

## SAFETY RECOMMENDATION No: 22/2014

### Text of Safety Recommendation:

Assess the need of acetylene/oxygen cylinder supplies on board the vessel. If such need deems necessary, set standards and procedures for the storage area in compliance to the Classification Society's Rules and Flag State's regulations, if applicable.

### No of Safety Investigation Report:

03/2014: Explosion on board M/V "NAKHODKA"  
(See the full Report [here.](#))

### Safety Recommendation addressed to:

Managers/Owners

### Date of publication:

13/09/2016

### Comments-Remarks:

### Casualty information



**Name of vessel:** NAKHODKA  
**Type of vessel:** General Cargo  
**Year of built:** 1978  
**Flag:** Russian

### Course of events

M/V NAKHODKA loaded with grain from Rostov (Russia), arrived at the port facility of Loulis Mills at the area of Sourpi near Amaliapolis, Volos on the 25 April 2014 to discharge her cargo.

The following day of her arrival, at approximately 08:00 on 26 April 2014, the Chief Engineer along with the 3rd Engineer went to the Boatswain's Store, located at the vessel's forecabin, to mend a pipe. At approximately 08:04 there was an explosion inside the forecabin, followed by the outbreak of fire inside the Boatswain's Store as well as at the adjacent space of the Paint Room, situated at the port side of the forecabin.

The crew of NAKHODKA was alerted, mustered on scene and efforts were made to extinguish the fire by spraying water with the fire hoses. The explosion was noticed by the crew of an adjacently berthed vessel and the Mill's security personnel who immediately reported the incident to the local Coast Guard Authority. A local Fire Brigade Squad arrived on scene shortly afterwards and managed to extinguish the fire, limiting its potential growth to other areas of the vessel.

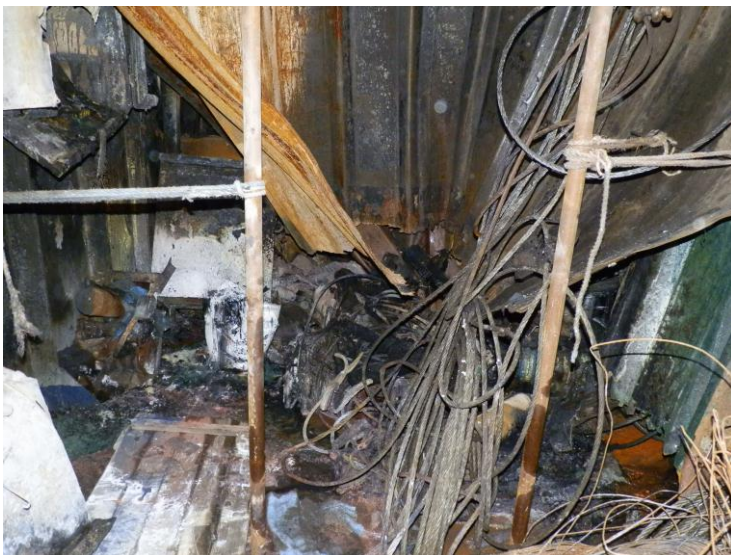
The Chief Engineer as well as the 3rd Engineer suffered extended burns on their bodies and inhalation burns due to the explosion and were transferred to a local hospital for medical treatment. However, their condition was critical and during the same day they were transferred to another specialized hospital.

As stated above the medical condition of the two crew members was critical and finally the Chief Engineer passed away in the hospital almost one month after the date of the explosion. The 3rd Engineer managed to recover and exited the hospital on the 21st of June and was repatriated.

The vessel sustained damages due to the explosion and the fire, in the forecabin, such as distortion of bulkheads and burning of equipment.



*Photos from the explosion*



*Capture of the cracked bulkhead of the Paint Room caused by the explosion.*



### **Cause of the accident**

The casualty was caused by the ignition of propane gas that had leaked from the storage bottle and accumulated at the lower levels of the Boatswain's Store. The ignition source could not be identified; however spark from unprotected lighting equipment found at the area or spark caused by static electricity or friction/impact of metal tools or other metallic equipment were highlighted as possible sources.

### **Main identified issues**

The propane and oxygen cylinders were stored at the Carpenter's Shop located at the Starboard side of the forecastle and they were connected to a gas welding tool found at a working bench. This was in conflict with the regulations of the vessel's Classification Society by which the use and storage of propane was not permitted as well as with the Classification Society's requirements for the use and storage of oxygen/acetylene cylinders.

The use of the propane gas for hot work was not permitted on board as the vessel's SMS did not include any guidance on control of hot work according to IMO MSC/Circ. 1084, 13 June 2003. However the location and condition of the gas welding tool found after the explosion suggested that it had been used by the vessel's crew or it was about to be used by the two Engineers.

Moreover, the bulkheads of the Carpenter's Shop had signs of past explosion incident; however said incident was not investigated and analyzed under the respective provisions of ISM Code and further information were not provided.

The overall fire extinguishing operation by the local Fire Brigade Squad was hindered as the crew of NAKHODKA had difficulties in speaking and understanding the English language and could not provide imminently and adequately the requested information to the Fire Brigade's personnel.

The common type of coveralls made with cotton does not provide adequate protection to the body from flash fires or explosions. Said type of clothing keeps burning even after the flame has retreated, and while being in contact with the skin causes the most severe burns on the body increasing the life threatening injuries.

Certified protecting clothing against flames is not commonly used by mariners not even when they are performing works with fire or explosion hazards.