FEDERAL AUTHORITY FOR TRANSPORT OVERSIGHT OF THE RUSSIAN FEDERATION

Directorate for State Maritime and Inland Waters Supervision

Report on the Investigation into the Fatal Accident Involving a Crew Member of the *ODISSEY* Sea-Going Tugboat on the Roadstead of the Sea Port of Gdańsk (Republic of Poland) on 18.07.2016

Report No. 01/2016
Moscow, 30 November 2016

Investigating Authority:	**Directorate for State Maritime and Inland Waters Supervision of the Federal Service for Supervision of Transport of the Russian Federation (Rostransnadzor). Established by Decree of the Government of the Russian Federation No. 398 of 30 July 2004.**
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Pursuing to Regulation 6 of Chapter XI -1 of the International Convention for the Safety of Life at Sea (SOLAS) and the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) (resolution MSC.255(84), the Federal Service for Supervision of Transport of the Ministry of Transport of the Russian Federation has investigated the casualty involving the *ODISSEY* Sea-Going Tugboat.

Excerpts from the Regulations for investigating marine casualties and incidents

Regulation 3:

«The aim of investigation is to search out the of reasons casualty and develop recommendations to prevent their reoccurrence in future».

BRIEF DESCRIPTION OF THE ACCIDENT

On July 18 2016, the *ODISSEY* tugboat stood anchored on the roadstead of the Sea Port of Gdańsk (Republic of Poland). At 14:55, while pulling-in the towing line on board the tug, the pulling rope slipped from the bitt and hit the *ODISSEY*'s Boatswain against his chest, thus causing to him an injury incompatible with human life.

Fig. 1. The *ODISSEY* tugboat

SHIP PARTICULARS:

Name:	ODISSEY
Ship type:	Tugboat
Flag:	Russian Federation
IMO number:	8102579
Voyage (where from and where to):	from the Port of Kaliningrad to the External Roads of the Port of Gdańsk
Port (site) of registry:	Kaliningrad
Ship Owner and IMO number:	"More Servis" JS, 5910103
Place and year of construction:	Gdańsk (Republic of Poland), 1979
Ship's maximum dimensions:	Length - 35.65 m, breadth – 9.34 m, depth - 5 m
Tonnage (gross/net):	329/98 gross/reg.t
Type and capacity of the ship's propulsion plant:	Internal combustion engine, 1,840 kW
Number and type of propellers:	One variable pitch propeller
Rudder construction, thruster(s):	Plain, N/A

Full speed (when maneuvering /at sea passage), in knots: 10 kn
Draught at the time of accident (fore): 3.7 m
Draught at the time of accident (aft): 4.9 m
Number of passengers: None
Quantity and kind of cargo and its stowage in holds: N/A
Crew number: 7
Regular set of life-saving appliances: A "VIKING" liferaft, six lifebuoys, eight lifejackets and eight immersion suits

Towing equipment on board

Type	Description
Towing winch	BP 335.1 kN
Main towing wire	650 m / 36 mm / MBL 904 kN
Socket mine wire	1 psc
Chain bridles	2 x 6 m / 32 mm / SWL 315 kN
Wire bridles	2 x 4 m / 50 mm / SWL 245 kN
Wire bridles	2 x 15 m / 40 mm / SWL 196 kN
Wire bridles	2 x 12 m / 50 mm / SWL 245 kN
Triangle plate	I-250 SWL 250 kN
Emergency tow line	2 x 110 m / 56 mm / 65/5 TS
Shackles 1	3 x SWL 35 TS
Shackles 2	3 x SWL 25 TS
Shackles 3	2 x SWL 55 TS
Connection links	4 / SWL 250 kN

EVENTS THAT PRECEDED THE ACCIDENT

On July 15, 2016 the Port State Control Officers of the Kaliningrad's Affiliate of the Federal State Unitary Enterprise "Administration of Seaports of the Baltic Sea" undertook a survey of the tanker *VENEZIA D* (flying the Dutch flag) and tugboat *ODISSEY* to check the fitness of tanker towage from the Sea Port of Kaliningrad to the Sea Port of Gdańsk, which was confirmed by the Act of Fitness for towing the *VENEZIA D* by the *ODISSEY* tugboat dated 15.07.2016.

The Gdańsk Sea Port Authorities confirmed their readiness to admit the *VENEZIA D* in their port.

On 18.07.2016 at 07:00 (here and hereinafter, the ship time is used as the reference one, UTC+2), the convoy consisting of the *ODISSEY* tugboat and towed tanker *VENEZIA D* arrived to the sea roads of the Sea Port of Gdańsk.

Hydrometeorological conditions recorded: wind W - 5 m/s, sea state – 1, visibility – 5 miles.

Fig. 2 Tanker *VENEZIA D*

CONDITIONS AND CIRCUMSTANCES SURROUNDING THE ACCIDENT

On 18.07.2016 в 13:00, operations on disconnecting the tow line from the *VENEZIA D* started.

At 13:40, the tanker disconnected the ends of the towing line from its bollards and threw them down to the water.

At 13:45, the *ODISSEY* tugboat, having moved away from the tanker to a safe distance, dropped its starboard anchor to stop for lifting the thimble eyes' wire ropes of the towing line on board. After anchoring, the Master summoned the crew of the *ODISSEY* tug in the messroom to discuss the plan of lifting the thimble eyes' wire ropes of the tow line and briefed the crew on operational safety precautions.

Hauling of the thimble eyes' wire ropes was made by means of the mooring polypropylene rope fixed on the tow thimble eye's wire rope. The thimble eye's wire rope was led through the stern hawsepipe, then fixed to the mooring line which, while passing on the tug's starboard deck, was taken by fore rollers and, from them, to the anchor windlass' gypsyhead.

The crew members of the *ODISSEY* tug were commanded to take their workstations.

Two motormen were working on the forecastle. One of them was in control of the anchor windlass, whereas the other took up the end of the pulling rope, by means of which the thimble eyes' wire ropes of the towing line were lifted on board of the tug.

On the stern in the vicinity of the hawsepipe, the Chief Mate and Electrical Engineer monitored the pay-out and passing of the rope and chains from the stern hawsepipe to the superstructure.

The Boatswain monitored the rope which served for hauling the thimble eyes' wire ropes from the water and, depending on the situation, rendered assistance either on the forecastle or stern.

Hauling of the thimble eyes' wire rope was performed step-by-step by means of transferring the point of fixation of the pulling rope on the thimble eye's wire rope of the towing line. The passage along the *ODISSEY* 's starboard deck where the pulling line was passing, as well as the presence itself there, were prohibited.

On one case when the pulling line was routinely moved again on the towing line's

thimble eye's wire rope, the Boatswain moved the rope over the starboard bitt. The motormen considered such position of the pulling line as dangerous, as it could slip from the bitt, warned the Boatswain accordingly and removed the pulling line from the bitt. At 14:55, having returned to the anchor windlass, they continued with pulling the rope in. From their position at the anchor windlass, the starboard bitt was not visible, as it was overshadowed by the tug's superstructure.

Shortly afterwards, in 15 to 20 seconds, the motormen heard the sound of a rough shock against the bulkhead. Having stopped heaving of the rope and taken a look over the superstructure's corner, they found the Boatswain with his back pressed against the superstructure's wall by the pulling line.

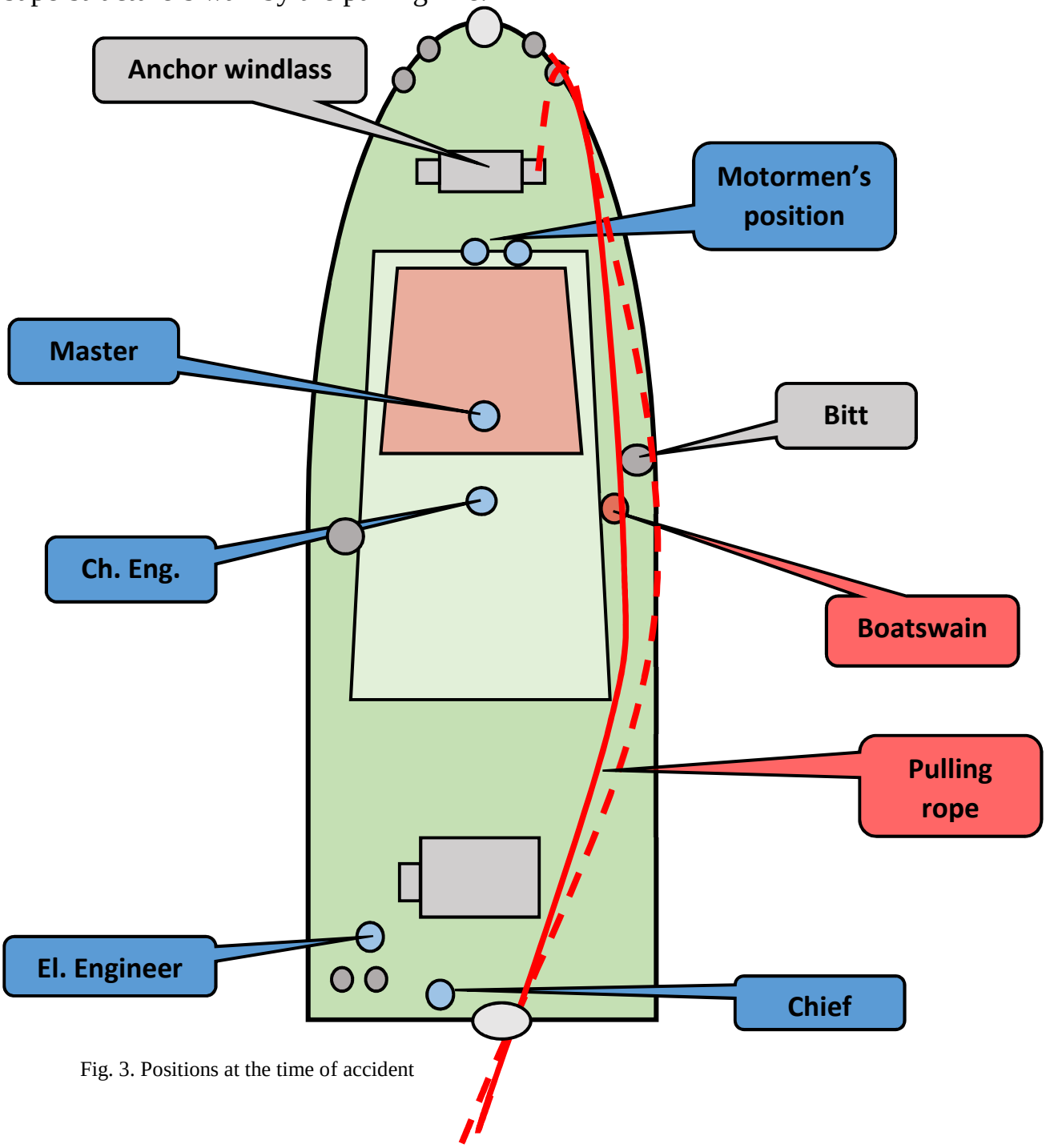

Fig. 3. Positions at the time of accident

Having paid out (slacked) the pulling rope from the anchor windlass, the motormen laid the Boatswain on the deck and informed the Master of what had happened. Having

examined the injured Boatswain, the Master went to the navigating bridge and informed on the radio the authorities of the Port of Gdańsk of the accident and requested immediate medical assistance.

Fig. 4. Location of the fatal accident

ESTABLISHED FACTS

The *ODISSEY* tugboat had valid documents issued by the Italian classification society RINA Services S.p.A. – recognized organization having authority for carrying out surveys and issuing certificates to ships registered in the Russian International Register of Ships.

The ship's crew was complemented in accordance with the Minimum Safe Manning Certificate.

The schedule of working hours on board corresponded to the schedule of watch developed by the ship's Master, as delegated to him by the Ship Owner, and approved by a Representative of the ship's team.

The person in charge with rendering primary medical care was the *ODISSEY*'s Master, which is confirmed by his certificate No. 166352 of 21.10.2011 "Rendering First Medical Aid".

All technical arrangements and equipment of the *ODISSEY* tug, including the mooring gear, were in a fit technical condition before the ship's departure from the Port of Kaliningrad.

At the time when operations on lifting the thimble eyes' wire ropes of the towing line started, the *ODISSEY* tugboat was anchored at the roadstead of the Sea Port of Gdańsk,

hydrometeorological conditions for carrying out this operation were favourable, the tug's mooring arrangement was in a fit technical condition and used in accordance with its purpose.

Hauling of the thimble eyes' wire ropes 35 m long submerged in the water aft from the tugboat was effected from the stern, on the starboard main deck, with leading them to the forecastle by means of the polypropylene mooring rope. There were no extraneous objects which would impair the lifting of the thimble eyes' wire ropes.

The polypropylene mooring rope lay alongship on the main deck, extending from the tug's stern to the forecastle, with one of its ends on the gypsyhead of the anchor windlass. The fatal accident occurred in the area of frames 33 to 35, between the exit from the superstructure and inner ladder leading to the upper deck. The width of the main deck at the accident location equals to 117 cm, bulwark height 93 cm, the bitt's height 117 cm, diameter 38/44 cm. The width of the companionway of the door leading to the superstructure equals to 119 cm and depth 74 cm. The distance between the companionway of the door and platform of the ladder accessing the upper deck is 205 cm, platform width equals to 85 cm and depth 80 cm.

There was natural light sufficient for the works, daylight hours.

Fig. 5. Starboard bitt

The injured Boatswain, at the time of the accident, had the means of individual protection, namely: hard hat, lifejacket, special boots and certified special clothes.

Preparatory measures for hauling the thimble eyes' wire ropes on board the

ODISSEY tugboat were taken, and these were in conformity with SOLAS-74 and the Regulations for the Labour Safety on Board Sea and River Ships approved by the Order of the Ministry of Transport No. 367н of 05.06.2014. Before proceeding with works, all crew members of the *ODISSEY* tug participating in the operation on hauling the thimble eyes' wire ropes, were briefed by the Master as regards the safety of work, were acquainted with the general work plan; a person responsible for conducting the operation – the Chief Mate, was assigned. Every crew member was instructed on where he shall operate in the course of the tasked operation on hauling the thimble eyes' wire ropes. Particular attention was paid to the observance of labour safety regulations, appropriate outfit (hard hats, lifejackets, boots, mittens, special clothes), presence of dangerous areas and individual caution. In the course of preparatory works all extraneous subjects were timely removed from the dangerous work area.

On 14.06.2016, the Boatswain acquainted himself, certifying this acquaintance by signature, with the "Duty Instructions for Boatswain" and "Instructions on Labour Safety for Boatswain", and was briefed by the Master on the labour safety aspects, which is confirmed by an entry in the log for registration of safety briefings. From 15.06.2016 to 11.07.2016, the Boatswain underwent the labour safety training.

While carrying out works on hauling the thimble eyes' wire ropes, the Boatswain, without informing the Head of works, led the rope over the bitt for the second time, while staying in the vicinity of the tight pulling rope, within the angle formed by the rope, at the side where the rope was heaved. The pulling rope slipped from the bitt and, having hit the Boatswain against his chest, pressed him to the tug's superstructure.

After the Boatswain was found jammed against the superstructure by the pulling rope, the Master was called on and, after an attempt to apply resuscitation measures, because of high risk of damage to internal organs, these resuscitation measures were stopped. The injured Boatswain was evacuated to a Poland's Coast Guard boat for further delivery to the hospital.

On 18.07.2016 at 15:20 the Boatswain deceased as a consequence of heavy bodily injuries, which is attested by a Death Certificate issued by the Forensic Medicine Department of the Medical University of Gdańsk.

REASONS BEHIND THE ACCIDENT

1. Failure to observe the labour safety regulations by the Boatswain.

2. Unauthorized change of the procedure of hauling the thimble eyes of the tow line on board the *ODISSEY* tugboat by the Boatswain.

CONCLUSIONS

The Boatswain of the *ODISSEY* tugboat breached the following requirements:

- those of Article 214 of the Labour Code of the Russian Federation: workers shall observe the labour safety requirements;

- those of sub-paragraphs а), в), з), и) and к) of paragraph 4 of the Statute of Discipline of Maritime Transport Workers, approved by Decree of the Government of the Russian Federation No. 395 of 23.05.2000 № 395, according to which the worker shall:

а) observe the labour and operational discipline, the present Statute and the Statute

of Service on Board Sea-Going Ships, and discharge duties prescribed by the labour agreement (contract);

b) know and rigorously observe established regulations on processing and procedures of carrying out works, service and operational instructions, as well as labour safety rules and standards, principles of safe conduct of works, manuals for technical operation and repairs of equipment, industry's health and hygiene work standards, fire safety, preservation of environment and other standards, regulations and instructions related to his/her working activities;

c) never leave the working station without permission;

d) contribute to the observance of work discipline within the ship's crew and personnel of sea transport organization;

e) know the present Statute and strictly adhere to its requirements;

f) meet other requirements, as envisaged by laws and other regulatory acts of the Russian Federation;

sub-paragraph 1.6 of paragraph 1; sub-paragraphs 3.1, 3.3, 3.14, 3.35 of paragraph 3 of the "Instructions on Labour Safety for Boatswain" approved by the Director General of "More Servis" JS on 04.03.2016:

sub-paragraph 1.6 provides for: Boatswain, seaman shall:

- know well and strictly follow the labour safety regulations when carrying out deck, towing, mooring, painting and other works;

- carry out works only on a condition of awareness of the Head of works and upon his/her authorization;

paragraph 3, labour safety requirements while conducting works:

sub-paragraph 3.1 – all anchoring/mooring and towing works are carried out under command of a Master's Mate nominated by the Master. All actions connected with getting mooring lines over, casting them off, paying out and heaving mooring ends, starting anchor and mooring mechanisms shall be taken only upon his/her command ...;

sub-paragraph 3.3 – when working with wire and fibre ropes it is prohibited to stay and keep hands closer than in 1 m distance from drums, bollards, pulleys and other equipment from which the live end is heaved. When working with synthetic ropes, this distance shall not be less than 2 m. It is prohibited to stay close to strongly tight ropes, as well as on the tightening line fore as well as aft from the point of contact of the rope with the mechanism serving for heaving the rope, for fixing or changing the pulling direction ...

sub-paragraph 3.14 – when carrying out mooring operations it is prohibited to: get over, heave, pay out, fix or cast off the mooring line, and start the mooring mechanism without permission of the person in charge with mooring operations...

sub-paragraph 3.35 - ... While getting over and heaving the towing line it is prohibited to stay within the loops (round turns) of the rope, as well as between the rope and side from which it is either paid out or heaved...

RECOMMENDATIONS TO PREVENT RE-OCCURRENCE OF SIMILAR ACCIDENTS IN FUTURE

Addressed to "More Servis" JS:

- the Expert in the labour safety and health protection of the Company has to conduct

an extraordinary training of Company's ship crews on strict adherence to the labour safety and health protection regulations and filling in the labour safety log;

- with the Company's ship crews, analyze circumstances and causes of this fatal accident, paying special attention to the safety of operations carried out on the deck.

In carrying out mooring, cargo and other operations it is recommended that the locations of every member of the deck team should be arranged in such a way as to ensure that potentially dangerous areas remained visible by at least one member of the team, while all team members shall have communication with the person in charge of the operation carried out.