



# Bundesstelle für Seeunfalluntersuchung

## Federal Bureau of Maritime Casualty Investigation

Federal Higher Authority subordinated to the Ministry of  
Transport and Digital Infrastructure

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### Press Release 12/14

**The Federal Bureau of Maritime Casualty Investigation (BSU) hereby gives notice that the investigation report No 86/13 was published on 8 August 2014. The report deals with the capsizing of the training craft MERI TUULI and the associated fatal personal accident.**

**Upon request the report will be forwarded. Alternatively this report – as well as all previous reports – is available on the website <http://www.bsu-bund.de> and can be downloaded.**

#### Short version:

#### **Capsizing of the training craft MERI TUULI and the associated fatal personal accident off the entrance to the port of Figueira da Foz/Portugal on 10 April 2013**

At 0830 on 10 April 2013 the German training craft, the type X yachts 442, sailed out of the port of Peniche/Portugal with 5 crew members. Her destination was Figueira da Foz. The voyage was calculated with a distance of 55 nm and a speed of 8 kts. The arrival would therefore have been

approximately in the afternoon at about 1630 in high tide. The MERI TUULI did not reach her berth in the port of call.

After the sails were struck, she abruptly heeled south-west of the northern jetty, roughly on the 10 m line, at 1641 due to groundswell probably to port on the waterline

when she broached and lost her ability to steer because of a steep aft wave of 5-6 m in height.

Thereby the mast broke and 4 crew members fell overboard. The rescue action resulted in the death of a police officer and a crew member in a semi-rigid inflatable dinghy, which capsized after two crew

members of the MERI TUULI had already been recovered. The Portuguese investigation authority gpiam had already investigated the marine casualty and published its investigation report: <http://www.gpiam.mam.aot.gov.pt/images/Relat>

orios\_Tecnicos/022013\_MERI\_TUULI.pdf

However, there remained some outstanding issues with respect to the course of the accident. Therefore the BSU prepared an investigation report on its own.

The final investigation report was published on 8 August 2014 by the BSU and can be read on [www.bsu-bund.de](http://www.bsu-bund.de).

### Long version:

#### **Capsizing of the training craft SY MERI TUULI and fatal personal accident off the entrance to the port of Figueira da Foz/Portugal on 10 April 2013**

At 0830 on 10 April 2013 the German training craft, the sailing yacht MERI TUULI, sailed out of the port of Peniche/Portugal with 5 crew members. Her destination was Figueira da Foz. The voyage was calculated with a distance of 55 nm and a speed of 8 kts, meaning that the time of arrival would have been in the afternoon at about 1630 in high tide. The MERI TUULI did not reach her berth in the port of destination. After the sails were struck, she abruptly heeled south-west of the northern jetty roughly on the 10 m line at 1641 due to groundswell probably to port. Thereby the mast broke and 4 crew members fell overboard. A police officer and a crew member died in a semi-rigid inflatable dinghy that capsized during the rescue operation, after two crew members of the MERI TUULI had already been recovered. Moreover, 4 crew members and 2 police officers sustained injuries and had to undergo medical treatment.

The office for prevention and investigation of marine casualties on sea (gpiam) in Lissabon already published an investigation report pertaining to the very serious marine casualty involving the MERI TUULI in October 2013. The report can be downloaded at the following address:

[http://www.gpiam.mamaot.gov.pt/images/Relatorios\\_Tecnicos/022013\\_MERI\\_TUULI.pdf](http://www.gpiam.mamaot.gov.pt/images/Relatorios_Tecnicos/022013_MERI_TUULI.pdf).

However, there remained outstanding issues with respect to the course of the accident. Therefore the BSU prepared an investigation report on its own. According to the gpiam-report, the yacht reportedly capsized and the mast hit the bottom. This is unlikely. The mast broke and remained on the port side of the deck. According to the statements made by the crew, the wave came from aft. The crew intended to pass the port entrance after having struck the sails, assess the situation and take the sea from aft in case of approaching the port.

In the opinion of the BSU, the broaching of the MERI TUULI to starboard with a steep aft wave, breaking steep sea, washing over the boat. Thereby a steep wave with a height of 5-6 m was generated by the chaotic crossing sea and the swell, rendering the rudder ineffective and leading to strong rolling moments, probably to port. It is likely that the mast dashed on the water surface and broke. With a stability range of the hull of 115° the MERI TUULI righted herself and drifted towards the beach, because the propeller was blocked. The precise scene of the accident could not be determined since the position signals of Figueira da Foz were officially not recorded. According to witness statements, it is likely that the scene was about 100-200 m away from the northern jetty. The final nautical mile was not recorded on the electronic nautical chart plotter because of damage to the GPS antenna. Since the rigging was completely replaced about a year ago and at 1-2% elongation, the cables could not have been fully stretched yet, the mast possibly broke due to loose shrouds or a construction of the manufacturer that might be too weak. On the other hand, the shroud loads are calculated and specified by the mast manufacturer based on the rules for construction. The heeling moments of the hull are taken into account in the process. Possible forces when the mast strikes the water surface are not considered.

The rescue operation was initiated as a result of the red paraflare being fired and transmission of a mayday relay message by the craft sailing with the MERI TUULI, the TIME BANDIT. The MERI TUULI was already in the surf zone between the southern jetty and Praia do Cabedelo beach when the rescue cruiser PATRAO MOISES MACATRAO and the police boat PAPA NOS reached the scene of the accident. The PAPA NOS exposed herself to danger with three police officers and two survivors from the MERI TUULI on board in the process. Due to the shallow water and breaking waves, the PATRAO MOISES MACATRAO could no longer intervene without capsizing.

The decision to call at the port of Figueira da Foz was taken about 2 nm off the entrance. The crew was not aware of the information concerning the closure of the port, even though it was broadcast via NAVTEX and the receiver was on. It is likely that the message was lost among the many reports. The VHF calls made to obtain information on the port went unanswered. In some cases, the MERI TUULI called stations in Figueira da Foz incorrectly due to wrong information in the sailing directions on board. The TIME BANDIT, which was sailing with the MERI TUULI, called on VHF shortly before the accident and was advised the port was closed to vessels of less than 35 m (probably by the pilot). Moreover, the Santa Catarina signal mast, which signalled the closure, was not visible from the sea with binoculars. It is located in the inner harbour entrance. Moreover, the BSU could not make it out even from the opposite southern jetty. Inasmuch, its value tends to be more tourism-related/historical.

The crew of the MERI TUULI was experienced and the voyage well prepared. The fact that the port was closed does not necessarily mean that sailing into another port would have been easier. The yacht would possibly also have capsized. The decision to sail into an Iberian port can only be made on the spot and best jointly. Ultimately no co-sailor had expressed concerns. It should be attempted to ride the waves and not to get into the breaking sea, only then there is a higher risk of capsizing. A direct

and resolute approach of the port entrance under sails with observation of the waves would have simplified the situation. The intention to sail into the port on high tide (1602) was good, because strong currents can prevail, with south-westerly wind up to 3 kts in direct proximity of the port entrance.

In addition to personal protective equipment and donned inflatable lifejackets, all crew members in the cockpit should attach themselves to the craft with a lifeline during the approach. It seems that this only happened properly once because four fell overboard during the knockdown. In the process, there was one casualty with a fractured shoulder. However, it is important to remember that during such roll moments a shock absorber woven into the lifeline would protect against supposed injuries if one's own body fell into the line. Such accidents would also lead to injuries. Which lifelines were used and how they were donned could not be assessed with certainty.

The BSU recommends that the sailing school inspect and possibly improve the life-saving appliances on its recreational craft, in respect of their adequacy on international voyages on the Atlantic, in particular. Based on the area of operation (high seas, coastal waters or sheltered waters), it is important to ensure that the equipment is arranged so that the risk of falling overboard is reduced as far as possible and reboarding is facilitated. In this context, it is important to assess whether on sailing craft smaller lifejackets are more suitable than multi-purpose jackets with greater buoyancy. With regard to lifelines, based on the challenges of the area of operation an assessment must be made as to whether a fall arrest system with crotch strap and shock absorber, which is separate from the lifejacket, should be provided and anchoring points appropriate for reducing the risk of injury during high roll moments are available on the craft.

In addition to the individual responsibility of each crew member, the skipper is required to verify the proper application of personal safety equipment and draw attention to risks. It is helpful to discuss situations together and define a strategy. The risk of recreational yachts capsizing due to crossing waves that are steep, high or breaking is high. Inasmuch, breaking waves should be avoided and the wave pattern continuously monitored.

Sailing directions from several sources should be used for voyage planning in foreign and unknown waters. The Federal Maritime and Hydrographic Agency keeps a wide variety of maritime literature in its library for that purpose.

Volker Schellhammer  
Director