



REPUBLIC OF CROATIA

**Air, Maritime and Railway Traffic Accidents Investigation Agency**  
**Maritime Accident Investigation Department**

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# **FINAL REPORT**

## **ON VERY SERIOUS MARINE CASUALTY**

**Collision of boat with registration number “MT 1839” and  
boat with registration number “CZ 111 018”**

**Pelješki kanal, 12 July 2017**



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Marine Accident Investigation Department is autonomous and independent department of Agency that performs, on the basis of public authority, professional tasks related to the initiation and conducting of safety investigations with the aim of determining the cause of marine casualties and incidents, the publication of the results of the conducted safety investigations and issuing safety recommendations for prevention of marine casualties and incidents in the future, improving maritime safety and reducing the risk of pollution by vessels.

Safety investigations are conducted independently of any other investigations, and such investigations do not have and cannot have influence on conducting safety investigations or the results of these investigations.

Initiating and conducting safety investigations cannot be precluded, suspended, delayed, or in any way restricted, by reason of any other parallel investigations whose aim is to determine liability or apportion blame.

A common methodology for the safety investigations of marine casualties and incidents, developed in accordance with Directive 2009/18/EC of the European Parliament and of the Council, including the use of methodologies and guidelines developed by the International Maritime Organization (IMO) and European Maritime Safety Agency (EMSA) shall be applied to initiation and conducting the safety investigations.

The purpose of a marine safety investigation is to identify the possible causes and contributing factors which contributed to marine casualty or incident, in order to improve maritime safety, prevent future casualties and incidents and reduce the risk of pollution by vessels, as well as to propose safety recommendations based on analysis and conclusions of the investigation, which may relate to amendments to the regulations, improvement of working procedures on board, the manner of conducting inspections, ship management, health and safety at work, maintenance and repairs, crew training, coastal assistance procedures, emergency preparedness, etc.



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The safety recommendations are addressed to those that are best placed to implement them, such as ship owners, managers, recognised organisations, maritime authorities, vessel traffic services, emergency bodies and/or European Commission.

Safety recommendations shall in no circumstances determine liability or apportion blame for a marine casualty or incident.

Each safety investigation of marine casualty or incident shall be completed by the publication of the Final report on the results of the conducted safety investigation in accordance with Annex I of the Regulation on the Manner and Conditions for Conducting Safety Investigations of Marine Casualties and Incidents (Official Gazette no 122/15).

The final reports shall be published in a form that corresponds to the type and seriousness of marine casualty or incident.



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## 1. CODES AND ABBREVIATIONS

AIA – Air, Maritime and Railway Traffic Accidents Investigation Agency  
CZ – Czech Republic (boat's flag state)  
DHMZ – Croatian Meteorological and Hydrological Service  
DORH – State Attorney's Office of the Republic of Croatia  
DUZS – National Protection and Rescue Directorate  
EMSA – European Maritime Safety Agency  
GPS – Global Positioning System  
HGSS – The Croatian Mountain Rescue Service  
HHI – Croatian Hydrographic Institute  
HMP – Emergency medical help  
ILK – Branch of the Harbour Master's Office  
IMO – International Maritime Organization  
LK – Harbour Master's Office  
MMPI – Ministry of the Sea, Transport and Infrastructure  
MRCC Rijeka – Maritime Rescue Coordination Centre Rijeka  
MT – Metković (port of registry)  
MUP – Ministry of the Interior  
ORP – Coastal radio station  
PP – Police station  
SAR – Search and Rescue  
UTC – Universal Time Coordinated  
VTMIS – Vessel Traffic Monitoring and Information System  
VTS CROATIA – Vessel Traffic Service



## 2. SUMMARY

On 12 July 2017 around 22:35 hours local time (UTC + 2) in the Pelješki kanal<sup>1</sup>, near Kučište, a very serious marine casualty occurred, where the boat under the Croatian flag with registration number "MT 1839" and the boat under the Czech flag with registration number "CZ 111 018" collided.

Consequently, the skipper of the boat with registration number "CZ 111 018" suffered serious bodily injuries, fell into the sea and died. The boat he was operating turned without control, separated from the boat she collided with and circled uncontrollably at a high speed with occasional change of direction and approaching the coast. After multiple attempts of the rescue services, the boat was finally stopped by force and berthed.

As a result of the collision, there was visible damage to the bow of the boat with registration number "CZ 111 018" above and below the water level and to the port side of the shell plating above the water level in the forward part of the boat with registration number "MT 1839". There were no fatalities or injured persons on the boat with registration number "MT 1839", nor third persons. There was no damage to third parties. The boats were not intended for cargo transportation therefore there was no cargo or damage to it. No pollution of the sea or of the environment caused by the collision was detected.

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<sup>1</sup> Pelješac Channel



### 3. OBJECTIVE INFORMATION (FACTS)

#### 3.1. BOATS PARTICULARS

##### 3.1.1. Pleasure craft with registration number "MT 1839"

Name of the boat:	—
Registration number:	MT 1839
Former name or registration, port, state:	714 ST, Split, Republic of Croatia
National Identification Number:	183260
Flag and Port of Registry:	Republic of Croatia, Metković
Recognised organization:	—
Call sign:	—
IMO number:	—
Type of the vessel:	boat
Purpose:	non-commercial purpose
Navigation area:	III
Year and place of built:	1990, Labin, Republic of Croatia
Vessel manufacturer and type:	ADRIA Labin (KVARNERPLASTIKA Labin), ADRIA 1000
Owner:	natural person, (citizen of Republic of Croatia)
Construction details:	single hull boat with cabin and upper cabin
Hull material:	plastic
Minimum safe manning:	1
Max. number of passengers:	7
Max. number of persons:	8
Hull length:	10,60 m
Width:	3,60 m
Height:	1,80 m
Draught:	not registered
Deadweight:	—
Gross tonnage:	8,50
Speed:	unknown
Propulsion type:	internal combustion engine
Type and number of propulsion engines:	built-in marine engine, 1
Engine manufacturer:	Yanmar
Main engine and total power:	unknown, 103 kW (140 KS)



**Picture 1** Boat with registration number "MT 1839" berthed in Kučište after the marine casualty  
*(source: Harbour Master's Office Dubrovnik)*



### 3.1.2. Pleasure craft with registration number "CZ 111 018"

Name of the boat:	—
Registration number:	CZ 111 018
Former name or registration, port, state:	unknown
National Identification Number :	unknown
Flag and Port of Registry :	Czech Republic, Prague
Recognised organization :	—
Call sign:	—
IMO number:	—
Type of the vessel :	boat
Purpose:	non-commercial purpose
Design category:	C
Year and place of built:	2012, -
Vessel manufacturer and type:	ZODIAC Nautic, Medline 500
Owner:	natural person (citizen of Czech Republic)
Construction details:	speedboat without cabin
Hull material:	plastic (with rubber buoyancy chambers)
Minimum safe manning:	1
Max. number of passengers:	8
Max. number of persons:	9
Max. number of persons (manufacturer):	9
Length overall / Hull length:	5,00 m / 4,50 m
Width overall / Hull width:	2,24 m / 1,53 m
Hull height:	1,43 m
Draught:	0,3 m
Deadweight:	—
Speed:	unknown
Propulsion type:	outboard engine
Type and number of propulsion engines:	marine Otto motor (gasoline), two-stroke, 1
Engine manufacturer:	EVINRUDE
Main engine and total power:	EVINRUDE E-TEC 75, 55,90 kW / 76 KS
Recommended engine power (manufacturer):	40 - 80 KS
Maximum permissible engine power (manufacturer):	80 KS
Diameter of buoyancy chambers:	0,50 m
Number of buoyancy compartments:	5



Picture 2 Boat with registration number "CZ 111 018" berthed in Kučište after the marine casualty  
(source: Harbour Master's Office Dubrovnik)

## 3.2. VOYAGE PARTICULARS

### 3.2.1. Pleasure craft with registration number "MT 1839"

Ports of call: the boat was underway from the beach Trstenica in Orebić (Pelješac Peninsula) towards the port Lovište (Pelješac Peninsula).

Type of voyage: non-commercial navigation.

Cargo information: no cargo (the boat is not intended for the carriage of cargo).

Passengers information: 3 passengers (one female and two children - citizens of the Republic of Croatia).

Crew: 1 crew member (boat skipper – citizen of the Republic of Croatia).



### 3.2.2. Pleasure craft with registration number "CZ 111 018"

Ports of call: the boat was underway from Viganj (Pelješac Peninsula) towards Kučište (Pelješac Peninsula).

Type of voyage: non-commercial navigation.

Cargo information: no cargo (the boat is not intended for the carriage of cargo).

Passengers information: no passengers.

Crew: 1 crew member (boat skipper – citizen of the Czech Republic).

### 3.3. MARINE CASUALTY INFORMATION

Type of marine casualty or incident: a very serious marine casualty – collision of two pleasure crafts with registration number "MT 1839" and "CZ 111 018" which resulted in damage of both of them and one fatality.

Date and time: 12 July 2017 around 22:35 hours local time (UTC+2).

Location of the marine casualty or incident: Pelješki kanal, around 350 m from the main pier in Kučište towards the middle of channel, at the estimated position: 42° 58' 39" N; 017° 06' 45" E (more details in chapter 5.1. Estimate of the marine casualty position).



**Picture 3 Pelješki kanal - situated between Pelješac Peninsula and the Island of Korčula**  
(source: O. Korčula, MK-22, Croatian Hydrographic Institute)

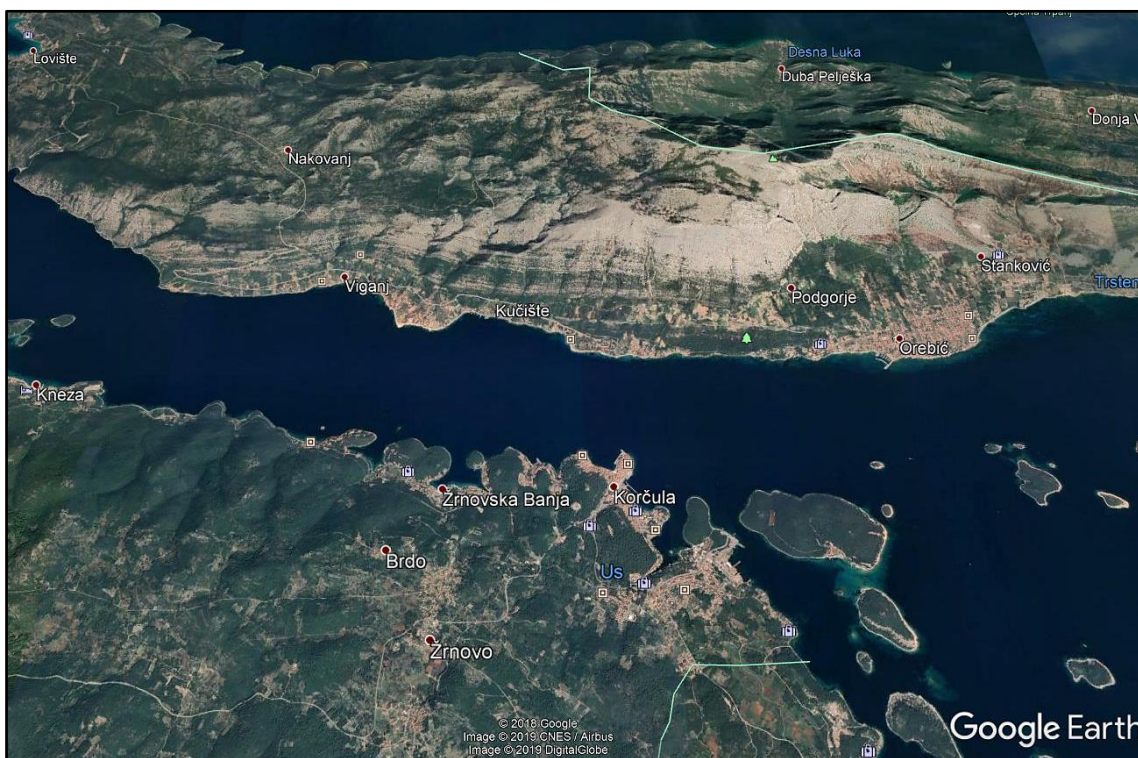


External and internal environment: light air of variable direction (wind speed 1 Bf), wind speed of around 2 km/h, calm (rippled) sea (sea state 1), waves average height around 0,1 m, no precipitation, air temperature around 29° C, good visibility (about 10 km), air pressure 1008 hPa. Sea depth in the middle of the channel is around 45 meters, in the area of the casualty around 30 metres.

The skipper of the boat with registration number "CZ 111 018" was, due to the construction of the boat, at the time of the marine casualty exposed to the influence of the external environment. The steering position of the skipper of the boat with registration number "MT 1839" was inside the cabin, so he was exposed to internal environmental influences.

Boats operation and voyage segment: night navigation through Pelješki kanal.

- pleasure craft with registration number "MT 1839" - along the Pelješki kanal, closer to the northern side, from the direction of the beach Trstenica in Orebić (southwest coast of Pelješac Peninsula) towards Lovište (western coast of Pelješac Peninsula), in westerly direction.
- pleasure craft with registration number "CZ 111 018" - along the Pelješki kanal, closer to the northern coast, from Viganj (southwestern coast of Pelješac Peninsula) to Kučište (southwestern coast of Pelješac Peninsula).



**Picture 4 Part of the Pelješki kanal with positions of Orebić, Lovište, Viganj and Kučište**  
(source: Google Earth)

Place on board:

- pleasure craft with registration number "MT 1839" – port forward part of the shell plating, above the water line.



- pleasure craft with registration number "CZ 111 018" - above and below the water level of the bow.

Human factors data:

- pleasure craft with registration number "MT 1839" - during navigation and at the time of the marine casualty, the skipper operated the boat. On the boat were also one female person and two children. They were sailing at the speed of about 4 knots in the direction of Lovište. The skipper suddenly noticed that another boat with navigational light was approaching them very rapidly from the direction of the centre of the Pelješki kanal. In a very short time afterwards he was not able to take actions to avoid collision.
- pleasure craft with registration number "CZ 111 018" - during navigation and at the time of the marine casualty, the skipper operated the boat, and there were no other persons on the boat. It appears from the eyewitness's statement that the skipper departed from Viganj towards Kučište, with the intention of embarking the members of his family. At a high speed the boat collided with the fore port side of the other, slower boat. As a result of the collision, the skipper suffered serious bodily injuries, fell into the sea and died.

Consequences (for people, vessels, cargo, environment, other):

- pleasure craft with registration number "MT 1839" - as a result of the collision there was visible damage to the forward port side of the shell plating above the water level at about 1.2 meters in length, about 65 centimetres in height and 20 centimetres in depth. There were no fatalities or injured persons on the boat nor third parties. There was no cargo on the boat. There was no damage to third parties. No pollution of the sea or of the environment by fuel or oil from the boat was detected.



**Picture 5 Visible damage to the forward port side of the shell plating above the water level of the boat with registration number "MT 1839"**  
*(source: Harbour Master's Office Dubrovnik)*



**Picture 6 Visible damage to the forward port side of the shell plating above the water level of the boat with registration number "MT 1839"- close up**  
*(source: Harbour Master's Office Dubrovnik)*

- pleasure craft with registration number "CZ 111 018" - as a result of the collision there was visible damage to the bow above and below the water level and to the windscreen. One person died (skipper of the boat). There were no passengers. There were no fatalities or injured third parties. There was no cargo on the boat. There was no damage to third parties. No pollution of the sea or of the environment by fuel or oil from the boat was detected.



**Picture 7 Visible bow damage of the boat with registration number "CZ 111 018" – front view**  
(source: Harbour Master's Office Dubrovnik)



**Picture 8 Boat with registration number "CZ 111 018" after the marine casualty – starboard side view**

*(source: Harbour Master's Office Dubrovnik)*



**Picture 9 Boat with registration number "CZ 111 018" after the marine casualty – port side view**

*(source: Harbour Master's Office Dubrovnik)*



### 3.4. INVOLVEMENT OF COASTAL SERVICES AND READINESS FOR EMERGENCY OPERATION

Who was involved: Centre 112 – DUZS (from the notifier in Kučište received notification on the casualty and forwarded it to the competent authorities), MRCC Rijeka (received the notification from the notifier through DUZS and forwarded the notification on the casualty, coordinated the search and rescue), LK Dubrovnik with ILK in Orebić and ILK in Korčula (received and forwarded the notification on the casualty, coordinated the search and rescue), Maritime Police Dubrovnik (participated in search and rescue and securing the boats involved in the marine casualty), HGSS station Orebić (participated in stopping the boat that was uncontrollably sailing and in the search and rescue), commercial rescue company Sea Help Adria d.o.o. (participated in stopping the boat which was uncontrollably sailing and in the search and rescue), PP Ston (participated in securing the boats that participated in the casualty), firefighters from Orebić and Viganj (participated in the search and rescue), HMP (taking care of survivors from the boat), ORP Dubrovnik Radio (broadcasted the "PAN PAN" message), owners of vessels from Viganj, Kučište, Orebić, Korčula and the Czech Republic, owner of the ship "Dalmatinka", Dubrovački Pilot d.o.o., the owner of taxi speedboat, the owner of the vessel "Dar Mar", the company Kisik d.o.o., divers from Korčula, Orebić, Viganj, Kučište and divers of HGSS, the owner of drone (participated in the search and rescue).

Means used:

- boat of HGSS Station Orebić
- boat of the company Sea Help Adria d.o.o.
- boat of ILK Orebić and ILK Korčula
- boats and ship "Sveti Rok" of Maritime Police
- boat of Orebić firefighters
- boat and SAR ship "Danče" of LK Dubrovnik
- boats from Viganj, Kučište, Orebić and Korčula and Czech Republic
- ship's "Dalmatinka" tender
- pilot boat from Orebić
- taxi speedboat
- passenger ship "Dar Mar"
- boats of the company Water Donkey
- boat of the company Kisik d.o.o.
- drone
- boats of divers from Korčula, Orebić, Viganj and Kučište.

Speed of response and actions taken: immediately after the collision of the boats the eyewitness from Kučište called 112 Centre, which forwarded the call to MRCC Rijeka, informing them that there was a marine casualty after which one of the boats was uncontrollably sailing and asked to urgently send an assistance. A complex search and rescue operation was activated at sea, under the sea, from the air and from the shore, with the aim of finding the missing person and the actions with the aim of stopping the speeding boat sailing without supervision. In a relatively short time, personnel and resources of competent institutions, as well as volunteers and private assets were engaged.



Results achieved: the speeding boat was safely stopped and berthed, thus preventing additional injuries and damage to the surrounding boats, shore and the environment. The care has been taken about the persons on board the boat with registration number "MT 1839" and after extensive action the body of the skipper of the boat with registration number "CZ 111 018" has been found and pulled out from a depth of 32 meters.



## 4. DESCRIPTION OF EVENTS (RECONSTRUCTION OF MARINE CASUALTY)

**Wednesday, 12 July 2017**

On the day and at the time of the marine casualty the boat with registration number "MT 1839" was operated by the skipper of the boat, who was at the same time the owner of the boat (citizen of the Republic of Croatia). There were 3 more passengers on board, one female person and two children (citizens of the Republic of Croatia).

From the statement of the key witness it follows that on 12 July 2017 at 21:30 hours they departed from the beach Trstenica (Orebić), with the navigation lights switched on, in the direction of Lovište, sailing on the northern side of the Pelješki kanal, about 150 meters from the coast of Pelješac Peninsula, at a speed of about 4 knots in the westerly direction and at the same time fishing (trolling).

On the day and at the time of the marine casualty the boat with registration number "CZ 111 018" was operated by the skipper of the boat, who was at the same time the owner of the boat (citizen of the Czech Republic). There were no other persons on board. He was sailing near the coast on the northern side of the Pelješki kanal.

According to the eyewitness's statement (also a friend of the skipper of the boat), on 12 July 2017, around 22:15 hours, the skipper of the boat with registration number "CZ 111 018" departed from Viganj towards Kučište, with the intention of embarking his family members in Kučište. The eyewitness noticed that the skipper was sailing fast and he noticed red light on the boat (sidelight – port side of the boat). Due to the increased distance and the shape of the coast he lost sight of the boat and he could not hear her anymore.

From the statement of the eyewitness with residence in Kučište, it appears that on the same evening around 22:35 hours, under good visibility conditions and moonlight, looking from his own terrace in the direction of the Vrbovica on the Island of Korčula (opposite side of Pelješki kanal), he noticed a white vessel of greater dimension moving slowly from the direction of Orebić towards Viganj (through Pelješki kanal in westerly direction). It had navigation lights on and sailed at a speed of about 5 knots, about 350 meters from the main pier in Kučište. Suddenly, an unknown vessel was approaching at a great speed from the direction of Viganj, with red light switched on. It sounded like a speedboat.

At approximately the same time, from the statement of the key witness it appears that in good visibility conditions, moonlight and calm sea, he suddenly noticed that a vessel with exhibited light was approaching him at a great speed from the direction of the centre of Pelješki kanal. Immediately after that, in altogether about 2 seconds, he was unable to do anything to avoid the collision, and the unknown boat collided with her bow into the port forward part of his boat.

The eyewitness from Kučište saw a speedboat at a great speed collided with the boat that was sailing slowly. He then heard a terrible sound like an explosion, a female scream and groaning.

On 12 July 2017 around 22:35 hours local time (UTC + 2) in the Pelješki kanal, about 350 m from the main pier in Kučište towards the center of channel, the two boats collided.



After the collision, the skipper of the slower boat turned off the engine and rushed into the cabin to check if everything was fine with the children who were sleeping in the cabin. He noticed an opening in the hull of the boat, but above the water level, so there was no water ingress into the boat. He took the children to the stern of the boat. He switched on a portable flashlight and checked the surrounding of the boat.

At the same time, the eyewitness from Kučište noticed that a large light was switched on the slower boat which illuminated the area around the boat. He no longer heard the engine, just groaning. He also noticed that the other boat was turning, separating from the boat to which it collided and started to circle uncontrollably at a high speed, while approaching the coast.

The skipper of the boat also noticed that the speedboat that hit them was circling near them at a high speed. As he feared new collision might occur, he decided to turn on the engine and proceed to the coast to protect themselves and seek help on the coast. He called 112 Centre (DUZS - National Protection and Rescue Directorate), but unsuccessfully.

From the statement of the eyewitness from Kučište, it also follows that he noticed that the larger boat started to move again, now in the direction of the cape Rat in Kučište. He called 112 Centre and reported the marine casualty, and asked for immediate assistance because the boat continued to sail uncontrollably. 112 Centre received the notification from him and connected him with the Maritime Rescue Coordination Centre Rijeka (MRCC Rijeka) so that the eyewitness directly reports the details of the accident.

At 22:37 hours MRCC Rijeka received the notification on the collision of two boats in the Pelješki kanal, between Kučište on Pelješac Peninsula and Tri Žala on the Island of Korčula. They informed the Harbour Master's Office Dubrovnik and Maritime Police Dubrovnik. The Harbour Master's Office Dubrovnik then informed the branch office in Orebić. Considering that the Harbour Master's Office Dubrovnik did not have available vessels, and the Maritime Police vessel was located in Ploče, the Croatian Mountain Rescue Service (HGSS) Station Orebić was engaged.

At 22:45, the commercial rescue company Sea Help Adria d.o.o. received the notification on the marine casualty from MRCC Rijeka.

From the statement of the eyewitness from Kučište, it follows that after about 10 minutes he received a call from the MRCC Rijeka checking the current situation and if someone came to help. At that time the speedboat continued to circle and was approaching the coast where people started gathering. Employees of the Ston Police Station (PP Ston) also arrived. From the moment of the accident, he has not seen the injured person in the water. He saw the larger boat approaching the coast in the area of the cape Rat, at the beginning of the tourist camp. The police called firefighters and HGSS. In the meantime, Emergency medical help arrived.

At 22:56, boat of the company Sea Help Adria d.o.o. arrived at the accident site and found the speedboat unmanned circling at high speed with a tendency of approaching the shore and other vessels. They hadn't noticed a missing skipper on the surface of the water. Nearby were few private boats who have come to help. They embarked 2 persons from HGSS to try to stop the speedboat. After 20 minutes, with the help of a life-buoy with a floating rope, they managed to disable the speedboat in



a way that the rope caught the propeller and stopped it. After that, the search for the person who operated the boat began.

Around 23:00 hours, Branch of the Harbour Master's Office Dubrovnik in Orebić engaged two fast boats for the search. The captain of the Branch Office coordinated the search from the dock in Kučište.

At 23:16 hours, MRCC Rijeka received information that still had not been confirmed by then that at least one person was being searched for in the sea while the skipper and the passengers from the other boat were rescued and taken care of by Emergency medical help.

At 23:47 hours it was confirmed that the person that was being searched for was a citizen of the Czech Republic and that most likely he is only missing person.

The search also involved: boats from Viganj, Kučište and Orebić, boats of the friends of person being searched for, firefighters from Orebić (at sea and on both channel coasts), ship's "Dalmatinka" tender, pilot boat from Orebić, taxi speedboat, Maritime Police boat, HGSS boat and other boats that responded.

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#### **Thursday, 13 July 2017**

From 00:03 hours, a PAN PAN urgency message was broadcasted via Coastal radio station (ORP) Dubrovnik Radio to all participants in maritime traffic for sharp lookout during navigation inside and outside the search area.

At 00:09 hours, MRCC Rijeka received notification that the SAR vessel "Danče" of the Harbour Master's Office Dubrovnik, which was by then located at the shipyard in Korčula, had been sent to the scene.

At 2:30 hours the sea started to ripple due to gentle westerly breeze, so the search for one part of the boats was interrupted with the intention to be continued at 7:00 hours. The SAR ship "Danče", the ship "Sv. Rok" of the Maritime Police and several volunteers from Viganj with boats remained in the search.

At 3:27 hours the Harbour Master's Office Dubrovnik conveyed information that parts of an unknown body that could belong to the missing person have been found, and that the coroner is awaited to confirm whether this was a human body.

At 3:33 hours Maritime Police Dubrovnik confirmed that boats that participated in the collision are berthed at Kučište. The surrounding area and damaged boats were being secured by the police officers of PP Ston.

At 7:00 am the comprehensive coordinated maritime search for a missing skipper of the boat continued. The search involved: boats of LK Dubrovnik, HGSS and Sea Help Adria d.o.o. boats, ship "Dar Mar" (navigating between Viganj - Korčula and observing), firefighters from Viganj (search of the coast), boats from Orebić and Viganj, boats under the Czech flag, boats of the company Water Donkey, boat of the company Kisik d.o.o., ships of the Maritime Police Dubrovnik, drone (air search), boats of ILK Korčula, boats from Korčula (search of the other side of the channel), divers from Korčula, Orebić,



Viganj, Kučišta, HGSS divers, pilot boat and SAR ship "Danče" which retreats from the search around 07:30 hours.

Around 12:00 hours, at position 42° 58,602 'N, 017° 06,755 'E and 32 meters in depth divers of HGSS found the lifeless body of the missing person, raised him to the surface, notified the Maritime Police Dubrovnik whose officers took over the body and handed it over for further process of identifying mortal remains. The identity of the missing skipper of the boat was verified, so the search for him was terminated.



## 5. ANALYSIS

### 5.1. ESTIMATE OF THE MARINE CASUALTY POSITION

The boats that were involved in the marine casualty were not equipped with electronic devices that could subsequently determine the exact position of the marine casualty, therefore the approximate position of the collision is determined based on obtained information.

According to the statement of an eyewitness from Kučište, the marine casualty occurred around 22:35 hours while the boat with the registration number "MT 1839" was sailing at about 350 meters from the main pier in Kučište.

The skipper of the boat stated that the collision of the boats occurred about 150 meters from the coast.

In the initial notification on marine casualty MRCC was informed that the collision of two boats occurred between Kučište on Pelješac and Tri žala on Korčula.

The position at which the body of the skipper of the boat with registration number "CZ 111 018" was found was accurately marked and it is at 42° 58,602' N, 017° 06,755' E. Due to the weather conditions prevailing at the time of the marine casualty (more details in 5.6.2.2. Weather Conditions) and the sustained injuries as well as the cause of death of the skipper of the boat (elaborated in 5.2.3. Crew of the pleasure craft with registration number "CZ 111 018") it can be assumed that the position of the collision of the two boats was near the position where the lifeless body was found.

Based on the obtained information it can be estimated that the position of the collision of the boats is located in the line between the main pier in Kučište and Tri žala on the island of Korčula, about 350 meters from the main pier and about 200 meters from the coast of the nearest mainland, i.e. in 42° 58' 39" N, 017° 06' 45" E. The estimated position is about 95 meters away from the position where the lifeless body was found (Picture 10).



**Picture 10 Estimated position of the collision in relation to the position where the lifeless body was found**

*(source: Google Earth)*

## 5.2. HUMAN FACTOR

### 5.2.1. Crew of the pleasure craft with registration number "MT 1839"

At the time of the casualty four (4) persons were on board the boat with registration number "MT 1839": one crew member and three (3) passengers. Among the passengers there was one female person and two children aged 4 and 5. All persons on the boat were citizens of the Republic of Croatia.

By insight to the Vessel's Navigational License it was established that in accordance with the assigned navigation area III (includes navigation in internal seawaters, territorial waters of the Republic of Croatia and waters accessible from the sea, and for fishing boats longer than 7 meters in Ecological an Fisheries Protection Zone of the Republic of Croatia (ZERP)) at least one crew member must be embarked on the boat with the license for:

- Boat Skipper Category B.



The skipper of the boat with registration number "MT 1839" possessed the Yacht Master License for operating motor boats in coastal waters up to 200 nautical miles from the coast (FB III) which was issued on 10 September 2016 in the Republic of Austria by an association approved by the Austrian competent ministry.

Article 4, paragraphs 2, 3 and 4 of the Ordinance on Boats and Yachts (Official Gazette 27/05, 57/06, 80/07, 3/08, 18/09, 56/10, 97/12, 137/13, 18/16, 72/17), regulates:

- (2) Boats and yachts of Croatian nationality may be operated by a person holding a certificate of competency issued pursuant to the provisions of this Ordinance.*
- (3) By way of derogation from paragraph 2 of this Article, a pleasure boat or yacht of Croatian nationality or a commercial boat or yacht that is chartered unmanned may also be operated by a person holding a document evidencing competency, issued by a competent body of another state provided that:
  - a) the Ministry has concluded an international agreement on the mutual recognition of certificates issued by the competent or authorised bodies of the state concerned; or*
  - b) the Ministry adopted a decision on the recognition of certificates issued by the competent or authorised bodies of the state concerned on the basis of a comparison of foreign certification requirements with the requirements set out in this Ordinance.**
- (4) Information on recognised certificates shall be made publicly available on the Ministry's web site.*

In accordance with the aforementioned, in Appendix 1 of this report is a list of documents for the operation of boats and yachts flying the Croatian flag issued by the competent bodies of the Republic of Austria, which are recognized in the Republic of Croatia. Under ordinal number 2 there is also a certificate which the owner of the boat possessed. By this it was confirmed that at the time of collision, a person with a valid certificate of competence in accordance with the Ordinance on Boats and Yachts was operating the boat flying the Croatian flag.

By testing the amount of alcohol in the body it was established that the skipper of boat was not under the influence of alcohol, i.e. it was measured 0.00 g/kg of alcohol in the body which was recorded in the Record of testing of alcohol, narcotics or medicines in the body. The testing was performed on 13 July 2017 at 00:41 by Ston Police Station (Orebić Branch). Also, during the alcohol testing the skipper of the boat stated that he did not consume alcoholic beverages, narcotics and medicines.

### **5.2.2. Events, actions and omissions of the crew of the pleasure craft with registration number "MT 1839"**

The skipper of the boat departed from the beach of Trstenica (Orebić) in the direction of Lovište. According to his statement and statement of the eyewitness from Kučište, his navigation lights were switched on, and on that evening a good visibility conditions prevailed.



The skipper of the boat stated that at the time of the marine casualty the children were sleeping in the cabin. There is no information on the actions of the female person immediately before the marine casualty.

The boat was not equipped with electronic devices whereby the speed of the boat could be determined, however from the statement of the skipper of the boat with registration number "MT 1839" it follows that he sailed at a speed of 4 knots at a distance of about 150 meters from the coast. By Article 48 of the Ordinance on Safety of Maritime Transport in Internal Waters and Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Vessel Traffic Management and Information (Official Gazette 79/13, 140/14, 57/15) it was established that when navigating the internal waters and the territorial sea of the Republic of Croatia, motor boats should not approach the coast at a distance of less than 50 meters except in the case of arriving into the port, anchorage or berthing. By Article 48.a it was established that, if not otherwise prescribed by Section I.a part Special conditions for navigation safety, in the area of:

- *150 m from the coast all vessels are obliged to navigate with special care, with a speed not exceeding 5 knots.*
- *between 150 m and 300 m from the coast all vessels are obliged to navigate with special care, with a speed not exceeding 8 knots.*

Since it was estimated that the collision occurred about 200 meters away from the nearest coast, it can be assumed that the distance of navigation from the coast was greater than 150 meters, as the skipper of the boat stated. Therefore, the skipper of the boat complied with the provisions of Articles 48 and 48.a of the said Ordinance relating to the minimum distance at which motor boats in navigation may approach the coast and maximum allowed speed.

The skipper of the boat with registration number "MT 1839" was unable to notice the other boat (up to 2 seconds before the collision) by observing and listening or by some other available means. He stated that at the time of the marine casualty he was fishing by trolling and therefore there was a possibility that he was distracted from conscientious look-out, just before the marine casualty. Since he noticed the second boat too late, he could not take manoeuvre to avoid the collision i.e. the actions of stand-on vessel.

### **5.2.3. Crew of the pleasure craft with registration number "CZ 111 018"**

On board the boat with registration number "CZ 111 018" was one person, i.e. the skipper of the boat who was also the owner of the boat (citizen of the Czech Republic). There was no passengers on the boat, but skipper's friend provided information that skipper departed with the boat from Viganj to embark members of his family in Kučište.

The deceased skipper of the boat possessed the International Certificate for Operators of Pleasure Craft issued on 16 June 2017 with unlimited duration. It was issued by the State Navigation Authority (Štátní plavební správa) of the Czech Republic, in accordance with UNECE Resolution No. 40. It was valid for operating motorized and/or sailing crafts of up to 20 meters in length in area of inland waters and coastal waters (a daylight cruise at the sea limited to a distance of 1 nautical mile from the mainland or offshore islands if the maximum wind force does not exceed 4 degrees of Beaufort scale).



Since on 12 July 2017 in Kučište the sunset was at 20:30 hours local time and the marine casualty occurred around 22:35 hours, it can be concluded that the skipper of the boat, according to the restrictions in his certificate, was not allowed to navigate the boat in coastal waters outside the daylight limit (from sunset to sunrise), i.e. at the time of the marine casualty.

There is no evidence or knowledge if on the day and at the time of the marine casualty the skipper of the boat was under influence of alcohol, narcotics or medicines.

The external examination and autopsy record made on 14 July 2017 in the morgue of the Department of Pathology of General Hospital Dubrovnik provided an expert opinion according to which by external examination of the skipper the cut wound of the body and left arm, the cut wounds of the back, abrasions on the skin of the torso and extremities and the hematoma on the skin of the torso and extremities were established, and by internal examination the break of the spine with the fracture of the spine and the spinal cord were established.

These injuries, apart from surface injuries, represent unity and each one of them and in its entirety represents serious bodily injury of such characteristics and intensity that led to the inability to move which resulted in drowning. Therefore, the cause of death can be considered drowning that is directly connected to the injury of the spinal cord.

Since the skipper of the boat, due to the force of impact, suffered serious bodily injuries and fell from the boat and drowned, it can be concluded that the use of lifejackets during operation of the vessel could have helped the injured person to remain on the surface of the sea despite the injuries.

#### **5.2.4. Events, actions and omissions of the crew of the pleasure craft with registration number "CZ 111 018"**

The boat was not equipped with electronic instruments to determine at which speed and in which course she was sailing. According to statements of the eyewitnesses and the skipper of the other boat that participated in the collision, it can be assumed that the boat with registration number "CZ 111 018" was exhibiting navigation lights and was moving at a high speed. The eyewitness from Kučište stated that by the sound it could be concluded that it was a speedboat.

By Article 48.a of the Ordinance on Safety of Maritime Transport in Internal Waters and Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Vessel Traffic Management and Information (Official Gazette 79/13, 140/14, 57/15) it is regulated that:

- (2) Motorboats and jet boats (personal watercraft and similar) may navigate by hydrodynamic buoyancy or skim only at a distance of more than 300 meters from the coast and in the area where it is not prohibited to navigate by hydrodynamic buoyancy (glide).*
- (3) The competent harbour master's office shall, by a decision, determine the areas in which motor boats and jet boats are prohibited to navigate by hydrodynamic support.*
- (4) The areas referred to in paragraph 3 of this Article shall be published in official nautical charts and publications.*



Since, according to the estimated position of the collision, it was established that the marine casualty occurred at about 200 meters from the nearest coast and that the body of the deceased skipper was found about 280 meters from the coast, it can be assumed that at the time of the collision, according to the Article 48.a, the skipper was not allowed to navigate with hydrodynamic buoyancy, i.e. skim.

The intention and actions of the skipper of the boat can only be assumed. It can be assumed that the skipper of the boat did not notice the boat with registration number "MT 1839" on time and realize that there was eminent danger of collision with the boat, or he noticed the boat heading slowly in westerly direction assuming to pass her at a safe distance.

### 5.3. REGULATORY OBLIGATIONS

In case of this marine casualty, the skippers of the boats were obliged to comply with the provisions of the Ordinance on Safety of Maritime Transport in Internal Waters and Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Vessel Traffic Management and Information<sup>2</sup> (Official Gazette 79/13, 140/14, 57/15) which prescribes, among other, rules for preventing collisions at sea, which are harmonized with the International Regulations for Preventing Collisions at Sea (COLREGs).

#### 5.3.1. Look-out Obligation

The look-out obligation is prescribed by Ordinance on Safety of Maritime Transport, which in Article 8 (Part II – REGULATIONS FOR PREVENTING COLLISION, Title II Steering and sailing rules, Chapter 1 Conduct of vessels in any condition of visibility, Article 8 Look-out) prescribes:

- *Every vessel<sup>3</sup> shall at all times maintain a proper look-out by sight and hearing, as well as by all available means appropriate in the prevailing circumstances and conditions, so as to make a full appraisal of the situation and of the risk of collision.*

The weather conditions at the time of the marine casualty were favourable, the visibility was good, with no clouds, and the indentation of the coastline should not have been a limiting factor to the look-out. This conditions allowed skippers of the boats to see each other, provided that the look-out was performed diligently.

It is not known whether the skipper of the boat with registration number "CZ 111 018" was able to notice the boat that he was in the collision course with, however from the outcome of the marine casualty it is clear that he did not fully assess the situation and the risk of collision. It can be assumed that the presence of background lights had an adverse effect on his look-out, due to which it is possible that he did not timely notice the boat sailing at a low speed near the coast in westerly direction.

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<sup>2</sup> Below in text is Ordinance on Safety of Maritime Transport

<sup>3</sup> The word »ship« means any type of vessel, including floating navigation vessels, WIG and seaplane, which is used or may be used as a means of transport on the water.



The skipper of the boat with registration number "MT 1839" stated that he was trolling (fishing) while navigating, which could have also had an impact on his belated noticing of the boat that was approaching him from his port side.

### 5.3.2. Obligation of Navigating at Safe Speed

The Article 9 of the Ordinance on Safety of Maritime Transport (Part II – REGULATIONS FOR PREVENTING COLLISION, Title II Steering and sailing rules, Chapter 1 Conduct of vessels in any condition of visibility, Article 9 Safe Speed) requires that every vessel at all times proceeds at a safe speed so that it can take proper and effective action to avoid collision and be stopped within an appropriate distance.

In determining a safe speed the following factors shall be taken into account:

*(1) By all vessels:*

- a. the state of visibility*
- b. the traffic density including concentrations of fishing vessels or any other vessels*
- c. the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions*
- d. the presence of background light at night, such as from shore lights or from back scatter of her own lights*
- e. the state of wind, sea and current, and the proximity of navigational hazards*
- f. the draught in relation to the available depth of water.*

Additional conditions are prescribed for vessels with operational radar, which is not applicable to the boats involved in the this marine casualty since they were not equipped by radar devices.

At the time of the marine casualty the visibility was about 10 kilometres, which is considered as good visibility. Manoeuvrability of the boat, as well as the state of the wind, sea and current at the time of the marine casualty and the proximity of navigational hazards, should not have had an impact to the need to reduce the speed of the boats. The draught of both boats in relation to the available depth of water of about 30 meters should not have had an impact on the speed of navigation.

The sea area where the boats collided was near the coast where the town of Kučište is located and therefore there were background lights that could have interfered with look-out, especially of the skipper of the boat with registration number "CZ 111 018", who was sailing in the direction of Kučište, and the boat with registration number "MT 1839" was sailing at a low speed near the coast. Also, dense traffic in the summer months should have been taken into account when determining the navigating speed of the boats.

There are no records to determine the navigating speed of the boats, therefore the speed was established based on the statement of the eyewitnesses, the key witness and the assumptions of the Permanent court expert for vessels and maritime affairs. According to the aforementioned, the boat with registration number "MT 1839" was sailing at speed of approximately 4 knots, and the boat with registration number "CZ 111 018" was, according to the statement of the eyewitness from Viganj, sailing fast towards Kučište, and according to the statement of the eyewitness from Kučište, an



unknown boat sailed from the direction of Viganj at a high speed, but from the sound of it, it could be concluded that it was a speedboat.

The Permanent court expert for vessels and maritime affairs rendered the Findings and Opinion on the marine casualty in Pelješki kanal based on the order of the Municipal State Attorney's Office in Dubrovnik. In the Findings and Opinion it was established that the hull of the boat "MT 1839" was made of reinforced fiberglass and was in good condition while the bow of the boat "CZ 111 018" was made of a combination of rubber and fiberglass and the anchor bracket of stainless steel was longitudinally mounted on the part of the fiberglass. During the collision, the anchor bracket and the bow of the boat with registration number "CZ 111 018" hit the hull of the boat with registration number "MT 1839". Taking into account the materials from which mentioned parts on boats were built, the structural characteristics of the boats and the damages to the boats, the permanent court expert established that the speed of the boat with registration number "CZ 111 018" ranged from 12 to 18 knots. He also established that the collision angle between the two boats was between 70° and 85°.

The safe speed is not defined, but it depends, based on the abovementioned conditions, on the professional assessment of the person who is operating the vessel at the time concerned. If the boat with registration number "CZ 111 018" was skimming near the coast at the time of the year when the traffic is dense and in the environment with many background lights, which has an impact on look-out, this indicates to a high probability that the speed at which the boat was sailing influenced the course and the outcome of the marine casualty in the manner that the skipper of the boat did not or could not take a proper and effective action to avoid collision.

There are no facts suggesting that the speed of the boat with registration number "MT 1839" influenced the course and the outcome of the marine casualty and that such speed cannot be considered safe.

### **5.3.3. Obligation of Avoiding Collision at Sea**

In the present case, according to the received statements, both boats sailed in front of Kučište, the boat with registration number "CZ 111 018" in the direction of Kučište, and the boat with registration number "MT 1839" near the coast in the westerly direction.

Due to the fact that the boat with registration number "CZ 111 018" collided straight with the bow into the port side of the hull above the water level (closer to the bow) of the boat with registration number "MT 1839" and according to the received statements two scenarios can be assumed to have resulted in the collision of the boats. If the skipper of the boat with registration number "CZ 111 018" sailed further from the coast, changed the course towards Kučište and continued to sail in that course, then he should have seen the boat with registration number "MT 1839" (which was at the crossing course, so the collision was threatening) over his starboard side and keep out of his way, as further explained below. However, there is a possibility that the skipper of the boat with registration number "CZ 111 018" sailed closer to the shore and that the courses of the boats were initially not crossing, but that he, considering the shape of the coast and the port of destination, turned the course to the port, until the boats, immediately before the collision, found themselves in a collision course.

When the courses of the boats cross in such a way that there is a risk of collision, they were obliged to apply the provisions of Article 18 (Crossing situation) of the Ordinance on Safety of Maritime Transport:



- *When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.*

The Article 21 of the Ordinance on Safety of Maritime Transport it is prescribed that the power-driven vessel underway shall keep out of the way of a vessel not under command, a vessel restricted in its ability to manoeuvre, a vessel engaged in fishing and a sailing vessel. The boat with registration number "MT 1839" was fishing, however this did not limit manoeuvring characteristics of the boat and therefore it cannot be considered as a boat engaged in fishing but a power-driven boat, as well as the boat with registration number "CZ 111 018". Therefore, considering the mutual positions of the boats with crossing courses and the risk of collision, the boat with registration number "CZ 111 018" was required to keep out of the way of the boat with registration number "MT 1839".

The Article 20 of the Ordinance on Safety of Maritime Transport determined actions by stand-on vessel:

- (1) *When, based on this Part of the Ordinance, one of two vessels is required to keep out of the way of the other vessel, the other vessel shall keep her course and speed unchanged.*
- (2) *The other vessel may, however, take action to avoid collision by its manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with this Part of the Ordinance.*
- (3) *When, from any cause, the vessel required to keep its course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.*
- (4) *A power-driven vessel which takes action in a crossing situation in accordance with paragraph 2 of this Article to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on its own port side.*
- (5) *This Article does not relieve the give-way vessel of its obligation to keep out of the way.*

Pursuant to this Article, if the boat with registration number "CZ 111 018" did not take an appropriate manoeuvre or if such manoeuvre was insufficient to avoid collision, the boat with registration number "MT 1839" could have or in other case should have taken an action which would best contributed to avoid collision.

According to the statement of the skipper of the boat with registration number "MT 1839" such manoeuvre was not taken because the boat with registration number "CZ 111 018" was too late noticed by look-out.

In conclusion, regardless whether the boat with registration number "CZ 111 018" did not take actions for avoiding collision with the boat that was located to its starboard or the boat took actions that caused the risk of collision immediately before the marine casualty, both of the assumed actions could have contributed to the course and the outcome of the marine casualty. Also, late detection and inability of the boat with registration number "MT 1839" to react and avoid collision influenced the course and the outcome of the marine casualty.



#### 5.3.4. Obligation of Exhibiting Lights

Article 26 of the Ordinance on Safety of Maritime Transport prescribes:

- (1) *A power-driven vessel underway shall exhibit:*
  - a) *masthead light forward*
  - b) *another masthead light abaft of and higher than the forward one; a vessel under 50 meters shall not be obliged to exhibit such light but may do so*
  - c) *sidelights*
  - d) *sternlight.*
- (4) *A power-driven vessel of less than 12 meters in length may in lieu of the lights prescribed in paragraph 1 of this Article, exhibit a white all-round light and sidelights.*
- (6) *A masthead light or white all-round light on a power-driven vessel of less than 12 meters in length may be displaced from the fore and aft centreline of the vessel if centreline fitting is not practicable, provided that the sidelights are combined in one lantern set on the fore and aft centre line or located as nearly as practicable in the same fore and aft line as the masthead light or the all-round white light.*

According to Article 23, paragraph 2 and 3 of the Ordinance on Safety of Maritime Transport the lights shall be applied from sunset to sunrise and during such times no other lights shall be exhibited, unless such lights as cannot be mistaken for the lights specified in this part of the Ordinance or impair their visibility or distinctive characteristics and don't interfere with the keeping of a proper look-out. The lights shall also be exhibited from sunset to sunrise in restricted visibility and in all other circumstances when it is deemed necessary.

Since the marine casualty occurred after the sunset, both boats had to exhibit prescribed lights corresponding to their length, purpose or type of boat and other specifics.

According to the statement of the eyewitness from Kučište, the boat with registration number "MT 1839" was exhibiting lights and the skipper of the boat stated that he had navigation lights switched on.

The eyewitness from Viganj saw the red light on the port side of the boat with registration number "CZ 111 018" as it departed and was heading for Kučište. Also, the skipper of the boat with which it collided said that he saw the light on the boat, and the eyewitness from Kučište saw the red light on the boat, from which it can be assumed that the boat had the navigation lights switched on. The inspection of the boat after the marine casualty revealed irregularities in navigation lights as explained in more detail in 5.4.2. Pleasure craft with registration number "CZ 111 018".

#### 5.3.5. Obligation of Using Sound Signals

The Ordinance on Safety of Maritime Transport under Title IV Sound and light signals, among other defines the equipment for sound signals and manoeuvring and warning signals. Article 36 Equipment for sound signals prescribes that:



- (1) *A vessel of 12 metres or more in length shall be provided with a whistle, a vessel of 20 metres or more in length shall be provided with a bell in addition to a whistle, and a vessel of 100 metres or more in length shall, in addition, be provided with a gong, the tone and sound of which cannot be confused with that of the bell. The whistle, bell and gong shall comply with the specifications in Technical requirements for the statutory certification of vessels and maritime structures. The bell or gong or both may be replaced by other equipment having the same respective sound characteristics, provided that manual sounding of the prescribed signals shall always be possible.*
- (2) *A vessel of less than 12 metres in length shall not be obliged to carry the sound signalling appliances prescribed in paragraph 1 of this Article but if she does not, she shall be provided with some other means of making an efficient sound signal.*

Therefore, in accordance with Article 36, the boats had to be equipped with some other means of making an efficient should signal. Considering the late detection of the risk of collision by the both boats, i.e. just before the collision, the skippers were unable to use the equipment for sound signals.

#### **5.4. PLEASURE CRAFTS WITH REGISTRATION NUMBER "MT 1839" AND "CZ 111 018"**

##### **5.4.1. Pleasure craft with registration number "MT 1839"**

The boat with registration number "MT 1839" was in the ownership of a natural person who, at the notary public office on 29 June 2017 in Metković, signed a contract for the sale of the boat whereby he sold the boat to the skipper of the boat who was the participant in the marine casualty. Additionally, on the same day, he notarized a special power of attorney authorizing the new owner to do the following with the motor vehicle instead of her and without her presence:

- operate in the country and abroad;
- sell, sign a sale purchase agreement for transfer the ownership to the new owner and take other necessary actions regarding the transfer of ownership of the vessel
- deregister the boat
- register the vessel with the competent harbour master's office
- take all the other actions to which the owner is authorized without limitations.

The Navigational license for the boat with registration number "MT 1839" was issued on 21 December 2016 by the Branch of the Harbour Master's Office Ploče in Metković, based on the regular survey of the boat performed on 9 June 2016 and valid until 9 June 2021. In the Navigational licence of the boat, the former owner was registered as the owner of the boat, and the legal entity from Split was registered as the user of the boat, however, as the boat was purchased 13 days before the marine casualty, according to the Ordinance on Boats and Yachts, as amended, the new owner has a period of 30 days from the date of acquisition to request the change of the data in the registry of boats and the issuance of a new Navigational license.

From the Navigational license it was established that the boat has the following limitations:

- the maximum number of persons is 8 with a mandatory Boat Skipper with Category B



- the permitted navigation area is III (includes navigation in internal seawaters, territorial waters of the Republic of Croatia and waters accessible from the sea, and for fishing boats longer than 7 meters in Ecological and Fisheries Protection Zone of the Republic of Croatia (ZERP)).

Article 8 of the Ordinance on Boats and Yachts prescribes that all domestic and foreign boats and yachts with a total propulsion power of more than 15 kW and which navigate in the internal waters and the territorial sea of the Republic of Croatia must have a valid policy on compulsory liability insurance for non-material damages of the owner of the boat. On 17 June 2017, the former owner of the boat concluded the compulsory insurance policy for the owner of the motorboat for damages caused to third persons that was valid until 16 June 2018.

By inspection of the boat "MT 1839" it was established that the boat was equipped with the following navigation lights:

- masthead light
- port sidelight
- starboard sidelight
- sternlight
- all-round white light.

There are no reported or discovered facts that would indicate technical defects of the boat, the failure of any critical (key) ship equipment (ship propulsion, steering wheel, navigation devices etc.) as well as problems with the design of the boat, design or location of the conning console, which could adversely affect the actions of the person who operated the boat.

#### **5.4.2. Pleasure craft with registration number "CZ 111 018"**

Article 4, paragraph 7 of the Ordinance on Boats and Yachts, as amended, regulates that:

- (3) A foreign boat or yacht may navigate the internal waters and the territorial sea of the Republic of Croatia provided it meets the requirements set out in lex specialis, and is seaworthy under the laws of the boat or yacht flag state, and is operated by or is under the command of a person qualified to operate it or be in command thereof.*

The International certificate for pleasure craft was issued by the State authority of the Czech Republic on 12 June 2017, and was valid until 30 June 2020. In the Certificate it was stated that the boat can sail at significant wave height of not more than 2 meters. The skipper of the boat that operated the boat at the time of the marine casualty was registered as the owner of the boat.

From the boat manufacturer's information the design category of the boat Medline 500, according to Directive 94/25/EC of the European Parliament and Council, is C – inshore (designed for wind force, and including, 6 Bf and significant wave heights up to, and including, 2 m). For comparison purposes, the project category C corresponds to the navigation area IIa (covers international voyage in the Adriatic Sea with the limit of distancing from the nearest land not more than 12 nautical miles) or below.

On 20 June 2017 the owner of the boat contracted the compulsory insurance policy of the owner of the motor boat for damage caused to third parties or property, which was valid until 20 June 2018.

On the boat was found a Confirmation of payment of fees upon application of yacht, boat or craft which was paid by the owner of the boat, in accordance with the Regulation on conditions for entry and stay of foreign yachts and boats intended for sport and recreation in internal waters and territorial sea of the Republic of Croatia, on 4 July 2017. The Confirmation was issued by the Harbour Branch Office in Korčula and was valid until the end of the current year.

The technical characteristics of the boats issued by the boat manufacturer indicated that the minimum recommended power of the outboard engine was 40 horsepower (30 kW) and the maximum recommended power was 80 horsepower (60 kW). The engine EVINRUDE E-TEC 75 of 55.90 kW, i.e. 76 hp, was installed on the boat, which in terms of the power corresponded to the recommended characteristics of the manufacturer.

The boat had installed all-round white light and sidelights. During the inspection of the vessel "CZ 111 018" the permanent court expert for vessels and maritime affairs noticed the following irregularities:

- on the mast there was an all-round white light with visible modifications by duct tape
- on the mast there was a red sidelight with visible modifications by duct tape
- on the mast there was a green sidelight with visible modifications by duct tape.



**Picture 11 Showing of modifications by duct tape on the navigation lights**

*(source: enlarged photographs of the Harbour Master's Office Dubrovnik)*

The eyewitnesses from Viganj and Kučište stated that they saw a red light on the boat, and the skipper of the boat with which she had collided stated that the speedboat had the light switched on, which indicates that the navigation lights were exhibited, however the reason why there were modifications



on the lights was not known, which also could have influenced the course and the outcome of the marine casualty.

On the boat with registration number "CZ 111 018" the Permanent court expert also established a deficiency of the safety element in the emergency stopping device which serves for the immediate stopping of the vessel's power in case the skipper falls into the water.

The use of the emergency stopping device would reduce the danger the boat caused after the fall of the skipper into the water by uncontrolled circling. The obligation to use emergency stopping device prescribed by Croatian and Czech legislation is elaborated in details in chapter 5.7. Impact of Legislation.

## **5.5. EXTERNAL INFLUENCES**

There were no reported or discovered facts that would indicate that immediately before or during the time of the casualty external influences, positive or negative (proximity or actions/omissions of other vessels or persons, influence of VTMIS service or other similar influences and established contacts with third legal or natural persons) affected the skippers of the boats.

## **5.6. ENVIRONMENT**

### **5.6.1. Internal Environment**

On the boat with registration number "MT 1839" the conning position was located inside the closed cabin and therefore it is assumed that immediately before the marine casualty the skipper of the boat was navigating the boat from that position. There were no reported or discovered other facts that would indicate that impacts of internal environment (temperature, ventilation, lighting, air quality and humidity, noise, vibration, etc.) affected the skipper of the boat which could have contributed to the marine casualty.

The boat with registration number "CZ 111 018" did not have a closed cabin and therefore the skipper of the boat was exposed to the influence of the external environment i.e. the weather conditions at the time of the marine casualty.

### **5.6.2. External Environment**

#### **5.6.2.1. Characteristics of the navigation area**

The Pelješki kanal is a sea area in southern Dalmatia located between the southern coast of the Pelješac Peninsula and the eastern part of the northern coast of the Island of Korčula. It covers the area within the boundaries that involve:



- the connection between the lighted beacons of the cape Osičac and Račišće harbor (Korčula) on the northwest side
- the connection between the lighted beacon on the cape Ražnjić (Korčula) – the lighthouse Sestrice - the coast of Pelješac Peninsula (Trstenica bay) on the south-eastern side.

It is about 6.5 nautical miles long and about 0.7 to 1.3 nautical miles wide. The depth of the sea in the middle of the channel is about 45 meters, and in front of Kučište in the area of approximate position of the marine casualty about 30 meters. The surrounding coast is mostly steep and rocky.

Inhabited town of Kučište is a tourist destination known for favourable conditions for yachtsmen and surfers located on the southwest coast of the Pelješac Peninsula, about 5 kilometres west of the town of Orebić. In the west direction there is also the town of Viganj. Both towns, including Lovište (planned destination of the skipper of boat with registration number "MT 1839"), fall under the municipality of Orebić.

According to data from the Population Census conducted by the Croatian Bureau of Statistics in 2011, a total of 217 residents inhabited Kučište. According to data from the Statistical Report of 2017/2018, Tourism in coastal cities and municipalities in 2017, in Kučište there was a reported arrival of 5 894 persons who spent 45 902 nights. In the area of Orebić municipality, in the year 2017 there were 109 942 persons with the number of overnight stays of 829 121. As the marine casualty occurred in the middle of the tourist season, it can be concluded that the number of persons in Kučište at that time was much higher than the number of permanent inhabitants.

Anchorage is located in front of Kučište. According to the data from Adriatic Sea Pilot issued by the Croatian Hydrographic Institute, the sea bed is sandy and muddy and holds well, however during the southern winds it is unreliable. This also indicates to an increased number of boats in the middle of the tourist season at anchorage in front of Kučište. No additional warnings were issued in the Adriatic Sea Pilot to the sailors in this area nor indicated on the maps.

According to Croatian Hydrographic Institute information, at the head of the gate in the port of Kučište there was a white flashing light in the period of 3 seconds with a visibility of 3 nautical miles.

The mentioned facts point to the existence of numerous background lights, which greatly influenced the look-out, especially for the skipper of the boat with registration number "CZ 111 018", which headed towards Kučište.

On the opposite side of the Pelješki kanal, at a distance of about one nautical mile, in the north-eastern part of the Island of Korčula, there are small tourist towns that also represented the background lights to the boat with registration number "MT 1839", which was sailing along the Pelješki kanal, in the westerly direction, while the other boat was approaching her from her port.

By analysing the navigation area where the boats sailed, width of the Pelješki kanal, depth, visibility and recognizability of the coast, and the absence of major dangers or obstacles for navigation, it was concluded that navigation through the Pelješki kanal was not demanding in terms of characteristics of the navigation area but in terms of characteristics of the tourist season. Denser traffic and larger



amount of background lights could have contributed to the course and the outcome of the marine casualty.

### 5.6.2.2. Weather conditions

According to the meteorological conditions recorded at the day of the marine casualty at 22:00 hours in Hvar, it was established that during the time of the marine casualty prevailed: the light breeze of variable direction with wind speed of about 7 km/h (wind speed 2 Bf), with no precipitation or clouds, the air temperature of about 29° C and the air pressure of 1008 hPa. The visibility was good, about 10 km.

In Kučište, on 12 July 2017 from 18:00 to 24:00 hours, the western wind with speed of about 2 km/h (wind speed 1 Bf) prevailed. The humidity was about 50%, the air pressure was 1010 hPa and the sky was clear.

According to the recorded average wind speed of 1 Bf in Kučište, from the Beaufort scale (relevant part) shown in Picture 12 it can be concluded that the assumed waves height was about 0.1 meter, which according to the Douglas scale shown in Picture 13, indicates the sea state 1, i.e. calm (rippled) sea.

#### Beaufort scale

		Wind speed				Waves height	
		km/h	m/s	kt	mph	m	ft
0 Bf	calm	< 1	0 - 0.2	< 1	< 1	-	-
1 Bf	light air	1 - 5	0.3 - 1.5	1 - 3	1-3	0.1 (0.1)	0.25 (0.25)
2 Bf	light breeze	6 - 11	1.6 - 3.3	4 - 6	4 - 7	0.2 (0.3)	0.5 (1)
3 Bf	gentle breeze	12 - 19	3.4 - 5.4	7 - 10	8 - 12	0.6 (1)	2 (3)
4 Bf	moderate breeze	20 - 28	5.5 - 7.9	11 - 16	13 - 18	1 (1.5)	3.5 (5)

#### Picture 12 Beaufort scale (relevant part)

(source: Croatian Hydrographic Institute, Marine forecast,  
[https://meteo.hr/prognoze.php?section=prognoze\\_specp&param=pomorci](https://meteo.hr/prognoze.php?section=prognoze_specp&param=pomorci))

#### Douglas scale

State of the sea	Description	Waves average height (m)	Description of the sea
0	calm (glassy)	0	Sea like a mirror
1	calm (rippled)	0 - 0.1	Ripples; smoke drifts
2	smooth	0.1 - 0.5	Small wavelets, long and low wave

#### Picture 13. Douglas scale (relevant part)

(source: Croatian Hydrographic Institute, Marine forecast,  
[https://meteo.hr/prognoze.php?section=prognoze\\_specp&param=pomorci](https://meteo.hr/prognoze.php?section=prognoze_specp&param=pomorci))



According to information from the Adriatic Sea Pilot of the Croatian Hydrographic Institute, in the anchorage of Kučište, current speeds of up to 0.8 knots prevail, and stormy south and west winds can increase the speed of currents up to 2.0 knots.

The skipper of the boat "MT 1839" stated that the visibility was good, that the moonlight was present and that the sea was calm, and the eyewitness from Kučište also noted that there were moonlight and good visibility.

On 12 July 2017 in Kučište the sunset was at 20:30 hours local time (UTC +2), while the civil twilight lasted until 21:04 hours, nautical twilight until 21:48 hours, and astronomical twilight until 22:40 hours. It was the 3<sup>rd</sup> day after the full Moon, and the Moon came out around 22:29 hours, which points to the fact that at the time of the marine casualty the Moon was only 1 degree above the horizon.

By analysing the weather conditions that prevailed at the day and at the time of the marine casualty at the site and in near the site of the marine casualty, and taking into consideration records of meteorological stations and the participants' statements, it was concluded that on the day and time the marine casualty favourable weather conditions prevailed that had no negative impact on navigation and the ability to operate the boats involved in the marine casualty.

## 5.7. IMPACT OF LEGISLATION

The Ordinance on Safety of Maritime Transport in Internal Waters and Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Vessel Traffic Management and Information (Official Gazette 79/13, 140/14, 57/15) prescribe rules for preventing collisions at sea, in line with the International Regulations for Preventing Collisions at Sea (COLREGs).

The Ordinance on Boats and Yachts (NN 27/05, 57/06, 80/07, 3/08, 18/09, 56/10, 97/12, 137/13, 18/16, 72/17) prescribe the conditions for navigation, placing on the market and/or use of pleasure vessels, navigation areas, registration and deregistration of boats from registries of boats, determining seaworthiness of yachts and boats, boat's documents, boat and yacht manning, the manner and conditions for obtaining confirmations and certificates of competence of skipper of the boats and master of the yacht.

The provisions of these Ordinances in large part obliged the skippers of the boats involved in the marine casualty. No deficiencies have been identified in the aforementioned Ordinances that have contributed to the occurrence of the marine casualty.

By the inspection of the boat with registration number "CZ 111 018" the Permanent court expert established a deficiency of the safety element in the emergency stopping device which serves for the immediate stopping of the vessel's power. Not used engine cut-off switch was confirmed by the outcome of the marine casualty, since after the collision the unmanned boat continued to circle at a high speed near the coast.

Using of the engine cut-off switch on boats for personal use which have the technically performed boat operation such as the boat with registration number "CZ 111 018" is not prescribed. By provisions of the Directive 2013/53/EC of the European Parliament and of the Council it is prescribed that only tiller-



controlled outboard propulsion engines shall be equipped with an emergency stopping device which can be linked to the helmsman.

The same was prescribed by Regulation on Statutory Certification of Boats and Yachts, and also by provisions of the decree of the Government of the Czech Republic on recreational crafts and personal vessels in Appendix 1, point 5.1.8. (Nařízení vlády č. 96/2016 Sb., Nařízení vlády o rekreačních plavidlech a vodních skútrech), since both legislations have taken over the provisions of Directive 2013/53/EC of the European Parliament and of the Council

Additionally, the Regulation on Statutory Certification of Boats and Yachts in Annex II, Section 6, Technical requirements for statutory certification of Croatian nationality boats, prescribes that speedboats which are categorized as commercial or public boats must have an emergency engine cut-off switch. The Regulation does not explicitly prescribe that boats for personal use must be equipped and use engine cut-off switch, although this, in view of this case and the cases with similar outcomes, would contribute to the safety of navigation.



## 6. CONCLUSIONS AND MEASURES TAKEN

### 6.1. FINDINGS

The deceased skipper of the boat possessed the International Certificate for Operators of Pleasure Craft which was valid for operating motorized and/or sailing crafts of up to 20 meters in length in area of inland waters and coastal waters (a daylight cruise at the sea limited to a distance of 1 nautical mile from the mainland or offshore islands if the maximum wind force does not exceed 4 degrees of Beaufort scale). Since the marine casualty occurred around 22:35 hours, after the sunset, it can be established that the skipper of the boat with registration number "CZ 111 018" did not possess the valid certificate for operating the craft in the time of the marine casualty.

By testing the amount of alcohol in the body it was established that the skipper of boat with registration number "MT 1839" was not under the influence of alcohol. Testing of amount of alcohol in the body of the deceased skipper of the boat has not been performed, therefore it is not possible to determine whether this had an influence on his actions.

Based on the External examination and autopsy record made in the morgue of the Department of Pathology of General Hospital Dubrovnik it was established that the cause of death of the skipper of the boat was drowning which was directly connected to the sustained injuries of the spine. Therefore, it can be concluded that the use of lifejackets during operation of the vessel could have helped the injured person to remain on the surface of the sea despite the serious bodily injuries.

Based on statements of eyewitnesses from the land and participants in the marine casualty, it can be assumed that the boat with registration number "CZ 111 018" was exhibiting navigation lights. Nevertheless, by inspection of the vessel following irregularities were noticed:

- on the all-round white light there were visible modifications by duct tape
- on the red sidelight there were visible modifications by duct tape
- on the green sidelight there were visible modifications by duct tape.

The said could have had an adverse influence, i.e. late detection of the boat with registration number "CZ 111 018" by the skipper of the boat with registration number "MT 1839".

Based on the statement from the eyewitness from Kučište and the skipper of the boat and the inspection of the boat, it can be assumed that the boat with registration number "MT 1839" was exhibiting prescribed navigation lights.

There are no accurate records whereby the sailing speeds of the boats would be determined, so they are assumed based on available information. Therefore, it is assumed that the boat with registration number "MT 1839" was sailing at speed of approximately 4 knots, while the boat with registration number "CZ 111 018" was sailing at speed of 12-18, i.e. according to the statements she was sailing very fast/skimming.



There is a high probability that the navigation speed of the boat with registration number "CZ 111 018" has influenced the course and the outcome of the marine casualty in such a way that the skipper did not or could not take a proper and effective action for avoiding collision which points to the conclusion that he was not moving at safe speed, taking into account the traffic density at that time of year and the presence of background lights in night conditions.

Furthermore, considering the estimated position of the collision which is about 200 meters from the nearest coast, according to the provisions of the Ordinance on Safety of Maritime Transport in Internal Waters and Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Vessel Traffic Management and Information, as amended, at the place of the collision was not allowed to sail with hydrodynamic buoyancy, i.e. skim.

The intention and actions of the skipper of the boat with registration number "CZ 111 018" can only be assumed based on the gathered information. It can be assumed that the skipper of the boat did not notice the boat with registration number "MT 1839" on time and realize that there was eminent danger of collision with the boat, or he noticed the boat moving slowly in the westerly direction assuming he would pass her at a safe distance.

It cannot be established with certainty if the courses of the boats were initially crossing with the danger of collision, but the boat with registration number "CZ 111 018" did not avoid the boat seen over its starboard side, or their courses were not crossing, but the boat with registration number "CZ 111 018", considering the stretching of the coast and the port of destination, changed the course of the boat to the port and thus caused the collision. Nevertheless, both of the assumed actions of the boat with registration number "CZ 111 018" could have contributed to the course and the outcome of the marine casualty.

The skipper of the boat with registration number "MT 1839" stated that during navigation he was trolling which also could have had an impact on his proper look-out, i.e. noticing the boat that was approaching him from his port side.

The presence of background lights had an adverse effect on the look-out on boats.

The Ordinance on Safety of Maritime Transport prescribes the procedure of the stand-on vessel by which the boat with registration number "MT 1839" could have or should have taken an action which would best contributed to collision avoidance, if the boat with registration number "CZ 111 018" failed to take an appropriate manoeuvre or if such manoeuvre was insufficient to avoid collision. Since the skipper of the boat too late saw the boat with which there was a risk of collision, he was unable to take the action by which he would avoid the collision.

The Navigation license for the boat with registration number "MT 1839" was issued on 21 December 2016 by the Harbour Master's Office Ploče in Metković. In the Navigation license of the boat, the former owner was registered as the owner of the boat, and the legal entity from Split was registered as the user of the boat, however, as the boat was purchased 13 days before the marine casualty, according to the Ordinance on Boats and Yachts, the new owner has a period of 30 days from the date of acquisition to request the change of the data in the registry of boats and the issuance of a new Navigation license.



On the boat with registration number "CZ 111 018" a deficiency of the safety element in the emergency stopping device which serves for the immediate stopping of the vessel's power in case the skipper falls into the water was detected. The use of the emergency stopping device would reduce the danger the boat caused after the fall of the skipper of the boat into the water by uncontrolled spinning. Using of the emergency stopping device on boats for personal use which have the technically controlled boat operation such as the boat with registration number "CZ 111 018" is not prescribed by Croatian and Czech legislation.

By analysing the navigation area of Pelješki kanal where the boats sailed, along its width, depth, visibility and recognizability of the coast, and the absence of major dangers or obstacles for navigation, it was concluded that navigation through the Pelješki kanal was not demanding in terms of characteristics of the navigation area but in terms of characteristics of the tourist season, i.e. denser traffic and larger amount of background lights could have contributed to the course and the outcome of the marine casualty.

## 6.2. CAUSES

In this part, the factors contributing to the marine casualty (contributing factors) and the immediate (decisive) cause of the marine casualty are stated.

### 6.2.1. Contributing factors

The operation of the boat with registration number "CZ 111 018" by the skipper after the sunset, despite the restrictions stated in his certificate regarding the navigation in coastal waters during daylight, could have contributed to the course and outcome of the marine casualty.

During navigation, the speed of the boat with registration number "CZ 111 018" was not fully adjusted to the limiting conditions (denser traffic and greater amount of background lights) that shall be taken into account when determining the safe speed.

The background lights of nearby inhabited towns, marine signalization, and the nearby anchorage could have contributed to the difficulties in look-out of the skippers under night conditions.

The modifications on the navigation lights of the boat with registration number "CZ 111 018" could have contributed to the difficulties of detecting the boat by the skipper of the boat with registration number "MT 1839".

Performing trolling by the skipper of the boat with registration number "MT 1839" could have affect the late detection of the other boat approaching him from the port side.

Not used lifejacket by the skipper of the boat with registration number "CZ 111 018" had an influence on the outcome of the marine casualty, i.e. aggravated the consequences of the marine casualty.

Not used emergency stopping device had aggravated the outcome of the marine casualty, i.e. caused an uncontrolled circling of vessels that posed a danger to people, environment and property.



### 6.2.2. Immediate cause

This very serious marine casualty was developed by the impact of human factor that is directly linked to the obligation to comply with the provisions of the Ordinance on Safety of Maritime Transport in Internal Waters and Territorial Sea of the Republic of Croatia and on the Manner and Conditions of Vessel Traffic Management and Information, and in particular those relating to look-out obligation, obligation of avoiding collision at sea, obligation of exhibiting lights and navigation at safe speed, and in the vicinity of the coast navigation with special care and at speed no higher than allowed.

### 6.3. MESURES TAKEN

The Air, Maritime and Railway Traffic Accidents Investigation Agency has no knowledge of the safety measures taken by the interested parties, in order to improve the safety of navigation and prevention of the occurrence of similar casualties and incidents.

Since it was established that the cause of death of the skipper was drowning which is directly related to the injuries of the spinal cord, it can be concluded that the obligation to use lifejacket could have influenced the outcome of this marine casualty.

In 2019, the Air, Maritime and Railway Traffic Accidents Investigation Agency, in the Final Report on a very serious marine casualty – Collision of the ship "Danče" and the boat with registration number "690 DB", Koločepski kanal, 25 April 2017, issued to the Ministry of the Sea, Traffic and Infrastructure the following safety recommendation:

- ***AIN05-SR-02/2019:*** *It is recommended to the Directorate for Maritime Navigation and the Maritime Safety Directorate of the Ministry of Sea, Transport and Infrastructure to amend the laws and regulations in the manner that all persons on board the boats, irrespective of their purpose (for personal use, for economic use or for public use), whose speed exceeds 20 kn, are obliged to carry a lifejacket during the entire navigation, irrespective of the area and the conditions of navigation.*



## 7. SAFETY RECOMMENDATIONS

In the case concerned, the Air, Maritime and Railway Traffic Accidents Investigation Agency issued the following safety recommendations:

**AIN05-SR-6/2019:** It is recommended that the Republic of Croatia national legislation regulates the obligatory possession of an emergency stopping device (engine cut-off switch) on all speedboats of Croatian nationality, irrespective of their purpose (personal, economic or public use) and the obligation of its usage by the person operating the speedboat during the entire navigation.

**AIN05-SR-7/2019:** It is recommended that the Czech Republic national legislation regulates the obligatory possession of an emergency stopping device (engine cut-off switch) on all speedboats of Czech nationality, irrespective of their purpose (personal, economic or public use) and the obligation of its usage by the person operating the speedboat during the entire navigation.



## 8. APPENDICES

### APPENDIX – LIST OF CERTIFICATES FOR OPERATION OF BOATS AND YACHTS ISSUED BY COMPETENT AUTHORITIES OF THE REPUBLIC OF AUSTRIA RECOGNIZED IN THE REPUBLIC OF CROATIA

In accordance with Article 4 Paragraph 3 of The Ordinance on Boats and Yachts (Official Gazette No. 27/05, 57/06, 80/07, 3/08 and 18/09) certificates issued by competent authorities of other states are recognized for operating Croatian flag boats and yachts as in the table below.				
	STATE	ISSUED BY	CERTIFICATE	COMPETENCE
1.	Austria	Österreichischer Segel-Verband – ÖSV  Motorboot – Sportverband für Österreich – MSVÖ  <b>Remark:</b> Since 01 January 2012 certificates are issued by via donau - Österreichische Wasserstraßen - Gesellschaft mbH	<b>Befähigungsausweis zur selbstständigen Führung von Motoryachten im Fahrtbereich 2 Küstenfahrt – 20 sm (Yacht master licence) ÖSV</b>  <b>Befähigungsausweis zur selbstständigen Führung von Motoryachten im Fahrtbereich 2 Küstenfahrt – 20 sm (Yacht master licence) MSVÖ</b>  <b>International Certificate for Operators of Pleasure Craft C - 20 nautical miles, M motorized craft or S sailing craft (ÖSV or MSVÖ)</b>	competence to operate: <ul style="list-style-type: none"><li>- boats used for private purposes,</li><li>- bareboat chartered boats,</li><li>- yachts used for private purposes up to 30 GT,</li><li>- bareboat chartered yachts up to 30 GT,</li></ul> in internal waters and territorial sea of the Republic of Croatia and waters accessible from the sea, under the condition of holding an appropriate national or foreign radio licence if there is a radio-telephone VHF station or a GMDSS-VHF station on the boat or yacht.
2.	Austria	Österreichischer Segel-Verband – ÖSV  Motorboot – Sportverband für Österreich – MSVÖ  <b>Remark:</b> Since 01 January 2012 certificates	<b>Befähigungsausweis zur selbstständigen Führung von Motoryachten im Fahrtbereich 3 Küstenfahrt – 200 sm (Yacht master licence) ÖSV</b>  <b>Befähigungsausweis zur selbstständigen Führung von Motoryachten im Fahrtbereich 3 Küstenfahrt – 200 sm (Yacht master licence) MSVÖ</b>	competence to operate: <ul style="list-style-type: none"><li>- boats used for private purposes,</li><li>- bareboat chartered boats,</li><li>- yachts used for private purposes up to 500 GT,</li><li>- bareboat chartered yachts up to 500 GT,</li></ul> in the area of navigation which includes international voyage in the Adriatic Sea, under the condition of holding an appropriate national or foreign certificate for operating radio station if there is a radio-telephone VHF station or a GMDSS-VHF station on the boat or yacht.



		are issued by via donau - Österreichische Wasserstraßen - Gesellschaft mbH	International Certificate for Operators of Pleasure Craft C - 200 nautical miles, M motorized craft or S sailing craft (ÖSV or MSVÖ)	
3.	Austria	Österreichischer Segel-Verband – ÖSV  Motorboot – Sportverband für Österreich – MSVÖ  <b>Remark:</b> Since 01 January 2012 certificates are issued by via donau - Österreichische Wasserstraßen - Gesellschaft mbH	<b>Berechtigung zur selbstständigen Führung von Segeljachten im Fahrtbereich 4 Weltweite Fahrt (Yacht master Licence) ÖSV</b>  <b>Berechtigung zur selbstständigen Führung von Segeljachten im Fahrtbereich 4 Weltweite Fahrt (Yacht master Licence) MSVÖ</b>	competence to operate: - boats used for private purposes, - bareboat chartered boats, - yachts used for private purposes up to 500 GT, - bareboat chartered yachts up to 500 GT, without restriction on the area of navigation, under the condition of holding an appropriate national or foreign certificate for operating radio station if there is a radio-telephone VHF station or a GMDSS-VHF station on the boat or yacht.
3a	Austria	Österreichischer Segel-Verband – ÖSV  Motorboot – Sportverband für Österreich – MSVÖ  <b>Remark:</b> Since 01 January 2012 certificates are issued by via donau -	<b>Befähigungsausweis zur selbstständigen Führung von Segelyachten im Fahrtbereich 1 Watt-oder Tagesfahrt – 3 sm (ÖSV)</b>  <b>Befähigungsausweis zur selbstständigen Führung von Motoryachten im Fahrtbereich 1 Watt-oder Tagesfahrt – 3 sm (MSVÖ)</b>  <b>International Certificate for Operators of Pleasure Craft C - 3</b>	competence to operate: - boats used for private purposes, - bareboat chartered boats, in internal waters and territorial sea of the Republic of Croatia up to three nautical miles from mainland or island coast, under the condition of holding an appropriate national or foreign certificate for operating radio station if there is a radio-telephone VHF station or a GMDSS-VHF station on the boat.
		Österreichische Wasserstraßen - Gesellschaft mbH	nautical miles, M motorized craft or S sailing craft (ÖSV or MSVÖ)	