



Bundesstelle für Seeunfalluntersuchung
Federal Bureau of Maritime Casualty Investigation
Bundesoberbehörde im Geschäftsbereich des Bundesministeriums
für Verkehr, Bau- und Wohnungswesen

Investigation Report 122/04

1 November 2004

Very serious marine casualty

**Loss over board of the skipper
of SY RENI
on 31 May 2004
in the Bay of Mecklenburg
southeast of Fehmarn**

The investigation was conducted in conformity with the law to improve safety of shipping by investigating marine casualties and other incidents (Maritime Safety Investigation Law - SUG) of 24 June 2002.

According to this the sole objective of the investigation is to prevent future accidents and malfunctions. The investigation does not serve to ascertain fault, liability or claims.

As to the interpretation of this investigation report, the German version is prevailing.

issued by:
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1 Summary of the marine casualty

On Whit Monday, 31 May 2004, coming from Kühlungsborn, SY RENI was sailing on a port bow with NNE wind force 5 to 6 bft, in gusts 7 bft, towards Fehmarn.

At approx. 11.30 h the skipper was flung out of the cockpit by an extremely high wave. Rescue manoeuvres initiated immediately by his wife, who remained on board, to recover her husband swimming in the water were unsuccessful. After approx. 5 to 6 failed attempts to carry out a "person-over-board" manoeuvre under sail, the skipper sank. After the wife had lost sight of her husband she sailed aimlessly over the Bay of Mecklenburg and was found drifting with a torn mainsail at about 14.00 h by SY ONDA approx. 1.5 sm off the Dahme pier. The emergency call "person-over-board" was sent out via VHF at 14.08, stating the position at which SY RENI had been found, and an extensive search for the missing person was started. After this SY ONDA towed SY RENI into the port of Grömitz where it was possible to tie up the vessel at 16.20 h.

After the wife had been questioned by the River Police in the port of Grömitz at about 16.20 h, the search was coordinated anew by the MRCC and the location was shifted. However, this search initiated remained unsuccessful.

On 8 July 2004 a dead person was flushed ashore in Wustrow and was identified as the missing skipper from on board SY RENI.

2 Scene of the casualty

Nature of the incident: Very serious casualty
 Date/Time: 31 May 2004 at approx. 11.30 h
 Location: approx. 8 sm south east of the Staberhuk lighthouse
 Latitude/Longitude: approx. $\varphi 54^{\circ}17'N$ $\lambda 011^{\circ}21'E$

Excerpt from the sea chart, official charts for leisure craft
 Series 3005, BSH

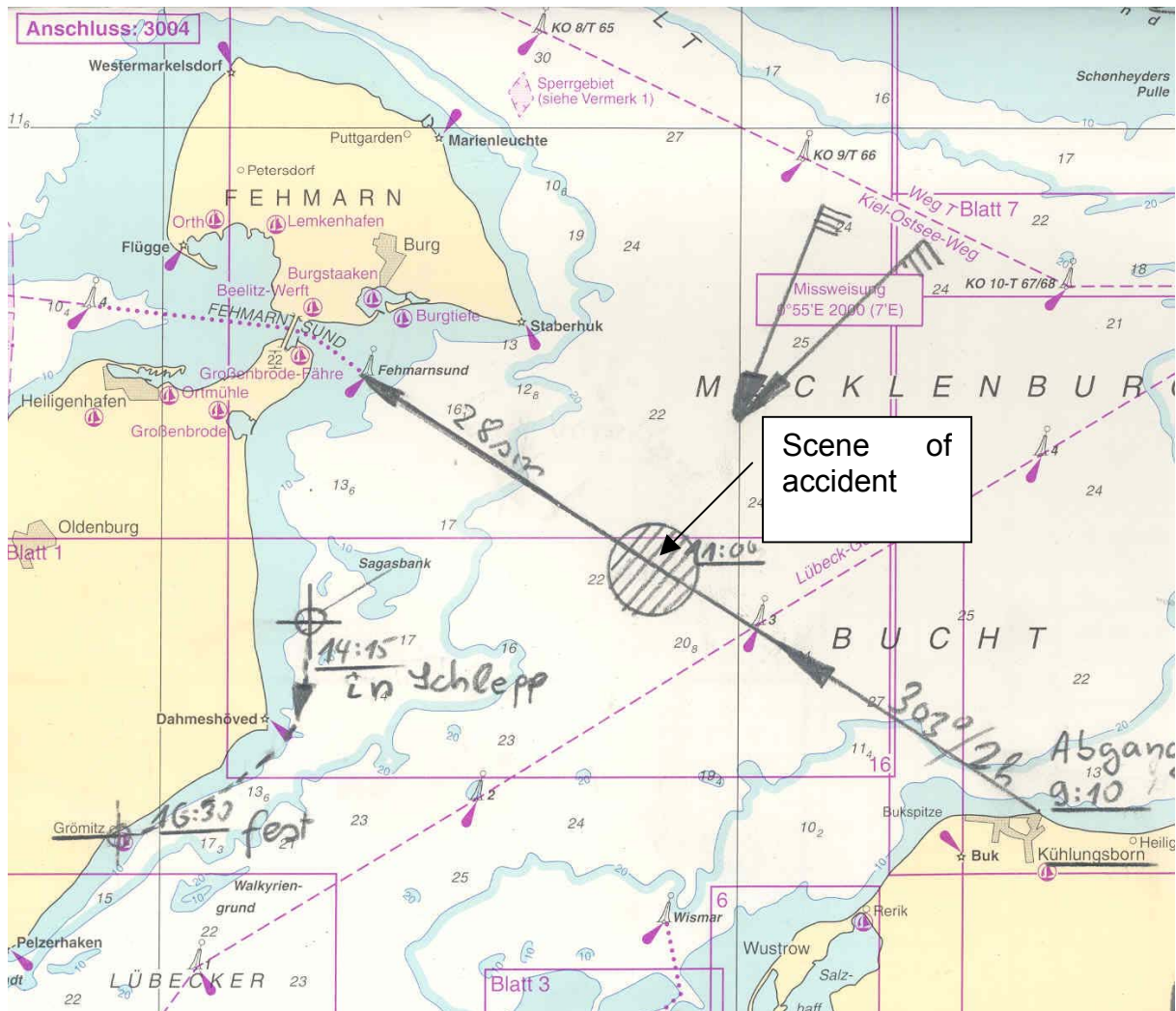


Figure 1: Sea chart

3 Vessel particulars

3.1 Photo



Figure 2: Photo of the vessel

3.2 Data

Name of vessel:	RENI
Type of vessel:	Leisure craft
Nationality/Flag:	Federal Republic of Germany
Port of registry:	Wismar
Year built:	1984 to 1989
Building yard/building number:	Owner-built
Sail area:	approx. 21 m ²
Length over all	8.25 m
Width over all	2.85 m
Displacement:	approx. 1.2 t
Engine and rating:	Yamaha outboard engine 8 HP / 5.9 kW
Hull material	GRP
Number of crew	2

4 Course of the accident

4.1 History of the vessel

The Sailing Yacht RENI was built by the owner and skipper himself in the years 1984 to 1989. The original in-board engine was replaced in 2002 by an 8 HP out-board engine. The vessel is a centre-board yacht. The sail area consisting of a roller jib and a mainsail, each with 10.5 m², was being sailed fully unfurled on the day of the accident.

4.2 Persons on board SY RENI

On the day of the accident only Mr. and Mrs. A were on board.

4.2.1 Skipper and owner Mr. A

The vessel was under the command of the 55-year-old owner, holder of the German yachting licences Sportbootführerschein See, dated 23 July 1992, Sportsee-Schifferschein, dated 18.01.1994, a DSV BK-Schein, dated 15.06.1992, and the restrictedly valid Operating Certificate for Radio Operators II dated 16.01.1999.

4.2.2 Co-sailing wife, Mrs. A

The 59-year-old co-sailor Mrs. A holds a Sportbootführerschein See certificate, issued on 14.12.1993, and a Sportbootführerschein Binnen, dated 16.12.1993.

4.3 Progress of the voyage/course of the accident

At the beginning of the holiday voyage from Kühlungsborn to Denmark, due to the wind direction a course towards Fehmarn was set after leaving the port at 09.10 h. Mrs. A had entered the waypoints and coordinates in the hand-operated GPS and ascertained the distance to Fehmarn to be 28 nm at a course of 303°. This course had been steered for approx. 15 minutes until they had noticed six sailing vessels with the same course. Thereupon the GPS had been switched off in order to save electricity and they had oriented themselves to the vessels sailing ahead.

They had heard the weather report in the port, and according to the information supplied by Mrs. A, a wind force 3 bft, increasing to 5 bft from a north-easterly direction had been forecast. Up to the time of the accident there had been no difficulties and they had sailed with full sails on a port bow. The wind had increased constantly and shortly before the accident Mrs. A had said to the skipper that that was enough wind now and they could do without any further wind force.

There had been no log or other speed indicator on board and the average speed had been estimated at 7-8 kn. After sailing for about 2 hours she had gone down below deck in order to switch on the GPS to determine the vessel's position. She had just taken the GPS out of the drawer below deck when suddenly a relatively large wave ran over the boat and the water had run into the cabin. She had thereupon immediately run on to the deck and seen her husband as well as four blue cushions and two cabin door inserts floating in the water. Her husband had been about 15 to

20 m away from the boat and had called out to her that she should shoot into the wind. She had then gone to the tiller at once and turned the boat into the wind and immediately gone through a tack in order to get as close as possible to her husband. She had repeated this manoeuvre about five to six times but the boat had been repeatedly flushed away from her husband. Altogether these manoeuvres had lasted about 30 minutes. After this her husband had gone under and she had lost sight of him. Immediately after the first manoeuvre she had tried to obtain assistance via her mobile telephone by dialling the number 124124. However, no connection had been made due to an area with no reception or because she had entered the wrong PIN number. She had only informed her son in law of the accident with this mobile telephone at approx. 15.00 h.

No lifejacket was thrown to the man, and due to the high sea neither was the outboard engine used, nor was the GPS consulted to determine the exact position. After Mrs. A had lost sight of her husband she had sailed shouting and waving five to six times in the direction of other sailors without them noticing her. Between these manoeuvres a white motor yacht with a brown, probably wooden stern had circled SY RENI at a distance of approx. 15 m and despite the evident emergency situation due to the torn mainsail and the waving of the woman had continued further without providing any assistance. (It has not yet been possible to determine the name of this motorboat within the context of the marine casualty investigation.)

After hours of sailing around Mrs. A discovered land and thought that she was steering for the Island of Poel. On approaching closer, she recognised that it was not the landscape of Poel and so she did not know where she was. At about 14.00 h she proceeded towards a sailboat crewed with a husband and wife and by shouting drew attention to the fact that her husband had gone over board and indicated with hand signals that the sailors should obtain help via radio. This 9 m keel-vessel, SY LARUS, thereupon sent out the emergency call at 14.18 h to MRCC with the position of ϕ 54°15,9'N λ 011°07,7'E off Dahme. Since SY LARUS had only set a double-reefed mainsail, it was much slower than SY RENI. Before further information could be exchanged it had disappeared from sight of SY RENI.

At approx. 14.30 h the SY ONDA, alerted by the radio call, approached SY RENI approx. 1.5 sm off the pier of Dahme and took SY RENI in tow in the direction of Grömitz at 14.40 h. According to the information supplied by the Skipper of SY ONDA, SY RENI could only be towed under fairly difficult conditions due to the sea swell and the fact that Mrs. A was no longer in a position to stand at the tiller. The roller jib and the torn mainsail were still set right up to the entrance to the port. Only there did a person transfer from the motorboat and largely secure the sails and take the SY RENI to the pier with the support of other vessels.

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After the Water Police in Grömitz immediately took up investigations on board SY RENI at about 16.20 h, it was realised that it was necessary to extend the sea area off Dahme more to the east in order to search for the missing man.

Seat cushions and wooden parts were found in the newly fixed search area at position ϕ 54°17'N λ 011°23'E .

The search was discontinued at 21.00 h.

5 Investigation

5.1 Survey of the vessel on 1 June 2004 in Grömitz

A survey was conducted by the BSU investigation team on board SY RENI in the marina Yachthafen Grömitz on 01.06.2004. The yacht was lying properly tied up with the portside along the pier close to the crane.

No damage to the vessel was ascertained. There were approx. 20 l water in the bilge. There was a firmly installed crank handle beneath the galley table with a wire roll for a centreboard. That is why the boat was classified as a centre-board type. The keel bolt evident in the bilge area and the centre-board lifting device unfit for use indicate that a fixed keel had been installed subsequently. The sailing yacht has a self-draining cockpit.

5.1.1 Mast and sails

The mast is approx. 8 m high. The jib sail consists of a 10.5 m² large roller jib system and the mainsail also has an area of approx. 10.5 m².

The jib was rolled up. The hauling out line of the jib was partly on the drum of the roller jib system and partly loose on deck.

The port sheet was entangled round the starboard sheet and the entire sheet was very stiff and tangled. These sheets were not secured in the sheet block.



Figure 3: Entangled foresail sheet

The mainsail had been torn out of the bolt rope, the slide travellers were hanging next to it and the sail was torn or ripped in several places. Only the rope end reinforcing the fore leech/luff was still present over the whole length. There were residues of the mainsail on the aft port lower shroud and on the flag line on the port side. The main sheet was wound up and the sheet block was fixed midships on the traveller. The curry clamp of the main sheet was defective.



Figure 4: Torn mainsail

5.1.2 Engine drive

The vessel had a Yamaha outboard engine with 8 HP/5.9 kW, 4-stroke, short shaft, secured on a running rail with two clove hitches, that could be lowered at the rear. The engine, year built 2000, Model 2001, had been on board for two years and exchanged as substitute for a built-in engine. A 25 l tank for the outboard engine, 3/4 full, was stowed under the cockpit and the outboard engine could be started simply with a normal hand starter cable.

After pulling a choke and pre-pumping the fuel appropriately, the outboard engine started immediately at the second pull and ran without any problems. After this the engine was lowered into the water without much strength being expended.



Figure 5: Engine in raised position

5.2 Safety equipment

There was no liferaft on board.

5.2.1 Lifejackets

Two relatively new solid lifejackets of type Seepilz D 86 with functioning emergency lamp were stowed below deck on the port side beneath the bunk. One relatively old jacket of the same type was in the stowage chest outside in the cockpit on the port side.



Figure 6: Solid lifejacket

Aft, beneath the starboard bunk, three automatic jackets of type Kadematic, last tested 1993, were discovered. These jackets looked as new, and despite the fact that the inspection date had expired they still looked fit for use.



Figure 7: Automatic jacket

5.2.2 Lifebuoys/rescue loops

There were no lifejackets or rescue loops. A white, twisted floating line 22.5 m long, diameter 8 mm, and a small floating ring with a diameter of approx. 20 cm were lying in the railing bag by the cockpit on the port side.



Figure 8: Floating line

5.2.3 Safety belts/safety lines/emergency signals

There were no safety belts and lines on board. Water-tight packed pyrotechnical emergency signals from the firm Nico-Signal, altogether six red shots, secured with a shooting device, and two red hand-torches from the firm Komet, expiry date 2006, were stowed forward on the port side. Mrs. A stated that although she had talked to her husband about purchasing the emergency signals, ultimately she had not been clear whether this had in fact happened.



Figure 9: Emergency signals

5.3 General equipment, navigation equipment

The Sea Chart No. D 36, issue 1980, with last correction date 1986, in which no courses and positions were entered, was on board. A stamp of a shipping line/vessel operator from the former GDR was printed on the reverse. A compass, navigating triangle and support triangle as well as a complete set of leisure boat charts, status September 2000, and one set of January 2000, were also on board. There was a Baltic Sea port manual, Edition 1981, close to the companionway and a logbook without entries. A magnetic compass screwed onto a wooden plate with illumination, brand Ritchie, could be inserted in the bulkhead by the companionway. A relatively old, operable, but not connected echo-sounder, brand Seafarer, was lying in a box on the starboard side.

In addition an operating instruction for a GPS, type Magelan GPS-Blaser 12, from Messrs. Ferropilot, Edition October 1998, was also found on board. The associated hand-device was not discovered, but according to the information supplied by the Water Police the wife had taken this from board with her. There was no radio set, but Mrs. A had a mobile telephone with her. There was a swimming ladder for getting in and out of the boat on the port side behind the backrest in the saloon.

5.4 Crew

According to the sports-boat certificates (Segelscheine and Sportbootscheine), the seamanship knowledge and sailing skills as well as practical experience of the crew members are to be considered as good. They sailed regularly from May to October, whereby the couple took turns in running the vessel in case one of them wanted to sleep or rest. Mrs. A stated that they had never worn jackets and had never secured herself with lines. She knew the "person-over-board" manoeuvre not only theoretically, but had carried out a practice course at a sailing school the year before in which such manoeuvres had been practiced frequently in a sailing dingy without an engine.

5.5 Weather expertise

On behalf of the BSU Germany's National Meteorological Service issued an official expertise on wind and sea conditions in the Bay of Mecklenburg between Kühlungsborn and Fehmarn between 08.00 h and 16.00 h CEST on 31 May 2004. According to this expertise, the wind was ENE, average force 5 to 6 bft, reaching 7 bft in gusts. It had been sunny and free of rain the whole day. Visibility was 20 km. The air temperature was between 12°C and 14°C and the water temperature was 10°C. With the given wind conditions at the time of the accident, a wind sea with characteristic wave heights of 1.0 m to 1.5 m and periods of 4 to 5 seconds could develop in the open part of the Bay of Mecklenburg. The maximum individual wave to be expected should probably not have exceeded 2.5 m.

The German Meteorological Service forecast easterly winds force 5 bft, occasionally 6 bft, sea 1 to 1.5 m, and a warning that heavy wind or storm was to be expected for the forecast area at 05.00 h GT for the western Baltic Sea on 31.05.2004.

5.6 Search measures

The search by the rescue vessels following the alert at 14.18 h was concentrated on the search area east of the Dahme pier where the SY RENI was found. After questioning of Mrs. A in Grömitz, the search was extended further easterly to the sea area there and re-coordinated by MRCC Bremen. At the scene of the casualty, position 54°17,05'N 011°23,36'E, a seat cushion/cushion fender and the upper and lower part of the wooden companionway door inserts were found at about 19.40 h.

The following report by the MRCC Bremen reproduces the entire radio traffic of the search. The names of the participating persons have been rendered anonymous.



Deutsche Gesellschaft zur Rettung Schiffbrüchiger

MRCC BremenReport

Man over board from SY Reni

31.05.2004

Weather at the scene:

Wind direction ENE to NE
 Wind force 14:00 h bft 5-6; 15:30 h bft 7-8; 19:40 h bft 5
 Water temperature 13°C
 Visibility 10 nm

Duty Officer: xxxxxxxxxxxxxx

All times in CEST

Time	from	to	Report
14.08	Unknown	BRR / K 16	Mayday 54°50,9`N 011° 07,7`E (Danish territory)
14.10	MRCC	Lyngby Radio	Query about Mayday. Position wrong - over land in Denmark, no contact to vessel in distress
14.12	SY Condor/DJ9110	BRR	White sailboat with blue stripes. Woman on board waving excitedly trying to establish contact
14.14	MRCC	SK Hannes Glogner	Information
14.18	SY Larus	BRR	<u>Confirmation:</u> 1 person over board; position SY Reni: 54°15,9`N 011° 07,7`E 1 person still on board. Communication only by shouting; no radio connection possible, have started search
14.20	SY Maribu	BRR	Description: white SY, approx. 30 ft., torn sail, drifting in SW direction - no contact possible.
14.20	MRCC	RCC Glücksburg	SAR helicopter alerted.
14.20	MRCC	SK J.T. Essberger SK Hannes Glogner	Alert

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14.22	Water Police	MRCC	Offers River Police Boat Fehmarn - accepted
14.23	SY Onda/DJ7276	BRR	2 cbl on weather side, no contact with SY Reni possible
14.25	BG22 Neustrelitz	BRR	Offers assistance, ETA 30 min - accepted
14.25	KüWaz Ost	MRCC	BGS helicopter Pirol 813 alerted ETA 40 min
14.30	RCC Glücksburg	MRCC	SAR helicopter Rescue 8955 airborne ETA 14.50 lt
14.30	SY Onda	BRR	Running behind "SY Reni" to Dahme pier, will have to turn off soon due to draft
14.30	BRR	SY Onda	Request description of person and equipment (lifejacket etc.) of missing person - no data possible
14.34	MRCC	RCC	H/C should fly to Dahme and then out to sea
14.35	MRCC	JTE	Information about first H/C search Yacht drifting towards Dahme pier
14.39	BRR / UKW DSC and K 16	All sea stations	radio Mayday Relay – Info No. 1
14.46	KüWazOst	MRCC	Water Police sends vessel to sea pier Dahme
14.48	SY Onda	BRR	Have "SY Reni" in tow - still no contact possible
14.56	SY Onda	BRR	Missing man not wearing lifejacket
15.02	BG 22	JTE	BG 22 in search area
15.03	SAR Helicopter Rescue 8955		In search area
15.09	SY Liberty	MRCC	Enquiry: just received telephone call via mobile telephone from his mother-in-law that her husband had fallen over board near Dahme
15.10	JTE	MRCC	Discussion and agreement 1 st search area
15.18	SY Onda	BRR alle Einheiten	Description of person: 53 years old, blue parka
15.20	MRCC	RCC Glücksburg	Description of person
15.28	Polizeileistelle Eutin	MRCC	DLRG Grömitz/Dahme has seen something by the pier in Dahme 600 m south
15.32	MRCC	JTE	Information about circumstances H/C to check object
15.37	SAR H/C	MRCC / BRR	The object was a surfer
15.37	MRCC	RL Eutin	Information about surfer with request that this be passed on
15.40	MRCC	JTE	Weather Update: NE 7-8
15.46	Water Police Fehmarn	JTE	Requests allocation of position in search group
16.00	SK H. Glogner	MRCC	Sheers out of search group, behind tow group, to secure on entry to Grömitz Police boat Fehmarn in search group

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16.16	Water Travemünde MRCC	Police MRCC	MRCC	Tow group off Grömitz
			Water Travemünde	Police Please state exact time and place person went over board to staff on the spot in Grömitz
16.20	Water Travemünde	Police MRCC	MRCC	Questioning of wife revealed the following: Time man over board approx. 11.30 h, left port at 09.10 h from Kühlungsborn in the direction of Fehmarnsund, after running out her husband determined the course and steered 303°, speed according to DPS 7-7.5 kn. However, GPS was switched off shortly after running out. SY Reni sails behind another yacht that was taking the same course. At approx. 11.30 h her husband fell over board. She saw him for about 10 minutes and threw everything that she could find behind: a blue fender, pieces of wood. Description 53 years old, blue parka confirmed, 1.76 m, blond, full beard, was not wearing a lifejacket.
16.25	MRCC		JTE	2 nd search area discussed and agreed
16.28	MRCC		RCC Glücksburg	Information on situation 2 nd search area between 54° 20`N and 54° 15`N and from 011° 25`E in a westerly direction.
16.45	MRCC		RCC Glücksburg	Information passed on, fuelling discussed and agreed, so that always one H/C is in the search area.
16.55	JTE		MRCC	A blue and white fender was found at pos.: 54°14,3 N 11°09,3`E
16.58	Rescue 8955		BRR	Trackline search from Kühlungsborn in the direction of Fehmarnsund, approx. 1.5 sm west of the course line
16.59	MRCC		JTE	Information on coupling location for 11.30 - 54° 17` N 011° 21`E
17.05	Water Travemünde	Police MRCC	MRCC	reports from Travemünde; Information: Mrs. A. xxxxxxxx in medical treatment in the Port Office (Grömitz)
17.07	Rescue 8955		BRR	Search in the extending squares via the coupling location; track spacing 0.3 sm
17.10	KüWazOst		MRCC	Pirol 813 goes to fuel up and after this change of helicopter (Pirol 813 for Pirol 819)
17.12	JTE		MRCC	In the 2 nd search area
17.18	KüWazOst		MRCC	Pirol 819 comes into the search area as new H/C BG 21 Bredstedt ETA 19.00
17.20	MRCC		JTE	Westerly search area boundary: 11°15`N
17.27	Rescue 8955		JTE	Leave search area to fuel up

17.48	BRR / UKW DSC und K 16	All stations	sea radio	Mayday Relay – Information No. 2
18.11	JTE	MRCC		Pirol 819 in search territory
18.13	Fast boat Ozelot	JTE		In the search territory
18.17	Rescue 8955	JTE		Started in Neustadt
18.43	Fast boat Wiesel	BRR		Reports for search
18.50	Hafenmeister Grömitz	MRCC		Family members are under stress, driving home, mobile telephone numbers are being exchanged Water Police at the scene: wife not home before 21.30 h, name and mobile telephone number confirmed
18.53	Fast boat Wiesel	JTE		In the search area
19.10	Kümo Annamarie	JTE		Running through the search area and to keep a lookout
19.30	MRCC	JTE		Discussion on status and continuation of the search Vessel at the scene: SK John T. Essberger and Hannes Glogner, SAR helicopter Rescue 8955 and BGS helicopter Pirol 819, Fast boat Otzelot, fast boat Wiesel (both with thermo cameras), Police boat Fehmarn
19.35	Notfallseelsorge Kreisleitstelle OH	MRCC		Looking after the wife; is under shock
19.37	Fast boat Wiesel	JTE		Have fished out wooden covers
19.43	MRCC	JTE		Expand search area to the north
19.43	JTE	MRCC		JTE and Rescue 8955 find seat cushions and wooden parts at approx. 54° 17'N 011° 23'E
20.01	Fast boat Wiesel	JTE		Wooden part is cabin cover - not been in the water long
20.10	MRCC	JTE RCC Glücksburg		3 rd search area for H/C 54° 20'N 011° 24'E 54° 15'N 011° 30'E
20.23	RCC	MRCC		Area divided up for both H/Cs Rescue 8955 must go and fuel up at 21.05 h.
20.43	Pirol 819	JTE		To fuel up
21.00	MRCC			Search discontinued until further findings obtained. The units will continue to keep a lookout on traveling back through the search territory.

SG / jab

6 Analysis

The objective and factual scope of Section 3 of the Maritime Safety Investigation Law (SUG) are regulated in § 9 of this law. According to this definition the purpose of the maritime casualty investigation is "neither to determine facts for the purpose of allocation of faults in order to bring about disadvantages for individuals, nor to determine blame, liability or claims. However, it should not disregard unrestricted presentation of the causes simply because the results of the investigation might allow conclusions indicating faulty behaviour or responsibility under the law on liability."

The marine casualty with a fatality is attributable to the fact that the unsecured skipper, not wearing a lifejacket, was washed over board by a wave running into the cockpit.

The skipper knew from the weather reports that wind of force 3 bft increasing to 5 bft was expected from ENE. Throughout the voyage no instructions were issued to put on the lifejackets on board. Other sailors in the sea territory spoke of "very uncomfortable" steep wave situations, and unlike SY RENI were sailing with massively reefed sails. At the latest when Mrs. A complained about the freshening wind, lifejackets should have been put on and the sail area should have been reduced.

No "person-over-board" manoeuvre was practiced on SY RENI. The operable outboard motor was not used in the "person-over-board" manoeuvres.

The 22.5 m long floating line with floating ring on board was not used as a rescue line during the manoeuvres.

The solid lifejacket/life collar lying in the storage chest in the cockpit was not thrown to the man swimming in the water. Floating rescue bodies should be thrown immediately to persons drifting in the water. In addition to functioning as a swimming aid for the person involved in the accident, this measure would have had an additional positive psychological effect and could have facilitated the search.

The rescue and emergency equipment on board was insufficient or non-existent, and was not used at all. Carrying the necessary safety equipment is part of the seamanship obligation to take care that forms part of the basic rules for behaviour in traffic (§ 3 Para. 1 Sentence 2 SeeSchStrO).

All crew members should know where the rescue and safety equipment are stored.

The position was not determined with GPS, even though the wife of the man involved in the accident knew how to handle the GPS. In order to be able to initiate specific search and rescue measures from the exterior, a precise position would have been absolutely necessary.

It would have been desirable for an operable radio set or even an EPIRB to have been on board and if the emergency rockets on board had been fired in order to alert the rescue forces.

After the marine casualty nearly five hours passed before the search area could be extended to the probable scene of the accident.

The search, rescue and recovery manoeuvres of the other vessels and persons participating were carried out correctly in accordance with the external circumstances.

If one assumes that the skipper of the "white" motorboat recognised the emergency situation of SY RENI, the omission to provide assistance is not comprehensible. On the basis of seamanship traditions and the differing regulations of international law (SOLAS), captains and skippers are obligated to assist others in emergency situations provided that this is possible without danger for their own safety.

The accident is essentially attributable to circumstances lying within the scope of responsibility of the owner and skipper.

The result of the post-mortem did not reveal any physical injury due to a blow, for instance as a result of the boom, or other possible causes of death, but instead death by drowning.

7 Safety recommendations

7.1 "Person-over-board" manoeuvre

The accident of SY RENI has shown once again that the important "person-over-board" manoeuvre must be repeatedly practiced and that leisure craft voyaging in coastal areas should be equipped with a certain minimum of safety standards. The BSU issued a safety recommendation in April 2004 - addressed to training schools, sailing clubs and all leisure craft sports persons, that the "person-over-board" manoeuvre should be practiced intensively. This recommendation was repeated in the Maritime Casualty Investigation Report 338/03 SY LISA and can be viewed and downloaded on the Internet page of the BSU.

7.2 Equipment and safety on sail boats

The BSU also referred in detail to the equipment and safety in its above report, stating that a minimum safety equipment corresponding to the rules of the Offshore Racing Council (ORC) or the Cruiser Department of the Deutscher Segler-Verband (DSV) is to be provided on sea-going yachts.

7.3 Safety rules for leisure yacht persons

The frequency of fatal accidents in which persons fall over board unsecured, could not be recovered in time, and drowned fully conscious simply because they had not donned any rescue equipment, should stimulate consideration and discussion.

The BSU therefore once again urgently draws the attention of all skippers of leisure craft to observe No. 1.4, Rule 7 - Person-over-board - of the ten safety rules for leisure craft sailors, according to which measures are to be taken against falling over board and for recovering persons who have fallen over board, and lifejackets and safety belts must be put on in time. These rules are published in the brochure Safety in Sea and Coastal Area issued by the Federal Maritime and Hydrographic Agency (BSH).

8 Sources

- Investigations by the Water Police (WSP) Lübeck-Travemünde, Neustadt and Wismar
- Surveys on board by the Federal Bureau of Maritime Casualty Investigation (BSU)
- Written statement by the wife of the skipper involved in the accident
- Statements by witnesses
- Records of the radio traffic of the MRCC Bremen

- Sea charts and vessel particulars Federal Maritime and Hydrographic Agency (BSH)
- Official Weather Expertise by Germany's National Meteorological Service (DWD)

- Other documents
 - Leitfaden für Wassersportler/Sicherheit auf dem Wasser (BMVBW) [Guide for Water-sportspersons/Safety on the Water]
 - Sicherheit im See- und Küstenbereich/Sorgfaltsregeln für Wassersportler (BSH) [Safety at Sea and Coastal Areas/Rules for Care for Water-sportspersons]
 - Manual for Search and Rescue (BSH), Edition 2002, ISBN 3-89871-005-x
 - Safety Guidelines of the Cruiser Division of the DSV Ausrüstung und Sicherheit von Segelyachten [Equipment and Safety of Sailboats] Issue 2000/2002