Marine Safety Investigation Unit

Transport Malta

# SAFETY INVESTIGATION REPORT

**202209/034** REPORT NO.: 17/2023 September 2023



## MV *MILAGRO*

**Serious burn injuries to a crew member during maintenance work on a hydraulic pipe on deck, while drifting in position 37° 32' N 130° 20' E**

**26 September 2022**

## SUMMARY

In the morning of 26 September 2022, whilst *Milagro* was drifting outside the Republic of Korea's territorial waters, the fitter was assigned to replace a leaking hydraulic pipe on the main deck. An oxy-acetylene torch was used to cut the U-bolts, which secured the pipe to the pipe supports on the deck.

Whilst cutting the last U-bolt, which was close to the forward flange, the pipe slipped off its supports. Oil from the pipe splashed onto the fitter and immediately ignited. The crew members assisted the fitter in extinguishing the flames on his coveralls, following which he was administered first-aid. The injured fitter was eventually evacuated to a shore hospital for further medical treatment.

The safety investigation concluded that prior to the commencement of the task, the hydraulic oil pipe had not been completely drained.

Two recommendations have been made to the Company to enhance onboard assessment of risks.


MV *Milagro*

## FACTUAL INFORMATION

### Vessel

*Milagro* was a 40,298 gt bulk carrier, owned by Ifestos Owning Co. Ltd. and managed by TMS Dry Ltd. (Cardiff Marine), Greece (the Company). The vessel was built by Hudong-Zhongua Ship Building (Group) Co. Ltd., China, in 2009. American Bureau of Shipping (ABS) acted as the classification society, while Det Norske Veritas (DNV) acted as the recognised organisation, in terms of the International Safety Management (ISM) Code, for the vessel.

*Milagro* had a length overall of 225.00 m, a moulded breadth of 32.26 m and a moulded depth of 19.60 m. The vessel had a summer draft of 14.22 m, corresponding to a summer deadweight of 75,205 metric tonnes (mt).

Propulsive power was provided by a 5-cylinder, two-stroke, slow speed, MAN B&W 5S60MC-C Mk7 marine diesel engine, producing 8,990 kW at 101 rpm. This drove a fixed-pitch propeller, enabling the vessel to reach a service speed of 14.0 knots.

At the time of the occurrence, *Milagro* was in ballast condition, drawing forward and aft draughts of 4.82 m and 7.18 m, respectively.

### Crew

*Milagro*'s Minimum Safe Manning Certificate stipulated a crew of 14[1]. At the time of the accident, the vessel was manned by a Greek master and 22 Filipino crew members.

The seriously injured fitter was 45 years old. He had about 14 years of seafaring experience, all of which were served in the rank of a fitter. He had served for about three years in the Company, prior to the accident. The fitter held a certificate of proficiency for an able seafarer engine (STCW[2] III/5), which was issued in July 2016, by the Maritime Industry Authority (MARINA) of the Philippines. He had joined the vessel on 21 September 2022, at the port of Donghae, Republic of Korea. This was the fitter's second employment term on board *Milagro*.

The chief engineer was 55 years old. He had about 22 years of seafaring experience, 16 of which were served in the rank of a chief engineer with STCW III/2 qualifications. His certificate of competency was last renewed in May 2021, by MARINA. He had served for five years in the Company, prior to the accident. He, too, had joined the vessel on 21 September 2022, at the port of Donghae.

The third engineer was 34 years old. He had 13 years of seafaring experience, 12 of which were served with the Company. He had 1.5 years of experience in the rank of a third engineer. He held STCW III/2 qualifications for a second engineer, and his certificate of competency was issued in January 2020, by MARINA. He had joined the vessel along with the chief engineer and the fitter.

The oiler assigned to assist with the task, was 49 years old. He had 11 years of seafaring experience, all of which were served with the Company. He had 10 years of experience in the rank of an oiler with STCW III/5 qualifications. His certificate of competency was issued in April 2016, by MARINA. He had joined the vessel on 18 April 2022, at the port of São Francisco do Sul, Brazil.

[1] Provided that the UMS or the bridge control systems were operational, and at least two deck officers held Global Maritime Distress and Safety System (GMDSS) General Operator's Certificates.

[2] IMO. (2020). *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978* (Consolidated ed.). London: Author.

**Environment**

The vessel's records indicated that the sky was clear, and the visibility was about 12 nautical miles (nm) around the time of the accident. A gentle breeze was blowing from the East Northeast, while the sea state was moderate, with a low swell. The air and sea temperatures were recorded as 18 °C and 22 °C, respectively.

**Narrative**[3]

During the ballasting operations in the port of Donghae, Republic of Korea, the crew members noticed a stream of oil leaking from a 5 mm hole in a section of the hydraulic oil return pipeline for the water ballast tank valve remote operating system, on deck. This section was on the starboard side of the cross deck between cargo holds nos. 6 and 7 (**Figure 1**).

**Figure 1: Location of the task (circled in blue)**

The crew members placed a plastic tray under the pipe to collect the oil, which was frequently monitored and emptied when necessarily. They decided to replace the leaking section of the pipe, after the vessel's departure, and estimated that the task could be completed in approximately half a working day.

*Milagro* departed in a ballast condition from Donghae on 23 September 2022. Since further voyage instructions had not been received, the vessel proceeded outside the Republic of Korea's territorial waters and remained adrift.

In the morning of 26 September, whilst the vessel was still drifting, the crew members decided to proceed with the replacement of the leaking section of the pipe. A toolbox talk was held amongst the engine-room crew members, and the task was assigned to the third engineer, fitter and an oiler. Observing that all bolts on the pipe section were corroded, the crew members decided to cut them using either an angle grinder or an oxy-acetylene set, as required. The chief engineer instructed the third engineer to isolate, drain and depressurize the hydraulic oil pipe before commencing the task.

The vessel's records indicated that a risk assessment was carried out for the task, which involved the chief officer, second and third engineers, the fitter, and the oiler, and was approved by the chief engineer. By 0750, a work permit for work on pressure vessels / pipelines and a hot work permit were prepared by the second engineer and were discussed with the assigned crew members.

At 0800, the third engineer, fitter, and oiler prepared for the task. After confirming that both hydraulic pumps for the system were switched off, the third engineer shut off the delivery valve[4]. Meanwhile, the fitter and oiler set up the oxy-acetylene set, a fire hose and a portable foam extinguisher near the work site. At about 0900, the crew members observed that the leak had reduced to just intermittent drops of oil[5].

3 Unless otherwise specified, all times mentioned in this safety investigation report are local times (LT = UTC + 9).

4 The pumps and the delivery valve were fitted in the engine-room.

5 The crew members stated that about 50 to 60 lts of hydraulic oil had been collected from the leak by this time.

The fitter decided to use the oxy-acetylene set for the task and using the torch, he cut the four bolts of the flange at the forward end of the leaking section of the pipe. Leaving the cropped bolt studs in the flange, he proceeded to cut the U-bolts that held the pipe onto the supporting angle bars below. He first cut the one that was about 1.6 m away from the forward flange.

In the meantime, the chief engineer arrived at the work site to discuss a separate maintenance task with the third engineer (**Figure 2**).

At about 0945, whilst the fitter was cutting the last U-bolt at the forward end of the pipe section (**Figure 3**), the pipe slipped down from the support on which it was resting.


**Figure 2: Simulation of the crew members' positions prior to the occurrence**

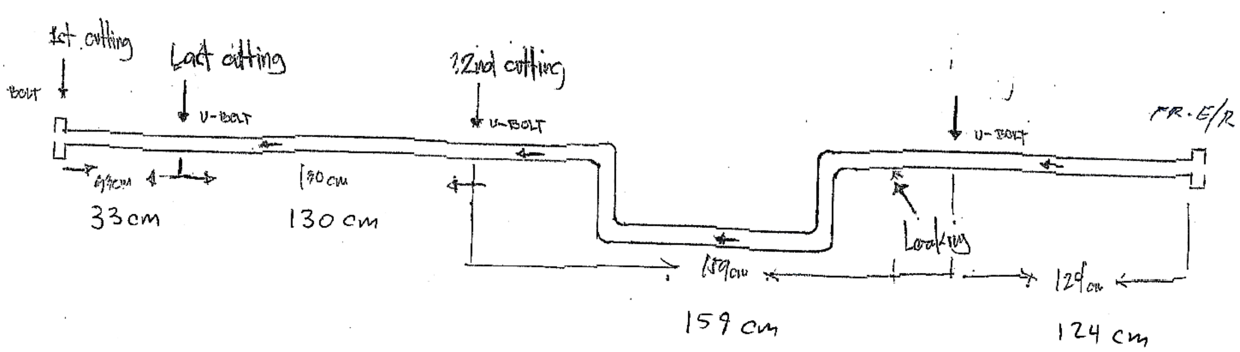


**Figure 3: Sketch of the hydraulic oil pipe section being worked on, indicating the location of the leak and the U-bolts, as well as the sequence followed by the fitter for cutting the bolts (provided by the crew members of *Milagro*)**

As soon as the pipe slipped, hydraulic oil sprayed onto the fitter[6], and it immediately ignited by the flame of the oxy-acetylene torch. Consequently, the fitter's oil-soaked coveralls caught fire.

On seeing this, the chief engineer grabbed the portable fire extinguisher. However, by that time, the fitter had run away from the site, with his coveralls still on fire, to the port side of the main deck. He then laid down and rolled in some water that had previously collected on the deck, to extinguish the flames.

The bosun, who was tasked with the washing of cargo hold no. 4, saw this. He immediately notified the bridge of the situation over his portable radio and rushed to the fitter's aid. Meanwhile, the third engineer shut off the valves of the oxyacetylene set. The crew members in the vicinity observed that the fire around the hydraulic oil pipe extinguished by itself, soon after the fitter ran away from the site. They then rushed to the fitter's assistance.

After the flames on the fitter were put out, they took the fitter towards the vessel's hospital and cut off his coveralls with a pair of scissors. Several crew members observed burn injuries on the fitter's arms, torso, legs, as well as his cheeks.

Since the fitter informed the crew members that he would prefer staying outside on the open deck, the crew members brought medicines and medical equipment from the vessel's hospital and administered first-aid to the fitter on the deck.

At 1020, the master contacted the Company and the vessel's local agents in the Republic of Korea. He requested the agents to arrange for the medical evacuation of the injured fitter.

[6] None of the crew members saw from where the hydraulic oil sprayed out, *i.e.*, whether it sprayed out from the pipe section being worked on, or from the section forward of it.

At 1400, the Company and the agents contacted the vessel and advised the master that a Korean Coast Guard helicopter would be arriving to evacuate the injured fitter. At 1510, the Coast Guard helicopter arrived and landed on the hatch cover of cargo hold no. 2. Five minutes later, the helicopter departed with the injured fitter.

### Reported injuries

The hospital reports indicated that the fitter had suffered deep, second and third degree burns over about 70% of his body and required several skin grafts. After completion of treatment at the hospital in the Republic of Korea, the fitter was deemed fit to be repatriated on 22 December 2022.

At his home country, the fitter had to undergo several physiotherapy sessions, which were still in progress at the time of publishing this safety investigation report.

### Damages to the vessel's equipment

Crew members reported that none of the vessel's equipment / fittings were damaged. There were only signs of minor heat damages at around mid-length of the section of the oxy-acetylene hoses, which was closest to the torch (**Figure 4**).

**Figure 4: Heat damages on the section of the oxy-acetylene hoses closest to the torch**

**Remote operating system for the water ballast tank valves**

The hydraulic oil system for the remote operation of the water ballast tank valves (**Figure 5**) consisted of a 170-litre hydraulic oil tank, two rotary vane pumps, each having a capacity of 3.9 ltsmin$^{-1}$ and a discharge pressure of 70 kgcm$^{-2}$, and the delivery and return pipelines between the pumps and the various tanks' valves.

Two nitrogen accumulators were fitted after the pumps and were connected to the delivery and return pipelines. Two pressure gauges were mounted on the system, one indicting the system setting pressure and the other, the accumulator pressure. A relief valve was fitted on the delivery pipeline after the accumulators. Isolation valves were fitted between cargo hold nos. 1 and 2, 5 and 6, and 3 and 4. Drain valves were not fitted along the length of the hydraulic oil pipe on deck.

A cross-over valve (included in the schematic drawing – red arrow in **Figure 5**) connecting the delivery and return pipelines was not fitted on board, and the forward ends of the delivery and return pipelines were blanked off.

The system was also fitted with pressure switches for the high and low-level alarms and pressure switches for the hydraulic pump's start and re-circulating operating conditions / modes. The system control panel was in the water ballast control room.

The working pressure of the hydraulic system was between 50 to 60 kgcm$^{-2}$. When the pressure dropped to the lower limit, the pressure switch activated the pump, and hydraulic oil would be pumped into and stored in the accumulators until the pressure reached the upper limit. The hydraulic oil lines were thus fed by the accumulators, while the pumps maintained the pressure within the accumulators.

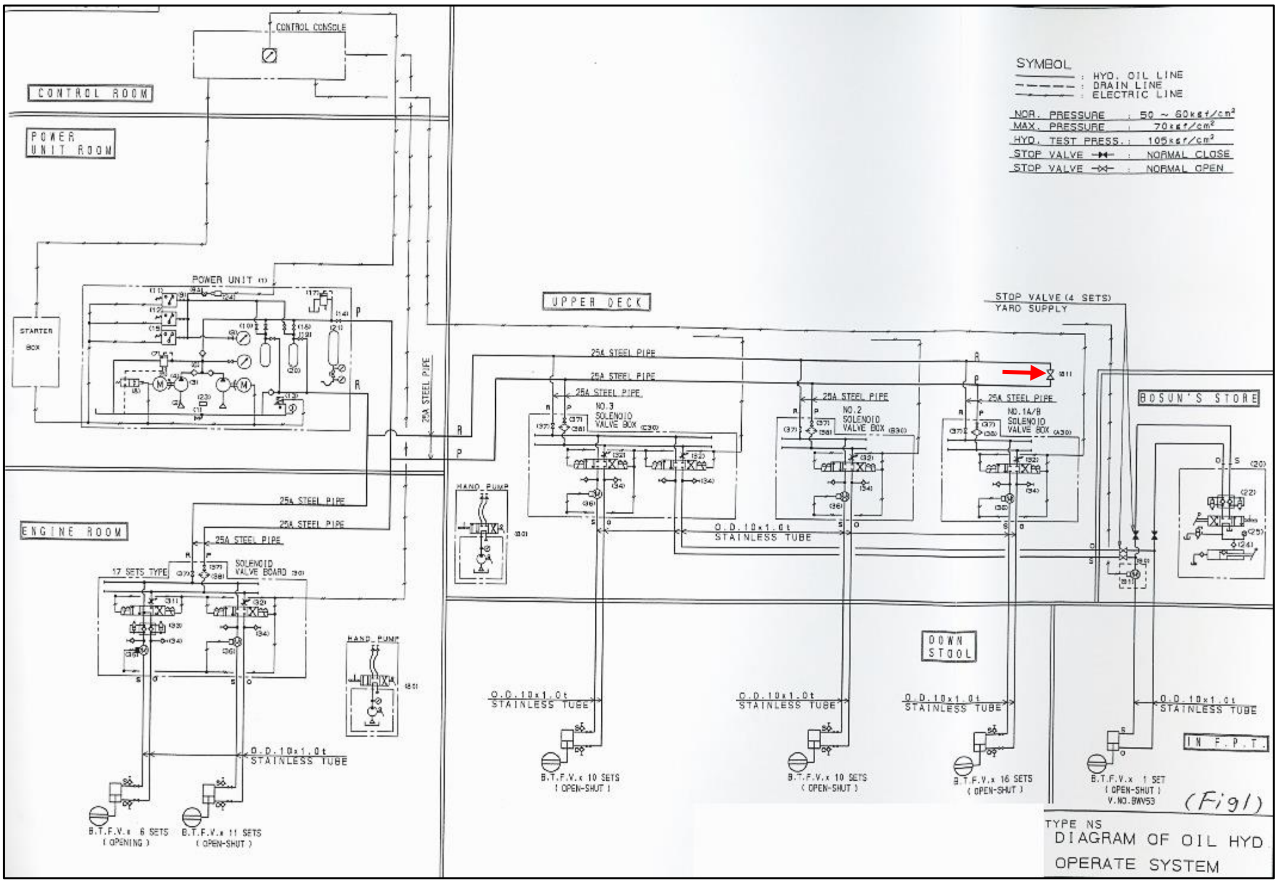


**Figure 5: Diagram of the hydraulic oil pumping and piping arrangement for the water ballast tank valve remote operating system**

## Properties of the hydraulic oil

The hydraulic oil used for the water ballast tank valve remote operating system was Shell Tellus S2 VX 32. Its material safety data sheet (MSDS) stated that the hydraulic oil was *not classified as flammable but will burn*. Its flash point was listed as 215 °C.

The MSDS also cautioned that the *hazardous combustion products may include: a complex mixture of airborne solid and liquid particulates and gases (smoke), unidentified organic and inorganic compounds* [*sic*.] and that carbon monoxide may be evolved in the event of incomplete combustion.

## Personal protective equipment (PPE)

Accident data indicated that the fitter was wearing cotton coveralls (**Figure 6**), a hot work apron (**Figure 7**), hot work gloves (**Figure 8**), a face shield (**Figure 9**), and eye protection goggles (**Figure 10**) under the face shield. The crew members who witnessed the event stated that only the coveralls were affected by the fire.

**Figure 6: Coveralls similar to the one worn by the fitter for the task**

**Figure 7: The hot work apron worn by the fitter**

**Figure 8: The hot work gloves**

**Figure 9: The face shield**

**Figure 10: The goggles**

**Assessment of risk**

The risk assessment conducted by the crew members addressed 10 identified hazards. The risk controls for each of these hazards referred to relevant sections of the Company's safety management system (SMS) manual. No vessel and situation-specific risk controls were mentioned. The risk factors for all the hazards were evaluated as 'acceptable' and additional control measures were not required.

**Similar past occurrences**

The MSIU has investigated and published safety investigation reports on several similar occurrences, the most recent of which had occurred in June 2022. It must be noted that the work sites had not been prepared for hot work in any of these cases.

*Iolcos Unity*[7]: a fitter was tasked to rectify a hydraulic oil leak from a flange in the ballast line valve operating system pipes on deck. Since the bolts of the flange were corroded and their hexagon head had worn down, the fitter used an angle grinder to cut the bolts. The fitter's coveralls caught fire, which then spread all over his body. The fitter succumbed to his injuries about 10 days later, while still receiving treatment in hospital. The safety investigation had concluded that during the job, the fitter's synthetic overalls became contaminated with hydraulic oil, and were ignited by the sparks from the angle grinder.

*Seascout*[8]: an explosion occurred on deck, while an angle grinder was being used to cut through corroded bolts in the vicinity of bunker tank air vents. The safety investigation had concluded that sparks generated by the angle grinder reached the vent head of a bunker tank, where flammable gases had accumulated.

*Kiran Anatolia*[9]: a deck fitter's coveralls caught fire after he used an oxy-acetylene torch to cut a leaking section of the hydraulic oil pipeline of the vessel's hatch cover operating system. The deck fitter succumbed to his injuries about 15 days later, while still receiving treatment in the hospital. The safety investigation had hypothesized that the fire may have been caused either by a flashback at the hose connections of the oxy-acetylene torch, or by the ignition of a spray of hydraulic oil from the pipe being worked on.

## ANALYSIS

**Aim**

The purpose of a marine safety investigation is to determine the circumstances and safety factors of the accident as a basis for making recommendations, and to prevent further marine casualties or incidents from occurring in the future.

**Safety investigation actions**

The MSIU was notified of this occurrence on 03 October 2022 *i.e.*, one week later. By then, the vessel had received its voyage orders and was already *en route* to its destination port of Vancouver, USA.

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7 MSIU Safety Investigation Report No. 15/2021.

8 MSIU Safety Investigation Report No. 05/2022.

9 MSIU Safety Investigation Report No. 09/2023.

A representative of the MSIU boarded the vessel at Vancouver to interview the crew members and collect relevant accident data for the safety investigation.

The Company advised the safety investigation that the injured fitter had communicated his unwillingness to participate in an interview until he recovered completely. To this extent, the safety investigation was unable to interview him.

**Cause of injuries**

Hydraulic oil splashed onto the fitter from the hydraulic oil pipe and ignited when it came into contact with the flame of the oxy-acetylene torch being used. As a result, the fitter's coveralls caught fire, causing deep, second and third degree burns over 70% of his body.

**Draining of the hydraulic oil pipeline**

Prior to commencement of the task, the third engineer had confirmed that both hydraulic pumps of the system were not in operation and that he had shut off the delivery valve. Although when previously asked by the chief engineer, the third engineer had confirmed that the hydraulic oil pipe had been drained and depressurized, available information suggested that no further actions had been taken to drain the residual hydraulic oil in the pipeline; once the crew members observed that the leaking oil had reduced to intermittent drops, they commenced with the task.

The third engineer informed the safety investigation that he had neither operated nor checked the isolation valves on deck. The safety investigation was later informed by the Company that, following the occurrence, the crew members inspected the status of the valves of the hydraulic oil system. In addition to the valve mentioned by the third engineer, they found that a valve in the engine-room, between one of the accumulators and the return pipeline, was open (**Figure 11**). Consequently, the return pipeline may have still been pressurized by the accumulator. Furthermore, the (brief) spray of hydraulic oil onto the fitter after the pipe section slipped off the support, also suggested that the pipeline was pressurized.

If there was any residual pressure in the system, the pressure gauge on the accumulator should have indicated so. However, the crew members had neither checked the pressure gauges prior to the commencement of the task, nor had they monitored the gauges during the task.

The safety investigation could not exclude that the third engineer was not yet familiar with this piping system. Nonetheless, while it is highly likely that the crew members may have not been aware of the residual pressure in the accumulator, the observed reduction in the oil leak, about an hour after shutting the delivery valve, may have misled them to believe that the pipeline had been depressurized and drained.

**Decision to use the oxy-acetylene set**

As stated earlier in this safety investigation report, the crew members had a toolbox talk and, taking into account that all bolts on the pipe section were corroded, they decided to use either an angle grinder or an oxy-acetylene set to cut the bolts. The crew members did not consider the option of using a hammer and chisel for the task.

A risk assessment was conducted for hot work and a hot work permit as well as a work permit for work on pressure vessels / pipelines were prepared. As the safety investigation was unable to interview the injured fitter, the reason why he chose to use the oxy-acetylene set could not be determined. Nonetheless, based on experience from earlier safety investigations. as mentioned earlier, the risk of a fire would have existed even if an angle grinder had been used by the injured fitter.

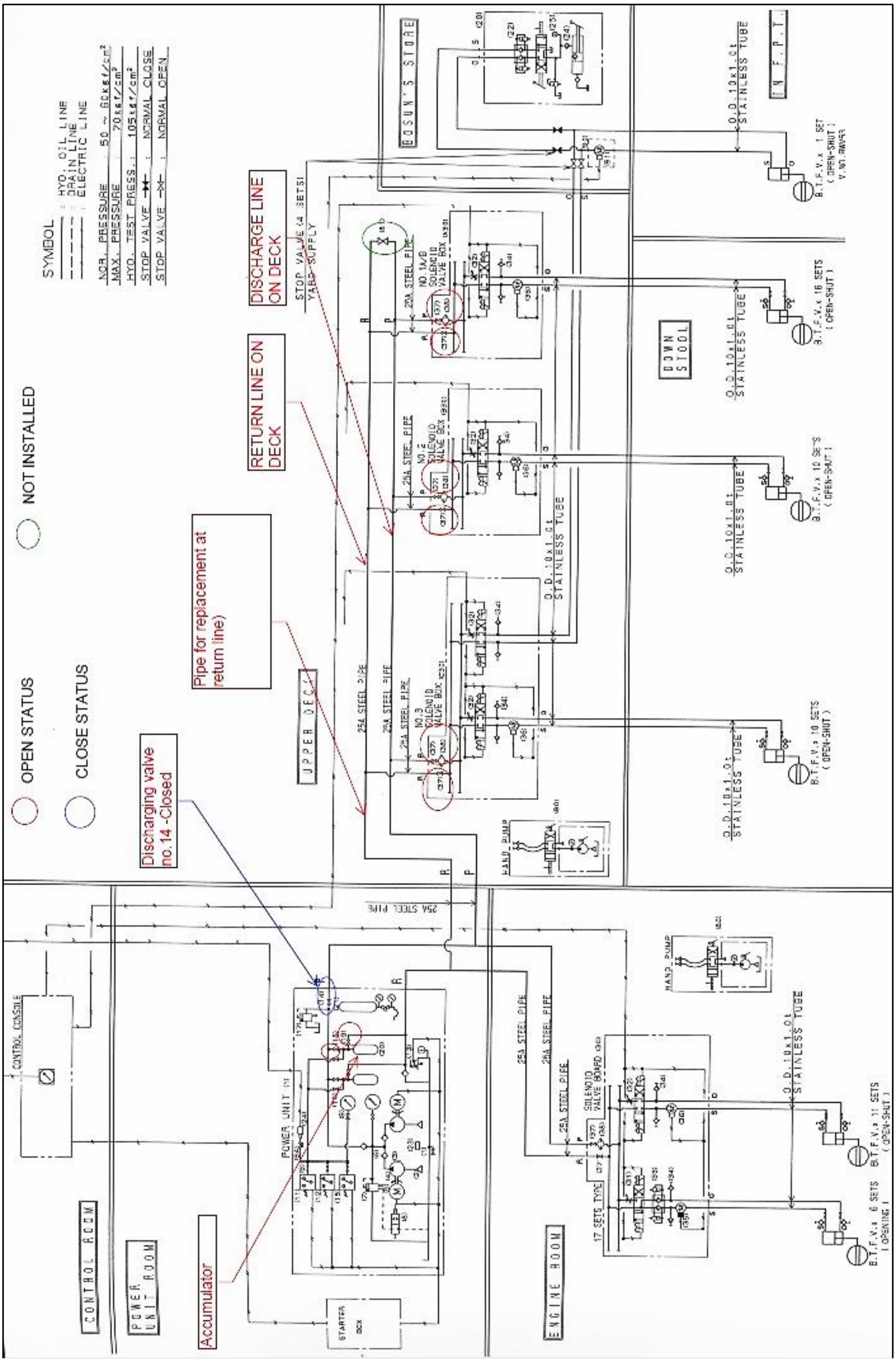


**Figure 11: Schematic drawing of the hydraulic oil pumping and piping arrangement for the water ballast tank valve remote operating system (markings and annotations by the Company)**

**Preparedness for a hazard**

The risk assessment involved all relevant crew members and was carried out prior to the commencement of the task. The oxygen and acetylene cylinders were placed about six metres away from the work site to minimize the chances of a fire / explosion hazard. A fire hose was connected to a fire hydrant and its nozzle was placed about four to five metres away from the work site, and so was a portable foam fire extinguisher, to tackle a potential fire.

However, the crew members informed the safety investigation that the fire pump had not been switched on, thereby rendering the fire hose unready to fight a fire. Furthermore, since all crew members were standing closer to the work site, they were not able to react immediately when the hydraulic oil sprayed onto the fitter and ignited.

In all probability, the fitter knew that water was not available near the work site and therefore, ran towards the port side, across the vessel's breadth, hoping to gain access to some water to extinguish the flames on his coveralls.

The level of preparedness mentioned above, was similar to that identified in earlier safety investigations. This suggested that several crew members often tend to accept risks associated with hot work on / around pipes containing oil / residues of oil.

**Risk assessment subjectivity and limitations**

The safety investigation believes that the boundaries between risk assessment (and all its subjectivity), and the decision-making process leading to the commencement of the work are normally blurred. Consequently, without an understanding of the potential factors preceding a final decision which triggers any action, the safety investigation may risk de-voiding the analysis of the decisions from the important context, and potentially misunderstand the meaning of that decision.

The MSIU noticed that similar to several other occurrences which have been investigated, this occurrence is a textbook example of the subjectivity of risk assessments, especially those which are carried out on board by crew members, who have received limited training, if any, on risk assessment procedures, but are nonetheless expected to (regularly) carry out the exercise because this is what is stipulated in the safety management system manual. This is a phenomenon which seems to be common in the industry.

*Per se*, the perception of risk is subjective, and this already determines and influences the assessment of the risk – the (perceived) probability for an accident to happen, but also the evaluation of the consequences. Academia has long provided a meaning for this – risk perception is not only influenced by personal / individual traits but also social and cultural factors[10]. A study commissioned by the UK's Maritime & Coastguard Agency revealed indicators of subjectivity when it came to how people applied risk assessment instruments and analysed the data[11].

Indeed, risk assessment subjectivity has observed by the MSIU in several other safety investigations. It may well be stated that the subjectivity arises because of several reasons, including but not limited to:

1. what, for an expert, may be a risk worth considering and calculating, others may be willing to accept it;
2. illusion of control; and / or
3. unawareness of the hazard (and, hence, the prediction of risk).

[10] Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology, 39*(5), 806-820.

[11] Busby, J. S. (2003). *Final report on credible risk assessment* (MSA 10/9/174). Maritime & Coastguard Agency.

Whilst the injured fitter was a very experienced seafarer (which will have a bearing on the manifested 'illusion of control'), the safety investigation believes that unawareness of the hazard was a pivotal factor on how the accident dynamics evolved in this case.

There are actually various factors within any socio-technical system (not only in transportation domains), which affect any person's perception of risk (and its tolerance). Whilst it was not possible for the safety investigation to analyse in detail the macro- and meso- levels' factors, the fact that work had commenced suggested a particular trait in the injured crew member's approach to the job. The commencement of the job suggested that the crew member was confident that his knowledge of the risk involved 'justified' his starting of the work. Like the perception of risk, the level of knowledge is, however, also not objective. The crucial point is that research suggests that the higher the 'perceived' knowledge of risk, the more tolerant people are of the risk.

In its considerations, the safety investigation could not exclude the possibility that the preventive actions taken by the crew members prior to the commencement of the job may have provided a sense of security for the injured crew member to commence the assigned job – being confident enough that all the preventive measures had been taken, and there was nothing which would have compromised the safety of the job[12].

Then, risk assessment carried out on board vessels is potentially based on emotions and intuition because without a formalised, detailed training regime on risk assessment, intervening variables may impact on the thoroughness of the assessment being made.

[12] This phenomenon is also referred to as risk compensation. One may also observe characteristics similar to those related to the 'local rationality principle'.

Seafarers, not being risk assessment experts, may analyse risk based on their emotions, potentially negatively affecting the outcome of the exercise and, consequently, the ensuing actions. Indeed, there is research to show that emotional risk perception precedes 'rational' risk assessment[13].

**PPE and suffered burn injuries**

The safety investigation observed that the coveralls did not bear any labels which would indicate whether they offered any degree of fire protection. However, considering that the seriously injured fitter was witnessed to have been covered in flames, it is highly likely that his coveralls did not offer any fire protection. Moreover, the spray of hydraulic oil would have contaminated his coveralls, causing it to ignite and allowing the fire to spread over it.

## CONCLUSIONS

1. The fitter's coveralls caught fire, caused by the ignition of a spray of hydraulic oil from the pipe that the fitter was working on.
2. The fitter was using an oxy-acetylene set to cut off the U-bolts on a leaking section of a hydraulic pipeline, which was part of the remote operating system for the water ballast tank valves.
3. After the occurrence, the crew members found that a valve between one of the accumulators and the return pipeline, was open, as a result of which, the return pipeline may have been under pressure.
4. An observed reduction in the oil leak may have misled the crew members to

[13] Xia, N., Wang, X., Griffin, M. A., Wu, C., & Liu, B. (2017). Do we see how they perceive risk? An integrated analysis of risk perception and its effect on workplace safety behavior. *Accident Analysis and Prevention, 106*(September 2017), 234-242.

believe that the pipeline had been depressurized and drained.

5. Although a fire hose was connected to a hydrant and placed near the work site, the fire pump was not switched on.
6. The fitter's unawareness of the hazard was a pivotal factor on how the accident dynamics had evolved.
7. It is highly likely that the fitter's coveralls did not offer any fire protection.

## SAFETY ACTIONS TAKEN DURING THE COURSE OF THE SAFETY INVESTIGATION[14]

During the safety investigation, the Company had carried out an internal investigation, in accordance with the requirements of the ISM Code. Following their investigation, the Company took the following actions:

- the investigation report was discussed with all crew member on board *Milagro*;
- the investigation report was circulated across the Company's fleet;
- the investigation report was used in its training centres as a case study for engineers at pre-embarkation training sessions;
- instructions and precautions for the replacement of a unit, device or a pipe of the hydraulic oil system, were posted in the hydraulic power unit room on board *Milagro*; and
- all crew members who were assigned to the task on board *Milagro*, were provided with additional training on the SMS procedures for hot work and work on pressurized systems.

## RECOMMENDATIONS

Considering the safety actions already taken, TMS Dry Ltd. (Cardiff Marine), is recommended to:

***17/2023_R1*** bring this safety investigation report to the attention of serving crew members, to raise awareness on the expected potential differences in the way seafarers may perceive (and hence) accept risk;

***17/2023_R2*** promote a training regime, which encourages crew members to engage in accident simulations to enhance risk assessment measures as part of the implementation of the vessel's safety management.

[14] **Safety actions and recommendations shall not create a presumption of blame and / or liability.**

| **SHIP PARTICULARS** | |
| --- | --- |
| Vessel Name: | *Milagro* |
| Flag: | Malta |
| Classification Society: | American Bureau of Shipping (ABS) |
| IMO Number: | 9465708 |
| Type: | Bulk Carrier |
| Registered Owner: | Ifestos Owning Co. Ltd. |
| Managers: | TMS Dry Ltd. (Cardiff Marine), Greece |
| Construction: | Steel – double bottom |
| Length Overall: | 225.0 m |
| Registered Length: | 218.19 m |
| Gross Tonnage: | 40,298 |
| Minimum Safe Manning: | 14 |
| Authorised Cargo: | Dry cargo in bulk |
| | |
| **VOYAGE PARTICULARS** | |
| | |
| Port of Departure: | Donghae, Republic of Korea |
| Port of Arrival: | Unknown (awaiting orders) |
| Type of Voyage: | Unknown |
| Cargo Information: | In ballast – 20,362 mt |
| Manning: | 23 |
| | |
| **MARINE OCCURRENCE INFORMATION** | |
| Date and Time: | 26 September 2022, at 0945 LT |
| Classification of Occurrence: | Serious Marine Casualty |
| Location of Occurrence: | 37° 32’ N 130° 20’ E |
| Place on Board | Main deck |
| Injuries / Fatalities: | One seriously injury crew member |
| Damage / Environmental Impact: | None reported |
| Ship Operation: | Drifting; maintenance |
| Voyage Segment: | Departure |
| External & Internal Environment: | Clear sky, visibility of 12 nm, East Northeasterly gentle breeze, and a moderate sea with low swell. Air and sea temperatures: 18 °C and 22 °C, respectively. |
| Persons on board: | 23 |