



FINAL MARINE SAFETY INVESTIGATION REPORT

OWNER	: BASIC ETERNITY LINE SA
MANAGER	: MINAMOTO KISEN CORP LTD.
NAME of SHIP / IMO No	: M/V CAPE HENRY (9648879)
FLAG	: PANAMA
SCENE of ACCIDENT	: Martas Marmara Ereglisi Port Facilities / Tekirdag-Turkey
DATE and TIME of ACCIDENT	: 5 December 2017 / 15:06 (GMT +3)
FATALITY / INJURY / LOSS	: 1 / - / -
DAMAGE / POLLUTION	: -

Board Resolution No: 22 DNZ - 02 / 2020

Date: 10/02/2020

The sole purpose of this investigation is to make recommendations in order to prevent similar accidents and incidents within the framework of the legislation of the Transport Safety Investigation Center.

This report shall be inadmissible in any judicial or administrative proceedings whose purpose is to apportion blame or determine liability.

LEGAL BASIS

This marine accident was investigated in accordance with the By-law on the Investigation of Marine Accidents and Incidents which came into force after being published at the Official Gazette No.30961 on 27th of November 2019.

Investigation procedures and principles are further applied by considering Resolutions of International Maritime Organization (IMO) concerning International Standards and Recommended Applications for Safety Investigations Directed to MSC 255(84) (Casualty Investigation Code) and Resolution A.1075(28) Marine Accidents or Incidents, and European Union Directive 2009/18/EC.

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SUMMARY



Figure 1: Location of the Accident

Note: All times used in this report are local times (GMT +3)

M/V CAPE HENRY berthed alongside Martaş port facilities on 2nd of December 2017 at 12:30 to load its' steel rebar cargo that it was going to transport to Panamanian port of Cristobal. The loading started at 13:55 on the same day. While the rebar was being loaded to the hold of the vessel with the crane No. 4, which is the closest crane to the superstructure of the vessel, from the trucks approached the port on the date of 5 December 2017, the rebars fell down on one of two stevedores in the hold No. 5 by parting of the wire rope of the vessel's crane and as a result, the worker was seriously injured.

After the first aid at the scene, the injured worker was taken to hospital by ambulance. The worker lost his life on the date of 18 December 2017 while he was being treated at the hospital.

SECTION 1 – FACTUAL INFORMATION**1.1 Information Regarding the Vessel, Navigation and the Accident**

Name of Vessel	: M/V CAPE HENRY
Flag	: Panama
Classification Society	: Nippon Kaiji Kyokai (ClassNK)
IMO Number	: 9648879
Type of Ship	: Bulk Carrier
Shipowner	: Basic Eternity Line SA
Ship Manager	: Minamoto Kisen Corp Ltd.
Place of Build/Year	: Japan Marine United Corp. Kure/Japan – 18 June 2013
Gross Tonnage	: 31.538
Length Overall	: 190,00 mt
Main Engine and Power	: Wartsila 6RT-FLEX50B – 8.890 KW (12.985 BHP)
Previous Port of Call	: Kroman Steel Port Facilities, Kocaeli / Turkey
Next Port of Call	: Cristobal / Panama
Cargo Information	: 33.378,10 MT Steel Rebar
Number of Crew	: 20
Type of Navigation	: Oceangoing



Figure 2: CAPE HENRY

1.2 Environmental Conditions

During the time of the accident, the weather was clear, the visibility and ambient light were good. The wind was blowing from the north at a force of 1-2 and the sea was calm.

1.3 Information with regard to the Casualty

Date and Time of Accident	5 th of December 2017 / 15:06
Type of Accident (IMO)	Very serious marine casualty
Initial event	Failure of the Vessel's Crane's Wire Rope
Location of the Accident	Martaş Marmara Ereğlisi Port Facilities/Tekirdağ/Turkey
Injured/Death/Lost	- / 1 / -
Damage	None
Pollution	None

1.4 Sequence of Events

CAPE HENRY departed from the Kroman Çelik Port Facilities located in Kocaeli to load 33.378,10 MT of steel rebar in total to its holds No. 1, 3 and 5, which it was going to transport to Panamanian port of Cristobal, and approached Martaş Port Facilities (Port of Martaş) of Tekirdağ at the date of 2 December 2017 at 12:30. The loading started at 13:55 on the same day.

It was agreed upon between the vessel and the port that the loading was going to be carried out by the vessel cranes. Crane was operated by the crane operator, who normally works at the Port of Martaş, and 2 workers were assigned in stowing in the hold.

The crane operator was taking the rebar from the trucks approaching the vessel's board side and putting them on the cargo pallets, and stowing into the holds with the help of the port workers. While these operations were being carried out, the operator was making direct contact with the port workers inside the hold but they didn't have any tool such as walky talky, etc. to help establish a healthy communication between them.

According to the statement of the operator using crane No. 4, as the loading operation to the hold no. 5 was going on, crane's wire rope parted 8-10 meters away from the place that the load was going to be put down while the crane was putting the rebar down to the hold, and as a result, approximately 23 tons of rebar slipped from its sling and fell on to one of the workers inside the hold. The crane operator stated that he had experienced a shock for a short period of time after the accident. As a result of the event, the worker was severely injured in the head, back and foot.

The other worker, who was inside the hold at the time of the accident, stated that there was a distance of approximately 3 meters between the injured worker and himself. He stated that as the load was being lowered, when he looked up and saw that the crane's wire rope parted suddenly as the load was about 10 meters away from the place it was to be put down, he warned the other worker to move away from beneath the load, but that the rebars hit the worker and caused him to fall down. He stated that he didn't sense any abnormal indication regarding the wire rope before it parted. He stated that the steel rebars falling after the parting wire rope was 2,5 - 3 meters away from him.

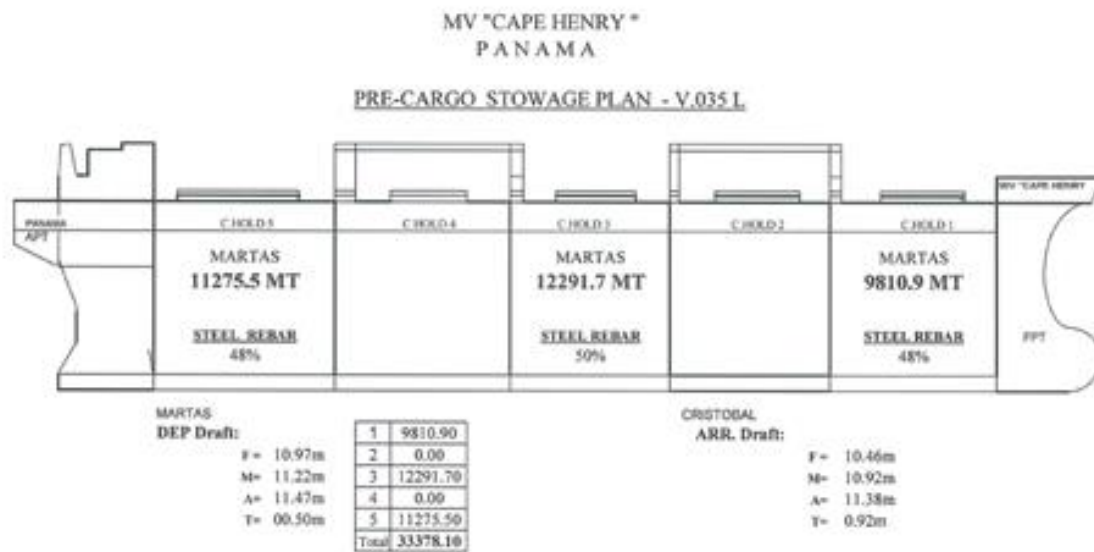


Figure 3 : Stowage plan for the cargo holds no. 1, 3 and 5

The master of the CAPE HENRY stated that he was in his cabin at the time of the accident and heard a loud noise at 15:06, and immediately ran to the bridge, and that the officer of the watch at that time told him that one of the workers assigned in stowing inside the hold was injured and he reported this situation to the ship owner.

He stated that the crane operator acted carelessly during the loading of the vessel, that they heard impact sounds several times and prepared several damage reports thereon. He stated that when they called people from the port to sign the damage reports, they did not come and after they sent the damage reports to the agency, the charterer and the ship owner.

He stated with regard to the loading equipment that the problem of (bulging) of the crane jib was fixed in the previous port of Algeciras. He stated that repair and maintenance of crane and wire ropes were carried out properly. (*ANNEX-1*) He stated that they did not have any deficiencies in PSC controls, but expressed his doubts regarding the crane operator and the workers stowing the load. He stated that they witnessed overloading. He stated that the damage reports contain photograph regarding this matter. (*Figure 22*)

The chief officer stated that he was in the hold No. 1 at the time of the accident and heard a loud noise and then he went to the hold No. 5 and saw the injured worker and scattered rebars. He stated that he immediately called the master after the accident and informed him. He didn't call anyone at the port. He stated that he was responsible for the maintenance of the cranes and that the cranes were lubricated every 3 months. He stated that the last time that the ropes were greased was on the date of 1 September 2017.

Regarding the accident, he stated that cargo above the lifting limit was lifted. He told that they informed the P&I insurance regarding this subject.

In the photographs taken after the accident, the condition of the wire rope of the vessel is shown in Figures 4, 5 and 6.



Figure 4: Photograph of the crane no. 4 and parted wire rope after the accident



Figure 5: Photograph of the wire rope's strands and threads after the accident



Figure 6: Photograph of the parted wire rope inside the cargo hold

1.5 Course of Events After the Accident and the First Aid to Injured Worker

After the accident, the workmates of the injured worker tried to help him before the ambulance arrived at the scene of the accident. When the master was asked whether the vessel's personnel applied the first aid to the injured, he stated that crew did not apply a first aid since they saw that his workmates had applied a first aid.

Ambulance and health team arrived at the scene at 15:15, the first aid to the injured worker was applied at the scene of the accident, and then the injured worker was taken to the Tekirdağ Namık Kemal University Faculty of Medicine Hospital at 15:56.

On the same day after the accident, Tekirdağ Police Department scene investigation officers and the agency went onboard and a certain part of the vessel's parted rope was taken from the vessel for analysis by the scene investigation officers.



Figure 7: Photograph of the injured worker, parted wire rope and steel rebars inside the cargo hold



Figure 8: Photograph of the parted wire rope and steel rebars inside the hold after the accident

1.6 Manning of the Vessel

CAPE HENRY is manned with sufficient personnel according to the Minimum Safe Manning Certificate issued in accordance with Regulation V/14 of the Safety Of Life At Sea (SOLAS 74). (*ANNEX-2*) On the day of the accident, there were 20 personnel onboard together with the master. The qualifications of the vessel's personnel are appropriate for the aforementioned navigation zone and the tonnage class of the vessel.

The master of the vessel is 57 years old. He has been working at sea since 1982. He has been working for his current company for 5 years and has been working on board the CAPE HENRY since August 1, 2017. He has been working as master since 2001. He stated that there were no problems among the crew. He stated that English and Filipino languages were spoken in the vessel and there was not any language barrier in communicating with the crew.

The chief officer is 52 years old. He has 25 years of experience at sea in total and has been working as chief officer for 4 years. He has been working for this company for 4 years and has been working on CAPE HENRY for 8.5 months. He stated that there were no problems among the crew. He stated that the working and sleeping/resting order in the last two days consisted of working for 8 hours and then resting.

1.7 Port Personnel Assigned in Loading Operation on the Day of the Accident

The crane operator and two workers who normally work in the port of Martaş are involved in the loading operation on the day of the accident.

Of the two personnel assigned in stowing the load in the hold of the vessel, the person seriously injured after the accident is 56 years old. He has been working for Marport Tahmil Tahliye Taahhüt Tic. Ltd. Şti. (Marport Loading Unloading Contracting Trade Limited Company) for 6 years. He has sufficient knowledge and familiarization with the place of accident and regarding stowing the rebars into the holds. He does not have any problems with his workmates and his working and resting period for the last 3 days consists of working for 8 hours and then resting. He started to work at 08:00 on the day of the accident.

He works as a worker according to Marport Tahmil Tahliye Taahhüt Tic.Ltd.Şti. worker card. He successfully completed the 8-hour occupational health and safety basic training given by Özel Tekirdağ Ortak Sağlık Güvenlik Birimi (Private Tekirdağ Joint Health and Safety Unit) on 9th of August 2017 and the training organized on the same subject by the same organization on 25th of January 2014.

The other worker assigned in stowing in the hold is 45 years old. He has been working for loading/unloading operations at Martaş Port for 4 years. He works as a worker according to Marport Tahmil Tahliye Taahhüt Tic.Ltd.Şti. worker card. He successfully completed the 8-hour occupational health and safety basic training given by Özel Tekirdağ Ortak Sağlık Güvenlik Birimi (Private Tekirdağ Joint Health and Safety Unit) on 11th of August 2017. He stated that he had been working together with the injured worker for 2.5 years. He stated that the injured worker served as a stevedore and had more experience than him. He

stated that he rested well before the day of the accident and had no fatigue. He started working at 08:00 on the date of 5th of December 2017.

1.8 Crane Operator

Crane operator working in the crane, which the wire rope that parted during the accident was connected to, stated that he had been working as a crane operator for 17 years, had been working at this port for 22 years, had the necessary training for the crane used in the vessel, and received refresher training in 2003 (between the dates of 1-12 December 2003). He stated that he had not received refresher training between 2003 and 2017. He stated that the loading plan was not given to them. He stated that they worked in shifts, worked 8 hours daily, and he was not tired on the day of the accident, and had enough sleep the day before. He started to work at 08:00 on the day of the accident. He stated that he did not have any problems with the other personnel working onboard the vessel. He successfully completed the 8-hour occupational health and safety basic training given by Özel Tekirdağ Ortak Sağlık Güvenlik Birimi (Private Tekirdağ Joint Health and Safety Unit) on 8th of August 2017 and received a certificate of participation regarding this training.

1.9 Other Information on the Cargo Handled and the Vessel

The steel rebar, which was loaded to the CAPE HENRY at Martas Port Facilities, is a versatile construction material widely used in making reinforced concrete in the construction sector. (<http://ispatguru.com/steel-reinforcement-bars-and-its-important-characteristics/>)

Special shaped steel which is put into concrete in order to endure the shear and tensile stresses in concrete structures is called rebar. It is manufactured in 12 meters length as standard. The ribs (nervure) on its surface are manufactured by twisting in cold. The good thing is that the possibility of it to get out of concrete by sliding is very, very low. The downside is that it gets through the concrete by splitting the concrete. (<http://www.klcdemir.com/urunler.html>)



Figure 9: Steel rebar

1.10 Information Regarding the Parted Wire Rope

The wire rope on the deck crane No. 4 is manufactured by South Korean company MANHO ROPE & WIRE LTD. with a nominal diameter of 33,5 mm, a nominal length of 262 m, a weight of 1.218 kg, its breaking test load is 808 kN = 82,4 tons (actual: 818 kN = 83,4 tons) (1 kN = 101,97 kg), it is galvanized steel with 4 arm x SeS (39) wire - FC composition.

When the vessel's wire rope certificates are examined, it is seen that the wire rope which is located at the deck crane No. 1 is manufactured by South Korean company KISWIRE LTD.

1.11 Surveys

According to the survey records of the vessel, in the standard inspection at the Port of Alabama by US Coast Guard, which is the Port State Control authority of the United States of America, on the date of 29th of August 2017, three deficiencies, one of each of the load, fire safety measures and operational, were identified and these deficiencies did not cause detention of the vessel.

During the annual inspection conducted by the surveyor of ClassNK Alabama (USA) office on the date of 10th of September 2017, it was noted that the use of crane No. 4 shall be stopped until permanent repair of the crane jib and load test is carried out. (*ANNEX-6*)

1.12 Previous Repair Carried Out in Crane No.4 of the Vessel

The vessel is subject to the classification society “Nippon Kaiji Kyokai (ClassNK)” (member of IACS) and the date of its classification certificate is 18th of June 2013 and the

aforementioned certificate is valid until 6th of September 2021 in case of continued compliance with the rules and regulations of the classification society. The certificate regarding the lifting equipment of the vessel is given in *ANNEX-3*.

In the test and detailed inspection certificate issued before the commissioning of the crane, wire ropes and auxiliary equipment, the safe working load (SWL) of crane No. 4 is 30 tons and a test weight of 35 tons was applied in the radius where the jib extends to 26 meters. (*ANNEX-4*)

In the document on detailed inspections of the vessel's lifting equipment, the annual detailed inspection conducted by ClassNK Istanbul office surveyor on 20 May 2014 in Iskenderun includes a temporary repair carried out with the doubling plate due to the damage caused to the jib of the deck crane No. 4 by the loading/unloading worker. The certificate of crane No. 4 was revoked and a new certificate was issued with the code 14IT0244. The SWL was reduced to 20 tons by the instruction of Imabari. A load test was carried out with a weight of 25 tons. Permanent repair of deck crane no. 4 until the date of 20th of May 2015 was recommended. (*ANNEX-5*)

In the survey report dated 2nd of November 2017, it is stated that the damaged area on the right side of the crane's jib (about 4.2 meters above the bottom of the crane body) was removed and the inserts with dimensions of 552x990 mm and 298x990 mm from plates with 7 mm thickness and K32A grade were inserted, and welding was carried out according to the procedures of the crane's manufacturer IMC, the visual inspection and Non Destructive Test-NDT (ultrasonic test (UT)) was carried out after the completion of the repair, and it was concluded with a satisfactory result according to the 35-ton load test. The repair carried out as a result of these operations was accepted as permanent repair and the deficiency noted in New Orleans on the date of 10th of September 2017 was deleted. Afterwards, the test certificate was issued on the date of 2nd of November 2017 at the inspection. (*ANNEX-7*)

SECTION 2 – ANALYSIS

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.

2.1 Loading

The lifting capacity of the crane No. 4 where the accident occurred is 30 tons. According to the crane operator's statement, the load they lifted at a time was 22-23 tons. It is stated that no instructions or procedures was transmitted to the crane operator regarding the cranes by the crew from vessel.

In the loading operation, firstly, the rebars, which are on the trucks approached the shore in a row, are attached to the sling of the crane of the vessel with the help of two workers on the trucks. Afterwards, the crane operator lifts the load above the vessel's boardside, maneuvers the crane to place them in the hold and lowers it to the place where the load is to be stowed.

The crane operator stated in his statement that he put the load down into the hold and let it rest for a while on the wooden wedges at the place where the load will be put down and then lifts the load up a little. In the meantime, the two workers assigned in stowing inside the hold try to adjust the pallet hanging from the wire rope to precisely adjust the place of the load. The rebar is then placed in the desired place.

As a general safety rule, it is essential that workers do not stand under the load. However, in the light of the available data, it is not known exactly whether the injured worker assigned in stowing inside the hold was under the load or at a distance from the projection of the load in the hold.

2.1.1 Communication and Coordination in Loading Operation

It is considered that the crane operator could not communicate well with the workers assigned in stowing in the hold during the loading process. The crane operator stated that he had to stand up in the crane cab during the loading operation and that he could only see a certain part of the load while the load was being lowered to the hold. The other worker in the hold stated that they contacted the crane operator via mobile phone from time to time.

However, it is considered that this method is not proper and is a deficiency. It was considered that the failure to supply a communication device such as a walky talky between the crane operator and the workers assigned in stowing in the hold to warn each other against possible dangers and to ensure a continuous communication - coordination was one of the factors causing the accident.

2.2 Maintenance Records of the Parted Wire Rope

When the maintenance and inspection records of the wire ropes of the vessel are examined, it is seen in the obtained data that the greasing of the wire rope attached to the deck crane No. 4 is carried out every 3 months and the last greasing was carried out on the date of 1st of September 2017. It is understood that the rope, hook and pulley, the brake mechanism and the operation tests are carried out once a month by the crew and that the operations for December was not carried out on the date of 7th of December 2017, which is the date that the certificate was received from the vessel. (*ANNEX-I*)

When the maintenance and inspection records of the deck equipment of the vessel are examined, although the greasing and the other maintenance procedures of the wire rope of deck crane No. 4 are carried out on time, it can not be mentioned that an effective maintenance is carried out.

2.3 Damages Caused to the Wire Ropes

Damages caused to the wire ropes can be grouped under several headings. These can be sorted as mechanical wear, bending fatigue breaks, corrosion damages, tensile overload breaks, external damages, internal wire breaks, damages from rotation and rope production faults.

2.3.1 Corrosion

When the parted wire rope was examined after the accident, rust formation was observed on it. It is considered that this rust formation is caused by atmospheric corrosion, i.e., reaction of metal with oxygen or effect of seawater.

Corroded steel wire rope will lose its strength and flexibility. Corroded wire surfaces will form fatigue cracks much faster than protected surfaces. If high local stresses help

propagate these cracks, we call this mechanism stress corrosion. The amount of corroded metal is a function of the surface which oxygen can attack. Steel wire ropes have an exposed surface about 16 times larger than a steel bar of the same diameter and will therefore corrode correspondingly faster.¹

The following picture shows a typical image of a rope that parted by corrosion related wear from the report of a similar accident occurred onboard DSV DSND PELICAN.



Figure 10: Typical View of the Parted Wire Rope Strand Caused By Corrosion Induced Wear ²

It draws attention that the image of a rope that parted due to corrosion in the Figure 10 bears a resemblance to the post-accident image of the wire rope that parted onboard CAPE HENRY below, and the wires of the rope show a tendency to be scattered.



Figure 11: Parts of the Parted Wire Rope Exposed to Corrosion and Mechanical Impact

¹ Wire Rope Forensics, Dipl.-Ing. Roland Verreet, Dr. Isabel Ridge p. 10

² Investigation of failure of crane rope from DSV DSND PELICAN, s. 10



Figure 12,13: Photographs Showing Outer Lubrication and Inner Corrosion and Rusting of the Wire Rope

The amount of corrosion can be reduced by reducing the exposed surface. This can be done by galvanizing³ the rope wires. A steel core can also be protected by a plastic coating. An internal and external lubrication will also reduce or prevent corrosion. Especially static ropes and ropes operating in a marine environment should be galvanized and well lubricated. A plastic coating between the steel core and the outer strands will protect internal rope elements. Steel expands when it corrodes. Therefore sometimes an increase in rope diameter over time might be an indication that the rope is corroding internally.⁴

A typical image of the rope that parted by tensile stress is also shown in the following figure.



Figure 14: Typical View of Parting of a Wire Rope By Tensile Stress

³ Coating of iron and steel with a thin layer of zinc. The aim of this method is protecting metals against corrosion.

⁴ Wire Rope Forensics, Dipl.-Ing. Roland Verreet, Dr. Isabel Ridge p. 10

The following photo also shows corrosion-caused wears on each wire of the steel rope.



Figure 15: Wearing of the Metallic Part of the Wire by Corrosion Induced Wear

If an analysis to be done with the data taken from a similar accident by reviewing a rope strength report of a non-rotating type, 26 mm diameter, 34x7 + core, galvanized, minimum breaking load (MBL) 50 tons; it was seen that a cut of 100 mm length weighted 218g/100mm of corroded part and 281g/100mm of as new part. It is seen that rope has lost approximately 22% of its metallic area due to corrosion. As a first approximation, the rope strength will be reduced proportionately, i.e. the corroded rope strength would be 39 tonnes. This calculation assumes that the corrosion is evenly distributed through the rope and along each wire; if proportionately more metal was lost from the outer strands then the strength of the rope could be degraded further.

Figure 16 shows a comparison of the cross section of the rope removed from near to the failure (left) and from the end of the rope stored on the winch drum, which may be considered to be representative of the rope in the “as new” condition. Attention is drawn to the extraordinary loss of metallic cross section on the core strand, especially considering that this is at the heart of the rope where galvanising and residual lubricant are most likely to remain.⁵

⁵ Investigation of failure of crane rope from DSV DSND PELICAN, p. 8



Figure 16: Cross sections of corroded (left) and "as new" (right) rope ⁶

In the interview with the crane operator, he stated that there was no abnormality in the normal operation of the crane and the wire rope. He stated that he did not observe any rupture or break in any of the strands of the ropes, but that a very yellow powder appeared after the parting of the rope. This yellow powder is considered to be caused by the rust produced due to the corrosion of the wire rope.

2.3.2 Mechanical Impact

Steel wire ropes are often mechanically damaged during service. The rope might hit a steel structure, thereby locally damaging some outer wires, or it might be dragged along a hard surface, creating a great amount of mechanical wear. A wear or damage pattern along the rope's axis or slightly helical to it always indicates that the rope has been dragged along an object. Ropes that have been pulled over a sharp edge have a tendency to coil when unloaded.⁷

⁶ Investigation of failure of crane rope from DSV DSND PELICAN, s. 7,8

⁷ Wire rope forensics, Dipl.-Ing. Roland Verreet, Dr. Isabel Ridge, p.18

Among the documents received from the vessel, there are several damage reports recorded during loading. Pictures of the aforementioned damage reports are given in Figures 17, 18 and 19.

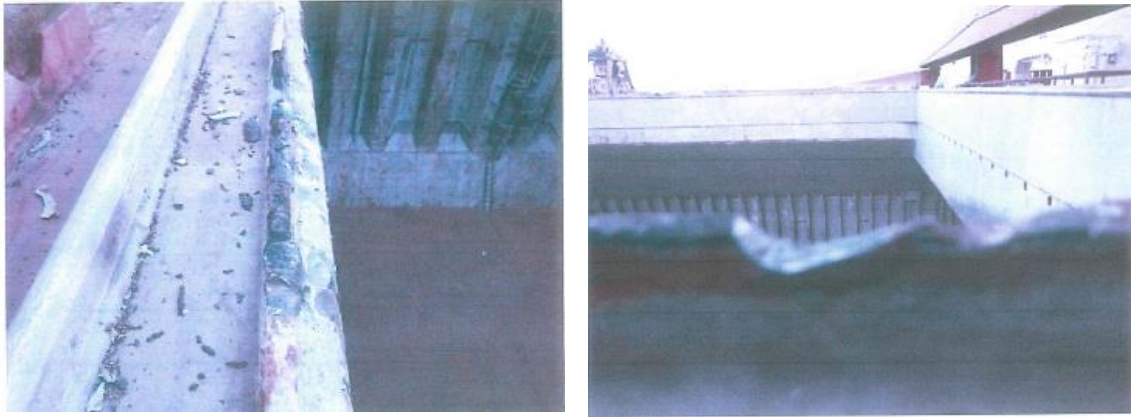


Figure 17,18: Photograph of the Aft Part of the Drain Channel

As can be seen in Figures 17, 18 and 19, the steel parts of the hatch coaming have ruptures and metal/paint scratches as a result of the fact that the rebar hit and rubbed the coaming while lowering them inside the hold. It is considered that these impacts and rubbings impose more load and tensile on the wire rope attached to the crane of the vessel, resulting in a decrease in the strength of the wire rope.

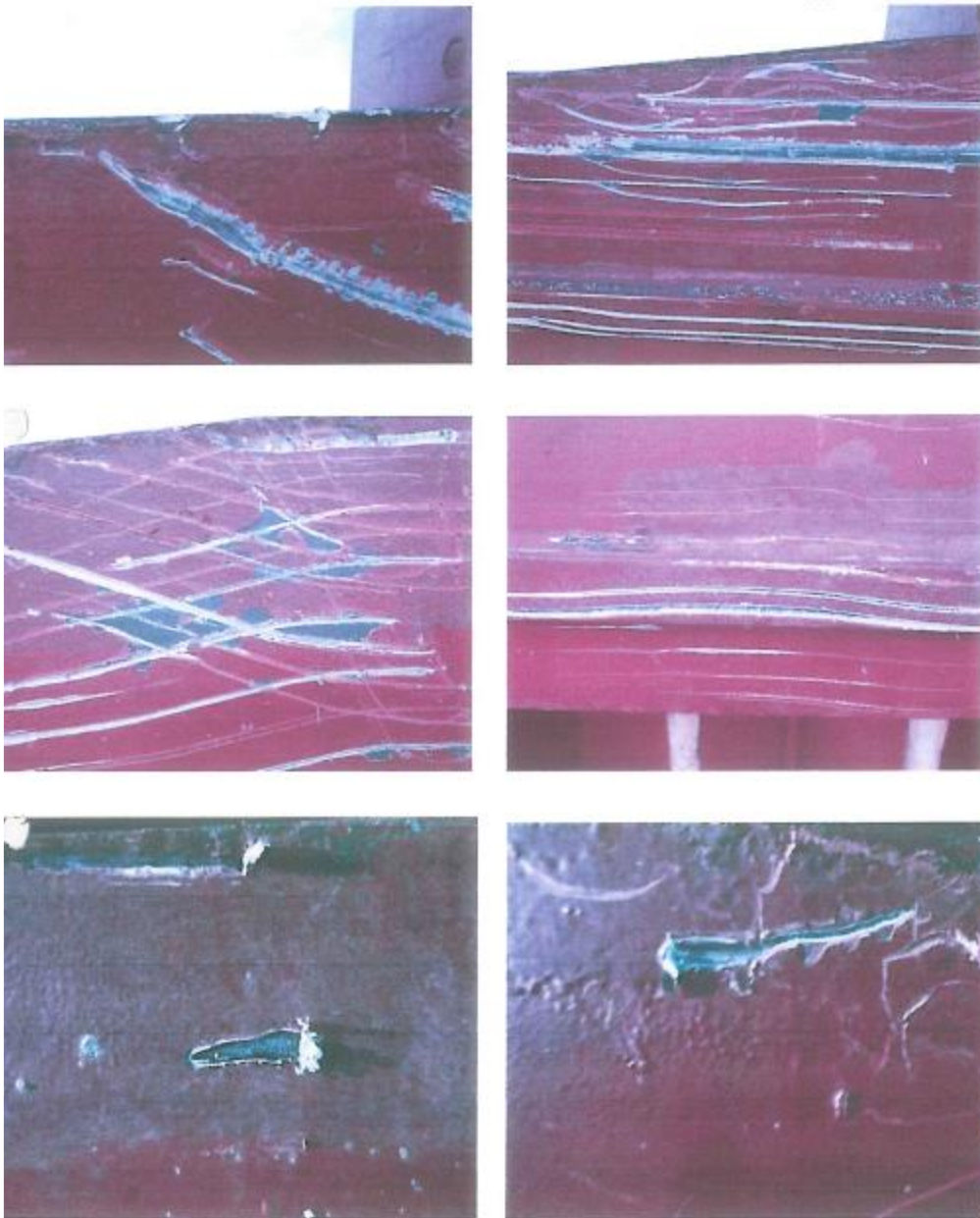


Figure 19: Scratches Caused by Inter Friction of Metals and Damage to Coating

2.3.3 Allegations on Overload Situation

There are 4 deck cranes and they have a lifting capacity of 30 tons at an angle of 20 degrees at a reach of 26 meters (radius). (Figure 20)



Figure 20: Safe Working Load and Radius of Deck Crane No.4 SWL 30t - 26m (20°)

During the accident investigation, the master claimed that the crane operator sometimes lifted loads heavier than the lifting limit in the interview with him. He stated that there was a photograph in the damage report regarding this issue. In the damage reports taken from the vessel, the photograph which is thought to document this issue is shown in Figure 22.



Figure 21: Label showing the properties and weight of one bundle of steel rebars



Figure 22: Photograph of overload situation claimed in the Master's and Chief Officer's interview

Figure 21 shows a label showing the weight and properties of one bundle of steel rebars. This label shows that the theoretical weight of a bundle is 1.362,380 kg.

Figure 22 also contains a photograph in which that the master claimed an overload in his statement. It is considered that in Figure 22 there are 21 or 22 bundles attached to the crane sling. In the case that there are 21 bundles attached to the sling of the crane, $21 \times 1.362.38 \text{ kg} = 28.609.98 \text{ kg}$, in case of 22 bundles, $22 \times 1.362.38 \text{ kg} = 29.972.36 \text{ kg}$ load is lifted. The lifting capacity of the crane is normally 30 tons. In case 21 or 22 bundles are lifted, the normal lifting capacity of the crane is not exceeded.

However, considering the matters explained under the heading 2.3.1 Corrosion; it is possible that the lifting capacity of the wire rope would decrease at the rate of the wear in the case that the rope is corroded and a certain amount of the metallic part is reduced. However, as no measurement or comparison can be made for this matter at this point, no evaluation can be made about how much the lifting capacity of the wire rope may be reduced.

2.4 General Information on Parting Ropes and Inspection Methods

If no corrosion, excessive heat, mechanical or chemical damage is involved, the rope is going to fail in the zone which has been subjected to the greatest amount of fatigue and abrasion. For many applications this means that the most likely zone where a rope failure is going to occur can be predicted. The fatigue distribution along the rope length depends both on the design and the mode of operation of the reeving system.⁸

Wire ropes are very regular machine elements. Any deviation from the regular rope pattern can be used to determine defects resulting from the rope manufacture, from the installation procedure or from rope deterioration during service.⁹

In steel wire ropes manufactured today, however, a great percentage of the metallic area cannot be visually inspected at all. In a rope 36×7 , as an example, the steel core, which cannot be visually inspected, accounts for about 50% of the metallic area (Figure 23). The outer strands make up the remaining 50%. But even here, the centre wires cannot be visually inspected either. They are covered by another layer of wires (Figure 24).

⁸ Wire Rope Technology Aachen/Germany, What can we learn from wire rope failures, R. Verreet, p.4

⁹ Wire Rope Technology Aachen, A new method for detecting wire rope defects, R. Verreet, p. 55-56

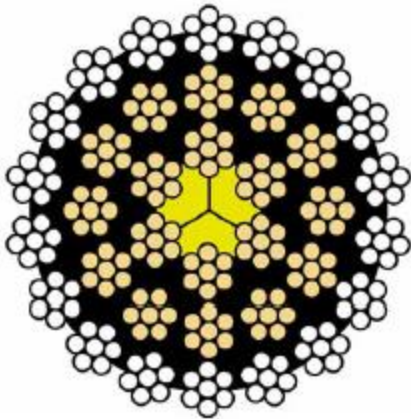


Figure 23: Cross section of a rope 36 × 7
The core, which makes up about 50% of the metallic area of the rope, cannot be visually inspected.

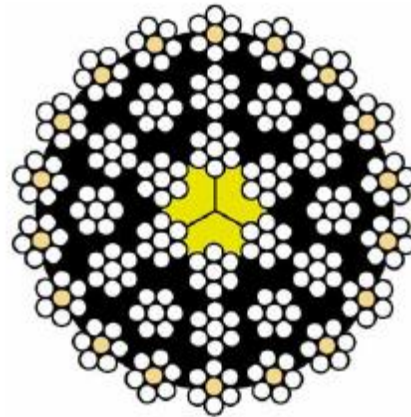


Figure 24: Cross section of a rope 36 × 7
The centre wires of the outer strands, which make up about 10% of the metallic area of the rope, cannot be visually inspected.

The only wires which can be visually inspected are the outer wires of the rope. These represent about 40% of the metallic cross sectional area. But even these wires disappear inside the rope on about half of their lengths, leaving only about 20% of the rope's cross section accessible for a visual inspection (Figure 25).

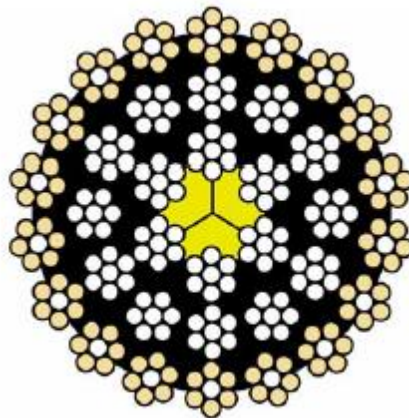


Figure 25: The outer wires, which make up about 40% of the rope, can only be inspected on about half of their lengths

Similar percentages will be obtained for most other ropes with a steel core. Because you can only visually inspect such a small percentage of the steel wire rope cross section, visual rope inspections must be performed with great care. But even then a great uncertainty about the overall condition of the wire rope remains:

Visual rope inspection = **20% evidence + 80% hope**

In order to also gain information about the remaining 80% of the steel wire rope cross section, non destructive (magnetic) test methods have been developed. In many applications, such NDT tests are mandatory and performed at regular intervals, e.g. every 6 months. But what happens in the long period between those NDT tests? Mechanical impact might damage a wire rope one day after the magnetic inspection and create a safety critical rope condition. Therefore, visual wire rope inspections must still be carried out daily.¹⁰

2.5 Inspection of Samples Taken From Parted and Intact Parts of the Wire Rope by Expert Witnesses and Pulling Test

With the instruction of Marmara Ereğlisi Public Prosecutor, 3 parts in total, two parted ends with a length of about 170 cm taken from the parted part of the steel rope and a part with a length of 184 cm taken as a sample from the intact part of the rope, were taken from the vessel by the Police Department officers on the date of 5th of December 2017 at 21:30.

The expert witnesses assigned with the interim decision dated 22nd of January 2019 were given the duty to prepare a report for the technical examination of the parted wire rope in the event of fatal occupational accident at Istanbul Technical University (ITU) Maritime Faculty Marine Equipment Test Center.

¹⁰ Wire Rope Technology Aachen/Germany, A new method for detecting wire rope defects, R. Verreet, p. 55 - 57

The wire ropes sent to the expert witnesses were examined visually and a pulling test was applied to them. Photographs of samples sent are given below.



Figure 26: Delivery of samples and files



Figure 27: A sample piece of 184 cm. which is taken from the intact part of the parted wire rope

Examination on the sample wire showed that the wires on the strands were parted. In order to understand the situation better, the wire rope was cleaned by washing with detergent water. When the clean wire rope was examined, it was seen that interestingly, more than one wire was parted on each strand and there were breaks on the same strand with intervals.



Figure 28: Cleaning of the lubricated wire rope with detergent



Figure 29: Cleaned wire rope



Figure 30: Apparent breaks on the cleaned wire rope



Figure 31: Breaks seen on the lubricated wire rope

In order to examine the breaks on the wire rope, the standard “ISO 4309:2010 Cranes — Wire ropes — Care and maintenance, inspection and discard” was studied and the criteria for the discarding of the wire ropes, i.e., the non-use of wire ropes, are given in the table below.

6.2 Visible broken wires

6.2.1 Criteria for visible broken wires

	Observation	Criteria
2	<i>Localized grouping of wire breaks in sections of rope which do not spool on and off the drum.</i>	<i>If grouping is concentrated in one or two neighbouring strands it might be necessary to discard the rope, even if the number is lower than the values over a length of 6d, which are given in Tables 3 and 4.</i>

In fact, after the wire rope was found to be so damaged, it was concluded that the wire rope should have been out of use according to the standards and that it was evident that it was unreliable, and no pulling test was even necessary. However, pulling tests were also carried out since it was within the scope of the assignment of the esteemed court.

2.5.1 Test Phase

In order to carry out the pulling (tensile) test, the mills of the tensile device must be inserted to both ends of the wire rope and a fixed eye must be made to carry out tensioning. The length of the sample sent is 184 cm and since the wire is very hard/solid, only one end could be eye spliced, thus the other end could be eye spliced by adding a similar wire rope with the same diameter as 184 cm.

Figure 32 shows the fixed eye made on the additional wire rope, and Figure 33 shows the fixed eye made on sample wire rope. When the sample rope was twisted to eye splice, the broken wires were exposed apparently.



Figure 32: Photograph of the additional wire rope



Figure 33: Photograph of the sent sample wire rope (breaks are apparent)

Although there is a tensile device in ITU Maritime Faculty Marine Equipment Test Center, the diameter of the sample did not fit the device, therefore, the test was carried out at the Turkish Standards Institute (TSE) Machine Laboratory.



Figure 34: Test equipment used at TSE



Figure 35: Preparation of the wire rope for the test

In the test carried out at TSE, the breaking load was measured as 467,17 kN, approximately corresponding to 47,64 tons, however, as the wire slipped out of thimble, it was noted in the TSE report that it did not break in accordance with the standard when it got free. As there were many broken wires on the wire rope, many cut wires corresponded under the alloy pressed for making the eye splice (case). As these wires slipped out during tensioning, no uniform parting occurred, but the wire rope eventually parted. The note in the TSE report indicates this condition.

Figure 36 shows that the wire rope parted. It is observed that it is well below the tensile breaking force of a similar wire rope in general.



Figure 36: Section where the wire rope parted at the end of the test

2.5.2 Assessment of the Pulling Test and the Results

Although the tensile breaking force of the sample wire is normally 80-85 tons, the test result was 47,64 tons.

Parted rope yarns on the wire are noticeably detected. As shown in Figure 30, 10 wires are parted on a single strand, and a large number of breaks are detected on the other strands as well. Despite such broken rope yarns, the wire rope parted at 47,64 tons. An estimation could be done about how strong the wire rope would be if there were no breaks.

Examination on the sample wire rope shows that tens of rope yarns are parted. If a part of the wire rope has so many breaks, it is concluded that there are a large number of cuts on the entire wire rope.

Because the crane wire ropes are expensive, they are not immediately thrown away/discarded due to a wire rupture at its end, they can be cut from the place that the wire parted and can be used again by eye splicing. Furthermore, the part of the wire rope wrapped around the drum, which is never used, can be taken forward and the part in front can be taken in drum and therefore, the life of the wire rope can be extended by using them equally.

The SWL of each material, i.e., the Safe Working Load, is different from the test load or test force. If the tensile breaking force of a wire is 10 tons, the working load is not 10 tons, it may be 3 tons. The ratio between is the safety factor. The safety factor depends on where the material is to be used, and thus on its impact on life safety. The safety factor of a wire used to open a door may be 2, but the safety factor of the same wire may be 5 if it is used in a scaffold winch in which people work. In other words, the wire with a tensile breaking force of 10 tons can be used for opening a 5-ton door, while a maximum 2-ton scaffold can be hung on the same wire. As can be seen from this example, the safety factor of the aforementioned wire rope in the crane, whose SWL is 30 tons, should be at least 3. In other words, the wire should have had a strength that shall not part even under load of 80-85 tons. Parting of the wire rope at 23 or 30 tons shows that the wire rope is worn too much and it fell far below the safety factor.

The fact that 25-30 wires are broken within one-turn length on adjacent strands on the sample wire rope, and that these breaks continue at intervals along the entire wire rope indicate that the wire rope is worn to a level that it definitely can not be used.

2.6 Evaluation Regarding the Cargo Lifting Equipment

The statutory demands for cargo handling gear are laid down in the ILO-convention 152 (International Labour Organisation). Conformity to these regulations are under the supervision of Flag State and Classification Societies.¹¹

¹¹ Ship Knowledge – Ship Design, Construction and Operation, 7th Edition, p. 199

Furthermore, in addition to the Convention, ILO also has a Occupational Safety and Health (Dock Work) Recommendation dated 1979 and with No.160. As ClassNK is the classification society of the CAPE HENRY, the rules for cargo handling appliances of the classification society also apply.

According to the general requirements rule 6.1.2 of Section 6 loose gear of 2017 version of the cargo handling appliances rules of ClassNK; it is stipulated that: "When the safe working load is applied to the cargo gear, the load that will occur in the important parts of the loose/release equipment and the ropes shall not exceed the determined safe working load".

Considering the available data in the accident investigation, it is considered that the weight of the load lifted by the crane did not exceed the safe working load (SWL). In section 6.3.1 wire ropes of the same rules, the requirements to which wire ropes must comply are listed. In paragraph 1, it is stipulated that it is necessary that the wire ropes are subjected to a suitable corrosion preventive treatment. However, when the parted wire rope was examined after the accident, it is considered that maintenance - inspection could not be carried out in compliance with this rule.

2.7 Fatigue

Considering the working routine of the worker, who lost his life in the accident, his workmate inside the hold and the crane operator, it is considered that fatigue is not among the factors causing the accident.

SECTION 3 – CONCLUSIONS

The safety issues regarding the occurrence of the accident are listed below:

1. When the maintenance and inspection records of the deck equipment of the vessel is examined, it can not be said that an effective maintenance was carried out although the greasing and the other maintenance procedures of the wire rope of deck crane No. 4 are carried out on time.
2. When the parted wire rope was examined after the accident, the main reason that caused the wire rope to part is that the wire rope was exposed to corrosion.
3. During the cargo maneuvering, extra tensions occurred on the wire rope because the cargo and the wire rope hit the hatch coaming from time to time and thus the structural integrity of the wire rope was damaged.
4. The safe lifting weight of crane No. 4 was 30 tons when the ship was put into service. This value was reduced to 20 tons due to subsequent damages. In the survey held on the date of 2 November 2017, the safe lifting weight of crane No. 4 was increased again to 30 tons and a test load of 35 tons was applied and a test and detailed inspection certificate was issued regarding the repair.
5. The crane No. 4 did not lift a load heavier than the safe working load (SWL) according to the currently available data within the scope of the accident investigation.
6. Although the safe lifting weight of crane No. 4 was determined as 30 tons in the survey carried out on 2nd of November 2017 and the certificate was issued by applying 35-ton test load, the fact that the accident occurred on 5th of December 2017, a short period of time after certification and survey, caused a difficulty for the general evaluation of the accident.
7. When loading with the crane of the vessel, as a general safety rule, it is essential that workers do not stand under the load. However, it is not fully understood whether the worker, who lost his life in the accident, was under the load or at a distance from the projection of the load.

SECTION 4 – ACTIONS TAKEN

4.1 By the Classification Society of the Vessel (ClassNK)

After sharing the draft marine safety investigation report with ClassNK Istanbul Office, Head Office Survey Department circulated the draft marine safety investigation report and reminded their related Rules to all Branch Offices & to other Head Office Departments on 10 January 2020 in order to refresh the knowledge / awareness of all Surveyors on the cautionary points of survey on Cargo Handling Appliances and also reminded that full length of wire ropes are to be thoroughly examined at Cargo Handling Gear (CHG) Annual Thorough Survey (ATS) and Non Destructive Test (NDT) may be required for the structural members as found necessary, as a preventive measure.

Additionally, ClassNK Istanbul Office also internally circulated the draft marine safety investigation report and reminded their related Rules to their Surveyors on 14 January 2020 in order to refresh their knowledge / awareness on the cautionary points of survey on Cargo Handling Appliances and also reminded that full length of wire ropes are to be thoroughly examined at Cargo Handling Gear (CHG) Annual Thorough Survey (ATS) and Non Destructive Test (NDT) may be required for the structural members as found necessary, as a preventive measure.

4.2 By the Port Manager Company (Martaş Marmara Ereğlisi Port Facilities)

After the accident, the ship's cargo gear information exchange form in Annex-8 with the document No. ML-FR-420 was issued by the Port of Martaş on 9th of March 2018 and if the vessel's crane is to be used in loading/unloading operations, an agreement shall be reached with the vessel before the operation.

Martaş Port has tightened the inspections of all vessel loading/unloading equipment to ensure whether they have an adequate maintenance and valid certificates, and also visually inspect the wire ropes before starting the operation.

SECTION 5 – RECOMMENDATIONS

In view of the conclusions reached and taking into consideration the safety actions taken during the course of the safety investigation,

5.1 The Port Manager Company (Martaş Marmara Ereğlisi Port Facilities)

is recommended to:

- 3/02-20** Provide orientation training to the personnel involved in the cargo operations, including especially the potential hazards of the cargo operations, and raise awareness by equipping the operation areas with warning signs,
- 4/02-20** Equip the personnel in charge of cargo operations with the necessary equipment to increase the communication and coordination between them.

5.2 The Ship Manager Company (Minamoto Kisen Corp. Ltd.)

is recommended to:

- 5/02-20** Review the provisions of Vessel Safety Manual and revise the related ones as appropriate in order to effectively carry out operations such as maintenance, greasing, replacement, etc. of the loading equipment of vessels in their fleets,
- 6/02-20** Consider the slip and cut policy for the most corroded part of the wire rope (for example, the part in the crane jib when the crane is in the waiting position) and remove this part of the rope periodically.

[illegible]

ANNEX-2



CERTIFICADO RELATIVO A LA DOTACION MINIMA

No. **MCURSTC**

DE SEGURIDAD

MINIMUM SAFE MANNING CERTIFICATE

Expedido en virtud de las disposiciones de la regla V/14 del
Issued under the provisions of regulation V/14 of theCONVENIO INTERNACIONAL PARA LA SEGURIDAD DE LA VIDA HUMANA EN EL MAR, 1974, enmendado
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as amended

REPUBLICA DE PANAMA

Republic of Panama

Autoridad Marítima de Panamá
PANAMA MARITIME AUTHORITYNombre del Buque: **CAPE HENRY**

Name of ship

Número IMO: **9548879**

IMO No.

Puerto de Matrícula: **PANAMA**

Port of registry

Letras de Radio: **3FTN3**

Call Sign

Nacional: **0.00**

National Code / Tonnage

Potencia (KW): **8890**

Propulsion (KW)

Arqueo Bruto (Convenio **31538**

International 1969):

International Tonnage Convention,
1969Tipo de Buque: **BULK CARRIER**

Type of Ship

Espacio de Máquinas sin dotación Permanente: **YES/SI**
Permanently unattended machinery spaceCompañía que explota el Buque: **MINAMOTO KISEN CORPORATION LIMITED**
Operating Company

Zona de Navegación (Trading area):

WORLDWIDE TRADE

Se considera que el buque cuyo nombre figura en el presente certificado tiene la dotación de seguridad adecuada si, al hacerse a la mar, lleva a bordo como mínimo el número de personas con las categorías o cargos indicados en el cuadro siguiente:

The ship named in this document is considered to be safely manned if, when it proceeds to sea, it carries not less than the number and grades/categories of personnel specified in the table(s) below.

Categoría/Cargo Grade/Category	Título (Regla del Convenio de Formación STCW) Certificate (STCW regulation)	Número de Personas Number of Persons
Master	II/2	ONE (1)
Chief Mate	III/2	ONE (1)
Deck Officer	III/3	ONE (1)
A.B. Seamen	III/4	THREE (3)
Ordinary Seamen	VI/1	TWO (2)
Chief Engineer	III/2	ONE (1)
2nd Engineer	III/2	ONE (1)
Eng. Officer	III/3	**ONE (1)
Officer/Motorman	III/4	**THREE(3)

REQUISITOS O CONDICIONES ESPECIALES:

Special requirements or Conditions:

Ships carrying 100 or more persons and ordinary engaged on international voyages of more than three (3) days duration shall carry a qualified medical doctor according to MLC 2006 A4.1.4(1).

Ships carrying ten (10) or more persons shall require a fully qualified cook according to MLC 2006 A3.2.5

Watchkeeping Deck Officers are required to have the appropriate GMDSS Radio Operator Certificate General or Restricted, depending upon the ship's intended Sea Area of operation.

While the vessel holds an Unattended Machinery Space Certificate (UMS) issued by a Recognized Organization, the Engineer Officer and one Officer/Motorman may be dispensed with.

Expedido en **SEGUMAR - PANAMA**
Issued atel **November 21, 2013**
on the

ENG. ROBERTO FONG
 TECHNICAL OFFICER

ENG. RINA BERROCAL
 SENIOR TECHNICAL OFFICER

ANNEX-3

Form D31
(Published 2005)

ClassNK

**REGISTER OF SHIP'S LIFTING APPLIANCES
AND
ITEMS OF LOOSE GEAR**

NAME OF SHIP CAPE HENRY

Official Number 44947-KJ

Call Sign 3FTN3

Port of Registry Panama

Name of Owner BASIC ETERNITY LINE S.A.

Register Number (Class Number) 133308

Date of Issue 18 June 2008

Issued by Nippon Kaiji






Signature and Stamp [Signature]

The tests, examinations and inspections indicated in this Register are based on the requirements of
ILO Convention No. 152, Recommendation No. 160 and
the Rules for Cargo Lifting Appliances of NIPPON KAIJI KYOKAI.

Note: This Register is the assigned international form as recommended by the International Labour Office

ClassNK

PART I - Thorough examination of lifting appliances and loose gear

(1) Situation and description of lifting appliances and loose gear (with distinguishing numbers or marks, if any) which have been thoroughly examined (see Note 1)	(2) Certificate Numbers	(3) Examination performed (see Note 2)	(4) I certify that on the date to which I have appended my signature, the gear shown in column (1) was thoroughly examined and no defects affecting its safe working condition were found other than those shown in column (5) (Date and Signature)	(5) Remarks (To be dated and signed)
All lifting appliances and loose gear	13HS0022CG3 13HS0022CG4 13HS0022CG5	Initial	18 June 2013 JG.  Surveyor to NK Hiroshima	Test certificate has been issued.
All lifting appliances and loose gear	13HS0022CG3 14IT-0244CG3	Annual thorough	20 May 2014  Surveyor to NK Itohake	No. 4 Crane have concealed from certificate. New certificate have issued.
All lifting appliances and loose gear	15PS0368CG3	Five yearly	13 August 2015  Surveyor to NK BUSAN	Test certificate has been issued.
All lifting appliances and loose gear	15PS0368CG3 13HS0022CG4	12 Monthly	13 August 2015  Surveyor to NK BUSAN	
All lifting appliances and loose gear	15PS0268CG3 13HS0022CG4	12 Monthly	06 SEP 2016  Surveyor to NK	-NIL-

Note 1: If all lifting appliances are thoroughly examined on the same date it will be sufficient to enter in column (4) "All lifting appliances and loose gear". If not, the parts which have been thoroughly examined on the dates stated must be clearly indicated.

Note 2: Thorough examinations to be indicated in column (3) include: (a) Initial (b) 12 monthly (c) Five yearly (d) Repair/damage (e) Other thorough examinations including those associated with heat treatment.

ClassNK

PART I – Thorough examination of lifting appliances and loose gear

(1) Situation and description of lifting appliances and loose gear (with distinguishing numbers or marks, if any) which have been thoroughly examined. (see Note 1)	(2) Certificate Numbers	(3) Examination performed (see Note 2)	(4) I certify that on the date to which I have appended my signature, the gear shown in column (1) was thoroughly examined and no defects affecting its safe working condition were found other than those shown in column (5) (Date and Signature)	(5) Remarks (To be dated and signed)
All lifting appliances and loose gear except PK Crane for No. 4 Hatch for No. 5 Hatch for Keel Remarks	KPSO-0368CG3 13HSCGZCG4/KS	12 monthly	10 September 2017 <i>C.R. Raman</i> NK NOLA Mobile AL USA C.R. Raman DSEP 2017	PK Crane for No. 4 Hatch off No. 5 Hatch as fuel filler is suspended with it at bridge port and load tested.
DECK CRANE FOR NO. 4 HATCHWAY (LEFT CENTER) OR NO. 5 HATCHWAY (RIGHT CENTER)	17BC-037CG3	12 MONTHLY REPAIR	2 NOVEMBER 2017 <i>[Signature]</i> EYES FOR TO ME BOARDS	TEST CERTIFICATE HAS BEEN ISSUED 2 NOVEMBER 2017 <i>[Signature]</i> SUBMITTED TO MR. NC 8

Note : If all lifting appliances are thoroughly examined on the same date it will be sufficient to enter in column (3) "All lifting appliances and loose gear". If not, the parts which have been thoroughly examined on the dates stated must be clearly indicated.

Note 2 :
which have been thoroughly examined, on the other hand those in which thorough examinations including those associated with heat treatment,
(a) Five yearly (b) 12 monthly (c) Repair/damage
(d) Other thorough examinations including those associated with heat treatment.

ANNEX-4

Test Certificate No. 13HS-0022CG3

Form No CG-3



NIPPON KAIJI KYOKAI

CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF CRANES OR
HOISTS AND THEIR ACCESSORY GEAR,
BEFORE BEING TAKEN INTO USE* ~~EVERY FIVE YEARS~~
~~AFTER ALTERATIONS / REPLACES / REPAIRS~~

Name and Official Number of Ship on which Machinery is fitted CAPE HENRY 44747-KJ
Port of Registry Panama Call Sign 3FTN3
Name and Address of Owner BASIC ETERNITY LINE S.A., Banco General Building, 16th Floor,
Aguilón de la Guayula Street, Marbella, Panama City, Republic of Panama
Classification Number 133308 IMO Number 9648878

(1) Situation and description of crane or hoist (with distinguishing number or mark if any) which have been tested and thoroughly examined	(2) For jib crane radius at which the test load was applied (meters)	(3) Test load applied (tons)	(4) Safe working load (tons)	(5) Allowable maximum stress for jib crane (megapascals)	(6) Remark
Deck Crane for No.1 Hatchway (aft., center) or No.2 Hatchway (fore, center)	28	35	30	28	
Deck Crane for No.2 Hatchway (aft., center) or No.3 Hatchway (fore, center)	28	35	30	28	
Deck Crane for No.3 Hatchway (aft., center) or No.4 Hatchway (fore, center)	28	35	30	28	
Deck Crane for No.4 Hatchway (aft., center) or No.5 Hatchway (fore, center)	28	35	30	28	
General Use Crane at Fr. No.14 (p.side)	8.83	0.5	2.0	8.83	
— The End — Load tests by movable weight					

Name of association witnessed testing and carried out making thorough examination: Nippon Kaiji Kyokai

Position of signatory in association:

Surveyor to Nippon Kaiji Kyokai

I certify that on the 18th day of June, 2013, the above gear shown in column (1) was tested and thoroughly
examined and no defects or permanent deformation were found; and that the safe working loads as shown above column (4).

The 18th day of June, 2013

Surveyor to Nippon Kaiji Kyokai

Port

Hiroshima

*: Delete as appropriate.



INSTRUCTIONS

1. Every crane and other hoisting machine, with its accessory gear, shall be tested with a test load which shall exceed the safe working load as follows :

SAFE WORKING LOAD	TEST LOAD
Up to 20 tons -----	25 percent in excess
20-50 tons -----	5 tons in excess
50-100 tons -----	10 percent in excess
Over 100 tons -----	As specified by the Society

2. The test load is to be hoisted, slewed and luffed at slow speed. Gantry and travelling cranes together with their trolleys, where appropriate, are to be traversed and travelled over the full length of their track.
 - 2.1 In case of variable load-radius cranes, the tests are generally to be carried out with the appropriate test load at maximum, minimum and at an intermediate radius.
 - 2.2 In the case of hydraulic cranes where limitations of pressure make it possible to lift a test load 25 per cent in excess of the safe working load, it will be sufficient to lift the greatest possible load, but in general this should not be less than 10 per cent in excess of the safe working load.
3. As a general rule, tests should be carried out using test loads, and no exemption should be allowed in the case of initial tests. In the case of repairs, replacement or when the periodic examination calls for re-test, consideration may be given to the use of spring or hydraulic balances provided the SWL of the lifting appliance does not exceed 15 tons. Where a spring or hydraulic balance is used it shall be calibrated and accurate to within ± 2 percent and the indicator should remain constant for 5 minutes.
 - 3.1 If test weights are not used this is to be indicated in column (3).
4. The expression "ton" shall mean a ton of 1,000 kg.
5. The terms "competent person", "thorough examination" and "lifting appliance" are defined in Form CG 1.

Note: For recommendations on test procedures reference may be made to the ILO document Safety and Health in Dock Work.

Test Certificate No. 13HS-0022CG4

Form No.CG.4

**NIPPON KAIJI KYOKAI**

CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF LOOSE GEAR
(CHAINS, RINGS, HOOKS, SHACKLES, SWIVELS, BLOCKS ETC.),
BEFORE BEING TAKEN INTO USE, AND OF SUCH GEAR

AFTER IT HAS BEEN LENGTHENED, ALTERED OR REPAIRED

Name and Official Number of Ship
on which Machinery is fitted

CAPE HENRY44747-KJ

Port of Registry

Panama

Call sign

3FTN3

Name and Address of Owner

BASIC ETERNITY LINE S.A. ,
Banco General Building, 15th Floor, Aquilino de la Guardia Street,
Marbella, Panama City, Republic of Panama

Classification Number

133308

IMO Number

9648879

(1) Distinguishing number or mark	(2) Description of loose gear*	(3) Number tested	(4) Date of test	(5) Test load applied (tons)	(6) Safe working load (tons)
	<p>See the attached certificates; Certificates Numbers are as follows, No. 6341-748-1 No. 12491</p> <p style="text-align: center;">-- The End --</p>				

* The dimension of the gear, the type of which it is made and, where applicable, the heat treatment received in manufacturer should be stated.

Name and address of makers or suppliers

Name and address of public service, association,
company or firm making the test and examination

Position and signature of competent person in
public service, association, company or firm

See the attached certificates;
Certificates Numbers are as follows,
No. 6341-748-1
No. 12491

I certify that on the 18th day of June, 2013, the above gear was tested and examined by a competent person
in the manner set forth on the reverse side of this certificate; that the examination showed that the gear withstood the proof load without injury
or deformation; and that the safe working load on this gear is as shown in column (6).

The 18th day of June, 2013

19
Surveyor to Nippon Kaiji Kyokai
Port Hiroshima

2-1)-2

Test Certificate No. <u>6341-748-1</u>		Form CHG-4			
CERTIFICATE OF TEST AND EXAMINATION OF CHAINS, RINGS, HOOKS, SHACKLES, SWIVELS AND PULLEY BLOCKS					
This certificate when properly executed by a competent person is accepted by the Government of the United States of America as being in accordance with the requirements of 46 CFR Part 91 and 29 CFR 1918.12(a).					
(1) Distinguishing number or mark (if any)	(2) Description of gear*	(3) Number tested	(4) Date of test	(5) Proof load applied (tons)	(6) Safe working load (tons)
T060-1 to T063-1	30T Moving Sheave Blocks	4	05-01-13	600KN	150KN
T060-2 to T063-2	SB70 Shackles	4	05-01-13	600KN	300KN
T060-3 to T063-3	SB70 Shackles	4	05-01-13	600KN	300KN
T060-4 to T063-4	30T type Hooks	4	05-01-13	600KN	300KN

* The dimension of the gear, the type of material of which it is made (indicating the carbon content of the steel made of steel) and, where applicable, the heat treatment received in manufacture should be stated (unless Form CHG-4 is used for the purpose).

(7) Name and address of maker or supplier Toyo Dennetsu Kogyo Co., Ltd
4835-24 Takasu-Cho Onomichi-City, Hiroshima, Japan.

(8) Name and address of public service, association, company or firm making the test and examination
Changshu Xinghua Ship Equipme Co., Ltd Liyuan Industrial
Park, Bixitown, Changshu City, Jiangsu Province, China.

(9) Position of signatory in public service, association, company or firm Chief Inspector of
Toyo Dennetsu Kogyo Co., Ltd

I certify that on the 5th day of January, 2013, the above gear was tested and examined by a competent person in the manner set forth on the reverse side of this certificate; that the examination showed that the said gear withstood the proof load without injury or deformation; and that the safe working load of the said gear is as shown in Column 6.


(Signature) Y. Ishihara
Y. Ishihara

(Date) 5th January, 2013.

NOTE: For the purpose of this certificate a competent person is defined as a Surveyor of a Classification Society or a responsible and technically qualified employee of the manufacturer of the gear certificated or of a recognized testing laboratory or company.

In substantial agreement with I. L. O. Form No. 4

2-1)-4

Test Certificate No. <u>12491</u>		Form CHG-4			
CERTIFICATE OF TEST AND EXAMINATION OF CHAINS, RINGS, HOOKS, SHACKLES, SWIVELS, AND PULLEY BLOCKS					
This certificate when properly executed by a competent person is accepted by the Government of the United States of America as being in accordance with the requirements of 46 CFR Part 91 and 29 CFR 1918.12(a).					
(1) Distinguishing number or mark (if any)	(2) Description of gear*	(3) Number tested	(4) Date of test	(5) Proof load applied (tons)	(6) Safe working load (tons)
12427-1	205mm DIA. Steel single sheave block W/O becket and with ball bearing	1	29 November, '12	5.6	1.4
12427-2	Steel cargo hook	1	29 November, '12	5.6	2.8
*The dimension of the gear, the type of material of which it is made (indicating the carbon content of the gear made of steel) and where applicable, the heat treatment received in manufacture should be stated (unless Form CHG-6 is used for the purpose).					
(7) Name and address of maker or supplier		MANSEI inc. 1575-17, Houjyouji Ekiya-Cho, Fukuyama-City, Hiroshima, 720-2413, Japan			
(8) Name and address of public service, association, company or firm making the test and examination		MANSEI inc. 1575-17, Houjyouji Ekiya-Cho, Fukuyama-City, Hiroshima, 720-2413, Japan			
(9) Position of signatory in public service, association, company or firm		Inspection Section 			
I certify that on the <u>29th</u> day of <u>November</u> 20 <u>12</u> , the above gear was tested and examined by a competent person in the manner set forth on the reverse side of this certificate; that the examination showed that the said gear withstood the proof load without injury or deformation; and that the safe working load of the said gear is as shown in Column 6.					
		Signature: <u>T. Utsumi</u> T. UTSUMI			
Date: <u>29th November, 2012</u>					
Note: For the purpose of this certificate a competent person is defined as a Surveyor of Classification Society or a responsible and technically qualified employee of the manufacturer of the gear certificated or of a recognized testing laboratory or company.					
In substantial agreement with LL.O. Form No.4					

Test Certificate No. 13HS-0022CG5

Form No.CG.5

**NIPPON KAIJI KYOKAI****CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF WIRE ROPE
BEFORE BEING TAKEN INTO USE**Name and Official Number of Ship
on which Machinery is fittedCAPE HENRY44747-KJ

Port of Registry

Panama

Call sign

3FTN3

Name and Address of Owner

BASIC ETERNITY LINE S.A. ,
Banco General Building, 15th Floor, Aquilino de la Guardia Street,
Marbella, Panama City, Republic of Panama

Classification Number

133308

IMO Number

9648879

Name and address of maker or supplier of rope

Nominal Diameter of rope (mm)

Number of strands

Number or wires per strand

Lay

Quality of wire

Date of test of sample of rope

Load at which sample broken (tons)

Safe working load, (tons)
subject to any stated qualifying conditions,
such as minimum pulley diameter, direct
tensile load, etc.

See the attached certificates;
Certificate Numbers are as follows,
No. RP12KB-01003KK
No. RP12KB-01004KK

Name and address of public service, association, company
or firm making the examination and testPosition and signature of competent person in public
service, association, company or firm

I certify that the above particulars are correct, and that the thorough examination and test was carried out
by a competent person.

The 18th day of June, 2013

Surveyor to Nippon Kaiji Kyokai

Port Hiroshima

ClassNKCRANE NO. 4 FITTED 15.10.2015
NIPPON KAIJI KYOKAI

Certificate No. : RP15PS03906-2

Date : 11 May 2015

CERTIFICATE
For
ONE(1) REEL OF STEEL WIRE ROPE

THIS IS TO CERTIFY that the undersigned Surveyor to Nippon Kaiji Kyokai did at the request of the applicant, did attend the testing and examination of the product(s) described below in accordance with the applicable rules/standards and found it/them satisfactory.

Manufacturer	: MANHO ROPE & WIRE LTD.
Place of Manufacturer	: (Songjeong-dong), 71, Noksanhwajeon-ro, Gangseo-gu, Busan, KOREA
Applicant	: MANHO ROPE & WIRE LTD.
Place of Inspection	: Busan, Korea
Intended for	: Stock
First Date of Inspection	: 11 May 2015
Final Date of Inspection	: 11 May 2015
Rules/Standards Applied	: The relevant requirements of the Manufacturer's Specification
Order No.	: —
Total set(s) of Product	: 1

Particulars

Kind	: Galvanized Steel Wire Rope
Composition	: 4 strands x SeS(39) wires - FC
Nominal diameter	: 33.5 mm
Nominal length	: 262 m
Weight	: 1,218 kg
Breaking test load	: 808 kN (Actual : 818 kN)
Reel Number	: 2

Test and Inspection

Breaking test	: Good
Wrapping and Unwrapping test	: Good
Twisting test	: Good
Visual inspection	: Good

Identification Mark

For identification, the product(s) was/were stamped:

NK 1616 P 2

Surveyor,
Office:



ClassNK

Form CLF
12.11

Class No.	133308
Record No.	14IT0244

Ship's Name:	CAPE HENRY	IMO No.:	9648879
Flag:	PANAMA	Registered GT:	31,538
Official No.:	44747-KJ		
Place of Survey:	ISKENDERUN	At sea	
Date of First Visit:	19 May 2014	Date of Last Visit:	20 May 2014

Class Surveys ;

Annual Survey

Continuous Machinery Survey (CMS)

Installation Surveys :

Automatic and Remote Control System Annual Survey

CHG Annual Thorough Survey

CHG Occasional Survey

CHG Load Test (For details refer to Form CHG)

Statutory Surveys ;

Load Line Certificate Annual Survey

Safety Construction Certificate Annual Survey

Safety Equipment Certificate Annual Survey

Safety Radio Certificate Periodical Survey

IOPP Certificate (MARPOL Annex I) Annual Survey

IAPP Certificate (MARPOL Annex VI) Annual Survey

Anniversary Date of Class Surveys; 17 Jun

The undersigned have carried out the above surveys in accordance with the Rules and found the ship to be fit to maintain her class subject to observance of the outstanding recommendations as noted below.

Outstanding Recommendations: **See the attached Form ATT**

Note: Nil

Information; Nil

() () (D.YAVUZ
Surveyor to Nippon Kaiji Kyokai Istanbul Office



ClassNKNIPPON KAIJI KYOKAI
Attachment to Survey RecordForm ATT
06.01

Class No.	133308
Record No.	14IT0244
Sheet No.	ATT 1 / 1

Class

NIL

Installation

Recommendation (Installation); Newly set out

Permanent repair for Deck Crane No.4 to be done by 20 May 2015

(Set out on 20 May 2014 at Istanbul)

(DueDate: 20 May 2015)

Statutory

NIL

ClassNK**NIPPON KAIJI KYOKAI**Form CLB
11.02**Survey Record****(Blank Form for Free Writing)**

Class No.	133308
Record No.	14IT0244
Sheet No.	CLB 1/1

- ☐ Class Maintenance
 ☒ Installations
 ☒ Statutory
 ☐ Others
- ☐ PSC

(Check boxes are to be filled as applicable. Descriptions for each article are to be made in detail as far as possible in the blank space below. Each article should be described with proper Heading.)

At the request of owner; Annual survey, Continuous machinery survey, Automatic and remote control system annual survey, CHG annual through survey, CHG occasional survey, CHG load test, Load line certificate annual survey, Safety construction certificate, Safety equipment certificate annual survey, Safety radio certificate periodical survey, IOPP certificate annual survey, IAPP certificate annual survey have been carried out at Iskenderun on 20 May 2014.

CHG (ATS):

Following items have been dispensed after satisfactory result of examinations.

- Checking of plate thickness of the structural members, non-destructive testing and open-up examinations of the bearings
- Open-up examinations of the driving gears

CHG Occasional Survey :

Temporarily repairing with doubling plate have done for stevedore damage on Deck Crane No : 4 boom .Load test have carried out to 25 tons. SWL have reduced 20 tons with SVD Imabari instruction. Following recommendation have set out :

- Permanent repair for Deck Crane No.4 to be done by 20 May 2015.
(Set out at Istanbul on 20 May 2014.)

SE

1- Annual thorough examination of lifeboat, rescue boat, launching appliances were conducted by company 'ONURSAN' and the statement were issued.

2- VDR annual performance test was carried out by manufacturer authorized service company with satisfactory results.

SR

- 1- Annual test of AIS and EPIRB carried out this time with satisfactory results by approved service company.

IMSBC:

-As a result of survey, it was confirmed that the ship complied with IMSBC code (2012 edition)

---The End---

Form No. CG-3



CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF CRANES OR
HOISTS AND THEIR ACCESSORY GEAR,
BEFORE BEING TAKEN INTO USE* / EVERY FIVE YEARS*
AFTER ALTERATIONS* / REPLACES* / REPAIRS*.

IMO Number 9648879

(1) Situation and description of crane or hoist (with distinguishing number or mark if any) which have been tested and thoroughly examined	(2) For jib crane radius at which the test load was applied	(3) Test load applied	(4) Safe working load	(5) Allowable maximum radius for jib crane	(6) Remark
Deck Crane for No:4 Hatchway(aft,center)or No: 5 Hatchway (fore,center) —The End— Load tests by movable weight.	(meters) 26	(tons) 25	(tons) 20	(meters) 26	Outstanding Recomm.

Surveys to Nilgiri Kalliyadi

* : Delete as appropriate.

INSTRUCTIONS

1. Every crane and other hoisting machine, with its accessory gear, shall be tested with a test load which shall exceed the safe working load as follows:

SAFE WORKING LOAD	TEST LOAD
Up to 20 tons	25 percent in excess
20-50 tons	5 tons in excess
50-100 tons	10 percent in excess
Over 100 tons	As specified by the Society

2. The test load is to be hoisted, slewed and luffed at slow speed. Gantry and travelling cranes together with their trolleys, where appropriate, are to be traversed and travelled over the full length of their track.
 - 2.1 In case of variable load-radius cranes, the tests are generally to be carried out with the appropriate test load at maximum, minimum and at an intermediate radius.
 - 2.2 In the case of hydraulic cranes where limitations of pressure make it possible to lift a test load 25 percent in excess of the safe working load, it will be sufficient to lift the greatest possible load, but in general this should not be less than 10 percent in excess of the safe working load.
3. As a general rule, tests should be carried out using test loads, and no exemption should be allowed in the case of initial tests. In the case of repairs, replacement or when the periodic examination calls for re-test, consideration may be given to the use of spring or hydraulic balances, provided that the SWL of the lifting appliance does not exceed 15 tons. Where a spring or hydraulic balance is used it shall be calibrated and accurate to within ± 2 percent and the indicator should remain constant for 5 minutes.
 - 3.1 If test weights are not used, this is to be indicated in column (3).
4. The expression "ton" shall mean a ton of 1,000 kg.
5. The terms "competent person", "thorough examination" and "lifting appliance" are defined in Form CG 1.

Note: For recommendations on test procedures, reference may be made to the ILO document Safety and Health in Dock Work.

Outstanding Recommendation : Permanent repair to be done by 20 May 2015.

ANNEX-6

ClassNK

NIPPON KAIJI KYOKAI

Form CLF
12.11

Survey Record

Class No.	133308
Record No.	17NL0249

Ship's Name:	CAPE HENRY	IMO No.:	9648879
Flag:	PANAMA	Registered GT:	31,538
Official No.:	45208-13		
Place of Survey:	Mobile, AL, USA	Afloat	
Date of First Visit:	01 Sep 2017	Date of Last Visit:	10 Sep 2017

The following survey(s) were carried out;

Class Surveys;

Annual Survey**Occasional Survey**

Installation Surveys;

Automatic and Remote Control System Annual Survey**CHG Annual Thorough Survey**

Statutory Surveys;

Load Line Certificate Annual Survey**Safety Construction Certificate Annual Survey****Safety Equipment Certificate Annual Survey****Safety Radio Certificate Periodical Survey****IAPP Certificate (MARPOL Annex VI) Annual Survey**Anniversary Date of Class Surveys; **06 Sep**

The undersigned have carried out the above surveys in accordance with the Rules and found the ship to be fit to maintain her class subject to observance of the outstanding recommendations as noted below.

Outstanding Recommendations; **See the attached Form ATT**Notes; **See the attached Form ATT**Information; **NII***C.R. Riemer*

() () (**C.R. RIEMER**)
 Surveyor to Nippon Kaiji Kyokai **New Orleans** Office

ClassNK**NIPPON KAIJI KYOKAI**Form ATT
06.01

Attachment to Survey Record

Class No.	133308
Record No.	17NL0249
Sheet No.	ATT 1 / 1

Class

Nil

Installation**Note(Installation); Newly set out**

Deck Crane for No4 Hatch aft/No5 Hatch fwd use is suspended until permanent repair of Jib and Load Test.

(Set out on 10 Sep 2017 at New Orleans)
(DueDate:)**Statutory****Recommendation(Statutory); Newly set out**

Freefall Lifeboat recovery davit winch, hydraulic hose to be renewed and Annual Inspection completed at next port, Houston, TX., USA no later than 9 Oct 2017; in accordance with Panamanian Maritime Author. Authorization, ref: RCH/09/17/038 of 10 Sep/ 2017.

(Set out on 10 Sep 2017 at New Orleans)
(DueDate: 09 Oct 2017)**Note(Statutory); Remain unchanged**IOPP certificate was issued based on the date of completion of the early renewal survey dated on 8 August 2017 in accordance with the Flag State's instruction.
Therefore, the new anniversary date of future IOPP periodical surveys is 7 August.(Set out on 08 Aug 2017 at Piraeus)
(DueDate:)**Note(Statutory); Cleared. For details, refer to description in Form CLB.****Cleared**~~ECDIS is to be installed not later than the date of first SE survey (Annual Survey, Periodical Survey or Renewal Survey) on or after 1 July 2017.~~(Set out at Head Office on 17 May 2016)
(DueDate:)**Note(Statutory); Remain unchanged**

Regulation D-2 of the BWM Convention shall be applied by the first Renewal Survey of IOPP Certificate conducted on and after 8 September 2017.

(Set out on 08 Aug 2017 at Piraeus)
(DueDate:)

ClassNK

NIPPON KAIJI KYOKAI

Form CLB
11.02

Survey Record

(Blank Form for Free Writing)

Class No.	133308
Record No.	17NL0249
Sheet No.	CLB 1/3

☐ Class Maintenance ☒ Installations ☒ Statutory ☐ Others
☒ PSC

(Check boxes are to be filled as applicable. Descriptions for each article are to be made in detail as far as possible in the blank space below. Each article should be described with proper Heading.)

Safety Equipment Certificate Annual SurveyECDIS installation confirmed:

Single JRC: JAN-901B/SN

from initial construction had new processor installed and software update.

IHO ECDIS Standards New Edition Effective from 1 September 2017.

Specification for Chart content and Display aspects of ECDIS: S-52 Edition 6.1

ECDIS Display and Presentation:

S-52 PreLib Edition 4.0

Test Data Sets S-64:

Edition 3.0

Verified on display and in ECDIS service company report(JRC/Alphatron Marine).

Backup arrangement for ECDIS: Nautical charts

Annual Inspection of Freefall Lifeboat Davit
could not be completed due to burst hydraulic hose of recovery davit winch. See Outstanding Recommendation on Form ATT in accordance with Panamanian Maritime Authority authorization ref: RCH/09/17039 of 10 Sep 2017. Launch of lifeboat is not affected. All other aspects of SE-As were completed.

CHG Annual Thorough SurveyDock Crane for No.4 Hatch aft/center or No.5Hatch fore/center

Lift right arm (facing top box construction) approx 4.2m up from heel, bottom sharp indent 40cm long by 25 mm deep

inside buckled 45cm long by 30mm deep and outside bulged same length/area.

Use of crane is suspended until it is permanently repaired and load tested.

See Note on Form ATT.

—The End/Periodical Survey—

ANNEX-7

ClassNK

NIPPON KAIJI KYOKAI

Form CLF
12.11

Survey Record

Class No.	133308
Record No.	17BC0372

Ship's Name:	CAPE HENRY	IMO No.:	9648879
Flag:	PANAMA	Registered GT:	31,538
Official No.:	45208-13		
Place of Survey:	Algeciras	Afloat	
Date of First Visit:	01 Nov 2017	Date of Last Visit:	02 Nov 2017

The following survey(s) were carried out;

Class Surveys;

Nil

Installation Surveys;

CHG Annual Thorough Survey

CHG Load Test

Statutory Surveys;

Nil

Anniversary Date of Class Surveys; 06 Sep

The undersigned have carried out the above surveys in accordance with the Rules and found the ship to be fit to maintain her class subject to observance of the outstanding recommendations as noted below.

Outstanding Recommendations; Nil

Notes; See the attached Form ATT

Information; Nil

() () (JJ Galindo Ruz)
Surveyor to Nippon Kaiji Kyokai Barcelona Office



ClassNK**NIPPON KAIJI KYOKAI**
Attachment to Survey RecordForm ATT
06.01

Class No.	133308
Record No.	17BC0372
Sheet No.	ATT 1 / 1

Class

Nil

Installation**Note(Installation); Cleared.** For details, refer to description in Form CLB.**Cleared**

Deck Crane for No4 Hatch aft/No5 Hatch fwd use is suspended until permanent repair of Jib and Load Test.
(Set out on 10 Sep 2017 at New Orleans)
(DueDate:)

Statutory**Note(Statutory); Remain unchanged**

IOPP certificate was issued based on the date of completion of the early renewal survey dated on 8 August 2017 in accordance with the Flag State's instruction.
Therefore, the new anniversary date of future IOPP periodical surveys is 7 August.
(Set out on 08 Aug 2017 at Piraeus)
(DueDate:)

Note(Statutory); Remain unchanged

Regulation D-2 of the BWM Convention shall be applied by the first Renewal Survey of IOPP Certificate conducted on and after 8 September 2017.
(Set out on 08 Aug 2017 at Piraeus)
(DueDate:)

ClassNK**NIPPON KAIJI KYOKAI**Form CLB
11.02**Survey Record**

(Blank Form for Free Writing)

Class No.	133308
Record No.	17BC0372
Sheet No.	CLB 1/1

☐ Class Maintenance ☒ Installations ☐ Statutory ☐ Others☐ PSC

(Check boxes are to be filled as applicable. Descriptions for each article are to be made in detail as far as possible in the blank space below. Each article should be described with proper Heading.)

At the request of the Ship Owner CHG Annual Thorough Survey and CHG Load Test for the Deck Crane for No.4 Hatchway (aft, center) or No.5 Hatchway (fore, center) have been carried out with satisfactory result upon completion of the crane's jib repair as follows:

The damaged area of the jib right arm (facing top/ box construction) approx. 4.2 m. up from heel according to record No. 17NL0249 has been cropped off and new inserts with dimensions PL7x(552x990) and PL7x(298x990) and grade K32A have been fitted and welded according to procedure of IMC (maker of the crane), upon completion of the repair a visual inspection and NDT (UT) have been carried out with satisfactory result as well as Load Test of 35 T.

Therefore, the repair has been regarded as permanent repair and the installation note set out on 10 September 2017 at New Orleans has been deleted.

-----The end-----

Test Certificate No. 17BC-0372CG3

Form No.CG.3



NIPPON KAIJI KYOKAI

CERTIFICATE OF TEST AND THOROUGH EXAMINATION OF CRANES OR

HOISTS AND THEIR ACCESSORY GEAR,

~~BEFORE BEING TAKEN INTO USE* / EVERY FIVE YEARS*~~~~AFTER ALTERATIONS* / REPLACES* / REPAIRS*.~~Name and Official Number of Ship
on which Machinery is fitted

CAPE HENRY

45208-13

Port of Registry

Panama

Call sign

3FTN3

Name and Address of Owner

BASIC ETERNITY LINE S.A. ,Banco General Building, 15th Floor,
Aquilino de la Guardia Street, Marbella, Panama City, Republic of
Panama

Classification Number

133308

IMO Number

9648879

(1) Situation and description of crane or hoist (with distinguishing number or mark if any) which have been tested and thoroughly examined	(2) For jib crane radius at which the test load was applied (meters)	(3) Test load applied (tons)	(4) Safe working load (tons)	(5) Allowable maximum radius for jib crane (meters)	(6) Remark
Deck Crane for No.4 Hatchway (aft, center) or No.5 Hatchway (fore, center) --- The End --- Load tests by movable weight	26	35	30	26	

Name of association witnessed testing and carried out making thorough examination :

Nippon Kaiji Kyokai

Position of signatory in association :

Surveyor to Nippon Kaiji Kyokai

I certify that on the 2nd day of November, 2017, the above gear shown in column (1) was tested and thoroughly
examined and no defects or permanent deformation were found; and that the safe working load is as shown above column (4).

The 2nd day of November, 2017

Port

Barcelona

*: Delete as appropriate.



INSTRUCTIONS


1. Every crane and other hoisting machine, with its accessory gear, shall be tested with a test load which shall exceed the safe working load as follows:

SAFE WORKING LOAD	TEST LOAD
Up to 20 tons	25 percent in excess
20-50 tons	5 tons in excess
50-100 tons	10 percent in excess
Over 100 tons	As specified by the Society

2. The test load is to be hoisted, slewed and luffed at slow speed. Gantry and travelling cranes together with their trolleys, where appropriate, are to be traversed and travelled over the full length of their track.
 - 2.1 In case of variable load-radius cranes, the tests are generally to be carried out with the appropriate test load at maximum, minimum and at an intermediate radius.
 - 2.2 In the case of hydraulic cranes where limitations of pressure make it possible to lift a test load 25 percent in excess of the safe working load, it will be sufficient to lift the greatest possible load, but in general this should not be less than 10 percent in excess of the safe working load.
3. As a general rule, tests should be carried out using test loads, and no exemption should be allowed in the case of initial tests. In the case of repairs, replacement or when the periodic examination calls for re-test, consideration may be given to the use of spring or hydraulic balances, provided that the SWL of the lifting appliance does not exceed 15 tons. Where a spring or hydraulic balance is used it shall be calibrated and accurate to within ± 2 percent and the indicator should remain constant for 5 minutes.
 - 3.1 If test weights are not used, this is to be indicated in column (3).
4. The expression "ton" shall mean a ton of 1,000 kg.
5. The terms "competent person", "thorough examination" and "lifting appliance" are defined in Form CG 1.

Note: For recommendations on test procedures, reference may be made to the ILO document Safety and Health in Dock Work.

ANNEX-8

	PORT OF MARTAŞ SHIP'S CARGO GEAR INFORMATION EXCHANGE FORM GEMİ YÜK EKİPMANLARI BİLGİLENDİRME FORMU		Doküman No : ML-FR-420
			Yayın Tarihi : 09.03.2018
			Revizyon No : 00
			Sayfa No : 1/1

Vessel Name : <u>M/V</u>	Date : _____
Gemî Adı	Tarih

As you well aware loading/discharging operation will be carried out with ship's cargo gear by port operators during vessel calls at Port of MARTAŞ for a smooth, swift and uninterrupted loading/discharging operation. Please kindly note that all cargo gear equipments, wires, limits, etc. has to be in good working condition according to manufacturers guide and maintenance instructions and violation of these will hold you directly responsible for any damage and all the related fees.

Bilgilendirilmeye istinaden, Martaş liman peryodu süresince kesintisiz, hızlı ve uygun yükleme/tahliyenin liman operatörleri tarafından gemi yük ekipmanlarıyla yapılacağı belirtilmiştir. Bu bağlamda, yükleme ekipmanları, telleri, kullanıcı limitleri, vb. üretici bilgi ve bakım talimatlarına uygun şekilde iyi kondisyonunda olmalıdır ve bunun ihlali sonucu ekipmanlarda oluşacak hasar ve kayıplardan gemi ve bağlı olan kuruluşların sorumlu olduğunu bilgilerinize sunarız.

Provisions are as follow / Maddeler aşağıdaki gibidir:

1-) Cargo gear certificate valid and up to date. (please attach copy of certificate) <i>Cargo Gear Sertifikası geçerli ve güncel. (lâzfen sertifika fotokopisini ekleyiniz)</i>
2-) Crane wires has to be in good working order and must match with manufacturers certificates. <i>Kreyn telleri iyi kondisyonunda olmalı ve sertifikalarıyla uyumlu donatılmış olmalıdır.</i>
3-) All cargo gears in good working condition and well maintained in accordance with manufacturers instructions. <i>Tüm kreynler iyi kondisyonunda ve bakımları üretici talimatlarına uygun şekilde yapılmış olmalıdır.</i>
4-) All cranes' safety working load (SWL) is tonnes/meter diameter. <i>Kreynlerin emniyetli çalışma limiti tondur/M çapındadır.</i>
5-) Ship's cranes do not run over ship's trim of ...3..... Meter and heel of3 °..... <i>Gemi kreynleri, geminin trimi Metreden fazla ve meytili dereceden fazla ise çalışmaz.</i>
6-) All limit switch settings of the cranes correctly conducted. It is forbidden to try/change these without Master/Chf.Off permission. <i>Kreyn limitleri gemi tarafından doğru şekilde yapılmıştır. Operatörlerin gemiden izinsiz şekilde bu ayarları değiştirmesi yasaktır.</i>
7-) Before commencement of the operation, ship's crew will show basic operation of the cranes to the operators. <i>Operasyona başlamadan önce, operatörlere gemi personeli tarafından kreynlerin temel operasyonu gösterilecektir.</i>
8-) Movement of on board cranes or gear that could interfere with ship loading/must be communicated to the Stevedore's Foreman. When not in use cranes must be properly secured. <i>Gemideki kreynlerin hareketleri yükleme/tahliyei engellememelidir/Vardiya Amirinin bilgilendirilmesi gereklidir.</i> <i>Kullanılmayacak kreynler neta olmalıdır.</i>
9-) To avoid any delays, all complains or break down shall be reported directly to deck officer on duty for immediate reaction. <i>Gecikmeleri önlemek için, ekipmanlarla ilgili herhangi bir şikayet veya arıza durumunda hızlı reaksiyon için doğrudan görevli güverte zabıtine bilgi verilecektir.</i>

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