EXTRACT FROM THE EUROPEAN DIRECTIVE 2009/18/EC

(26) Since the aim of the technical safety investigation is the prevention of marine casualties and incidents, the conclusions and the safety recommendations should under no circumstances determine liability or apportion blame.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

CCTV	Closed Circuit Television
IMO	International Maritime Organisation
kW	kilowatt
m	m
mm	millimetre
MMSI	Maritime Mobile Service Identity
mT	metric tons
mv	motor vessel
UTC	Universal Time Coordinated
VHF	Very High Frequency
VTS	Vessel Traffic Services

1 MARINE CASUALTY INFORMATION

1.1 CLASSIFICATION OF ACCIDENT

According to Resolution A.849(20) of the IMO Assembly of 27 November 1997, Code for the investigation of Marine Casualties and Incidents, a *serious marine casualty* means a marine casualty involving a fire, explosion, grounding, contact, heavy weather damage, ice damage, hull cracking suspected hull defect, etc., resulting in:

- structural damage rendering the ship unseaworthy, such as penetration of the hull underwater, immobilization of main engines, extensive accommodation damage etc.;
- or pollution (regardless of quantity);
- and/or a breakdown necessitating towage or shore assistance.

Less serious accidents are accidents that are not defined as *serious accidents* or *very serious accidents.*

According this definition, the accident was classified as

SERIOUS MARINE CASUALTY

1.2 ACCIDENT DETAILS

Time and Date	9 December 2019
Location	River Scheldt, Deurganckdok, near quay 1702
Deceased	0
Type of accident	Allision with gantry crane with hull damage below the waterline, impairing seaworthiness

2 SYNOPSIS

Throughout this report all times are in Central European Summertime which is UTC+2.

On December 9, around 06:00 hours, the mv APL MEXICO CITY picked up a sea-pilot at Steenbank pilot station, off the Dutch coast, bound for Antwerp via the Belgian coast and the River Scheldt. The mv APL MEXICO CITY sailed under pilot's advice to Flushing roads where around 08:30 pilots were exchanged. A river pilot boarded the vessel and the sea pilot left the vessel. The vessel subsequently proceeded to the Port of Antwerp. No incidents were recorded during the passage under pilotage to the Port of Antwerp.

Around 11:00 hours the vessel arrived at Antwerp roads. All mooring stations were subsequently properly manned and some minutes later the mv UNION EAGLE, a tugboat was made fast aft. Moments later the mv UNION PANDA, a second tugboat was made fast forward.

Around 11:20 hours the vessel arrived in the vicinity of the Deurganckdok[1] and began swinging over portside.

The vessel reversed into the Deurganckdok, and proceeded with mooring operations. Around 11:42 hours the forward tugboat, mv UNION PANDA, was let go off. At 13:06 hours the mv APL MEXICO CITY was well moored portside alongside, at the premises of MSC PSA EUROPEAN TERMINAL, at the Port of Antwerp, and the aft tugboat, the mv UNION EAGLE, was subsequently let go off. After safely mooring the river pilot left the vessel.

Both the engine and bow thruster were kept on stand bye. The vessel was moored using 7 mooring lines fore and aft in an 2+2+1+2 configuration as seen in Figure 1 on page 8, with certified mooring ropes as depicted in on page

Thereupon it was inquired whether two tugboats could be kept stand bye in assistance but the mv APL MEXICO CITY was informed that no tugboats were available to do so.

[1] The Deurganckdok is a tidal dock on the River Scheldt in the Port of Antwerp as seen in Figure 18 on page 23

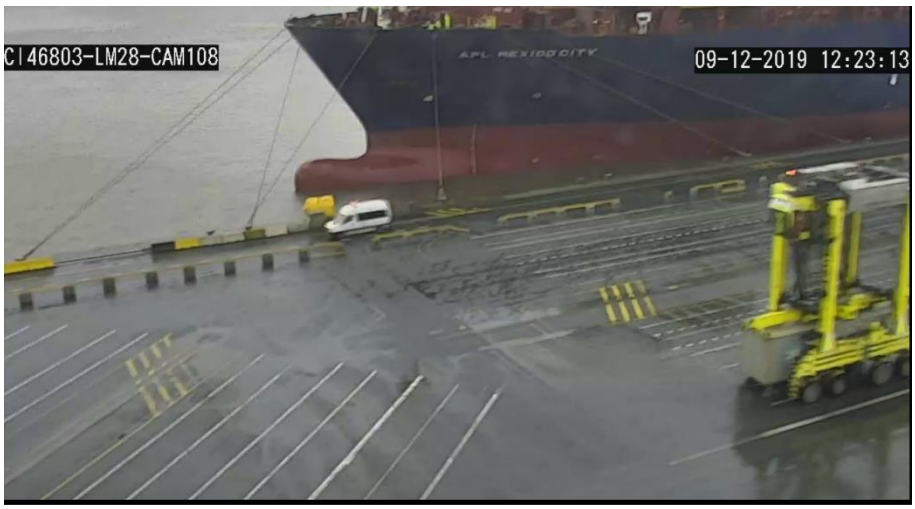


Figure 1 - Mooring line configuration forward upon arrival

Source: Terminal CCTV

At 13:44 hours an able bodied seaman on duty on deck noted that he vessel was parting from the quay and informed the officer on duty. Within a minute the general call was sounded and subsequently a first spring line gave way followed by all other mooring lines coming under very high tension. Consequentially, the forward mooring lines started snapping one after the other as seen in Figure 2, on page 8.

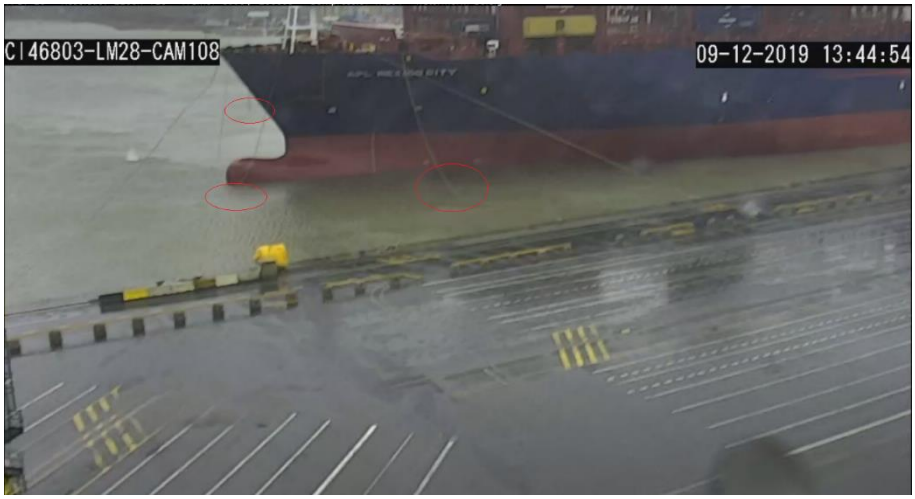


Figure 2 - Mooring lines breaking (marked up in red)

Source: Terminal CCTV

Thereupon the seven aft mooring lines came under very high tension. The ship's engine was subsequentially put ahead and the rudder was put hard to port. The order was given to slack all aft mooring lines.

Subsequently, the vessel started moving further away from the quay and moving forward.

At that moment the Master called “Antwerp Port Control” on VHF channel 18. The call was initially not picked up by the Antwerp Coordination Centre. After a second consecutive attempt the mv APL MEXICO CITY was replied to stand bye.

At 13:47 hours the VTS operator from Traffic Centre Zandvliet[2] hailed a dredging vessel, the mv SEBASTIANO CABOTO, on VHF Channel 12, which was in close vicinity to the mv APL MEXICO CITY and inquired whether or not the mv APL MEXICO CITY was coming away from the quay.

The reply was given that indeed the mv APL MEXICO CITY was coming away from the quay, all aft lines were slacked, the forward lines were all broken and the vessel’s propeller was producing a wash.

Traffic Centre Zandvliet replied that it would undertake the necessary measures, and subsequently advised a river barge, mv VREINSTEIN, not to proceed towards the Deurganckdok, on VHF Channel 12.

At 13:49 a nearby tug mv UNION PANDA hailed the mv APL MEXICO CITY on VHF Channel 12 but to no avail, and proceeded towards the stem of the mv APL MEXICO CITY on her starboard side. At about the same time, another nearby tug, the mv UNION EAGLE, operated by the same company as the mv UNION PANDA, proceeded towards the stern of the mv APL MEXICO CITY.

[2] The vessel traffic services on the River Scheldt are jointly managed by Dutch and Flemish authorities and are organised an seen in Annex 3 - Organisational chart of VTS on River Scheldt on page 38

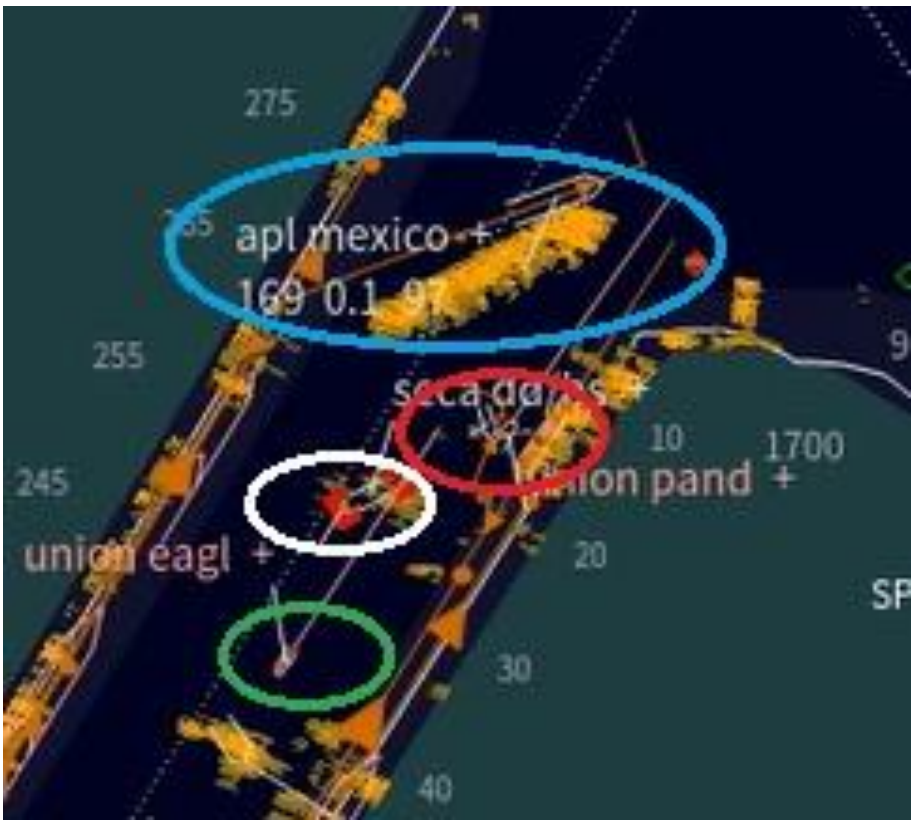


Figure 3 - Situation in the Deurganckdok just after breaking loose

with mv APL MEXICO CITY, mv UNION PANDA, mv UNION EAGLE and mv SABASTIANO CABOTO

Moments later at 13:50 hours, the dredging vessel mv SABEASTIANO CABOTO informed Traffic Centre Zandvliet via VHF Channel 12 that all aft mooring lines of the mv APL MEXICO CITY had broken and that the vessel was now loose from the quay. The river barge, mv VREINSTEIN, was informed by Traffic Centre Zandvliet also via VHF Channel 12 that it had become too dangerous to sail in the vicinity of the Deurganckdok and the river barge was advised to moor somewhere at the piers on the River Scheldt.

The mv APL MEXICO CITY again hailed “Antwerp, Antwerp” on VHF Channel 18 but was replied “It is not difficult to stand bye”. The mv APL MEXICO CITY again replied “our vessel is coming out”

The mv APL MEXICO CITY sailed further under command towards the entrance of the Deurganckdok of the River Scheldt. The mv APL MEXICO CITY thereby barely avoided a collision with the mv JORK, a container vessel that was moored on the opposite side of the Deurganckdok.

Moments later, in order not to get trapped between the APL MEXICO CITY and the quay, on the opposite side from where the APL MEXICO CITY had previously moored, both tugboats mv

UNION PANDA and mv UNION EAGLE got out of harm's way via the stern of the mv APL MEXICO CITY, and the mv APL MEXICO CITY sailed further towards the River Scheldt thereby striking a gantry crane from the terminal opposite to the one where the mv APL MEXICO CITY was moored prior to breaking loose.

At 13:57, the mv SABASTIANO CABOTO informed Traffic Centre Zandvliet again via VHF Channel 12 that a gantry crane at the DP World terminal was struck by the mv APL MEXICO CITY, and that subsequently the gantry crane had collapsed

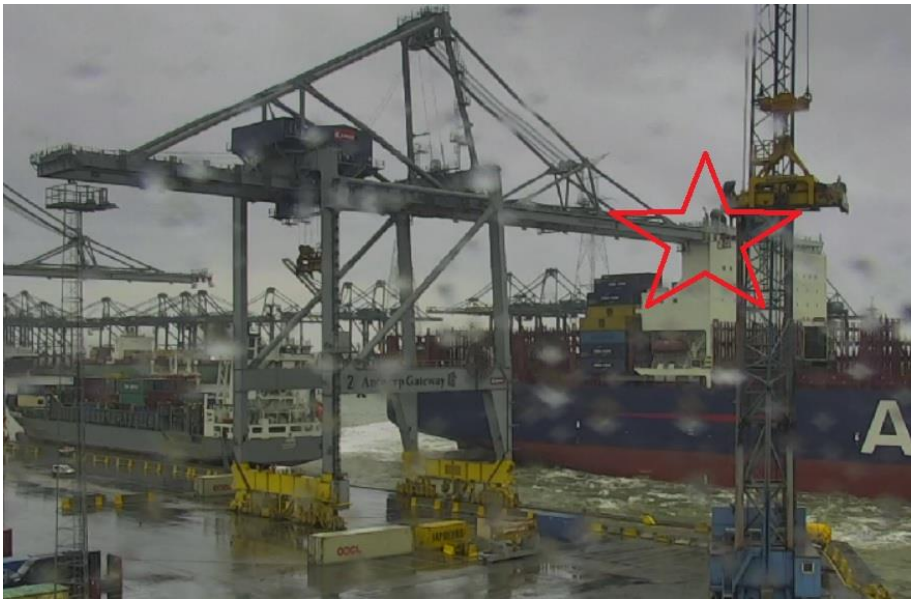


Figure 4 – mv APL MEXICO CITY striking gantry crane

Source: Terminal CCTV

Two service technicians, occupied with maintenance on the gantry crane, barely escaped from being crushed under the collapsing gantry crane, running at their highest velocity as seen in Figure 5 on page 12.

Figure 5 - Gantry crane collapsing and people running for their lives

Source: Terminal CCTV

The jib of collapsing gantry crane penetrated the hull of the mv APL MEXICO CITY during the fall into the water, and consequently, a compartment near the engine room of the mv APL MEXICO CITY was flooded impairing the vessel's seaworthiness.

Figure 6 - Jib of gantry crane penetrating hull of mv APL MEXICO CITY during fall

Source: mv JORK

Thereupon, another tugboat, mv FAIRPLAY X, informed Traffic Centre Zandvliet via VHF Channel 12 that she was proceeding towards the Deurganckdok.

At 13:58 hours a VTS operator at Traffic Centre Zandvliet acknowledged the message from the mv FAIRPLAY X, and subsequently mentioned for the first time that a calamity was ongoing in the Deurganckdok.

Same VTS operator inquired with the tug mv UNION EAGLE about the situation. Mv UNION EAGLE further replied that the mv APL MEXICO CITY was hailed on various VHF Channels but that no reply was received.

Traffic Centre Zandvliet subsequently informed a waterbus mv TWIN CITY LINER, that had intended to pass in front of the entrance the Deurganckdok, to stay clear of the area, since the situation had become dangerous, and subsequently inquired with an oil bunker barge mv TRAFUCO 9 whether they had followed the conversation and also advised said barge to stay clear of the area.

At 14:01 hours the tug mv FAIRPLAY 1 informed Traffic Centre Zandvliet that it was also proceeding towards the Deurganckdok. Moments later at 14:03 hours tugboats mv MULTRATUG 33 and mv MULTRATUG 7 also informed Traffic Centre Zandvliet that they were proceeding towards the Deurganckdok.

Traffic Centre Zandvliet again hailed the mv APL MEXICO CITY on VHF Channel 12 at 14:02 hours but again to no avail. Thereupon the mv UNION PANDA hailed the mv APL MEXICO CITY on VHF Channel 12 and at 14:03 hours the mv APL MEXICO CITY responded for the first time.

The mv UNION PANDA informed the mv APL MEXICO CITY that she was prepared to assist but that is was not be considered as normal towage but as salvage under the Lloyds Open Form and required the mv APL MEXICO CITY to confirm the agreement.

The mv APL MEXICO CITY responded that she had copied the message and that she did not require to make fast. At 14:04 hours mv UNION PANDA informed Traffic Centre Zandvliet that the wheelhouse of the mv APL MEXICO CITY was now manned.

At 14:05 hours the oil bunker barge mv TRAFUCO 9 informed Traffic Centre Zandvliet that the mv APL MEXICO CITY had dropped anchor and that the mv TRAFUCO 9 would proceed her voyage. Traffic Centre Zandvliet replied that the mv APL MEXICO CITY was still moving so the mv TRAFUCO 9 would have to assess for herself what the situation was.

The mv APL MEXICO CITY further proceeded onto the River Scheldt thereby alliding with a dolphin near the Phenol Jetty.

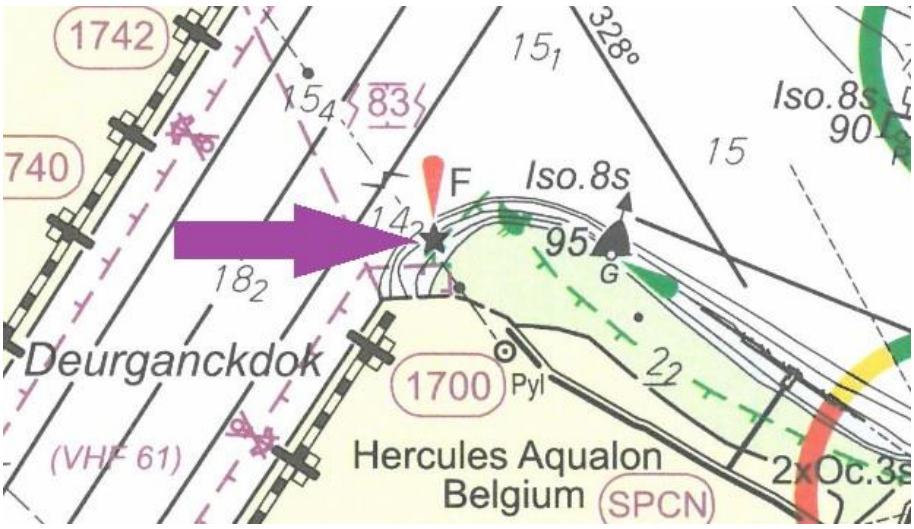


Figure 7 - Position of the dolphin the mv APL MEXICO CITY allided with when adrift

At 14:06 hours the mv APL MEXICO CITY hailed the tug mv UNION PANDA and informed the tug that her assistance was now required and confirmed salvage under Lloyds Open Form[3] of which an example is attached in Annex 8 on page 40. Thereupon the tug mv UNION EAGLE, that was following the mv APL MEXICO CITY at het stern, informed the mv APL MEXICO CITY that she was standing by for instructions near the stern of the mv APL MEXICO CITY.

At 14:07 hours Traffic Centre Zandvliet hailed mv MULTRATUG 33 on VHF channel 12 asking whether she could assess the situation near the area where the gantry crane had collapsed and to look out for people in the water. The mv UNION EAGLE responded that she had been in close vicinity all the time and that she had not noticed any people in the water.

Moments later the mv MULTRATUG 7 asked the mv APL MEXICO CITY via VHF Channel 18 to switch to VHF Channel 8, which the mv APL MEXICO CITY confirmed.

At 14:09 hours the mv APL MEXICO CITY further proceeded towards the River Scheldt and by doing so, she sailed over Buoy 95 near the Phenol Jetty.

[3] The Lloyd's Standard Form of Salvage Agreement commonly known as Lloyd's Open Form, or in short LOF, is a standard form contract for a proposed marine salvage operation. The term "open" referrers to the fact that no particular sum for the salvage operation is agreed upon prior to the salvage. At its best, it is a recognised 'no cure no pay' contract with remuneration based on an arbitration process in London administered by the Lloyd's Salvage Arbitration Branch. The contract is designed to be signed immediately without negotiation. The agreement has been around for over a century, but now, with the availability of modern means of communication more and more LOF proposals are declined after the Master of the vessel in peril had been in touch with operators/owners.

Figure 8 – Buoy 95 sailed over by the mv APL MEXICO CITY

Source: Terminal CCTV

In the meantime, a River Pilot was urgently dispatched to a jetty on the river where the pilot boarded the pilot launch mv RAVELINGEN. The pilot launch mv RAVELINGEN subsequently proceeded towards the mv APL MEXICO CITY.

Chatter between various vessels started on VHF Channel 12 and consequently Traffic Centre Zandvliet made a general call asking parties to keep the frequency clear and subsequently advised individual vessels operating on the River Scheldt in the vicinity of the Deurganckdok to stay clear of the area.

At 14:15 the pilot made contact with the mv APL MEXICO CITY from the pilot launch via VHF Channel 12 and instructed the APL MEXICO CITY to make fast the tug mv UNION EAGLE at the stern and to switch to VHF Channel 8 for communication.

Apparently the mv APL MEXICO CITY had dropped her two forward anchors starboard and portside, and was instructed by the pilot to start heaving up both anchors to 4 shackles on deck and prepare a pilot ladder on portside. Subsequently, the pilot inquired with the already present tug boats whether they could keep the mv APL MEXICO CITY clear of the phenol jetty until the mv UNION EAGLE was made fast at the stern of the vessel.

Thereupon the tug mv FAIRPLAY 1 inquired with the pilot, at that moment still on the pilot launch, whether the assistance of the tug was required. The pilot responded that at that very moment

the situation was well under control and no immediate assistance from the tug mv FAIRPLAY 1 was required.

At 14:25 the pilot boarded the mv APL MEXICO CITY and subsequently calculated that the wind pressure would be between 150 and 250 mT using the wind pressure calculation table as seen in Annex 2 on page 34. Consequentially 5 tugs would be needed to counter the wind during manoeuvring back into the Deurganckdok, 2 from one operator coloured red, and 3 more from a different operator coloured blue as in Figure 9.

Figure 9 - mv APL MEXICO CITY in tow

The mv APL MEXICO CITY was then appointed a new mooring place, quay 1704, opposite to where she was previously moored and close to the spot where the collapsed gantry crane was now lying.

Around 15:00 hours two salvage masters from two different tug boat operators, that had both offered their services to the mv APL MEXICO CITY, announced via VHF their intention to come aboard via the launch mv MULTRASHIP RESPONDER. At 15:22 hours the two salvage masters boarded the mv APL MEXICO CITY via the pilot ladder.

The master informed the pilot that the mv APL MEXICO CITY had sprung a leak in the engine room, but that the situation was under control, meaning that the capacity of the bilge pumps was sufficient to compensate for the incoming water and there was no risk for pollution.

At 15:33 hours a dockmaster from the Port of Antwerp inquired with the tug mv SVITZER MALLAIG to whether she can proceed to the Deurganckdok and assist the mv MSC ANCHORAGE to maintain her position alongside. The mv MSC ANCHORAGE was moored on the same side of the Deurganckdok as where the mv APL MEXICO CITY was moored prior to breaking loose.

The mv APL MEXICO CITY subsequently continued the manoeuvre and around 16:00 hours the mv APL MEXICO CITY was safely moored, starboard alongside at quay 1704 of the Port of Antwerp, maintaining 3 tugs made fast.

3 FACTUAL INFORMATION

3.1 PARTICULARS OF MV APL MEXICO CITY

Figure 10 – mv APL MEXICO CITY

Source: Marcin Kocoj

Ship's name	mv APL MEXICO CITY
IMO number	9632210
Call sign	9V9926
Flag State	SINGAPORE
Ship / craft type	Container Ship
Gross tonnage	109712
Deadweight	115024 mT
Date keel laid	2013
Company name	CMA CGM International Shipping
Max. engine power	51070 kW
Nr. main engines	1
Length overall	328,20 m
Length between PP	313,14 m
Breadth	45,20 m
Draught	15,00 m
Hull Material	Steel

4 DAMAGES

4.1 DAMAGE TO THE MV APL MEXICO CITY

All fourteen mooring hawsers of The mv APL MEXICO CITY were damaged at the beginning of the sequence of ill-fated events. After the mv APL MEXICO CITY was adrift the crew temporarily repaired the hawsers by means of a bowline.

Figure 11 - Repaired mooring hawsers

The mv APL MEXICO CITY allided with a gantry crane at the DP World terminal at the Port of Antwerp. Consequentially the area of impact on board the vessel, the starboard side of the wheel house got damaged. Several windowpanes were shattered and the metal structure got bent.

Figure 12 - Damage to the wheelhouse of the mv APL MEXICO CITY seen from inside

Figure 13 - Damage to wheelhouse of the mv APL MEXICO CITY temporarily repaired

After the mv APL MEXICO CITY had allided with the gantry crane at the terminal of DP World at the Port of Antwerp, the jib of the collapsed crane had penetrated the hull of the mv APL MEXICO CITY below the waterline, rendering the vessel no longer seaworthy as seen in Figure 5 on page 12. The hull was found torn between frames 45 and 46 just above the engine room's third deck. The length of the fracture was 600 mm.

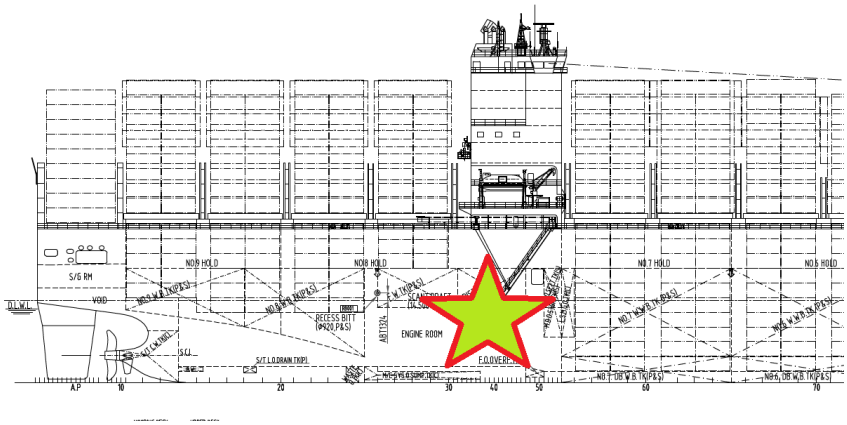


Figure 14 - Approximate position of hull damage

The day after the incident, temporary repairs were carried out, allowing the vessel to sail to a repair yard for more in depth repairs.

Figure 15 - Temporarily repaired hull of the mv APL MEXICO CITY

seen from inside the engine room

By sailing over the debris of the collapsed gantry crane at the terminal, and over the dolphin at the entrance of the Deurganckdok and subsequently the fairway buoy on the River Scheldt the propeller of the mv APL MEXICO CITY got damaged as seen in Figure 16.

Figure 16 - Damaged propeller of the mv APL MEXICO CITY

4.2 DAMAGE TO THE GANTRY CRANE

The gantry crane at the DP WORLD terminal in the Deurganckdok collapsed as a consequence of the impact om the mv APL MEXICO CITY onto the gantry's jib. The gantry was to be considered as a constructive total loss after the incident.

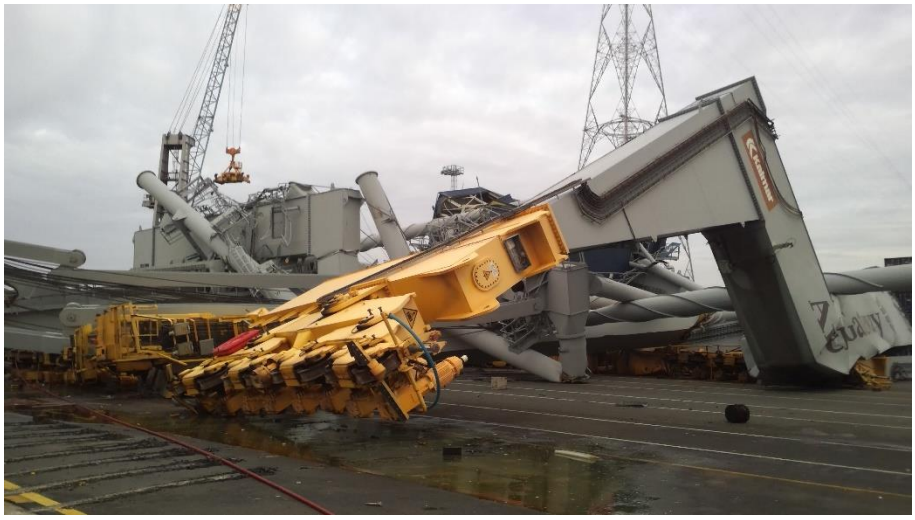


Figure 17 – Collapsed gantry crane

4.3 OTHER DAMAGES

After the mv APL MEXICO CITY had allided with the gantry crane at the terminal, the vessel further allided with an engineering structure, and a buoy.

The mv APL MEXICO CITY allided with a dolphin near the entrance of the Deurganckdok on the River Scheldt and subsequently with a buoy marking the starboard side of the fairway when sailing upstream. Both the buoy and the dolphin were severely damaged.

Figure 18 - Dolphin and buoy that were damaged during incident

5 ANALYSES

5.1 MOORING OF THE MV APL MEXICO CITY UPON ARRIVAL

Upon arrival and after assessing the weather, it was decided on board the mv APL MEXICO CITY to moor the vessel with 7 mooring lines forward and 7 mooring lines at the stern.

The Port of Antwerp had issued a flyer in 2014 with specific mooring instructions for normal circumstances, stating that vessels with a length of more than 250 metres, such as the mv APL MEXICO CITY, should moor using 6 hawsers forward and 6 hawsers at the stern as seen in part of the 2 page flyer in Annex on page 36.

The mv APL MEXICO CITY complied with the mooring instructions as issued by the Port of Antwerp.

5.2 METEOROLOGICAL CONDITIONS UPON ARRIVAL

Wind speed measurements, in different locations, at the terminal of MSC PSA EUROPEAN TERMINAL, as seen in Annex 5 on 36, indicated wind speeds up to 24,2 metres per second in location LM60, as seen in Table 1 – Measured wind speeds at terminal.

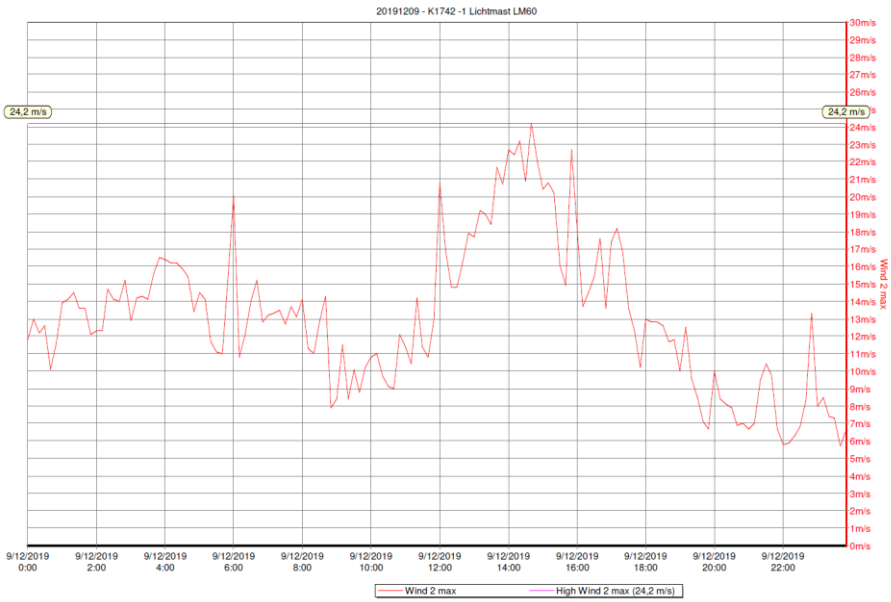


Table 1 – Measured wind speeds at terminal

Source: MSC PSA European Terminal (MPET)

An estimated 8000 square metres of the ship's surfaces were exposed to the wind. According to the table in Annex 2, the generated pressure corresponded to an estimated 150 to 250 metric tons.

5.3 TECHNICAL SPECIFICATIONS OF MOORING LINES

The fourteen hawsers used to moor the mv APL MEXICO CITY, on 9 December 2019 at quay 1704 in the Port of Antwerp, were all in relative new condition as seen in Figure 19 on page 24 and were fully certified as seen in Annex 7. Each individual hawser was certified for a minimum breaking load of 103 metric tons.

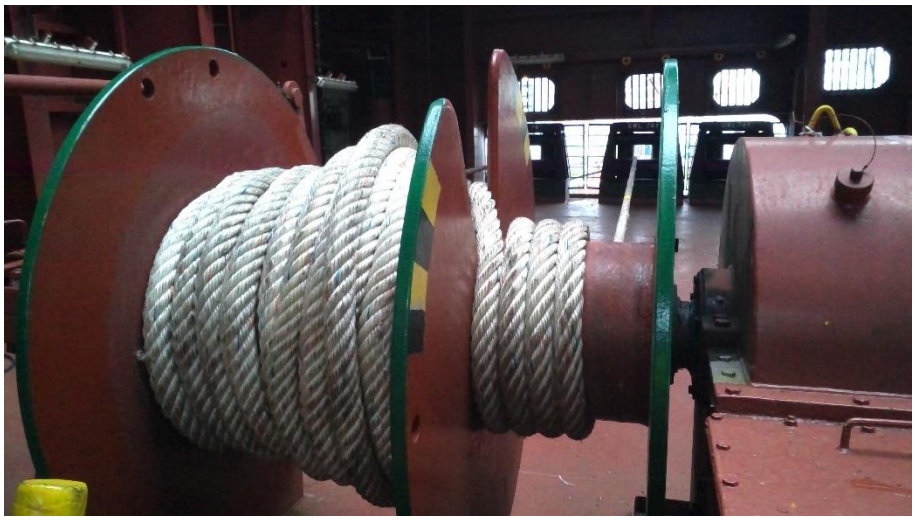


Figure 19 - Condition of mooring ropes

5.4 AVAILABILITY OF TUGBOATS

The Master of the mv APL MEXICO CITY inquired, after safely mooring the vessel at the premises of MSC PSA European Terminal, with the vessel's agent whether tugs could be maintained in assistance, but was informed that no tugs would be available for maintaining the vessel alongside, under normal contractual circumstances.

According to the towage regulation, issued by the Port of Antwerp on 4 December 2017, the company offering towage in the tidal section of the Port of Antwerp, should have 4 fully operational tugboats available at all times. Same service provider should be able to have a total of 7 tugboats available which can be put in "stand by" within 4 hours.

According to same aforementioned regulation, "stand by" means "ready for operation" whether or not already commissioned.

Seen the number of mooring and unmooring operations at that time in the tidal section and the locks of the Port of Antwerp, tugs should have been available, when ordered, within regular foreseeable time.

After the mv APL MEXICO CITY was broken loose and a traffic controller at TRAFFIC CENTRE ZANDVLIET had noticed said event on a radar screen, a telephone call was placed to one of the tugboats operators at the Port of Antwerp via cell phone that tugs were needed for a salvage operation in the Deurganckdok.

Immediately thereupon, two tugboats were made available by said operator.

5.5 RADIO COMMUNICATION

After the able bodied seafarer on duty on board the mv APL MEXICO CITY had informed the officer on duty that the vessel was parting from the quay, and after the Master had called for general stations, the forward mooring lines started breaking one after the other.

Subsequently the master of the mv APL MEXICO CITY called, what he believed to be, the waterway authority, the Port of Antwerp, on VHF CHANNEL 18, not specifying any urgency, and was told to stand by.

After the vessel was completely broken loose, the master of the mv APL MEXICO CITY again called, what he believed to be, the waterway authority on VHF CHANNEL 18 and was again told to stand bye. He replied that the vessel was coming out, but the message was not picked up as being urgent.

5.6 THE WATERWAY MANAGEMENT AT THE DEURGANCKDOK

Two separate authorities are responsible for the waterway management at the Deurganckdok at the Port of Antwerp. When ships are underway the managing authority is the Common Nautical Management or CNM of the River Scheldt Region. It is a mutual initiative of Flemish and Dutch authorities, the Agency for Maritime Services and Coastal Affairs of the Flemish Government and the Ministry of Infrastructure and Environment, Department of Public Works Sea and Delta of the Dutch Government.

The management of moored vessels in the Deurganckdok is entrusted to the Port of Antwerp. The Port Authority manages and maintains the docks, the bridges, the locks, the quay walls and the land. The personnel is also responsible for safe shipping traffic in the docks, the bridges and locks.

Both aforementioned waterway management entities make usage of different VHF channels in the communication with ships, but the physically share the same work floor at a premise near the Zandvliet Lock.

5.6.1 Mandatory use of VHF Channels

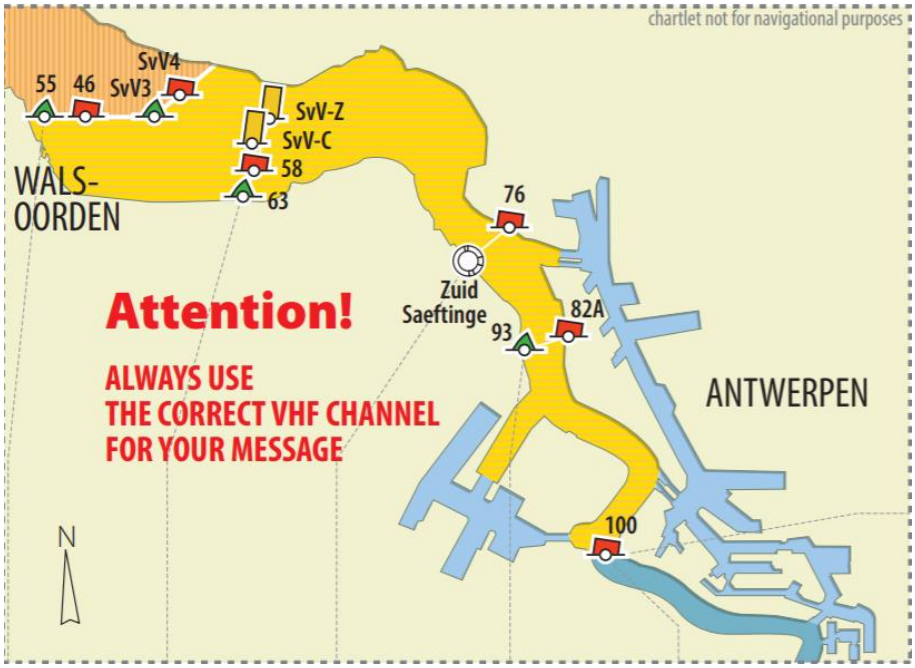


Figure 20 - VHF coverage near the Deurganckdok

From the website of the Common Nautical Management, *www.vts-scheldt.net*, we learned that there is a caution for the usage of the correct VHF channel. The VHF channels are defined as follows:

VHF Channel 12

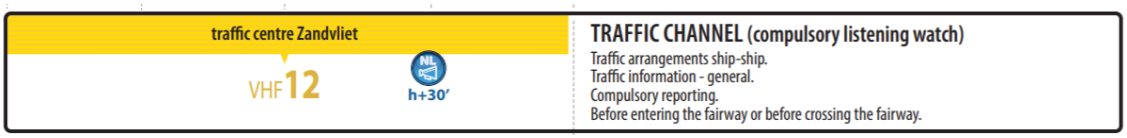


Figure 21 - Definition of VHF Channel 12

VHF Channel 85

Figure 22 - Definition of VHF Channel 85

Same website further draws the attention to differentiate between VHF Channel 12 and VHF Channel 85

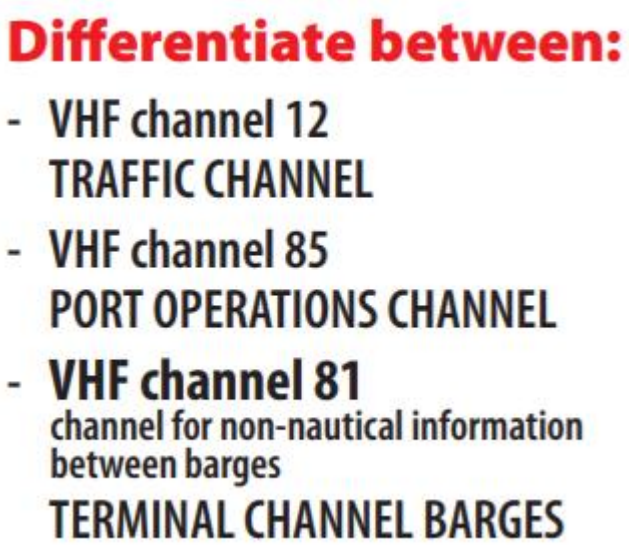


Figure 23 - Note on the usage of the correct VHF Channel

Extra reporting instructions for seagoing vessels stipulate that said vessels should contact the Port of Antwerp authority on VHF Channel 85 before unmooring at the lock or the terminal.

6 CAUSE OF THE ACCIDENT

The allision of the mv APL MEXICO CITY with a gantry crane at the Port of Antwerp on 9 December 2019 stemmed from exceptional meteorological conditions and the not availability of tugboats to assist the vessel in remaining alongside as requested by the Master, that have lead to the breaking of seven mooring hawsers on the foreship of the vessel.

Subsequently, in order to gain control over the vessel and prevent damages the main engine of the ship was put ahead. All mooring hawsers at the stern of the vessel broke. The vessel subsequently sailed/drifted onto the gantry crane at the opposite side of the Deurganckdok thereby destroying it. The falling jib of the crane damaged the ship's hull and propeller, rendering the vessel no longer seaworthy. In the further drifting/sailing onto the river Scheldt, a buoy and dolphin were damaged/destroyed.

6.1 CONTRIBUTING FACTORS

6.1.1 Unclear VHF communication instructions

The mv APL MEXICO CITY tried to hail the Port of Antwerp authority on VHF Channel 18, the port operations channel when the mooring lines were breaking, following the instructions for use of VHF Channels. The vessel was moored at that time and was getting loose from her mooring position. The operator from the Port of Antwerp authority did not anticipate the message as being urgent since the instructions for hailing the Antwerp Port Authority indicate that the Port Authority is to be hailed prior to leaving the berth, and consequentially no urgency is implied.

When the fact that the mv APL MEXICO CITY had left the berth was picked up by the VTS services, when dredging vessel mv SABEASTIANO CABOTO was inquired by Traffic Centre Zandvliet via VHF Channel 12 if the mv APL MEXICO CITY was leaving the berth. The VTS operator had tried on several occasions to hail the mv APL MEXICO CITY on VHF channel 12 to no avail.

Both operators, from the Common Nautical management and the Port of Antwerp authority, share the same work floor but the information about the mv APL MEXICO CITY coming loose from her berth was not exchanged.

Since the operator of the VTS service was unaware that the operator of the Port of Antwerp had been in contact with the mv APL MEXICO CITY, it was not considered to involve the operator from the Port of Antwerp in trying to make contact with the vessel, thereby loosing valuable time.

6.1.2 The role of the tugboats

Although the vessel was informed that no tugboats would be available to assist the vessel in staying alongside under normal contractual terms, the tugboats mv UNION PANDA and mv UNION EAGLE proceeded to the mv APL MEXICO CITY after the operators had received a telephone call that an incident had happened most probably needing salvage operations.

The operators of the said tugboats dispatched both tugs, via private VHF CHANNEL 32, towards the mv APL MEXICO CITY with clear instruction that the tug operations would be under the Lloyds Open Form conditions. Prior to assisting the vessel under the Lloyds Open Form, an agreement, signed on paper or agreed to via VHF, was required by the tugs, whereby the Master of the vessel needing assistance agrees to the terms and conditions of the form. The tugboat mv UNION PANDA tried on several occasions to contact the mv APL MEXICO CITY via VHF Channel 12, prior to the latter hitting the gantry crane, to no avail. After the mv APL MEXICO CITY had hit the gantry crane and further sailed onto the river Scheldt, radio communication was established and it was made clear to the mv APL MEXICO CITY that assistance would only be granted if and when the mv APL MEXICO CITY would agree to assistance under the Lloyds Open Form. The Master of the mv APL MEXICO CITY initially declined since there was no imminent danger that the vessel would be lost, and had to make contact with the operators of the vessel, in order to get approval for the accepting of the agreement, but later accepted since no tug assistance would be granted otherwise.

8 Actions Taken

8.1 By the Port of Antwerp

The Port of Antwerp will:

1. Determine how one, in the vicinity of a calamity, can be notified as soon as possible
2. Specify the emergency communication VHF CHANNELS on specific VHF CHANNEL flyer
3. On a project basis, chart the risks as a consequence of the wind, and act accordingly
4. Based on the aforementioned incident and risk analyses, consider the necessity of shore tensioning mooring

8.2 By the Common Nautical Management

1. Will review working procedures so that the traffic controller for traffic on the river and the traffic controller for the Port of Antwerp, not only share the work floor but also share information
2. Will review, with the tug boat operators and the Port of Antwerp, the required availability and conditions under which tug boats can operate in the tidal section of the Port of Antwerp

9 Recommendations

9.1 Boluda Towage Europe and Antwerp Towage NV

2019/009684 – 1 The tug boat operators in the tidal section of the Port of Antwerp, Boluda Towage Europe and Antwerp Towage NV, are recommended to review their modus operandi so that no valuable time is lost in commercial discussions in case of urgent demand for tug assistance in the tidal section of the Port of Antwerp.

9.2 Common Nautical Management and Antwerp Port Authority

2019/009684 – 2 The competent waterway authorities for the tidal section of the Port of Antwerp, the Antwerp Port Authority and the Common Nautical Management, are recommended to envisage the drafting of rules and or regulations that foresee in restrictions and or additional measures for mooring, berthing and unberthing under adverse weather conditions.

7 ANNEXES

CMA CGM
INTERNATIONAL SHIPPING COMPANY PTE LTD — **CMA SHIPS**

Vessel Particulars

NAME	:	"APL MEXICO CITY "
FORMER NAMES	:	N/A
TYPE	:	CONTAINER CARRIER CLASS 9326 TEU
CALL SIGN	:	9V9926
PORT OF REGISTRY	:	SINGAPORE
FLAG	:	SINGAPORE
OFFICIAL NUMBER	:	397754
IMO NUMBER	:	9632210
MMSI NUMBER	:	566961000
SHIP'S MOBILE	:	+65 96653073
SAT - F TEL [FBB250]	:	+870 773308764
SAT - F FAX [FBB250]	:	+870 783176711
SAT - C TELEX NO. 1	:	456 696 110
SAT - C TELEX NO. 2	:	456 696 111
IRIDIUM TEL NO	:	+8816 7777 1536
V-SAT TEL NO	:	+47 2339 7568
V-SAT TEL NO	:	+65 3158 1000
E-mail address: mexicocity@apl.dualog.net		
CLASSIFICATION	:	AMERICAN BUREAU OF SHIPPING
REGISTER NUMBER	:	14236431
OWNER	:	CMB OCEAN 5 LEASING COMPANY PTE.LTD. 80 Robinson Road #02-00 Singapore 068898
MANAGING OWNER	:	CMA CGM INTERNATIONAL SHIPPING COMPANY PTE.LTD 9 North Buona Vista Drive, #14-01 The Metropolis , Tower 1, Singapore 138588 Tel: +65 6278 9000 , Fax: +65 6334 3487 E-mail address:sij.safety3@cma-cgm.com
KEEL LAID	:	18th December 2013
DELIVERED	:	30th June 2014
YARD	:	DAEWOO SHIPBUILDING & MARINE ENGINEERING CO.LTD – S.KOREA
YARD HULL NUMBER	:	4261

		INTERNATIONAL	SUEZ	PANAMA
GROSS TONNAGE	:	109712	113906.32	
NET TONNAGE	:	63294	98239.99	106309
PANAMA CANAL NO.	:			

LIGHTSHIP	:	36310.9	mt	CAPACITY HFO 98%	:	7671 MT
MAXIMUM DISPLACEMENT	:	151334.9	mt	FUEL MAX. VISCOSITY	:	700 CST
DRAFT AT SUMMER	:	15.0	mtrs	CAPACITY MDO 90%	:	1277 MT
DEADWEIGHT	:	115024.0	mt			
FREEBOARD	:	5159	mm			
FRESH WATER ALLOWANCE	:	291	mm			
TPC	:	121.548		NUMBER OF HOLDS	:	9 HOLDS AND 53 HATCHCOVERS
LENGTH OVERALL	:	328.2	mtrs			
LBP	:	313.143	mtrs			
MOULDED BREADTH	:	45.2	mtrs	ANCHOR WEIGHT	:	16125 KG/ST
MOULDED DEPTH	:	27.0	mtrs	CRUISING RANGE	:	22000 NM
DEPTH TO SECOND DECK	:	20.144	mtrs			
HEIGHT (KEEL TO MAST TOP)	:	66.0	mtrs			
AIR DRAFT AT MAXIMUM DRAFT	:	51.0	mtrs			

CONTAINER INTAKE	:	9326 TEU	STACK WEIGHT IN HOLD 20'/40'	:	30t/unit for 20' 32t/unit for 40'
45' CONTAINER INTAKE	:	1344	STACK WEIGHT ON DECK 20'/40'	:	20': (90t for No.1-2 H/C, 70t for No. 3-18 H/C) 40': 170t

SERVICE SPEED AT 79 RPM	:	23.0 KNTS, CONSUMPTION 189.44 MT
ECO SPEED AT 54 RPM	:	15.3 KNTS
MAIN ENGINE POWER OUTPUT	:	NCR 43410 kW x 79.6 RPM MCR 51070 Kw X 84 RPM
MAIN ENGINE TYPE	:	MAN B&W 10S90ME-C9.2X 1 set (Derated)
AUX. ENGINES	:	4 x 4000kW HIMSEN ENGINE
BOW THRUSTER	:	3000 kW (4020HP), B/T always fully sumberged as bow draft 6.09 m
PROPELLER	:	1 x Right Handed 5 Bladed 9.2 m diameter
PROPELLER SUBMERGED AT	:	9.40 m
RUDDER	:	FULL SPADE (AREA 76.140 M2)
TOTAL BALLAST	:	37454.3 CBM
OIL RESIDUE TANKS	:	159.8 CBM
FRESH WATER	:	598.3 MT
REEFERS CAPACITY	:	1014 SOCKETS AND ONLY ON DECK
DECK PROVISION CRANE	:	MONORAIL, SWL 12.5 MT, 5 MTR OUTREACH BEYOND VSL'S BODY

Annex 1 - Particulars of mv APL MEXICO CITY

Wind pressure in Tons

Athward wind force= 0,638* (10^-4)*A*(W^2)

A= Atward wind area in M^2

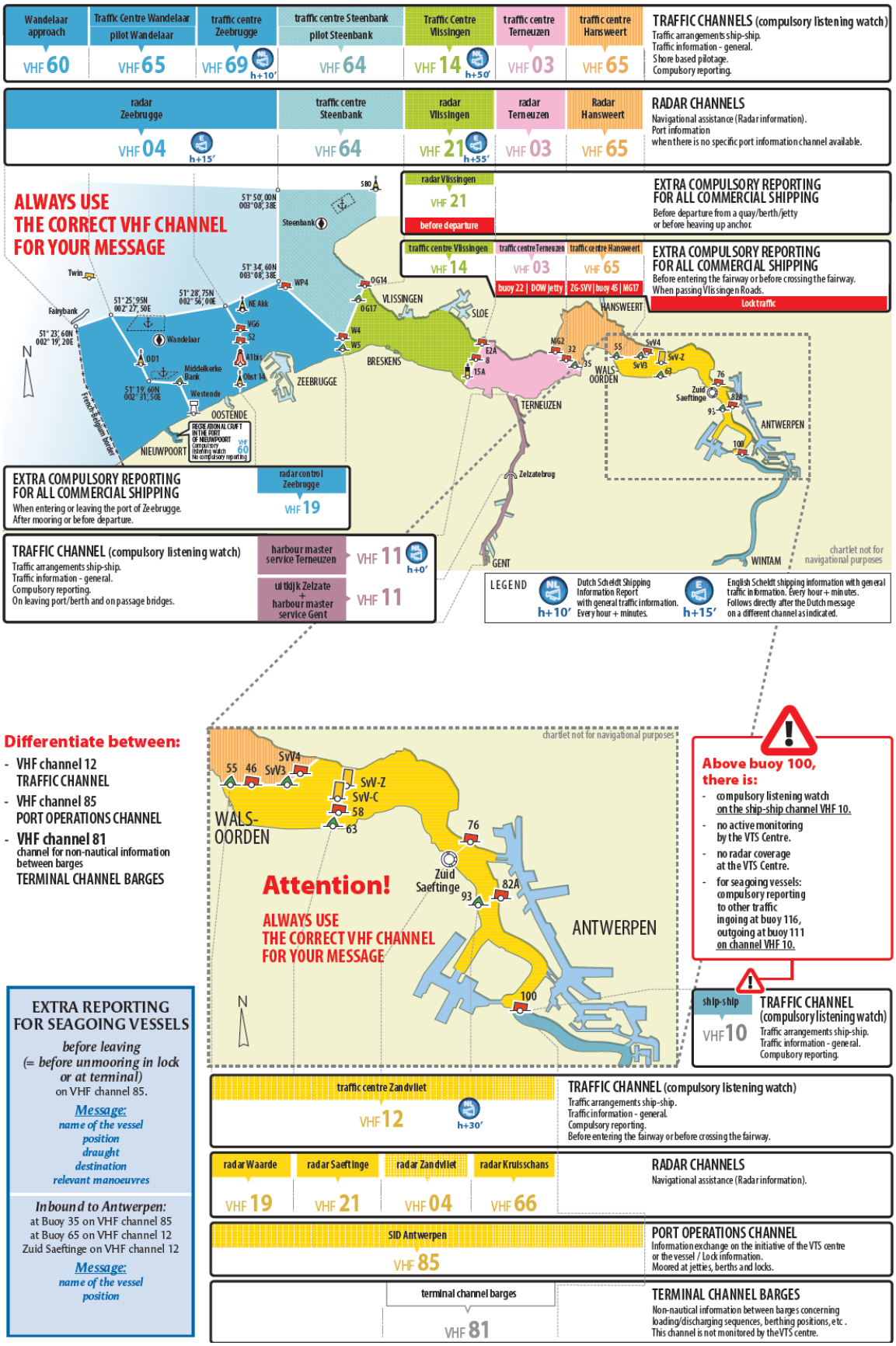
W= Wind speed in m/s

A/W	5	10	15	20	25	30
1000	2	6	14	26	40	57
2000	3	13	29	51	80	115
3000	5	19	43	77	120	172
4000	6	26	57	102	160	230
5000	8	32	72	128	199	287
6000	10	38	86	153	239	345
7000	11	45	100	179	279	402
8000	13	51	115	204	319	459
9000	14	57	129	230	359	517
10000	16	64	144	255	399	574
11000	18	70	158	281	439	632
12000	19	77	172	306	479	689
13000	21	83	187	332	518	746
14000	22	89	201	357	558	804
15000	24	96	215	383	598	861
16000	26	102	230	408	638	919
17000	27	108	244	434	678	976
18000	29	115	258	459	718	1034

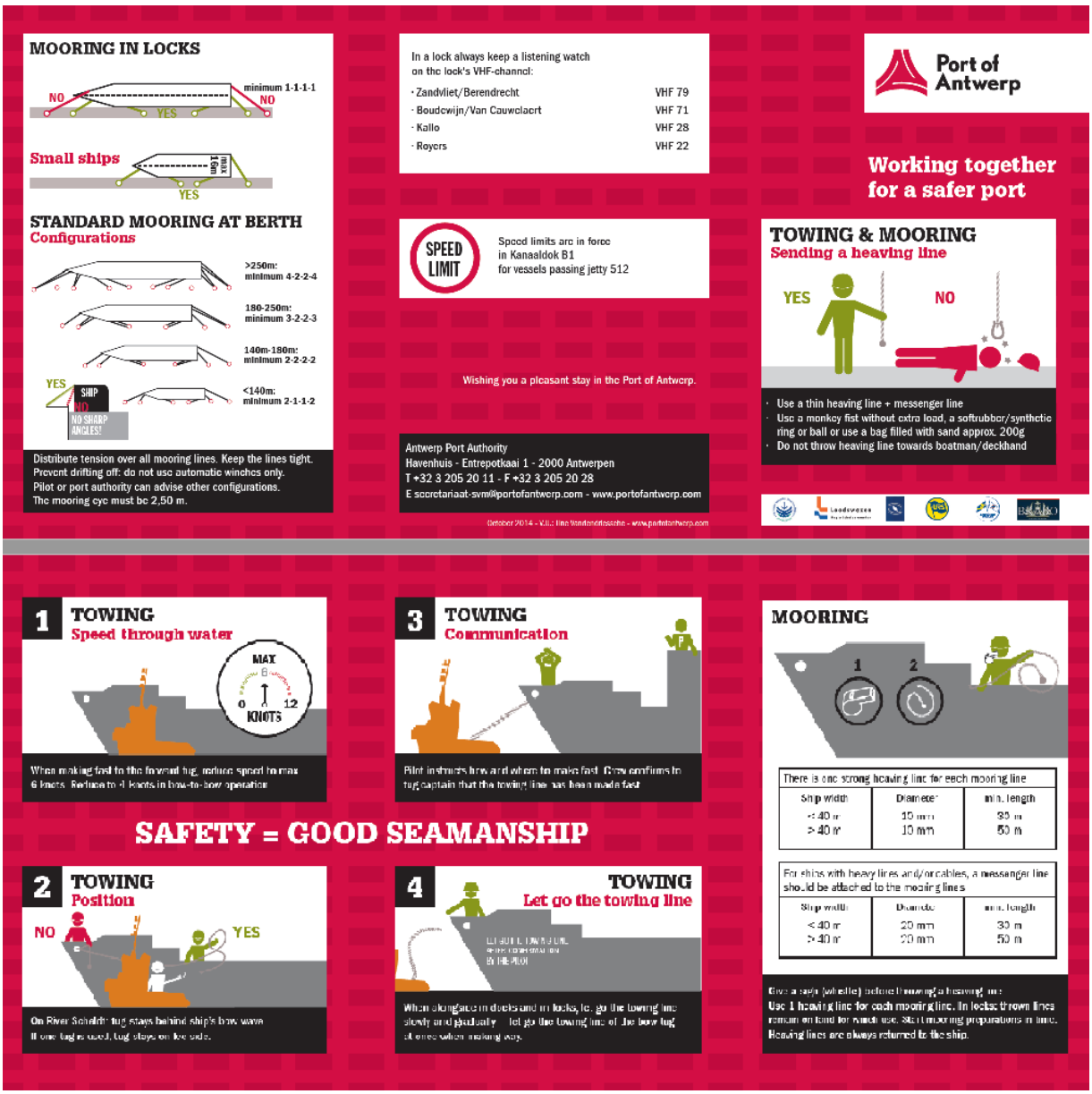
Beaufort windscale

Bft			Knots	m/sec	km/h
0	Calm		<1	0,0-0,2	<1
1	Light air		1-3	0,3-1,5	1-5
2	Light breeze		4-6	1,6-3,3	6-11
3	Gentle breeze		7-10	3,4-5,4	11-19
4	Moderate breeze		11-16	5,5-7,9	20-28
5	Fresh breeze		17-21	8,0-10,7	29-38
6	Strong breeze		22-27	10,8-13,8	39-49
7	Near gale		28-33	13,9-17,1	50-61
8	Gale		34-40	17,2-20,7	62-74
9	Strong gale		41-47	20,8-24,4	75-88
10	Storm		48-55	24,5-28,4	89-102
11	Violent storm		56-63	28,5-32,6	103-117
12	Hurricane		>64	>32,7	>118

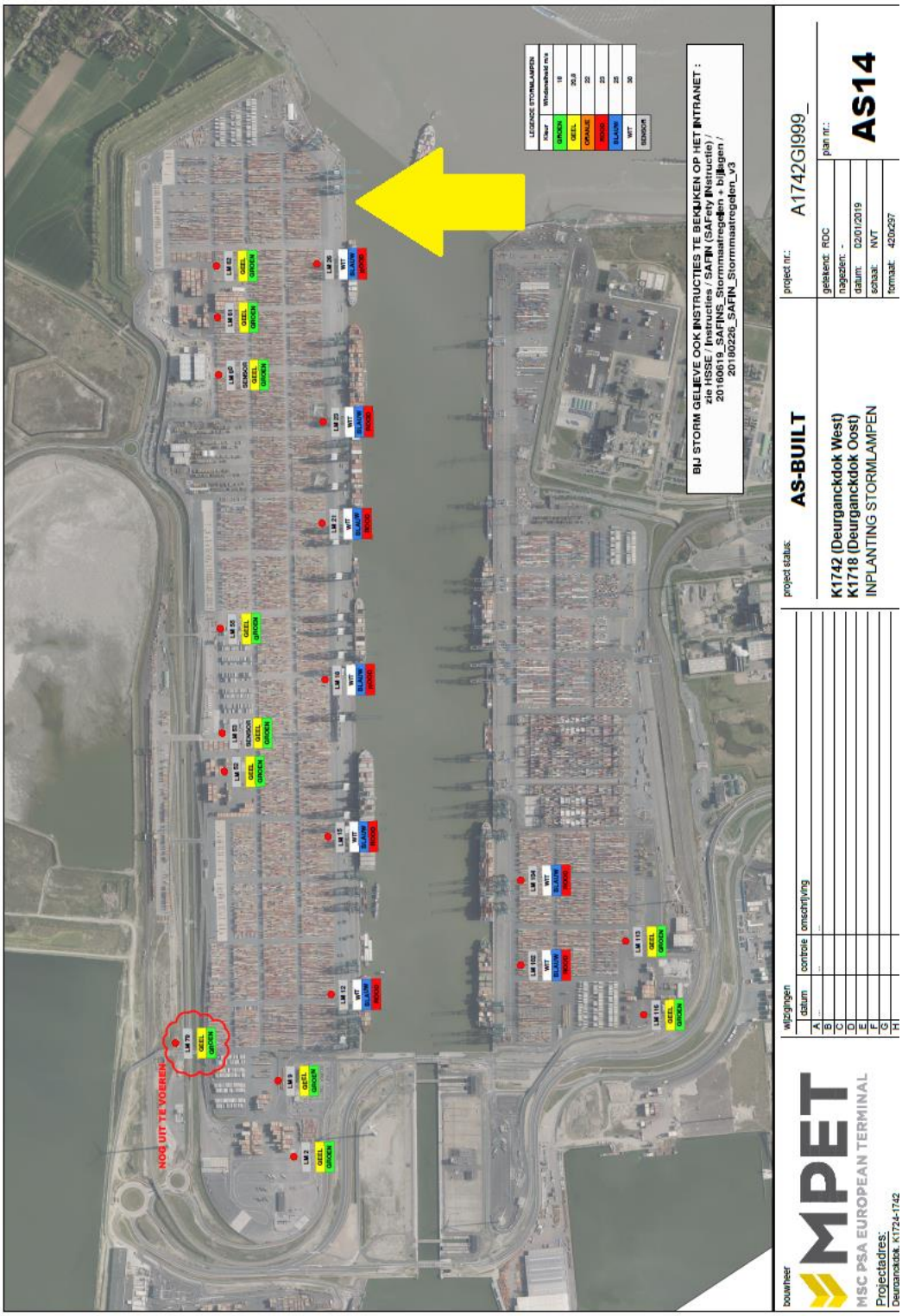
Annex 2 - Wind pressure calculation table



Annex 3 - Organisational chart of VTS on River Scheldt



Annex 4 - Mooring and Towing instructions Port of Antwerp 2 page flyer



Annex 5 - Wind measurement location at terminal

Source: MSC PSA European Terminal (MPET)

Annex 6 - Extract of navigational chart of Port of Antwerp

with area of incident marked up in red

[redacted]

Customer Name	[redacted]	Purchase Order No.	N/A
Attending Office	Busan Port	Report Number	BK2564852
First Visit Date	11-Mar-2014	Last Visit Date	11-Mar-2014

Certification Of: **NMP Rope**

Survey Location : Busan, Korea

Manufacturer	DSR CORPORATION
Destination Vessel (Name)	--
Destination Vessel (Class Number)	YY236431
Builder/Shipyard	DAEWOO SHIPBUILDING & MARINE ENGINEERING CO., LTD.
Builder I.D./Hull No.	4261
Purchaser Name	DAEWOO SHIPBUILDING & MARINE ENGINEERING CO., LTD.
Stamping	AB BK2564852

This is to Certify that the undersigned surveyor(s) to this Bureau did, at the request of the customer, carry out the following survey and report as follows:

Traceability of materials used on this project has been verified.
All testing (pressure/load/operational/etc.) has been carried out as applicable and verified in accordance with the applicable Rules/specifications.
Testing machines are maintained in a satisfactory condition and records of their recheck or calibration dates confirmed.
Asbestos-free declaration verified and supporting documentation reviewed.
Final markings for identification confirmed.

Description: NMP Rope
Specification: Manufacturer's Spec.
Diameter: 64 mm
Length of One Piece: 200 m
Weight per Piece: 496 kg
Quantity: 12 coils
Total Weight: 5,952 kg
Construction: (NY1680D/20ply x 35 ea x 12 S/T + NY 1680D/7Ply x 3 ea x 2 ea x 32 S/T)
Minimum Breaking Load: 103 tonnes

Surveyor(s) to The American Bureau of Shipping
Attending Surveyors

[redacted] Electronically Signed on 12-Mar-2014

Reviewed By
[redacted] Electronically Signed on 13-Mar-2014, Busan Port

Page 1

Annex 7 - Certificate for the mooring ropes o/b mv APL MEXICO CITY

LOF 2011

LLOYD'S STANDARD FORM OF SALVAGE AGREEMENT

(Approved and Published by the Council of Lloyd's)

NO CURE - NO PAY

1. Name of the salvage Contractors: (referred to in this agreement as "the Contractors")	2. Property to be salved: The vessel: her cargo freight bunkers stores and any other property thereon but excluding the personal effects or baggage of passengers master or crew (referred to in this agreement as "the property")
3. Agreed place of safety:	4. Agreed currency of any arbitral award and security (if other than United States dollars)
5. Date of this agreement	6. Place of agreement
7. Is the Scopic Clause incorporated into this agreement? State alternative : Yes/No	
8. Person signing for and on behalf of the Contractors Signature:	9. Captain or other person signing for and on behalf of the property Signature:

A **Contractors' basic obligation:** The Contractors identified in Box 1 hereby agree to use their best endeavours to salve the property specified in Box 2 and to take the property to the place stated in Box 3 or to such other place as may hereafter be agreed. If no place is inserted in Box 3 and in the absence of any subsequent agreement as to the place where the property is to be taken the Contractors shall take the property to a place of safety.

B **Environmental protection:** While performing the salvage services the Contractors shall also use their best endeavours to prevent or minimise damage to the environment.

C **Scopic Clause:** Unless the word "No" in Box 7 has been deleted this agreement shall be deemed to have been made on the basis that the Scopic Clause is not incorporated and forms no part of this agreement. If the word "No" is deleted in Box 7 this shall not of itself be construed as a notice invoking the Scopic Clause within the meaning of sub-clause 2 thereof.

Page 1 of 2

D **Effect of other remedies:** Subject to the provisions of the International Convention on Salvage 1989 as incorporated into English law ("the Convention") relating to special compensation and to the Scopic Clause if incorporated the Contractors services shall be rendered and accepted as salvage services upon the principle of "no cure - no pay" and any salvage remuneration to which the Contractors become entitled shall not be diminished by reason of the exception to the principle of "no cure - no pay" in the form of special compensation or remuneration payable to the Contractors under a Scopic Clause.

E **Prior services:** Any salvage services rendered by the Contractors to the property before and up to the date of this agreement shall be deemed to be covered by this agreement.

F **Duties of property owners:** Each of the owners of the property shall cooperate fully with the Contractors. In particular:

(i) the Contractors may make reasonable use of the vessel's machinery gear and equipment free of expense provided that the Contractors shall not unnecessarily damage abandon or sacrifice any property on board;

(ii) the Contractors shall be entitled to all such information as they may reasonably require relating to the vessel or the remainder of the property provided such information is relevant to the performance of the services and is capable of being provided without undue difficulty or delay;

(iii) the owners of the property shall co-operate fully with the Contractors in obtaining entry to the place of safety stated in Box 3 or agreed or determined in accordance with Clause A.

G **Rights of termination:** When there is no longer any reasonable prospect of a useful result leading to a salvage reward in accordance with Convention Articles 12 and/or 13 either the owners of the vessel or the Contractors shall be entitled to terminate the services hereunder by giving reasonable prior written notice to the other.

H **Deemed performance:** The Contractors' services shall be deemed to have been performed when the property is in a safe condition in the place of safety stated in Box 3 or agreed or determined in accordance with clause A. For the purpose of this provision the property shall be regarded as being in safe condition notwithstanding that the property (or part thereof) is damaged or in need of maintenance if (i) the Contractors are not obliged to remain in attendance to satisfy the requirements of any port or habour authority, governmental agency or similar authority and (ii) the continuation of skilled salvage services from the Contractors or other salvors is no longer necessary to avoid the property becoming lost or significantly further damaged or delayed.

I **Arbitration and the LSSA Clauses:** The Contractors' remuneration and/or special compensation shall be determined by arbitration in London in the manner prescribed by Lloyd's Standard Salvage and Arbitration Clauses ("the LSSA Clauses") and Lloyd's Procedural Rules in force at the date of this agreement. The provisions of the said LSSA Clauses and Lloyd's Procedural Rules are deemed to be incorporated in this agreement and form an integral part hereof. Any other difference arising out of this agreement or the operations hereunder shall be referred to arbitration in the same way.

J **Governing law:** This agreement and any arbitration hereunder shall be governed by English law.

K **Scope of authority:** The Master or other person signing this agreement on behalf of the property identified in Box 2 enters into this agreement as agent for the respective owners thereof and binds each (but not the one for the other or himself personally) to the due performance thereof.

L **Inducements prohibited:** No person signing this agreement or any party on whose behalf it is signed shall at any time or in any manner whatsoever offer provide make give or promise to provide or demand or take any form of inducement for entering into this agreement.

IMPORTANT NOTICES

1 **Salvage security.** As soon as possible the owners of the vessel should notify the owners of other property on board that this agreement has been made. If the Contractors are successful the owners of such property should note that it will become necessary to provide the Contractors with salvage security promptly in accordance with Clause 4 of the LSSA Clauses referred to in Clause I. The provision of General Average security does not relieve the salved interests of their separate obligation to provide salvage security to the Contractors.

2 **Incorporated provisions.** Copies of the applicable Scopic Clause, the LSSA Clauses and Lloyd's Procedural Rules in force at the date of this agreement may be obtained from (i) the Contractors or (ii) the Salvage Arbitration Branch at Lloyd's, One Lime Street, London EC3M 7HA.

3 **Awards.** The Council of Lloyd's is entitled to make available the Award, Appeal Award and Reasons on www.lloydsagency.com (the website) subject to the conditions set out in Clause 12 of the LSSA Clauses.

4 **Notification to Lloyd's.** The Contractors shall within 14 days of their engagement to render services under this agreement notify the Council of Lloyd's of their engagement and forward the signed agreement or a true copy thereof to the Council as soon as possible. The Council will not charge for such notification.

Tel.No. + 44(0)20 7327 5408/5407
Fax No. +44(0)20 7327 6827
E-mail: lloyds-salvage@lloyds.com
www.lloydsagency.com

15.1.08 3.12.24 13.10.26 12.4.50 10.6.53 20.12.67
23.2.72 21.5.80 5.9.90 1.1.95 1.9.2000 9.5.2011

Annex 8 - Example of Lloyd's Standard Form of Salvage Agreement