



SAFETY RECOMMENDATION No: 10/2012

Text of Safety Recommendation:

The review of the program of maintenance of Drencher system in all ferries managed and the evaluation of its application in the frame of the Safety Management Manual procedures, particularly in the direction of eliminating clogging phenomenon of Drencher heads and pipes.

No of Safety Investigation Report:	01/2012: Fire on board Ro-Pax "KRITI II" (See the full Report here.)
Safety Recommendation addressed to:	Owner and Management Company of Ro-Pax "KRITI II"
Date of publication:	19/11/2014

Comments-Remarks:

INFORMATION OF ACCIDENT

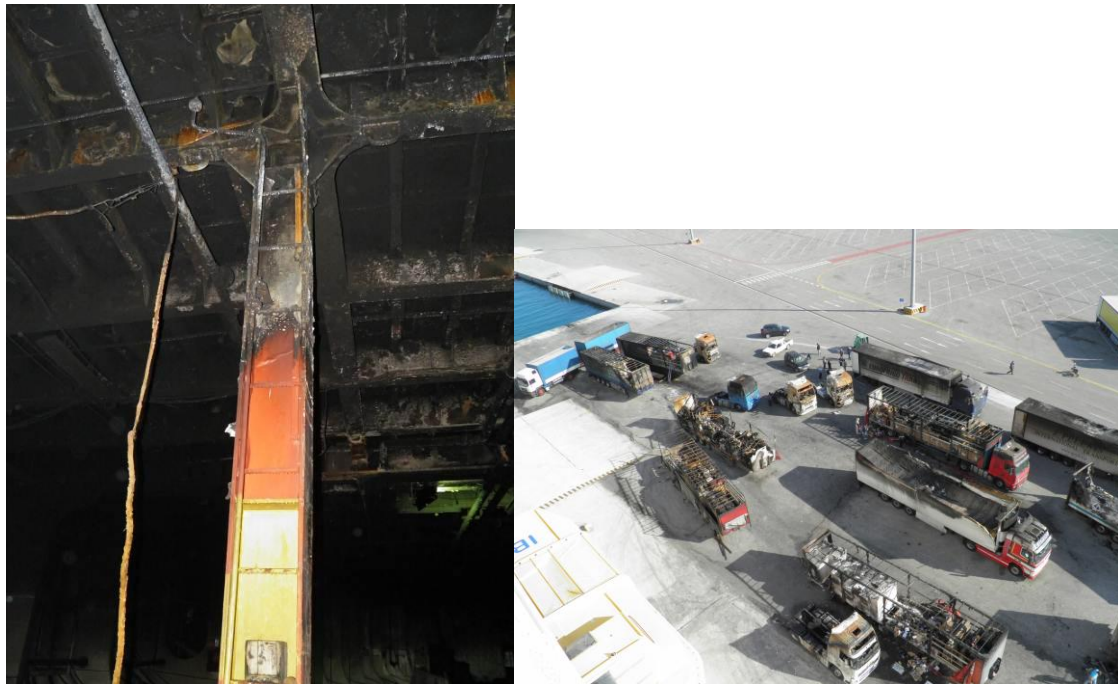
Type of vessel: Ro-Pax

Year of built: 1979

Fire inside the garage space of Ro-Pax

Course of events

When the Ro-Pax was approximately 4 nautical miles northwest of the port of Patras, coming from Venice, a fire broke out in the fore part of the closed main garage on the main deck of the ship. The Master activated the permanent Drencher fire extinguishing system on board for the fire fighting, while the ship's Risk Response Team, which entered the event area of the fire, was activated. However, it was not possible to approach the seat of the fire due to the fact that dense smoke had filled the space. Following Master's decision, the crew mustered the passengers at the assembly station No 7, which was located at the aft exterior area of deck No 7 and prepared the lifesaving equipment for abandonment.

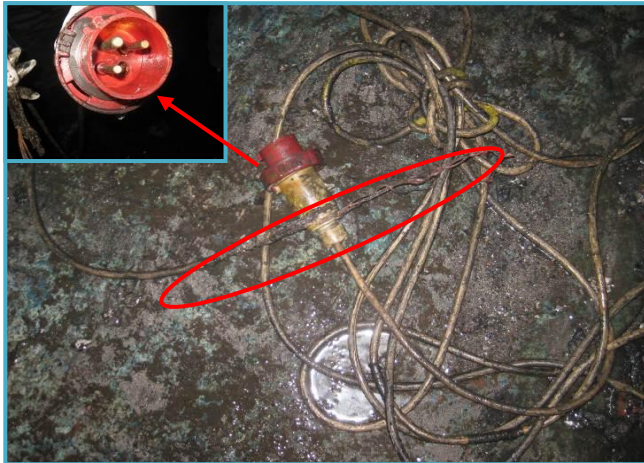


Photos of the damages on the top of the garage and trucks

The local Competent Authorities were informed as well as the Joint Rescue Coordination Center.

Taking into consideration that the ship was located near the port of Patras, it was decided that the vessel would call in to disembark the passengers and the incident would be confronted by the forces of the Fire Service, which had been put on standby in the port area pending the call of the Ro-Pax. The ship was moored alongside the new port of Patras and the passenger disembarkation process through the starboard stern ramp, which lasted approximately 15 minutes, started immediately.

At the same time, the passengers were being counted by the personnel of the Port Authority of Patras with the assistance of the crew of the ship and the safe evacuation of all passengers was confirmed.



The cable extension (extension cord), that was connected to a refrigerator truck and which is rated as one of the possible fire ignition points. The damaged side of the cable that ended at the refrigerated truck is shown and the plug which was connected to the socket DP2.

In the fire fighting and fire suppression operation, there were involved along with the crew members of the Ro-Pax, shore forces of the Fire Service with five fire trucks, a firefighting vessel and two harbor tugs. The engagement of vessels in confronting the fire involved throwing water at specific areas of the external superstructure plates of the ship.

The stowage of the trucks, did not allow direct access and approach of the fire seat from the shore forces of the Fire Service and the ship's crew, complicating the response and fire fighting operations in the place of the occurrence. Consequently, the operation developed gradually, with the progressive unloading of vehicles from the filled with smoke close garage.

By the fire no injury was reported.

Extent of damage

The consequences of the examined accident were confined to a limited damage to the ship and extensive damage to trucks which were in the vicinity of the seat of the fire in the main garage.

Probable cause

According to the collected data during the technical investigation, although documented monthly reports of the resistances of the electrical installation's equipment by performing tests with the Megger device (Megger Test) by the Chief Electrician and the ship's Electrical Sector's personnel were satisfactory, however, a number of sockets were found with residues of sockets' terminals at the connection points, which were the result of the development of an electric arc due to their bad connection.



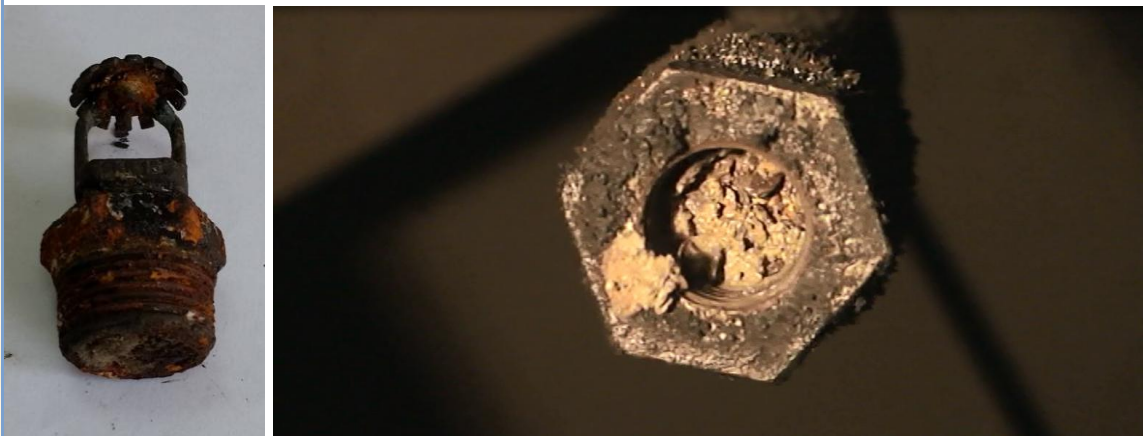
The pillar between frames 219-221, which was found with increased fire indicators in its fore side, the base of the socket and the cut cable. Also fusion signs of the socket material are evident on the fire extinguisher and the deck.

Additionally, in some extension cables were observed alterations that were potentially the result of a short-circuit. Also, the extension cable used for the connection of the refrigerator which is considered to be one of the possible points of ignition of the fire, presented wear in a lot of points which had been covered with insulating tape.



The aft side of the pillar, between frames 219-221, and the cut cable.

In regard to the fire fighting it is pointed out that the fire broke out at a time of an unexecuted fire patrol. Also the permanent Drencher system which was the only firefighting means while the ship was at sea, since the approach of the fire by the Risk Response Team was not feasible; two out of three heads of the Drencher system were found clogged after the fire extinguishment.



Clogged head and pipe of "DRENCHER" system

Finally it is noted that the parallel operation of several zones of the Drencher system, namely the activation of additional zones for cooling, may have affected its performance at the fire area as there is no technical guidance for the maximum number of drencher zones in parallel operation with respect to the required performance of the permanent Drencher system.

Lessons to be learned

The review of the program of maintenance of Drencher system in all ferries managed and the evaluation of its application in the frame of the Safety Management Manual procedures, particularly in the direction of eliminating clogging phenomenon of Drencher heads and pipes.