

## **Advanced Firefighting training scenario 1**

**Re-entry techniques from above (through an inclined or a vertical ladder) to a compartment using one (1) hose during a Carbonaceous fire**

### **Introduction:**

Reentry techniques through a hatch are safe procedures for reducing the dangers that firefighters are facing during their entry to compartments – enclosed spaces on ships. The videos for this module were shot at the Fire Fighting Training Unit at the Hellenic Navy Damage Control School, so the shape of the hatches and the staircases are not identical to the ones found on all kinds of ships. However, by applying the principles described and using their quick thinking, the trainees will be able to adjust themselves to any situation in order to make a safe vertical top-to-lower-end entry onboard a ship.

## **Module description:**

The first training scenario for advanced fire fighting focuses on the familiarization of the trainees with the appropriate procedure involving a series of techniques for re-entry through hatches using one (1) hose during a hydrocarbon fire.

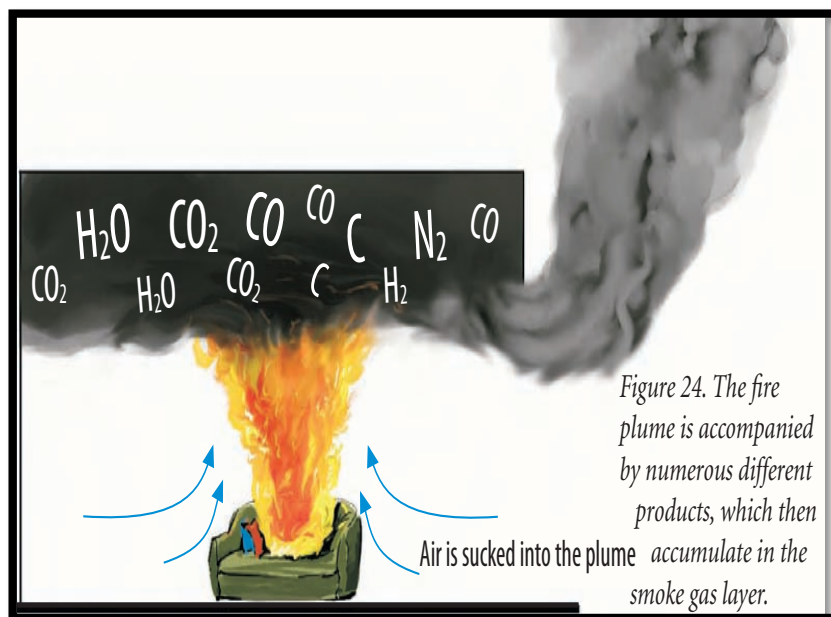
A number of enclosed spaces are accessible only from the top, through an inclined or a vertical ladder. In these spaces the access of the team is hindered by the emitted thermal gases because they are accumulated on the top of the compartment and they exit when the hatch is opened.



Picture 1: A common hatch in ships

## 1) The positions of the members of a Fire Fighting Team

The **Firefighter** kneels above the hatch (in the opposite direction to the hinges). The **Team Leader** (T.L) stands behind the Firefighter.



Picture 2: Lars-Göran Bengtsson "Enclosure fires"

## **2) Cooling the hatch:**

Following the Team Leader's order, the Firefighter begins the cooling process (holding the nozzle at a 60° angle). When the level of cooling is deemed to be satisfactory and there is no water vaporization, the Fire Fighter turns the nozzle to position "fog" at an angle greater than 90° and reports to the Chief.

**3)** The Team Leader orders the Firefighter to activate his nozzle (continuous flow) and at the same time the Hose Handler Operator (or Support operator) slightly opens the hatch.

The Firefighter directs his nozzle to the center of the opening, covering it up and thus protecting the team because there will be intense emission of thermal gases and probably flame.

If there is intense vaporization with the use of water, we can leave the nozzle open placing/securing it between the hatch and its framework. In this way, the firefighting team is protected from the emitted thermal gases and at the same time the thermal gases become cool without putting any further strain on the personnel. When the personnel realize that there is a reduction in the emitted vapor must start preparing for the full opening of the hatch and the entry of the Fire Fighting Team to the compartment.



Picture 3: Attaching the nozzle to the hatch

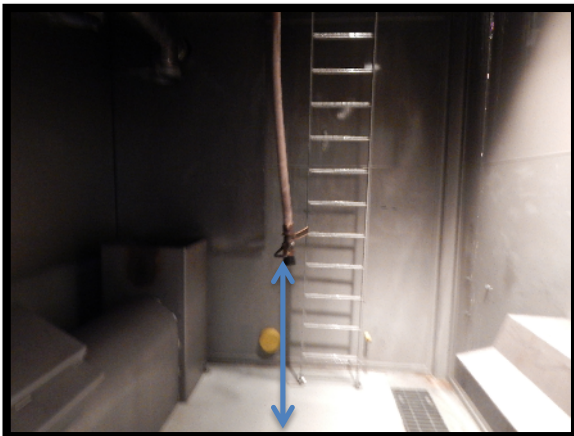
#### 4) Opening the hatch and flame source near the ladder

Subsequently, the **Hose Handler Operator** completely opens the hatch and the Team Leader inspects the place with a thermal camera (TIC).

If the Team Leader locates fire sources, he will try to put them out using water fog form. Moreover, there can be a reduction in the thermal load by lowering the hose in fog position and leaving no more than a one-meter distance above the base of the ladder. Next, the hose must be raised on the hatch so that the Firefighter gets hold of it.



Picture 4 : Lowering the hose



Picture 5: The hose in 1m from the floor of the compartment

## 5. The descent of the Fire Fighting Team

If the Team Leader does not observe a flame source near the ladder (with the use of a thermal camera), he orders the Firefighter to start preparing for descent.

Next the Team Leader takes over the hose (the flow of water is not stopped) from the Firefighter so that the latter starts preparing for entering the compartment.

The Firefighter climbs a few stairs down the gangway (so that the highest stair reaches his shoulder). When he reaches this height, he raises his hand with his fist clenched, stating in this way that he is ready to take over the hose.



Picture 6: Ready to receive the hose



Picture 7: Firefighter takes over the hose

He takes over the hose and goes down the ladder cautiously.

During the descent of other members of the Fire Fighting Team, it is not necessary to number the stairs of the ladder. However, it is obligatory that each person should knock the metallic part of the staircase with his boot shouting “ladder clear” once he is down there so that the next fire fighter starts to descend. In this way, any injuries can be avoided as a result of the simultaneous descent of the team members.

The descent of the personnel must be executed very cautiously during training (due to increased slippery of the staircase which can cause injuries) but also during a real fire incident (because the ladder or part of it may collapse).



## **6) The Firefighter inside the compartment**

After the Firefighter has successfully descended, he can start the gas cooling procedure until the Team Leader joins him. Then, the Team Leader will take his place behind the Firefighter and depending on the conditions they will both tackle the fire.



Picture 8: Firefighter inside the compartment

## **Summary**

Undoubtedly, the Fire Fighting Training Units contribute significantly to the training of firefighters and the crew members of a ship regarding basic firefighting skills in the realistic environment of a fire. However, the training should not provide trainees with a false notion of safety which will make them become too self-confident. False impressions can be fatal. Trainees should be knowledgeable about all serious issues regarding fire incidents on ships.