R.T.

MINISTRY OF TRANSPORT

MARITIME AFFAIRS

AND COMMUNICATIONS

Accident Investigation Board

SADABAT

Safety Investigation Report
Loss Of A Car Overboard From the Ferryboat

Marmara Sea / İstanbul Sirkeci Pier
15 March 2014

Report No: 06/2016

PURPOSE

This marine accident is investigated in accordance with the Regulation Concerning Investigation of Marine Accidents, which came into force after being published in the Official Gazette with reference number 26040 on 31st December 2005 and the Regulation on Investigation of Marine Accidents and Incidents which came into force after being published in the Official Gazette No.29056 on 10th July 2014 and which revoked the former Regulation.

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

Purpose of the Marine Accident Investigation is to provide the improvement of the legislation and applications directed to the safety of life, goods and environment by achieving the real reasons which cause the occurrence of marine accidents, and thereby, to avoid a repeat occurrence and to provide the mitigation of negative impacts and consequences following the accident.

Marine accident investigation shall be inadmissible in any judicial and administrative proceedings whose purpose or one of whose purposes is to attribute or apportion liability or blame.

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SYNOPSIS

Picture 1 : Scene of the Accident

The ferryboat SADABAT which made Harem – Sirkeci voyage on 15.03.2014 and started to load the vehicles and passengers at 15:10 hours at İDO Sirkeci Pier no. 2 for Sirkeci – Harem voyage. Thinking the audio warning siren by the ferryboat called SULTANAHMET at the adjacent pier while opening its ramp for the purpose of loading the vehicles and passengers belonged to his ship, the master moved to the other console to depart the ship during the loading of the last vehicle. He saw the closed ramp at the stern side (sea side) at the monitor of the closed circuit camera system above the console and supposed that this was the bow side ramp (loading side), got the idea at that moment that he had heard the report "ramp clear" from the seaman's portable vhf who was coordinating the loading at the bow side and departed the ship ahead before the ramp was closed. Since the ramp through which loading was performed was open at that time, the driver couldn't understand that the ship departed as the loading ramp was open loaded the vessel with his automobile just at the moment the bow ramp of the ship cleared from the ramp, but couldn't stay on the ramp due to the reason that the ramp cleared from the ramp and sloped downwards and slid back and the car fell to the sea at 15:15 hours.

Two of 4 persons in the automobile which fell to the sea got out from the automobile by their own means, and the other 2 persons, a girl aged 5 and an elder woman, lost their lives by drowning.

SECTION 1 – FACTUAL INFORMATION

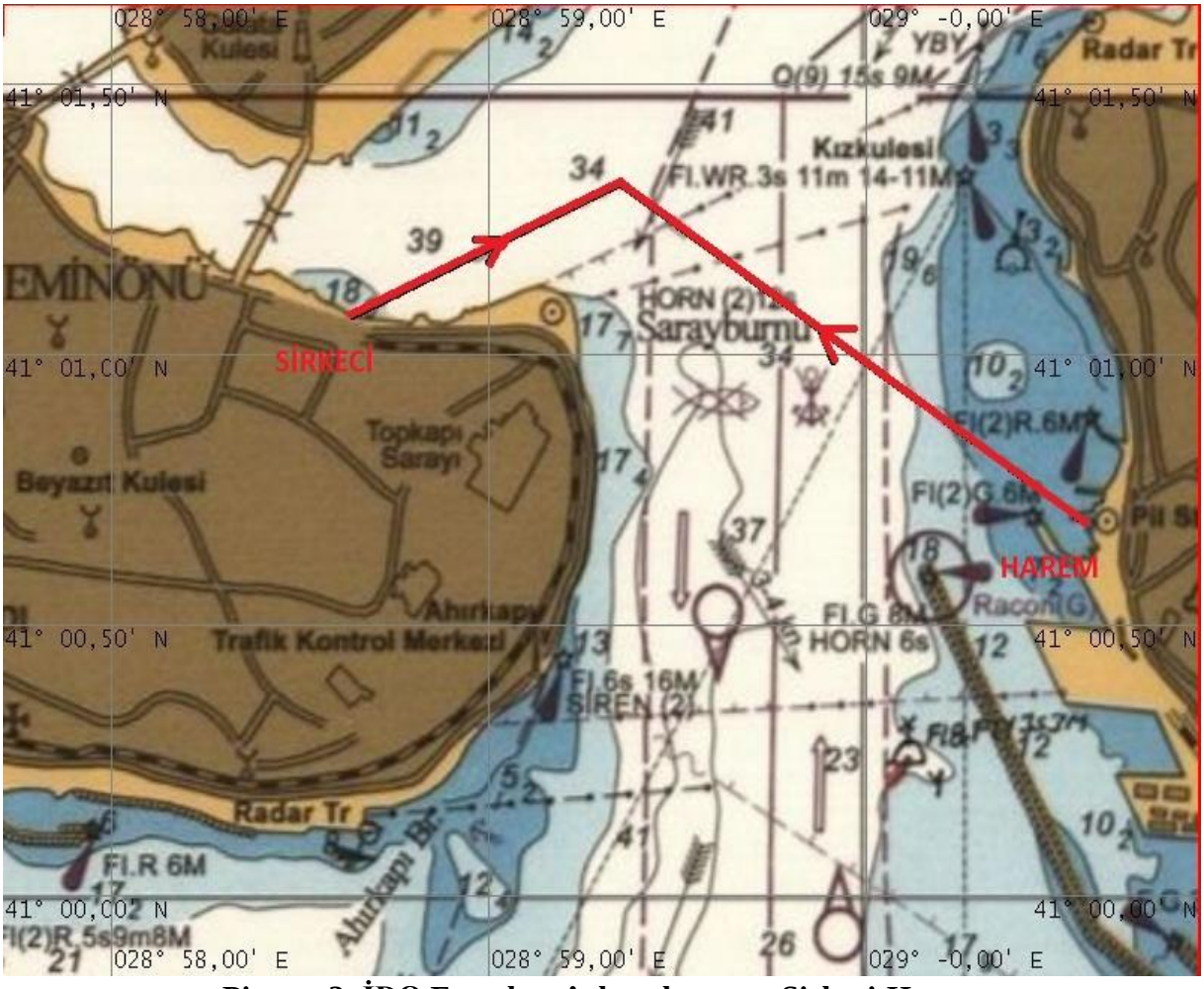
1.1 Vessel and Marine Casualty Particulars

Ship Particulars

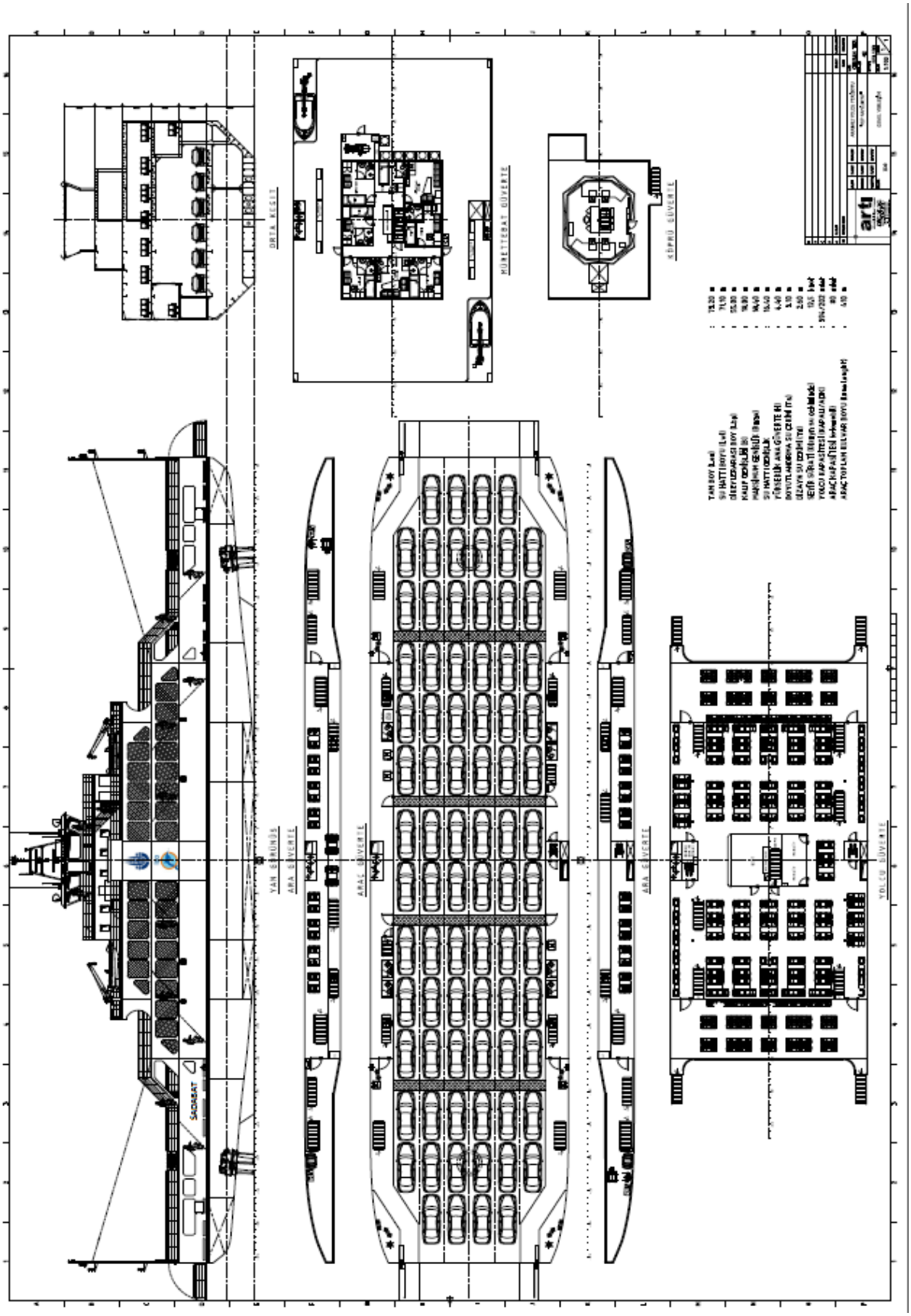
Ship's Name	: SADABAT
Flag	: Turkish
Port of Registry	: İstanbul
Type of Ship	: Ferryboat
Owner of Ship	: İDO Corp.
Construction Year and Place	: 2008 / İstanbul
Gross and Net Tonnage	: 1065 / 608
DWT	: 656
IMO No	: 9415521
Call sign	: TCTG8
Length overall and Width	: 73,2 / 18 m.
Depth	: 3,3 m.
Main Engine	: 4X761Bhp (Producer: MITSUBISHI)
Sea Speed	: 11kts
Number of Personnel	: 6
Port of Departure	: Sirkeci / İstanbul
Port of Arrival	: Harem / İstanbul

Marine Accident Information

Date and Time	: 15March 2014 / 15:15
Place of Accident	: Sirkeci Pier / İstanbul
Location of Accident	: 4101,00 N / 02858,38 E
Injuries/Fatalities/Missing	: 2 dead
Damage	: None
Pollution	: None



Picture 2: İDO Ferryboat's lane between Sirkeci-Harem



Picture 3 : General Layout Plan of SADABAT

1.1.1 Other Information Concerning Vessel

SADABAT is build in İstanbul in 2008 as the last one of 4 sister ships. The ship has a transport capacity 80 automobiles and 596 passengers in summer and 394 passengers in winter. The ship is permitted to navigate in port zone in the Certificate of Seaworthiness and is provided a total of 6 crew having the certificate of competency 1 Oceangoing Master, 1 Oceangoing Chief Engineer, 2 ordinary seamen and 2 oilers. Following its construction date, the ship operates in Sirkeci – Harem line in majority and may also serve at Eskihisar – Topçular line especially at summer months when vehicle intensity increases. Currently 5 ships serve in the same line. The ship is controlled by voith propeller system at the bow and the stern. The ship has not exist a standard rudder system. The ship should be able to handled by two control consoles at the bridge.

1.2 Environmental Conditions

At the accident day, the wind was with a force of 3-4 beaufort in various directions and the sea was calm. The weather was partly cloudy and visibility was good.

1.3 Narrative

1.3.1 Events Occurred Before Accident

The day before the accident, the ferryboat SADABAT plied to 36 voyages between Harem – Sirkeci at 14.03.2014 and her last departure from Harem to Sirkeci Pier was at 21:10 and moored to Sirkeci Pier whole night. SADABAT departed for the first Sirkeci – Harem voyage with the vehicles and passengers at 15.03.2014 07:00 and plied to 6 voyages total until 09:30. At 09:30, the shift was changed at Harem Pier. Up to the accident time the ship completed 12 voyages totally and berthed to Sirkeci Pier at 15:06. The ramp was landed at 15:07:12~~,~~ and disembarkation was commenced at 15:07:19. After a while vehicle loading operation was commenced at 15:10:26 for Sirkeci – Harem voyage. Meanwhile another ferryboat called SULTANAHMET berthed to the adjacent pier at 15:14:02 and following landed her ramp completetely at 15:14:22. The master of SADABAT heard a audio warning siren similar with SULTANAHMET and thought loading was completed. Therefore he moved to the other console to unberth his vessel during the loading of last vehicle. He saw at the monitor of the closed circuit camera system above the console that the ramp at the stern side (sea side) was closed and supposed that this was the bow side ramp (loading side). At the

same time he supposed to heard the report "ramp clear" from the seaman's portable vhf who was coordinating the vehicle loading at the bow side, gave the way ahead at 15:14:33 before the ramp was closed.

The seaman standing on the ramp at–15:14:36 referred with his hand to the last vehicle's driver to approach to opened ramp After a while, the seaman saw the ramp was moving and he retreated from ramp to the deck at 15:14:38. Meanwhile the driver couldn't recognize that the vessel was unberthed and drived to the ramp 15:14:41 during the clearing of the ship's ramp from the shore. However, the vehicle couldn't stay on the ramp due to the sloped ramp downwards and started to slide back. Meanwhile, the master saw vehicle from the monitor at the console and immediately gave the way astern to prevent the fall of the vehicle. However, he supposed to the vehicle was squezzed between ramp and shore, and accordingly gave the way ahead again. Meanwhile the vehicle slid from the ramp and fell to the sea at 15:15:01.

1.3.2 Events Occurred After Accident

The vehicle rapidly sank in the water and disappeared, and meanwhile the seaman who was coordinating the vehicle loading at the bow side on the ramp and a seaman serving in SULTANAHMET immediately jumped to the sea for the purpose of helping the victims. The master of SADABAT called İDO Corp. Inspectorate[1] and requested divers, and the Inspectorate informed the Sea Police and Directorate General of Coastal Safety teams about the circumstance and asked for help. Two of 4 persons in the vehicle got out by their own means, the girl aged 5 and her grandmother were taken out of the sea from the divers of the sea police about 15 minutes after the accident, but lost their lives despite all interventions at the accident scene and in the hospital.

[1] *Inspector: The ship owner's employee in charge who provides the ship be ready and always make ready for voyages.*

Picture 4 : Overboarding Moment of the Car

1.4 İDO İstanbul Ferries Corp.

Marine transportation of İstanbul was provided by Turkish Maritime Lines, City Lines Company to a great extent until 1987. In 1987, İDO **Ferries Corp.** was established by İstanbul Metropolitan Municipality for the purpose of contributing to İstanbul's marine transportation and the solution of traffic jam. In 2005, the management, ferries and piers of Turkish Maritime Lines, City Lines Company were transferred to İDO. Following the transfer, the most important authority responsible for the marine transportation of İstanbul has become İstanbul Metropolitan Municipality. İDO Corp. was privatized in June 2011 and İDO management was taken over by TASS (Tepe-Akfen-Souter-Sera) Joint Venture Group. İDO Corp. currently continues its operations with a total of 24 Sea Buses, 9 Speed Ferries, 19 Ferryboats in 16 lines and more than 50 million passengers and more than 7 million vehicles are transported in 2013. In Sirkeci – Harem line where the accident occurred, 8.207.000 passengers and 2.747.000 vehicles are transported by İDO again in 2013.

Türkiye Cumhuriyeti

Ulaştırma, Denizcilik ve Haberleşme Bakanlığı

Gemiadamı Donatımında Asgari Emniyet Belgesi

Republic of Turkey,Ministry of Transportation, Maritime Affairs and Communications
Minimum Safe Manning Document

Bu belge Denizde Can ve Mal Güvenliği Uluslararası Sözleşmesi SOLAS-74 (değişiklikleri ile beraber) kural V/14 uyarınca Türkiye Cumhuriyeti tarafından düzenlenmiştir.

This document is issued under the provisions of regulation V/14 of the International Convention For The Safety Of Life At Sea, 1974, as amended under the authority of the Government of Republic of Turkey.

Gemi Adı Name of Ship	**SADABAT**	**Çağrı veya tanıtma işareti** Distinctive number or letters	**TCTG8**
Sicil Limanı Port of Registry	**İSTANBUL**	**Gros Tonajı** Gross Tonnage	**1065,36**
Sicil Numarası Register Number	**TUGS 1592**	**Ana Makine Gücü (kW)** Main Propulsion Power (kW)	**2271 kW**
IMO Numarası IMO Number	**9415521**	**Gemi Tipi** Type of Ship	**ARABA FERİSİ**

Bu belgede adı geçen gemi,aşağıdaki tabloda verilen sayı ve yeterlik/kapasitedeki gemiadamları ile donatıldığında; ulusal ve uluslararası mevzuata göre emniyetli donatılmış sayılır.

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

Yeterlik / Kapasite Grade / Capacity	**Certificate (STCW Regulation)** Sertifika (STCW Kuralı)	**Kişi Sayısı** Number of Persons	
Kaptan Master	II/2	1	*
1.Zabit Chief Officer	II/2	-	
Vardiya Zabiti Officer in Charge of Navigational Watch	II/1	-	
Güverte Tayfası (Grup-1) Deck Rating (Group-1)	II/4	1	
Güverte Tayfası (Grup-2) Deck Rating (Group-2)	-	1	
Telsiz Zabiti Radio Officer	IV/2	1	**
BaşMühendis Chief Engineer	III/3	1	***
İkinci Mühendis Second Engineer	III/2	-	
Vardiya Mühendisi / Makinisti Officer in Charge of Engineer Watch	III/1	-	
Makine Tayfası (Grup-1) Engine Rating (Group-1)	III/4	1	
Makine Tayfası (Grup-2) Engine Rating (Group-2)	-	1	

Sefer Bölgesi / Voyage Area	**İdari Liman Seferi**

Düzenlenme Tarihi ve Yeri
Date and Place of Issue: **11.03.2014 / İSTANBUL**

Geçerlilik Tarihi
Date of Expire **30.04.2014**

T.C. İSTANBUL VALİLİĞİ İL EMNİYET MÜDÜRLÜĞÜ DENİZ POLİS BAŞKANLIĞI 1923

Mustafa KIRAN
İSTANBUL LİMAN BAŞKANI a.
HARBOUR MASTER OF ISTANBUL

Picture 5 : Minimum Safe Manning Document of SADABAT

1.5 Minimum Safe Manning Document

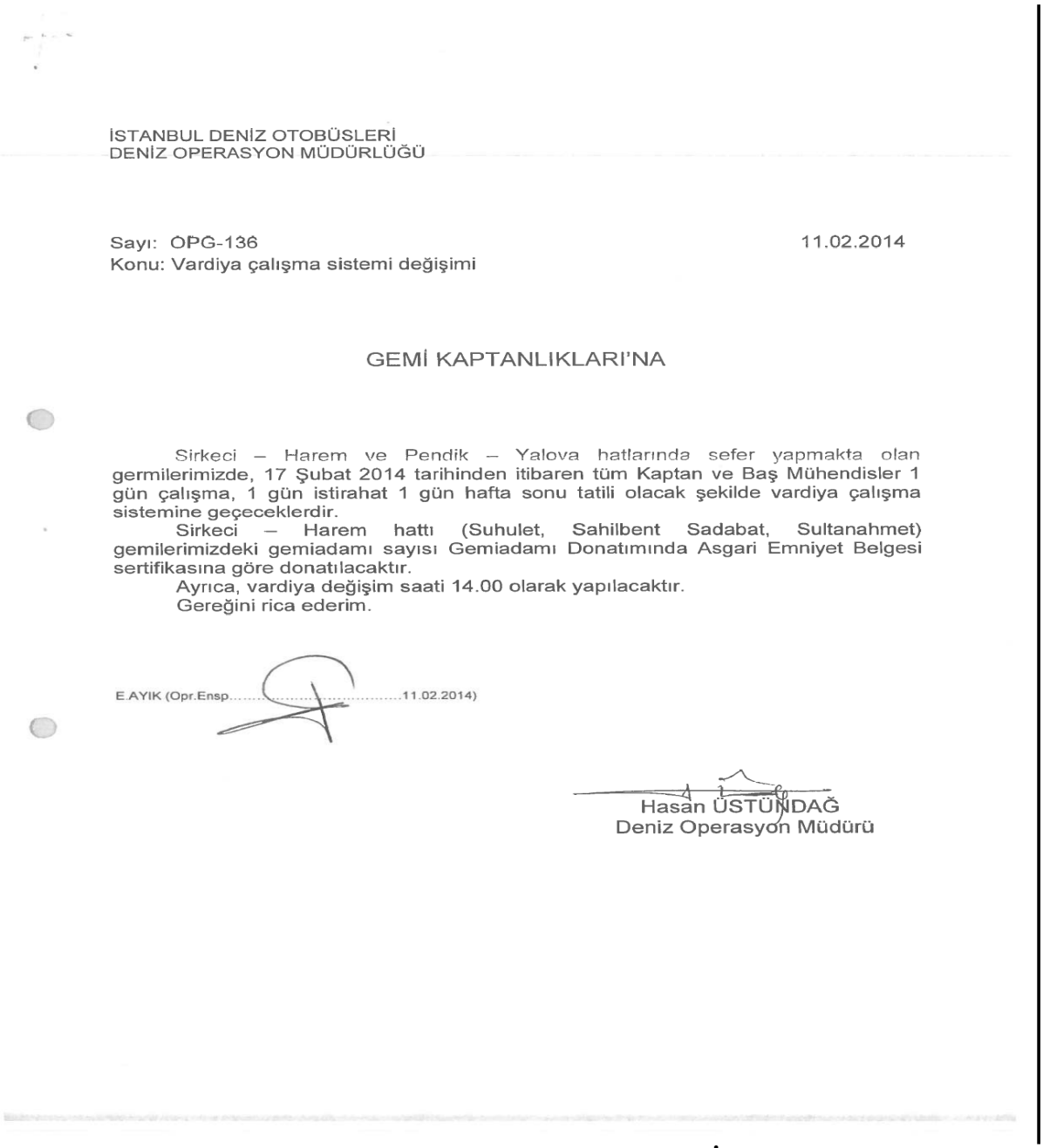
The ship should be manned, in accordance with Minimum Safe Manning Document (Picture: 5), with 1 Master at least in STCW II/2 certificate of competency, 1 deck rating in II/4 certificate (group 1: bosun, able seaman, seaman), 1 deck rating in deckboy certificate, 1 radio officer in IV/2 certificate, 1 chief engineer in III/3 certificate, 1 engine rating (group 1: engine bosun, oiler) in III/4 certificate, and 1 engine rating in wiper certificate. In addition, it is indicated in the attachment of the mentioned document that a further radio officer is not needed in case at least 2 seamen have short distance radio operator grade within VHF coverage area. Since there exist 2 seamen in the ship to provide these conditions, a further radio officer is not assigned in the ship. It is observed that the ship is manned with sufficient number of personnel having the minimum conditions indicated in the Minimum Safe Manning Document and the Directive Concerning Manning of Ships.

1.6 Watchkeeping System

Triple watchkeeping pattern in an order of 1 day work and 2 days rest was applied until 17.02.2014 for the Masters and Chief Engineers of the ships navigating in Sirkeci - Harem line. However, with the instruction sent to the Ship Masters on 11.02.2014, İDO has indicated that the Masters and Chief Engineers shall work in two watches as 1 day work, 1 day rest and 1 day week-end leave in Sirkeci – Harem and Pendik – Yalova lines from 17.02.2014.

In addition, decreasing by 1 the number of deck personnel who were again working in the watch system as 1 day work, 1 day rest and 1 day week-end leave is asked with the mentioned instruction to 2 seamen asked in the Minimum Safe Manning Document.

It is also asked in the mentioned instruction that watch handover time applied by all ship personnel as between hours 09:00 to 10:00 in the morning as per the location of the ships (Sirkeci, Harem) would be changed as 14:00.



İSTANBUL DENİZ OTOBÜSLERİ
DENİZ OPERASYON MÜDÜRLÜĞÜ

Sayı: OPG-136 11.02.2014
Konu: Vardiya çalışma sistemi değişimi

GEMİ KAPTANLIKLARI'NA

Sirkeci – Harem ve Pendik – Yalova hatlarında sefer yapmakta olan germilerimizde, 17 Şubat 2014 tarihinden itibaren tüm Kaptan ve Baş Mühendisler 1 gün çalışma, 1 gün istirahat 1 gün hafta sonu tatili olacak şekilde vardiya çalışma sistemine geçeceklerdir.

Sirkeci – Harem hattı (Suhulet, Sahilbent Sadabat, Sultanahmet) gemilerimizdeki gemiadamı sayısı Gemiadamı Donatımında Asgari Emniyet Belgesi sertifikasına göre donatılacaktır.

Ayrıca, vardiya değişim saati 14.00 olarak yapılacaktır.

Gereğini rica ederim.

E.AYIK (Opr.Ensp.....11.02.2014)

Hasan ÜSTÜNDAĞ
Deniz Operasyon Müdürü

Picture 6 : Instruction dated 11.02.2014 of İDO Corp.

1.7 Work and Rest Hours in Legislation

The expression "In general terms the duration of work is eight hours a day and forty eight hours a week. This duration is applied by dividing equally to the work days of the week. The duration of work is the time period when the seafarer works on job or keeps watch…" is involved in article 26 of Maritime Labor Law number 854.

Besides this, article 84 of the Seafarer's Regulation contains the provisions;

a) "Seafarer who keep watch at the ship and the seafarer who have tasks concerning safety, prevention of pollution and security;

1) Shall be given a rest of at least ten hours a day and at least seventy two hours within a seven days period.

2) The time period between the successive rest periods may not exceed fourteen hours.

3) Daily rest hours shall be seperated into two sequences at most. In this case, one of them shall not be less than six hours.

4) The rest hours which is at least ten hours may be shortened not less than six hours in extraordinary cases such as emergency case and drills. However, the shortened rest hours shall be such to seperate minimally and not make a fatigue. Total rest hours shall not be less than seventy hours a week."

Although not approved in our legislation yet, the limits of work and rest hours shall be as follows as indicated in article 2.3 of Maritime Labour Convention (MLC 2006), International Labor Organization:

(a) maximum work hours shall not exceed;

(i) 14 hours in any 24-hour period; and

(ii) 72 hours in any seven-day period;

b) minimum rest hours shall not be less than;

(i) ten hours in any 24-hour period; and

(ii) 77 hours in any seven-day period.

Rest hours may be seperated into no more than two periods, one of them shall be at least six hours in length, and the interval between consecutive periods of rest shall not exceed 14 hours.

1.8 Listening and Communication VHF Channels at Bridge and Internal Communication System

There exist a total of 4 fixed VHF devices on the bridge, on both consoles. In addition, a portable VHF is used to provide communication between the master and the seaman who coordinates on the ramp the loading and unloading of vehicles. In addition, internal communication system is used from time to time to provide communication between the ramp and bridge. One VHF is in dualwatch[2] position and 16th channel is listened in addition to 13th channel which is the VTS[3] channel.

Picture 7 : Fixed VHF's on Bridge Control Console

[2]*Dual Watch: The mode which enables the listening of two channels simultaneously in VHF devices.*

[3]*VTS (VesselTraffic Service):The system which responds to varying traffic conditions by monitoring the sea traffic and which regulates and plans the sea traffic actively for the purpose of improving the efficiency of sea traffic in the responsibility area.*

The other fixed VHF is set to 9th channel to communicate and listen to the local sea traffic. The mentioned VHF's are located on the console just before the seat which the master uses when steering.

1.9 Bow and Stern Ramps

There are two ramps on the ship at the bow and stern with dimensions 12,50x3,60 m operating with hydraulic system. 2 of the ramps control panels are located on the deck at starboard bow and starboard quarter and the other one is on the bridge. The ramps have 3 functions.

a) Ramp opening - closing
b) Ramp locking
c) Floating mode

The ramp is operated in floating mode in loading and unloading vehicles and passengers to and from the ship. The function of floating system is to prevent excessive loading of the cylinders, therefore the ramps in the elevation differences formed due to the waves and weight differences.

Picture 8 : Ramp Control Panel (Vehicle Deck)

Picture 9 : Bow and Stern Ramps

1.10 Closed Circuit Camera System On Board

19 recording cameras exist on board and two are fixed for to watch both ramps. In addition, there exist four more fixed cameras in a position to watch both sides of the ship used during manoeuvres. 6 cameras expressed above are intensely used during the navigation and manoeuvre. The other cameras are fixed in various positions to monitor the passenger halls etc. living locations. It is detected by the technical team who have arrived to get the camera records after the accident that the camera which records the bridge (image and sound) didn't can since 25.02.2014. It couldn't be detected until the accident day.

Desired display may be viewed from the monitor located at the starboard bridge control console by selecting the numbers of cameras present on board. In the interview with the masters of both watches on duty, it is expressed that the mentioned monitor was viewed by dividing it into 4 parts and those were the displays by the cameras which see the bow and stern ramps and 2 cameras which see the side of berthing.

Picture 10 : Closed Circuit Camera System Monitor at Bridge

1.11 Key Personnel

The master is 41 years old and has Oceangoing Master certificate of competency. He is working in ships since 1997 and is a master since 2004. He is working in İDO since 2005. He initially has worked at SADABAT in 2009. He has 1 year's experience in similar ships until 2011 and he is working in Sirkeci –Harem line in the last 1,5 year.

Ship Chief Engineer is 40 years old and has Oceangoing Chief Engineer certificate of competency. He is working in ships since 1997 and is a Chief Engineer since 2003. He started to work in İDO in June 2007. He is on duty at SADABAT since September 2012.

The deck personnel who has the duty of keeping watch on bridge is 34 years old, have able seaman certificate and 17 years' sea experience. He is working for 7 years in İDO and 5,5 years in SADABAT.

The deck personnel who was coordinating the loading of vehicles to the ship on the ramp during the accident is 31 years old, has officer in charge of navigational watch and serves as

able seaman. The said personnel who has 13 years sea experience is working in İDO since 2008. He is working at SADABAT in the last 1 month before the accident.

1.12 Division of Labor On Board

1.12.1 Navigation of Vessel and Division of Labor During Navigation

The ship performs 25-35 voyages in average although it varies from day to day (1 course between Sirkeci – Harem or Harem – Sirkeci is indicated as 1 voyage). The average navigation distance on the route of the ship in Sirkeci – Harem line is 1,6 miles. The average manoeuvre and navigation duration passed from the ramp of ship is closed to it is opened again is 10 minutes. The master, chief engineer and able seaman are present on the bridge during navigation. The chief engineer is present continuously on the bridge during navigation and vehicle / person loading / unloading for the purpose of following the temperature, pressure etc. values of the necessary machines with the assistance of the indicators located on the bridge as the engine room of the ship is designed as "*unmanned machinery space*". In addition, the company gives to the chief engineer the duty of keeping watch on the bridge in addition to his present duties.

Besides, one of two seamen present on board during navigation is on duty as watchman. This seaman helps the other one who coordinates the loading of vehicle in hours when vehicle traffic is intense, and when the vehicle loading is finished and the ramp is closed, he immediately goes up to the bridge and continue his duty of keeping watch. He tries to relieve feed, toilet etc. needs at times when the vehicle traffic is less intense and generally during unloading. It is learned that the seaman who is given the duty of keeping watch was at the hall for lunch, therefore not on the bridge during the occurrence of the accident.

On the other hand, the seaman who is on duty on the vehicle deck during loading – unloading operations is given the duty of wandering at the vehicle deck and passenger hall during navigation to perform the checks concerning safety. Two oilers who are on duty on board as engine personnel make the necessary checks and maintenance and handling in the engine room during navigation and loading – unloading.

1.12.2 Berthing – Unberthing and Division of Labor

Ropes are not used during berthing – unberthing and loading – unloading, only the ship is manoeuvred by her machines. The ship operates during loading and unloading without stopping its engines, but providing forward movement of one engine to provide the ramp kept fixed to the pier and the other engine to lean the ramp to the pier. The speed of engines vary depending the condition of sea and the condition of current at the pier.

The seaman on duty at the vehicle deck gives the information to the master about the distance of the ship to the pier during the berthing manoeuvre in case of request by the master and opens the ramp upon the generally verbal (portable VHF) and sometimes signal (ship's whistle) instruction of the master after the manoeuvre. He coordinates the loading of vehicles in the loading operation.

During the unberthing manoeuvre, the seaman on duty at the vehicle deck closes the ramp after vehicle / person loading is completed in cooperation and coordination with the dockman[4] at the coast. After the seaman closes the ramp, he reports to the master by portable VHF that the ramp is clear, and the master begins maneuvering the ship after observing visually or by closed circuit camera system that the ramp is closed after getting the report.

1.12.3 Division of Labor When Ship Is Berthed at Night

After the ship completes its evening voyages and berthed at the pier, the master and chief engineer go to rest. 2 seamen and 2 oilers on duty on board keep watch in 2 hour periods at night to control the fire, rope, weather and sea condition, etc. from the point of the safety.

1.13 Transit and Local Traffic at Area

Although being one of the most important waterways in the world, İstanbul Strait is a very dangerous strait from the point of being narrow, having sharp curves, shallows and 4 important currents, as well as, navigation. In addition to the mentioned geographical challenges, a daily average of 130 transit passes and about 1700 daily local traffic movements improve this danger. It is observed that the majority of 1700 local traffic movements is performed in the region where SADABAT navigates and, especially the routes followed in the voyages to Kadıköy are passes cross to the route continuously followed by SADABAT. In addition, it is seen that the route followed by SADABAT requires passes continuously cross

[4] *Port attendant who directs the vehicles on the pier.*

to Traffic Separation Order used by the transit traffic. In this context, both geographical challenges of İstanbul Strait and navigation in transit and local traffic make navigation compelling in the region and require utmost care and concentration.

1.14 Applications of Safety Management System (SMS)

1.14.1 Safety Management Certificate (SMC) and Document of Compliance (DOC), Internal Audit

SMC certificate for the ship was issued on 21.02.2011 by Turkish Lloyd and the interim audit concerning this certificate was again performed by Turkish Lloyd on 22.05.2013. It is indicated in the audit report issued as a result of the mentioned interim audit that major non-conformity, non-conformity or observation was not detected in the ship concerning ISM.

On the other hand, DOC for the ship was issued on 12.04.2012 by Turkish Lloyd and annual audit of the company was performed on 01.07.2013.

An internal inspection was performed on 20.09.2013 by the audit inspectorate of the company and it is indicated in the internal inspection report that major non-conformity, non-conformity or observation was not detected.

1.14.2 Drills

Log and drill record books are available concerning that "Man Overboard" drill was performed in the ship in Sirkeci on 11.03.2014 at 14:30 – 14:55 hours, all personnel participated in the drill and the drill was found sufficient. Again, "Grounding" drill was performed the same day between 15:00 – 15:30 hours.

1.14.3 Risk Assessment

A risk assessment was made last on 25.04.2013 prior to the accident by the masters of 3 watches on duty and a risk assessment form was filled. The activities which may pose a danger are indicated as;

a) Guardrail spacing of the upper floor stairs at the open deck,

b) Landing and take off the ramps for vehicle unloading,

c) Sides of upper floor stairs for passengers,

d) Dispose of the vehicles on the vehicle deck.

Picture 11 : İDO Corp.'s Sirkeci Pier

PART 2 – ANALYSIS

2.1 Applications of Safety Management System (SMS)

An internal inspection was performed in the ship on 20.09.2013 by the company inspectors for the purpose of auditing the existing system in the scope of SMS applications and it is indicated in the internal inspection report that major non-conformity, non-conformity or observation was not detected. Again, it is understood from the records presented to us that "Man Overboard" drill was performed in the ship on 11.03.2014 just before the accident in order to be ready for emergency cases. However, it is observed that a drill procedure is not prepared by the company directed to vehicle overboard during loading and unloading operations, which are basically built to carry vehicles such as SADABAT. Recalling that a vehicle had overboarded in Yalova on 27 September 2010 from another ship owned by İDO Corp. the non-development of any procedure since that date and nonperformance of any drill for the purpose of preparation to such emergency cases confronts us as a major deficiency.

2.2 Work and Rest Hours

2.2.1 Work and Rest Hours In The Aspect of Seafarers Regulation

The company has reduced the shifts for the masters and chief engineers working in Sirkeci – Harem and Pendik – Yalova lines from 3 to 2 with the instruction of dated 11.02.2014 (from 1 day work and 2 days rest to 1 day work, 1 day rest and 1 weekend day leave) and again, downsized in the total number of personnel on duty in its by decreasing the number of deck personnel from 3 to 2 in the ships again in Sirkeci – Harem line ships due to various commercial concerns. The company is contented with changing the watch handover time from hours 09:00 – 10:00 in the morning to 14:00 directed to preventing the probable negative influence of this situation on the personnel. The difficulties arising from the obligation of performing the same work with less personnel which workload is never decreased, but contrarily the personnel worked for very long work hours, are ruled out.

However, the master expressed that himself and the other masters didn't change the accustomed watch handover time despite the mentioned instruction with the opinion that to spare more time for their formal and private works by not splitting the day, the new watch handover time 14:00 indicated in the instruction were not observed and in general, the watch was handovered at about 10:00 hours in the morning. The master expressed that he started watch at 09:30 hours in the morning of the day when the accident occurred by loading the ship in Harem.

The company has assessed that it would change the habits of long years by publishing an instruction and not made an audit directed to detect the situations contrary to the published instructions. Although it is the liability of the company to detect whether the mentioned instruction to change the watch handover time which was applied in the ship for a long time and highly adopted by the personnel, no audit was made and no contradiction to the instruction was detected in the last one month time. It is assessed that the company has implicitly overlooked the former watch handover time currently applied by the personnel.

It is seen that the master took over the watch about 09:30 and worked about 12,5 hours in a duration of one calendar day until 22:00. It is obvious for a master that 12, 5 hours of work performed in the heavy tempo of continuous navigation – manoeuvre and operation (loading – unloading) accompanied by miscellaneous external factors by performing about 30 voyages in

average per day in a navigation area of intense sea traffic as İstanbul Strait shall make a person mentally and physically very tiresome and weary.

The ships generally commence their voyages at 07:00 and continue until 21:00 – 22:00 according to the condition of the vehicle traffic. Examining the work hours of the key personnel in the ship, it is seen that all start duty between hours 09:00 to 10:00 in the morning and hand over their watch again between hours 09:00 to 10:00 the next day depending on their residences being on European or Asian side. In this case, it is detected that all personnel on duty in the ship work about 12 hours the day they take over the watch, and 2-3 hours from 07:00 to 09:00 – 10:00 the next day which is minimum 14,5-15 hours within a total time of 24 hours. (2 hours night watches kept especially by the seamen when the ship is berthed at night are not included in this duration.) The time passed in the works performed to prepare the ship for the voyage before 07:00 in the morning and the time passed for many routine works performed in the evening after the voyages end are not included in the mentioned durations. When including such durations, it shall be seen that especially the masters and seamen have to work minimum for 15-16 hours within the period of 24 hours. Even if the ship personnel work in the direction of the mentioned instruction, it doesn't seem possible for them to work for less than 15 hours within the period of 24 hours in the available double shift system.

In addition, while the masters started to take over their watch floridly by working 1 day and resting 2 days until the said instruction be published, they are forced to rest 1 day less following 17.02.2014. While they kept watch 10 days in average prior to the instruction, they have started to keep watch 12 or 13 times per month by this instruction. Together with the increase in the number of watches, their work hours have improved between 48-72 hours per month and their rest hours have reduced as such. More important than the increase in the number of shifts, a work tempo such as they have 6 days watch a week either taken or handed over emerged. In addition to this intense tempo, the time passed in the transportation from home to ship or from ship to home in a metropolis like İstanbul parallel to the ~~increase~~ improve in the number of watches kept and their rest hours reduced in this direction.

On the other side, looking at the situation in commercial highway transportation, it is stated in article 98 with the side heading "Obligation of Observing and Auditing Principles of Driving and Rest Periods" of Highways Traffic Regulation enforced upon publishing in the Official Gazette of dated 18.07.1997 and number 23053 (amended with heading: OG-02/09/2004-25571);

“The procedures to be observed in the obligation of observing and auditing principles of driving and rest periods are shown below:

A) The drivers of the vehicles which perform cargo transport for commercial purposes and which maximum weight exceeds 3,5 tons, and the drivers of the vehicles which perform passenger transport for commercial purposes and which transport capacity exceeds 9 persons including the driver are forbidden to drive for more than a total of 9 hours and continuous 4,5 hours within any 24 hour duration.”

As seen here, while the upper limit of daily driving is determined as 9 hours and the duration of continuous driving as 4,5 hours for drivers in commercial highway transportation, it is assessed that indetermination of any upper limit in the navigation of the ships on the sea, especially in the sea navigation of two sides of İstanbul Strait which requires care and concentration at least as the highway traffic is unreasonable. It is known that this point is not observed not only in SADABAT and other İDO ships, but in all ferries which carry passengers between two sides of İstanbul and Çanakkale Straits.

It is assessed that provision of daily minimum 10 hours rest duration (maximum 1 hours work duration) is not found possible with this watch system even if weekly 77 hours rest duration is provided in accordance with the provisions of Seafarers Regulation.

2.2.2 Work and Rest Hours In The Aspect of Maritime Labor Law

Work duration is determined as eight hours a day and forty eight hours a week in the Maritime Labor Law and it is stated that this duration shall be applied by seperating equally to the work days of the week and be accepted as the duration when the seafarer worked on job or the duration the seafarer keeps watch.

It is observed in the watch order applied in SADABAT before the accident that the personnel works 12,5-13 hours within a calendar day, 14,5-15 hours within the 24 hours watch period and durations up to 45 hours within one week period. It is seen in this case that the work duration determined in the Law as 48 hours a week is not exceeded, but it is assessed that the work duration determined as 8 hours a day is exceeded. The company has determined the watch start as 14:00 by 11.02.2014 dated instruction. It is considered that the company aims to provide 8 hours work order between 14:00-22:00 and 7 hours work order between 7:00-14:00 in this way and thus target the application of eight hours a day rule in the Law.

However, it is assessed that it shall be a more correct approach to take as basis the duration passed on job in any 24 hours time period as a daily work time instead of a calendar day. This approach is expressed in Article 98 of the Highways Traffic Regulation as "the drivers ….. are forbidden to drive for more than a total of 9 hours …… within any 24 hour duration.", and the same expression has taken place in the same way in article 2.3.5 of MLC 2006.

Therefore, the rule of working eight hours in a routine way in one day (24 hours period) is violated and this duration is seen to reach to 15 hours. This situation also exceeds the work time to be applied maximum as 14 hours in accordance with the "Seafarers Regulation". The matters concerning overtime work fees are regulated in the Maritime Labor Law, but an upper limit concerning overwork doesn't exist. It is indicated in article 63 of the Labor Law that work time may not exceed 45 hours a week, 11 hours a day, and again in a 2 months period, the average work time may not exceed 45 hours. On the other hand, maximum work time is regulated as 14 hours a day, 91 hours a week in the "Seafarers Regulation". Monthly and annual upper limits don't exist. No upper limit is indicated in the Maritime Labor Law.

It was stated that the work time of eight hours a day from the point of Maritime Labor Law increased to 15 hours in SADABAT within 24 hours period. Thus, overwork time reaches 7 hours within 24 hours period. It is said in article 41 of the Labor Law that "Total overwork time may not exceed two hundred and seventy (270) hours a year." On the other hand, in SADABAT which working life is regulated in accordance with the Maritime Labor Law where there is no limitation, overwork time reaches 7 hours within 24 hours period, weekly overwork time reaches 21 hours and annual overwork time reaches 21 hours x 48 weeks = 1008 hours.

In addition, it is assessed that, the oceangoing ships which contain sufficient sheltering and rest areas for all personnel and which workload is less are considered when the work times are determined in the Maritime Labor Law, whereas, working in the direction of the same work times in SADABAT and like ships which perform very short voyages, which contain limited sheltering and rest areas and workload is heavy is not a quite correct approach, but lesser work times similar to mine workers must be determined.

In Coastal Maritime Law of Japan dated 2005, daily work time is determined as 8 hours, weekly 40 hours, in case of overwork, maximum 14 hours in 24 hours period, 72 hours in 7 days period, maximum 56 hours in a overwork period of four weeks. It is seen that the work

times are kept shorter in coastal navigations where more entrance to and exit from the ports is made, and more loading, unloading and port operations are made like the work times on land. It is assessed that a similar approach may be considered in our country for the ships performing coastal voyages.

2.3 Manning

The company has decreased by 1 the number of deck personnel composed by 3 seamen for each watch to 2 seamen which is asked in "Minimum Safe Manning Document" by the instruction of 11.02.2014 sent to the masters. In the interview made with deck personnel after the accident, it is indicated that 1 seamen is present continuously on the bridge as watchman when 3 seamen are assigned for the watch, one of the other two seamen take over the watchman duty in feed etc. needs, therefore there watch is kept continuously on the bridge.

However, a total of 2 seamen were on duty in the moment of accident in accordance with the mentioned instruction. It is learned that the seaman on duty as watchman was in the hall for lunch, but not on the bridge, and the other seaman was on duty on the deck for vehicle unloading and loading. Although the accident occurred when the ship was at the pier, considering that the ship didn't stop its engines at the pier, it is assessed that an extra eye on the bridge watching the loading and unloading would be a big barrier on the subject of preventing similar accidents. In this context, it is thought that decreasing the number of the seamen by one negatively affected the safety of navigation and operations of the ship to a great extent and influenced the occurrence of accident. In addition, it is thought that it is difficult for the chief engineers who are assigned as watchman in addition to their other duties to perform their duty of watching efficiently. Although the chief engineer was on the bridge at the moment of accident, our opinion is that he didn't perform the duty of keeping efficient watch as required. It is assessed that assigning chief engineers in the ships as watchman doesn't provide sufficient and required contribution to the performance of efficient watch as stated in the International Guideline to Prevent Collision at Sea and it is considered that keeping a seaman on the bridge as watchman especially in navigation and during loading and unloading as long as the engine is operating shall be an effective method to prevent the accident.

There is a provision "the Administration is authorized to make changes in the numbers of seamen shown in the charts in this Directive due to reasons such as the diversity and scope of

the technical facilities which the ships own, seasonal sea and weather conditions in their navigation areas, the nature, closeness or shortness of the duration of the voyage, occurrence of urgent and unexpected events…" in article 4 of the Directive Concerning The Manning of Ships. In this framework, it is assessed that the nature of work, performance of efficient watch, ship traffic in the navigation area, workload, work and probable rest durations must also be considered while the Administration determines the minimum number of personnel in the manning of ships and vessels engaged in passenger transportation in İstanbul Strait.

Although, in this context, it is observed that the ship is manned with the minimum number of deck personnel specified in the Minimum Safe Manning Document, a conclusion is reached that 2 seamen are not sufficient for the safe manning of ferryboats operating in Sirkeci – Harem line.

2.4 Factors Influencing Tendance and Performance of Master Before and During Accident

2.4.1 Fatigue

Tiredness is defined in the circulars of number (IMO)MSC/Circ.813 and MEPC/Circ.330 of International Maritime Organization (IMO) as a decrease in the physical and/or mental capacity as a result of physical, mental or emotional effort which may impair almost all physical abilities such as endurance, speed, reaction time, coordination, decision making or balance.

The master was on voyage for 5,5-6 hours by the time of occurrence of the accident, therefore, it is thought that he didn't have a tiredness originating from this duration of work or the duration of sleep of that day or the sleeping quality, but he had a continuing tiredness and stress created by more work and less rest as a result of reduce in shift's run from 3 to 2 for about 1 month. In addition, it is thought that very frequent travelling and manoeuvreing with the ship, intensity of sea traffic on the route of navigation and the sounds on the bridge and surroundings has improved the master's stress and caused a general tiredness and absence of mind. Because it is known that the individuals suffering from tiredness are prone to making errors in the works which require care and memory.

2.4.2 Communication Devices and Sounds on Bridge

As indicated before, a total of 4 VHF channel, 3 on the bridge and one at the port with portable VHF are continuously listened.

Taking account the high decibel sounds from the vessels of local traffic and international traffic in İstanbul Strait, the sounds from the land vehicles loading on the ship and the sounds from the communication devices on the bridge, it is assessed that a great sound pollution is formed. It is proved with scientific data that sound pollution or noise causes negative impacts on humans. It is indicated that sound pollution affects the humans physically, physiologically, and psychologically, as well as, has negative impacts on their performance.

In the article with the heading "Impact of Noise on Human Health" stated in the internet site of the Ministry of Environment and Urbanization, it is indicated that noise causes tiredness and slowing in mental actions, reduces productivity, causes non-understanding the sounds heard. It is stated that noise leads to concentration impairment even at the lowest noise level in the classification. In this context, a conclusion is reached that the noise or sound pollution before or during the accident caused tiredness, attention deficit and concentration impairment of the master, and in this context, caused him to perceive the siren sound of another ship as the siren sound of his ship, and get an idea that a call was made to him from the radio although there was no such call.

2.4.3 Transit and Local Traffic

In addition to the dangerous structure of İstanbul Strait originating from its geomorphology, concentration of the major part of 130 daily transit pass in average and local traffic movement which amounts to about 1700 daily passes in the region where SADABAT navigates, the route which SADABAT should follow in Sirkeci – Harem line required continuous passes contrary to the Traffic Separation order used by the transit traffic has made the Strait a waterway in which navigation is though. A conclusion is reached that concentration of the transit and local traffic, and fisher, agency motorboats etc. small vessels especially in this region has constituted a serious safety risk perception followed by great pressure on the masters and the work performed needs continuous concentration. It is assessed that such factors may lead to tiredness and attention deficit.

2.4.4 External Factors

The person who is on duty in the company as replacement master in one day weekend leaves of the masters of the ships operating in this line has gone to the bridge and had a dialogue with the master and chief engineer just before the accident. As a matter of fact, the accident has occurred just at that moment. Therefore, it is assessed that this person who arrived at the bridge might be effective in the concentration impairment of the master.

2.5 Enabling Safe Unberthing

Owing to the ship doesn't give rope during loading – unloading operations to fast safely to the coast, the ship operates its engines by providing forward movement of one engine and the other engine to lean the ramp to the pier depending on the condition of sea and condition of current at the pier.

During the unberthing manoeuvre, departure commenced after the seaman on duty at the vehicle deck closes the ramp after vehicle / person loading is completed in cooperation and coordination with the dockman at the coast, and after the seaman closes the ramp, he reports to the master by portable VHF that the ramp is clear, and the master begins the manoeuvre after hearing that the ramp is closed and confirming visually or by closed circuit camera system that the ramp is closed. Even the ramp is not being closed by the captain , but the seaman and warns the master for the clearance of the ramp, subsequently the master looks over visually and through camera that the ramp is closed is assessed as a precaution to prevent the accidents for the safe berthing-unberthing.

Besides the other safety precautions, it is thought that giving rope to the coast while berthing the pier should be assessed in addition to the mentioned precautions in the safe maneouvre of the ship. In addition, it is assessed that to fast the ship safely to the coast by giving rope shall seriously improve the safety of the ship in probable engine breakdowns and bad weather and rough sea conditions.

2.6 Events Occurred Before Accident

The master has gave ahead at 15:14:33, however the seaman standing on the ramp and referred with his hand to the last vehicle's driver in order to approach he was awaken the situation about 3 seconds later and retreated from the ramp to keep clear of falling. The driver who couldn't realize that the ship unberthed owing to the open ramp, boarded at 15:14:41

with her car during the clearing of the ship's ramp from the shore. Within about 7-8 seconds passed between the unberthing and boarding, the seaman couldn't realize the movement of the ship and accordingly couldn't refer or call ~~to~~ the driver to stop or speed up to boarding. With not realizing the movement of the ship in time, it is assessed that the seaman panicked with the fear of overboarding and retreated and couldn't decide in the stage of referring the car to stop or quickly get on board, therefore he couldn't refer the driver by any sign.

In addition, soon the master understood unberthed without closing the ramp after he saw the car on the ramp from the monitor and tried to prevent overboarding the car by moving the ship astern at first. Then, he gave the way ahead in order for not to squeeze the car between the ship and pier due to its pending position on the ramp. Meanwhile the car overboarded. Although it isn't definitely determined that the movement of the ship forwards and backwards may unbalance the pending car and cause its overboard.

2.7 Events Occurred After Accident and Search and Rescue

2 seamen on duty in SADABAT and SULTANAHMET, jumped into the sea after the car overboarded and wished to help those inside the car. 2 women in the driver seat and front passenger seat got out from the automobile by their own means, but the girl and her grandmother at the back seats couldn't leave the car. 2 seamen who jumped to the sea to rescue the persons in the automobile couldn't succeed as the automobile filled with water and quickly sank to the sea bottom although they tried to dive in the water a few times. The divers arrived at the accident location within about 15 minutes due to the proximity of the Sea Police elements deployed in Balat to Sirkeci Pier where the accident occurred and took out 2 persons isolated in the automobile.

İDO Corp. has a contract with the diving firm engaged in emergency underwater rescue and help works and the mentioned firm helps the company in general rope entanglement, underwater maintenance and handling etc. works. However, any terms of reference is not present for conditions such as man or automobile overboard. As a matter of fact, it is not possible to get in time to all piers operated by İDO from a single center in a metropolis as İstanbul and it doesn't seem applicable to assign a diver to each pier.

Hundred thousands of people daily travel between two sides in İstanbul by seaway transportation and undesired accidents are incurred from time to time (the citizen who fell into the sea and was drowned when leaving the steamer in January 2013 in Beşiktaş Pier, a bay

falling down to the sea in April 2014 in Eminönü Pier etc.). In these two accidents which may be assessed as exemplary of tens of sea accidents occurring every year in İstanbul, it is seen once more that it is very important to perform the work of rescuing people from the sea by competent persons. In this context, it is assessed that a company as İDO which carries ten thousands of people daily via sea shall provide great contribution to the provision of life safety in such rescue operations against time by providing diving courses principally for the purpose of rescue to good swimmers among the land personnel employed in each pier it operates and among the sea personnel working in the ships especially for quick rescue of persons falling to the sea.

PART 3 – CONCLUSIONS

3.1.1 Passage to double watch type working system from triple watch type working by the masters and chief engineers by 11.02.2014 dated instruction of the company has increased the weekly and monthly total work times of the masters and chief engineers even if it hasn't improved their daily work times and reduced their rest hours.

3.1.2 Although it is seen that the ship was manned with the minimum number of deck personnel specified in the Minimum Safe Manning Document, the number of seamen on duty at each watch was reduced to 2 seamen by the mentioned instruction of the company and this condition improved the workload of especially the seaman who served as watchman and navigation and manoeuvres were performed without any seaman keeping watch in the bridge from time to time due to feed, toilet etc. compulsory reasons.

3.1.3 It is assessed that the chief engineer assigned to keep watch didn't perform this duty efficiently.

3.1.4 The company didn't inspect if the watch handover time changed by the mentioned instruction was applied and it is assessed that the watch handover time was applied by the masters as 09:00-10:00 hours in the morning and this was implicitly overlooked.

3.1.5 In conclusion the master suffered from probable tiredness and his concentration reduced due to reasons arising from the characteristics of Sirkeci – Harem line (short navigation duration, a lot of international and local ship traffic and voyages etc.) and length of work times.

3.1.6 It is observed that the ship didn't give rope to the coast when berthing and performed its operations over the engine, therefore, out of using ropes has formed a weakness in safety for safe unberthing and sheltering in the port.

3.1.7 In conclusion the person coming to the bridge just before the accident might be effective in the concentration impairment of the master.

3.1.8 In conclusion the sounds in the bridge and surroundings caused tiredness, attention deficit and concentration impairment of the master.

3.1.9 Although Sultanahmet ferryboat gave siren at the adjacent pier while opening her ramp for the purpose of loading, the master of SADABAT thought that the audio warning siren by came from his own ship.

3.1.10 It is assessed that the seaman on duty in the vehicle deck realised the ship's unberthing in delay, panicked with the fear of overboarding and retreated from the ramp, and couldn't decide in the stage of referring the car to stop or quickly get on board, therefore he couldn't refer the driver by voice call or signal.

3.1.11 It is assessed that when minimum manning criteria of the ships is determined in the Minimum Safe Manning Document, the nature of work performed, ship traffic in the navigation area, workload, work and rest hours are not considered.

3.1.12 Upper limit concerning overwork times in the ships are not specified in the Maritime Labor Law. On the other hand, upper limit of work time which is 14 hours daily and 91 hours weekly is kept high in Seafarers Regulation compared to either the other transportation modes or the other fields of work in the Labor Law. In addition, no provision is established in the referred legislation about the work time upper limits which should be different and shorter for the ships performing short and coastal voyages.

3.1.13 A drill procedure doesn't exist for the ships operating in the Sirkeci – Harem line of the company oriented to vehicle overboarding while the ships perform vehicle loading and unloading operation.

PART 4 – RECOMMENDATIONS

TO İDO CORP.

4.1 Establishment of a working order which shall reduce the work times and improve the rest hours of all personnel also including triple watch system especially in the ferryboats operating in Sirkeci – Harem line,

4.2 Making the use of ropes mandatory in the berthing manoeuvres by the ferryboats operating in this line as it is assessed that safe berthing of the ship by giving rope to the pier in the berthing manoeuvres shall seriously improve the safety of ship in probable engine breakdowns and bad weather and shall be an additional barrier against probable accidents by improving safety during the unberthing manoeuvre,

4.3 Provision of life saving training to a portion of the land personnel employed in every operated pier and the sea personnel working in the ships,

4.4 Establishment of drill procedures in the framework of Safety Management System concerning man and vehicle overboard during loading – unloading operations and provision of frequent performance of these drills,

4.5 Although bridge recording is not mandatory in our legislation, provision of technical arrangements which shall provide to detect that the closed circuit camera system present in the ships don't record due to breakdown etc. reasons and thus be useful in the investigation of probable accidents,

4.6 Inspecting whether the ship personnel satisfy the watch handover time.

TO DIRECTORATE of GENERAL MARITIME and INLAND WATERS REGULATION

4.7 Consideration of the nature of work performed, ship traffic in the navigation area, workload, work and rest hours when determining the number and competency of the seafarers in the manning of the ships and vessels engaged in passenger transportation in İstanbul Strait and similar navigation areas where scheduled voyages are performed in short distances and making the necessary changes in the Regulation Concerning Manning of Ships in this direction,

4.8 Although 2 seamen is found sufficient for the ships operating in Sirkeci - Harem line in the Minimum Safe Manning Document, making the arrangement of providing the assignment of at least 3 deck rating at each watch for the purpose of improving the safety,

TO MINISTRY OF LABOUR AND SOCIAL SECURITY

4.9 Finalization of the studies concerning being a party to Maritime Labour Convention (MLC 2006) as soon as possible as it is assessed to be useful,

4.10 Making an arrangement directed to determining the upper limit of overwork time in Maritime Labor Law and taking as basis the 24 hours time cycle in the calculation of the work time,

4.11 Making a different type of arrangement for the ships performing short and coastal voyages for the upper limit of work time to be indicated in the Maritime Labor Law and keeping the upper limit short like in highways and aviation,

is recommended.

PART 5 – ACTION TAKEN

5.1 It is stated by the company that all personnel working in the ships operating in Harem - Sirkeci line are passed to triple watch system,

5.2 Fingerprint tracking system is taken to follow the boarding and disembarking hours of the crew,

5.3 The camera records at bridges operating in Harem - Sirkeci are taking periodically and a monitor is placed in the bridge to check whether the bridge camera system is operational,

5.4 Ships ramp operations are executed by the oilers on duty in the ships operating in Harem - Sirkeci line,

5.5 A drill procedure concerning vehicle overboarding is prepared.