S. Navy Firefighting School in Norfolk, Virginia.

At the end of the classroom portion of the symposium, attendees are able to participate in two exercises designed to allow the students to test their knowledge and skills at basic shipboard firefighting.

**EXERCISE 1**
During the first exercise, the participants have to set up an incident command system and establish water supply on a ship at anchorage with no operable onboard firefighting systems.

To accomplish this, the students use a portable fire pump of 3,000-gpm capacity, which is placed onboard a commercial tug (see...
(Left) Students participate in the Navy’s shipboard firefighting school. (Right) Incident command was established at both exercises. Here, the Norfolk Fire Department van is used as the command center.

Sidebar: All personnel and equipment must also be loaded on the tug or military landing craft assigned to the U.S. Reserve Fleet. The goal of this exercise is to establish an incident command system, with particular attention given to accountability of personnel, and place into operation three handlines on the main deck of the designated vessel. In past years, a fire department pumper onboard a landing craft has also been used to supply water for this exercise. This year, effective streams were flowing from three handlines within 45 minutes from the time personnel began loading equipment on the landing craft.

EXERCISE 2

The second hands-on exercise simulates an engine room fire in a ship berthed alongside a marine terminal. Once again, an incident command system that stresses personnel accountability is established. Students are divided into engine and ladder companies and must locate the seat of the fire, stretch two handlines to the location, and simulate an attack. After the final exercise, the week’s course is critiqued so that improvements can be incorporated into next year’s symposium.

(Top left) Portable pump supplying line to ship at anchorage. (Top right) Equipment is hauled onboard ship. (Bottom left) Accountability officer adjusts control board as personnel enter or exit the ship. (Bottom right) Three lines flow water from the ship’s deck.
At the beginning of each day, all officers present a personnel accountability report for their assigned members. Each team sits together during class sessions. Another personnel accountability report is taken after lunch as well as at other times the staff thinks it is needed. Teaming students enables the attendees to work more effectively as a group and provides leadership skills for those not currently in a leadership position.

During the engine room exercise, the instructors simulated a missing-member scenario. One of the team members advancing the handline to the engine room was removed from the group. As a result of the strong team spirit developed during the week, the other members of his company immediately noticed that he was missing and radioed the accountability officer at the entrance to the engine room. After confirming that the member had not exited the engine room, the incident commander was notified and the rapid intervention team was sent in to locate the missing member. The search was successful in a short period of time. The staff believes that the team building accomplished during the week enabled the rescue operation to be initiated quickly.

- **Pairing of engine companies.** With the long and arduous stretches needed onboard large vessels, engine companies should be paired so that enough staffing is present on each handline—to eliminate kinking and ensure that enough hose is at the point of operation. Additionally, hoselines should be stretched up outside the ship, where possible, using ropes. Hose rollers would be helpful at deck level to prevent kinking. Do not allow hoselines to remain on aerial ladders or use tower ladders as standpipes. The hose will severely limit moving these ladders should it be necessary to do so.

- **Accountability.** For symposiums such as this where exercises are conducted, an accountability system should be in place from

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The Virginia Port Authority placed this portable three-ton pump in service in 1995. Built by the Hale Fire Pump Company and driven by a Detroit Diesel 8V92TA V8 cylinder, turbocharged after cooled, diesel engine, it has a 3,000-gpm capacity at 150 psi and a 1,500-gpm capacity at 250 psi. Its estimated cost was $90,000.

The pump is placed aboard any floating platform such as a tugboat or barge. It can also be transported by trailer to a fire onboard a ship at a pier, where it can draft and supply lines to the ship.

Day 1. It would be helpful to nonfire service personnel if one of the first teaching sessions covered the accountability system to be used. Written materials should also be distributed at this time.

* **Equipment movement.** Firefighting gear including personal protective equipment should be placed in large canvas (or other suitable material) bags and then hoisted onboard the vessel, using rope. If you have ever tried boarding a ship underway or in the anchorage using the ship’s boarding ladder, you know that even without heavy turnout clothing, this is difficult. Members boarding vessels at points other than a pier should wear Coast Guard-approved personal flotation devices. It may be possible to use the vessel’s cranes or a crane at the pier when large amounts of equipment need to be hoisted onboard a ship, especially when additional air cylinders or large quantities of foam are needed.

* **Staging.** In addition to onshore staging areas, an onboard area may be needed. Doing this reduces the reaction time from the operations chief’s request for resources to the time of their arrival and reduces the fatigue of relieving or additional firefighting units.

* **Rehabilitation.** Consider establishing a rehab sector onboard the vessel. An onboard sector will enable rehabilitated firefighters returning to the operations area to report directly to a forward-staging area closer to the fire, if one has been established. At the final exercise, a rehab sector was established on the deck of the ship, and members had to be rehabilitated prior to firefighting activities because of the heat. They had just finished bringing all the equipment and hoses on deck.

* **Nonpotable water.** Companies operating firefighting hoselines and appliances must be informed when nonpotable water is being supplied. All hoselines, appliances, and equipment must be flushed with fresh water before being placed back in service. This policy prolongs the life of the equipment.

Each year attendance at the symposium grows, and new topics are included. A symposium such as this is a must for fire department personnel who may be called to fight a marine fire or respond to a marine emergency. In addition, a marine firefighting contingency plan should be developed in conjunction with the U.S. Coast Guard to ensure a coordinated response to maritime incidents and promote a mutual understanding in an area where the cooperation of numerous and diverse parties often is essential.

**Endnote**