|  |
| --- |
|  |
| LOSS OF HIRE Survey Report |
| MV “VESSEL NAME” |
| **INSERT PICTURE OF VESSEL / DAMAGE**  |
| **Occurrence:****Date/year - Fire in the engine room** | **NHC Claim Reference: xxxxxx/20xx/LOH** |
| **Our Reference.: xxxxxxxxx** |

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*Preface:*

*This is an example of a LOH survey report, in which guidelines/instructions regarding the content have been inserted (blue, italic letters) for each section of the report. “Clean” report examples (pdf-format) are posted on our web site (*[*www.norclub.*](http://www.norclub.)*com), together with templates in Word-format. The templates contain the headlines and standard (required) wording where applicable.*

*The guidelines/instructions are in general related to the final survey report, however, may be used for preliminary report as well, as far as the sections are applicable. Our intention is to prepare for the same reporting structure, regardless if the report is preliminary or final.*

*The Example Report has been prepared based on a real case but has been made anonymous and edited for improved instruction/guidance purposes.*

*The receivers of a survey report are the claims handler, the owners, the adjuster and the co-insurers. The content in the report is of most importance to the receiver and the content of the final survey report should reflect the information that is to be provided in all sections of this report. The surveyor may issue the report using their own company layout.*

*For preliminary reports, only sections 1 – 12, plus 14 are applicable. Typical examples for differences between preliminary and final reports are shown in section 14.*

# INTRODUCTION / SCOPE OF WORK

*This is the formal information of the appointment.*

*Note that it is sufficient to state as below – ………..on [date, month, year] and subsequent days……..*

At the request of Norwegian Hull Club, being the Leading Loss of Hire Underwriters of the above mentioned vessel, the undersigned has on [date, month, year] and subsequent days surveyed [Vessel Name] whilst lying at the premises of [Name, Place].

*If survey was carried out at more than one location, this must be stated. For instance: ……the above named vessel, first whilst lying at…………., thereafter whilst lying at …………………*

# Occurrence

*Below is the standard text and lay-out to describe the reason for / purpose of the survey, as well as the formal presentation of the occurrence. (If more than one occurrence is applicable, special instructions/guidelines will be given).*

*It is of importance to keep the naming of the occurrence short and accurate, as this will form the headline in all our files and correspondence.*

*As illustrated below for this case: Fire in Engine Room.*

*The condition (laden/ballast/scheduled) and voyage or location is important information for the claims handler/adjuster.*

Survey was held in order to ascertain the nature and extent of damage sustained on the following occasion:

|  |  |
| --- | --- |
| **Occurrence No. 1** |  |
|  |  |
| **Date, month, year** | **On laden (or ballast) voyage from Port A to Port B.****Fire in the engine room.** |

# Attending representatives

*Examples of typical attending representatives are listed below. The number of persons may vary from case to case, depending of the size, complexity and duration of the case, but “key representatives”, relevant for the occurrence and/or repairs are to be listed. The list may also be extended as necessary from the first preliminary report and onwards. It may be beneficial for the reader to make a list for each attendance.*

The following persons were present during the survey / meetings:

|  |  |  |
| --- | --- | --- |
| ***Name*** | ***Company*** | ***Function*** |
| Name | Company | Vessel Manager |
| Name | Company | Chief Engineer |
| Name | Class | Class surveyor |
| Name | Company | Senior Service Engineer |
| Further name(s)  | Further companies | Further |

# VESSEL’S PARTICULARS

*The below listing is what NHC require of ships particulars. Further information may be available in our files or easily obtained from the internet. Special instruction will be given if further particulars are required. A copy of the Ships Particular hand-out may be obtained on board, however, it is not necessary to enclose to this report (ref section 6 below).*

|  |  |  |
| --- | --- | --- |
| Type | : | Ro-ro vessel |
| GT / DWT | : | xx.xxx / xx.xxx |
| Flag / Home port | : | Name / Port |
| Built | : | Shipyard / Country / Year |
| Owners | : | Name |
| Managers | : | Name |
| Class / Notation | : | DNV / 1A1 ICE-C SF COMF-V(3)C(3)  |
|  |  |  |
| Certificates |  | All certificates valid at time of occurrence |
| DOC details | : | Issued xx March 20xx, valid till yy February 20yy |
| ISM SMC details | : | Issued xx March 20xx, valid till yy February 20yy |
| Casualty ISM reported? | : | Yes |
| Prior related ISM reports? | : | Yes |

# VESSEL’S MOVEMENTS & events

*In this section, the main events shall be listed in chronological sequence.
The purpose is to give the reader(s) a quick and brief overview of the involved timeframe for the case. For Loss of Hire cases we request the surveyor to present the times in format; date, year and time as far as possible (for preliminary reporting - depending on availability of information).*

*In the table below are examples of typical main events.*

|  |  |
| --- | --- |
| ***Event*** | ***Date*** |
| Fire occurred. | Date, Year at xx:xx hrs. |
| Fire extinguished. | Date, Year at xx:xx hrs. |
| Vessel arrived at *Arriving Port*. | Date, Year at xx:xx hrs. |
| Inspection and commencement of repair. | Date, Year at xx:xx hrs. |
| Shifting to a nearby shipyard commenced by using harbor tugs. | Date, Year at xx:xx hrs. |
| The vessel arrived at the shipyard. | Date, Year at xx:xx hrs. |
| The vessel dry docked. | Date, Year at xx:xx hrs. |
| The vessel undocked. | Date, Year at xx:xx hrs. |
| Sea trials after repair. | Date, Year at xx:xx hrs. |
| Repairs completed. | Date, Year at xx:xx hrs. |
| The vessel sailed. | Date, Year at xx:xx hrs. |

# AVAILABLE INFORMATION

*Below are examples of typical information/documentation that the surveyor may collect.*

*However, due to the fact that the survey report in the end will form an integrated part of the formal adjustment, it is important to limit the enclosures to avoid overwhelming extensive documentation. NHC encourages the surveyor to consider limitation of enclosures to a necessary, relevant minimum.*

*Typical relevant documentation is listed below.*

*Documentation which is not enclosed may be forwarded to NHC on request.*

|  |  |
| --- | --- |
| ***Document***  | ***Enclosed / Available*** |
| *General Information:* |  |
| Ship particulars | Available on request |
| DOC | Available on request |
| SMC | Available on request |
|   |  |
| *Log books:* |  |
| Copy of bridge log book | Relevant pages enclosed |
| Copy of engine log book | Relevant pages enclosed |
|  |  |
| *Incident reports:* |  |
| Master’s initial report | Enclosed |
| Master’s statement of facts | Enclosed |
| Class report and recommendation for repairs | Enclosed |
| Owner’s Incident Report | Enclosed |
|   |  |
| *Repair planning and execution of repairs:* |  |
| Repair Plan | Available on request |
| Repair offer from Cable Renewal Company | Available on request |
| Quotation from Cleaning Company | Available on request |
| Quoted unit prices from Electric Motor Overhaul Company | Available on request |
|   |  |
| *Final technical reports:* |  |
| Damage Control Company’s report of chloride spread and extent | Available on request |
| Class report after completion of repairs | Available on request |
| Final report from Cable Renewal Company | Available on request |

# BRIEF TECHNICAL DESCRIPTION

*Include a short description of the vessel and / or the relevant equipment for the present casualty. The following is an example of relevant background information related to the below case with fire in the engine room.*

The vessel is a Ro-Ro ferry of xx xxx gross tons, built in 1985. The two main engines are of make MAN B&W, type 8L45GB, two stroke diesel engine with 8 cylinders in line, rated to
16 965 bhp. Each cylinder has a separate fuel pump. The engines are normally running on heavy fuel oil.

Hi-Fog water mist extinguishing system is fitted in the engine room and in the machinery spaces.

# BACKGROUND

*Describe the background for the casualty event prior your attendance. Some surveyors prefer to call this “Narrative”.*

*The extent of information in this section will wary from case to case, also depending on how much information the surveyor manages to collect. It is important to keep this section “short & sweet”, with necessary relevant information. All information here has been provided / obtained from a third party, by reports and / or verbal information. The presentation of the information should reflect that fact.*

*For the preliminary survey report, it is more important to issue a report as soon as possible than waiting for substantial information. Such information can be included in the next preliminary report.*

*The surveyor may collect a huge amount of information / documentation related to this section, which may be listed in section 6, but not necessarily enclosed to the report.*

On the above date, at 15:34:30 hrs, whilst the vessel was approaching the entrance to
[*Arrival Port*], the fire alarm was activated in the engine room. Concurrently an oil squirt from the top of the No. 1 main engine was observed on the video monitor in the engine control room. Reportedly, the oil splashed into the ceiling plates of the deck above.

Within the next 50 seconds the following sequence of events has been reported:

* 15:34:40 hrs. The bridge was contacted and the No. 1 main engine was requested to be stopped.
* 15:34:45 hrs. Two engineers entered the engine room. They discovered a fire was starting and tried to extinguish with local fire extinguishers.
* 15:34:51 hrs. The No. 1 main engine was stopped.
* 15:34:55 hrs. The 2nd engineer arrived in the engine room, but was met by an explosive fire development.
* Bridge was notified that a fire was at stake.
* 15:35:10 hrs. The fixed Hi-Fog fire extinguishing plant for No. 1 main engine was released from a panel in the engine control room.
* 15:35:30 hrs. No. 3 fire team (engine room team) commenced dressing up. Chief Engineer arrived in the engine control room.

At 15:38 hrs, the fuel to the No. 1 main engine was shut off by activating the quick closing valves.

Three fire teams, including one cooling team were now ready and the engine room team entered into the engine room and reported that the fire had been extinguished. Further checking was carried out to confirm that the fire would not re-ignite before the engine room was eventually ventilated.

In the meantime the Owners had been informed at 15:46 hrs. and the No. 2 main engine had been stopped at 15:50 hrs. after the anchor had been dropped.

After thorough checking of the fire area it was decided that the vessel could sail to port by using the No. 2 main engine and she resumed her voyage towards [*Arrival Port*], where she arrived at 17:30 hrs.

# DAMAGE DESCRIPTION

*Describe the nature and extent of damage. The use of relevant photos, drawings, illustrations and/or sketches in the report is preferred, however to be limited in order to give a reasonable understanding of the situation. Other supporting pictures should be presented in a separate photo album, or just be available on request.*

*This is the section where the surveyor presents what has been seen / observed / measured etc.*

*It is of vital importance that this section only contents factual information.*

*Also note – if you mention any values – we need information about the relation of the values - recommended limit(s) etc. For example; if crank pin hardness has been measured to be 650 HB, then the maximum recommended (by maker or class) hardness must be informed.*

*The following is an example of a typical damage description. The purpose must be to give the reader a reasonable overview – without going too much in technical details. A good survey report will, already here give the reader the first indication whether the case will be time consuming or not.*

Upon survey at [*Arrival Port*] and at the shipyard we noted damages as follows:

* The No. 1 main engine and the adjacent areas, including equipment in way, were covered with a layer of fuel oil.
* The ceiling and bulkhead structures adjacent to No. 1 main engine, including pipes, cables, the engine room crane above No. 1 main engine, lighting armatures, fire detectors, video surveillance cameras, electric equipment, etc. were covered with soot and variously melted, discoloured and deformed.
* Water leaks were noted from cooling water piping on the engine.
* The instrumentation on the No. 1 main engine was variously melted, discoloured, covered by soot and deformed, involving sensors, wiring, and control/monitoring system.
* Electric cables in the area around No. 1 main engine were melted, discoloured, covered by soot and deformed.
* From the specialist company, Messrs. Cleaning Company it was reported that except for the areas close to the fire, the chloride measurements in the engine room revealed relative low concentrations.

|  |
| --- |
| **Insert relevant photo** |
| Photo 1: [*Text*] |

|  |  |
| --- | --- |
| **Insert relevant photo** | **Insert relevant photo** |
| Photo 2: [*Text*] | Photo 3: [*Text*] |

# REPAIRS

*The listed repairs must be in accordance with findings listed in section 9, preferably presented as a logic consequence of the listed damages.*

*The purpose is to give the reader a reasonable overview of the necessary damage repairs, without going too much in technical details. The presentation in this section shall form the basis for the reader to understand the time consumption of the case.*

*Preliminary reports written during repairs may very well be more comprehensive than the formal/final survey report.*

The permanent repairs were carried out by Ship Yard Ltd. with Cleaning Company Ltd., Cable Renewal Company, MAN B&W, ABB and Kongsberg Maritime as subcontractors and included as follows:

* Thorough cleaning of all affected surfaces, machinery, equipment etc. for oil, soot and chlorides as applicable.
* Renewal of, in total 3300 meters of electric cables of various sizes and types, including cable trays as necessary.
* Dismounting, cleaning and control of all affected piping, valves, pumps etc. fitted to the engine.
* Removing the cylinder covers of cylinders nos. 2, 3, 4 and 5 for inspection. The inspection result revealed that the engine was not internally affected by the fire, and no further opening of the engine was required.
* Check of both turbochargers of No. 1 and 2 main engines. The air filter mats of the silencers of all (4) turbochargers were contaminated with fuel oil mist to such an extent that satisfactory cleaning was not possible, and consequently the silencers had to be renewed.
* Renewal of the automation system fitted to the engine (sensors, wiring, control- and monitoring system).
* Renewal of the emergency engine telegraphs system. This system was only partly damaged, however, as the manufacturer did not exist anymore, spare parts were not available and therefore the entire system had to be renewed.
* Cleaning and overhaul/renewal as necessary of various electric and mechanical equipment/components.

The repair involved dry docking for cropping an access hole for transport of debris out of the engine room and for transport of equipment/parts out and in.

On completion of the individual repairs, testing was carried out by the relevant contractors as necessary and required, and a thorough system test, including sea trials, was carried out according to the Class’ requirement prior putting the vessel into service on “*Date 20xx”*.

Completion work of flushing/washing and painting of affected areas in the engine room continued without affecting the vessel’s sailing schedule until about mid of “*Date” 20xx*”

# OTHER MATTERS OF RELEVANCE

*This is a section where the surveyor may elaborate on relevant matters that do not fit naturally into the damage and repair sections above, however, which the surveyor considers important.*

*Typical example:*

During our first attendance, the owners’ superintendent presented a repair plan that had been made in cooperation with the yard. The repair plan included delivery of critical spare parts and attendance of specialists. Discussions revealed that various measures had been considered with the aim to reduce the repair time. These measures included working in shifts, using optimal numbers of labour and working parallel working in several sections of the affected areas.

The schedule of the repair plan was successfully kept during the repairs and the repair time was delayed by only 3 days compared to the initial considerations.

*…..and / or:*

The Owners used the opportunity to commence Class’ special survey during the dry docking of the vessel.

# Cause CONSIDERATION

*The cause consideration is one of the most important issues in a survey report, as it will form the basis for the adjuster’s considerations in relation to the policy conditions. It is of outmost importance that the surveyor states his opinion regarding the cause – based on all his/her observations, investigations and collected documentation.*

*Sometimes it is easy to conclude the cause – for instance, if the vessel has been involved in a grounding incident, the cause of the bottom damages and/or rudder/propeller damages is – the grounding incident. In other cases were for instance if corrosion / wear and tear / lack of maintenance is relevant to the cause of damage this must be specifically commented.*

*Normally it is not possible to conclude the cause of damage in the initial phase of the case– typical for fire and engine damages. Sometimes specialists are involved and their investigation may take some time.*

*Here is an example of a suitable text in the preliminary report for the case in this example report:*

At this early stage in the process, it is difficult to draw unambiguous conclusions about the cause of damage. However, preliminary investigation indicates that the fire may be related to a sudden oil leak from the top of the No. 4 cylinder fuel pump of No. 1 main engine. We will revert with further information as soon as further investigation has been carried out.

*Below is the cause consideration for the same occurrence, but as it should be presented in the final report. Note that the cause considerations should be presented in two sections:*

*1. Discussions and*

*2. Conclusion.*

*The below is from the actual case, after various considerations and investigation, including metallurgic investigation:*

## Discussion

During inspections in the fire affected engine room, we could see clear indications that there had been an oil squirt from the top of the No. 1 main engine that hit the underside of the deck above (the ceiling).

Further investigation revealed that the source of the escaped oil was at the top cover of the fuel pump of the No. 4 cylinder, in which one nut was missing due to a fractured stud bolt, which left a hole into the high-pressure section of the pump.

The fractured bolt and the disappeared nut allowed the high-pressure oil to escape upwards and splash over the engine and the adjacent areas.

It was reported that last time when work was performed, which involved the fuel pump, was during a yard stay at Messrs. *Machinery Shipyard* in the period from *xx* to *yy* *January 20xx*.
The contractor states that the relevant nut was not touched at that occasion.

The stud bolt was sent to Det Norske Veritas AS, Section for Materials Technology for investigation of the cause of breakage.

The conclusion of the investigation is that the bolt had fractured as a result of fatigue, with the initiation area in the second thread root from the top, which is indicating that the bolt and nut may have been subject to an assembly irregularity.

As the investigation report does not state anything about the time frame of the fatigue, it is not possible to conclude about when a potential assembly irregularity may have taken place.

## Conclusion

In our opinion the cause of the fire is related to a sudden oil leak from the top of the No. 4 cylinder fuel pump of No. 1 main engine, which allowed fuel oil to escape and spray over hot surfaces and consequently ignite.

Further it is our opinion that the root cause of the leakage is the mentioned stud bolt, which had been exposed to improper tightening, consequent development of fatigue, which eventually led to fracture.

The cause investigation has not succeeded to reveal unambiguously when or by whom improper tightening was carried out.

# COST OF Repair

*Note: This section is not applicable for the Preliminary Loss of Hire Reporting. The surveyor must focus on repair time!*

*In the final reporting it is sufficient to present the repair cost with rough/approximate amounts as follows:*

The above damages have been permanently repaired for a total amount of:

USD 2 735 000

# TIME FOR REPAIRS

*A: Preliminary Report*

*It is of outmost importance that the surveyor, from day one, has focus on duration of repairs. Even though we know how difficult it may be to come up with early estimates, we will emphasise the importance of the information in this section. A good surveyor will always give some information about repair cost and time. Preferably, and if possible, such estimates should be made in close cooperation with the superintendent in order to avoid different figures in circulation.*

*For example:*

The permanent repair will be carried out whilst dry docked at *Messrs*. *Repair Yard*, who presented the most favourable repair offer, based on both cost and time.

The main contractors are as follows:

* Cleaning – Messrs. Cleaning Company.
* Electric repair / Cable renewal – Messrs Cable Renewal Company.
* Engine repair - Engine maker, MAN B&W.
* Turbo chargers - Messrs ABB AS.
* Engine control and monitoring system - Kongsberg Maritime AS.

The repair is scheduled to be completed at the end of February 20xx. Investigation and discussions with the various suppliers of necessary spare parts revealed that all required spare parts are on stock, which means that presently there is no indication that delivery time of spare parts should cause any delay.

Also, possibilities for delays by transportation of spare parts will be evaluated and focus will be on required actions to avoid such delays.

Further we are involved in discussions for investigating the possibilities of expediting the repair by use of overtime and / or additional labour and to which extent various details of the repair can be carried out in parallel.

*B: Survey Report*

*In this section of the final LOH Report the repair time at the yard / repair place shall be stated as follows.*

If carried out separately the above work would have required xx days to be completed.

# TEMPORARY REPAIRS

*On some occasions it may be necessary, or economically sensible to conduct temporary repairs, and defer final repairs. This must be stated in this section.*

*The survey report shall include the cost and duration of the temporary repairs.*

*Example:*

The repair account includes USD 38 500 for temporary repairs to the engine room crane above the No. 1 main engine, which required 2 days to be completed.

Temporary repairs were carried out to save time as it was impossible to carry out permanent repairs to the No. 1 main engine without the crane in working condition and waiting for permanent repair of the crane would have detained the vessel a further
1 – 2 weeks.

*Option:*

*If no temporary repairs were involved, this should be confirmed in the report as follows:*

No particular temporary repairs were carried out at this occasion.

*If applicable, the cost and time for removal of temporary repairs must be stated.*

*Example:*

The repair account includes NOK xx xxx for removal of temporary repairs.

This work required x days/hours.

*Option:*

No particular cost was involved for removal of temporary repairs.

# EXTRA EXPENSES INCURRED TO REDUCE DELAY

*The surveyor must in his final report consider if any extra expenses, overtime, bonus etc. that has been granted and to what extent this has reduced the duration of repairs.*

In connection with this occurrence, extra expenses have been incurred by working
overtime for an amount of USD 20 250.

By incurring extra expenses, 3 days in dry dock have been saved and the total repair time has been reduced by 3 days.

**Note that General Expenses shall not be reported in a Loss of Hire Report (time is the main issue – not cost).**

# WORK NOT CONCERNING AVERAGE

*Work considered by the surveyor not to be related to the occurrence shall be presented in this chapter.*

*If the following types of work are carried out simultaneously with the damage repairs, the total duration of these types of work must be stated:*

1. *Work carried out to fulfil classification requirements, or*
2. *necessary to enable the ship to meet technical and operational safety requirements or perform its contractual obligations, or*
3. *related to the reconstruction of the ship*

Concurrently with the average repairs work not concerning average was carried out at the yard to an amount of:

USD 396 000

The work included as follows:

* Scheduled dry docking
* Commencement of Special Survey
* Aux engines overhaul for class renewal survey
* Renewal of 8 tons of bottom plating
* Repair of Electric system

If carried out separately the above work would have required a total of 17 days
to be completed.

Work necessary to fulfil classification requirements, or necessary to enable the ship to meet technical and operational safety requirements or perform its contractual obligations, or is related to the reconstruction of the ship would have required 15 days to be completed, if carried out separately.

# DETAILED TIME SCHEDULE

*In this section the surveyor shall insert the exact time for all relevant events during the case. The information in this table will form the key basis of the adjuster’s calculation of the LOH compensation.*

*Alternatively refer to Section 5 if the table there is sufficiently detailed.*

|  |  |
| --- | --- |
| ***Event*** | ***Date - hour*** |
| Fire occurred. | Date, Year at xx:xx hrs. |
| Fire extinguished. | Date, Year at xx:xx hrs. |
| The vessel resumed the voyage. | Date, Year at xx:xx hrs. |
| The vessel was safely berthed at Arrival Port | Date, Year at xx:xx hrs. |
| Repairs commenced | Date, Year at xx:xx hrs. |
| Owners’ work commenced | Date, Year at xx:xx hrs. |
| The vessel shifted to dry dock | Date, Year at xx:xx hrs. |
| Owners’ work in dry dock completed | Date, Year at xx:xx hrs. |
| The vessel undocked | Date, Year at xx:xx hrs. |
| Owners’ work completed | Date, Year at xx:xx hrs. |
| Completion of repairs | Date, Year at xx:xx hrs. |
| Berth trials | Date, Year at xx:xx hrs. |
| Sea trials commenced | Date, Year at xx:xx hrs. |
| Sea trials completed | Date, Year at xx:xx hrs. |
| The vessel sailed from the yard | Date, Year at xx:xx hrs. |

Subject to the rights of the Underwriters according to
the relevant insurance conditions and policy.

Place, day, month, year

|  |
| --- |
| Yours faithfully |
| For *[Name of the survey company]**Signature*LOH Surveyor [*name of surveyor]**Please include surveyor’s written name in addition to the signature* |