



SMAIC
STATE MARINE ACCIDENT
INVESTIGATION COMMISSION

INTERIM REPORT

96/17

Very serious marine casualty

**SAILING YACHT
PRODIGY 2**

Loss of the yacht due to breaking off the ballast fin in the
North Sea on the day of 13 October 2017

September 2018



The investigation of a very serious marine casualty of a sailing yacht *Prodigy 2* was conducted under the State Marine Accident Investigation Commission Act of 31 August 2012 (The Journal of Laws item 1068 as amended) as well as norms, standards and recommended procedures agreed within the International Maritime Organisation (IMO) and binding the Republic of Poland.

The objective of the investigation of a marine casualty or incident under the above-mentioned Act is to ascertain its causes and circumstances to prevent future casualties and incidents and improve the state of marine safety.

The State Marine Accident Investigation Commission does not determine liability nor apportion blame to persons involved in the marine casualty or incident.

This report shall be inadmissible in any judicial or other proceedings whose purpose is to attribute blame or liability for the accident referred to in the report (Art. 40.2 of the State Marine Accident Investigation Commission Act)

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1. Facts

On 13 October 2017, the yacht *Prodigy 2* left Cuxhaven at 06:35 local time with the intention of sailing towards the English Channel and going out to the Atlantic Ocean. There were 3 crew members on board.

At 08:15 the yacht left the Mittelrinne fairway in the vicinity of the Neuwerk-Reede anchorage and was sailing just outside the fairway to the west, passing starboard the buoy marking the southern boundary of the fairway.

At ca 18:25, the boatswain on watch and the master inside the yacht felt an impact and heard a loud crash. The master and the boatswain hastily inspected the spaces of the yacht at the stern and in the midship, and didn't find anything unexpected.

Approximately two minutes after the first crash they heard two more, weaker ones. This time the sound clearly came from under the floor inside the central cabin. After lifting the floor flap a strong inflow of water into the bilge was noticed. First, one of the bilge pumps switched on automatically and then the other. The crew cleared the sails. For a few minutes the engine was started at idle and the yacht was directed to the shore to put it in the shallows. The master estimated that the efficiency of the pumps was too small to pump out the incoming water.

Observing the rising water level, the master ordered to abandon yacht and proceeded to launch a pneumatic liferaft. At 18:38, the master sent a distress signal using a VHF radiotelephone with DSC. The MRCC Bremen center immediately confirmed the signal and launched a rescue operation. At ca. 18:42 the crew moved to the liferaft, joined by a painter with the yacht drifting without sails. At 19:14, a tug boat *Nordic* (RFG flag) came to the scene of accident and picked up the crew of the yacht from the raft using their rescue boat. A SAR helicopter which arrived at the site took the survivors from the tug boat to the shore to Wilhelmshaven.



Figure 1: The route of the yacht on the day of the accident¹

2. General Information

2.1. Yacht Particulars

Name:	<i>Prodigy 2</i>
Flag:	Polish
Owner:	Quale sp. z o.o. Łódź, Poland
Classification society:	PRS
Type:	cutter
Call sign:	SPG 4690
IMO No:	none
Dead weight (mLDC):	30.81 t
Year of built:	2017
Power:	built-in engine 102,9 kW (Vetus – Detz DTA44-455A)

¹ The route of *Prodigy 2* according to AIS data recorded by Vesselfinder LTD company.



Width:	5.00 m
Length overall:	17.89 m
Draught:	3.00 m
Hull material:	glass – fibre reinforced polyester resin
Minimum/maximum crew:	2/8 persons (acc. to the Safety Data Sheet)

2.2. Voyage Particulars

Ports en route:	Cuxhaven, Germany
Port of destination:	the Canary Islands
Type of navigation:	seagoing
Manning:	3 Poles



Photograph 1: Prodigy 2 (source: Andrzej Podwysocki, MarineTraffic.com)



2.3. Accident Information

Kind:	very serious marine casualty
Date and time of the event:	13 October 2017, ca. 18:30 LT
Geographical position of the event :	$\varphi = 53^{\circ}46,57' N$; $\lambda = 007^{\circ}21,25' E$
Geographical area of the event :	ca 2 Nm to the north of Baltrum The North Sea, German coast
Nature of the water region:	coastal waters
Weather during the event:	good visibility, wind SW 3-4° B, Sea state 3, water temp. 13°C
Operational status of the yacht during the event:	on a journey under sail
Consequences of the accident to the yacht:	sinking
Consequences of the accident to the crew:	the crew came out unhurt

2.4. Shore Services and Rescue Action Information

In response to the master's call, who at 18:38 sent a distress message via the DSC of the VHF radiotelephone - MRCC Bremen (the Maritime Rescue Coordination Center Bremen) joined the rescue operation. It announced an alarm for the following rescue units: *Nordic* (18:44), *Gruben* (18:45), *Secretarius* (18:51), and for a SAR helicopter *Helgoland* (18:45) and SAR helicopter from Glucksburg (19: 23). The nearest to the site was the rescue tug boat *Nordic*, which approached the raft with survivors at 19:14. During the action, communication between the crew members of the yacht and the rescuers was maintained via a portable VHF radiotelephone taken from the yacht. The tug boat *Nordic* joined the rescue action and immediately picked up the survivors from the raft using the rescue boat. At 19:21, the crew members of the yacht were relocated to the tug boat, from where at 19:28 the SAR helicopter pulled them on board and went to the base in Wilhelmshaven to give the survivors necessary medical assistance.

A second helicopter sent from Glucksburg was canceled before it arrived at the site since the survivors had already been saved. In Wilhelmshaven there were three ambulances and a fire brigade waiting ready to give help immediately. Once it had been ascertained that there was no such need, the crew of the yacht was transported to a local hotel.

In the meantime, the tug boat *Nordic* picked up from the water a RIB boat, a raft and a



SART transponder from *Prodigy 2*. Next, the rescue boat *Secretarius* attached a large white fender and a red buoy to the yacht drifting on port side, and *Nordic* additionally fastened a SART transponder. At 20:00 on 13 October 2017 MRCC Bremen announced the end of the rescue operation. At 20:50, all rescue vessels except for *Nordic* were released and returned to their bases, ready to undertake rescue operations. The tug boat *Nordic* was protecting sea traffic while remaining near the drifting *Prodigy 2*. Since 00:00 on 14.10.2017, the specialist vessel *Mellum* had been protecting the maritime traffic but after 06:33 the yacht drifted into an area where the depth was less than 5 m deep and due to its own draught the monitoring vessel remained outside the 5 m isobath.



Photograph 2: The wreck of Prodigy 2 drifting after the accident

On 15 October 2017 at 13:08 *Mellum* turned the protection of *Prodigy 2* to another vessel, *Ems Server* from the company Ems Marine Offshore. At that time, the yacht was drifting north from Drehbargen along the isobaths of 1 m. On 16 October 2017 at 11:10 the wreck of the yacht was lying at its bottom on the beach of Langeoog at the position of 53°45,73'N and



007°34,58'E.

Later (18/19 October 2017), a specialist craft *Hebo Cat 7* of the company Baltic Tauchereil und Bergungsbetrieb Rostock GmbH, which was rented by Wasserstraßen- und Schifffahrtsamtes (the Shipping Office) and the yacht's insurer, participated in the action of lifting the wreck of the yacht and transporting it to the port of Hooksiel.

3. Circumstances of the Accident

On 13 October 2017, *Prodigy 2* left the city marina in Cuxhaven at 06:35 LT = CEST (04:35 UTC) with the intention of sailing in the direction of the English Channel and going out to the Atlantic Ocean. There were 3 crew members on board. During the preceding two days the yacht stayed in the port of Cuxhaven, waiting till stormy weather had stopped.

At 06:45, the yacht moved to the eastern side of the fairway of the Elbe estuary near the buoy No 32a/Medem Reede 2, and went beyond the fairway, passing the buoy by port side. Until 07:10, the yacht was sailing off the fairway, passing near the shallows lying to the east of the fairway. It passed the buoy No 32 by port side. In this section the yacht was sailing at a speed of 4.6 - 5.0 knots in the direction of the declining current of the tide.

At 07:15, the yacht moved back to the fairway and was sailing on its eastern side, correctly passing the buoys by starboard. The speed of the yacht increased in the next 5 minutes from 5 to 5.88 k, 6.30 k, 6.62 k, 6.93 k, 8.08 k, 8.75 k.

At 07:45, the yacht laid the west course and was sailing down the central part of the Mittelrinne fairway. At 8:15 the yacht left the track in the area of the Neuwerk-Reede anchorage and was sailing further west just outside the fairway, passing by starboard the buoys marking the southern boundary of the fairway. At 09:50, after passing the Scharhornriff shallows, the yacht began tacking along the coast in the general westerly direction, passing by the estuaries of Alte Weser, Neue Weser and Jade. Apart from the maneuvers, the yacht was controlled by an autopilot. The watches were kept by one man. According to the master's order, the turns were made in such a way that the yacht would sail in the TSS "Terschelling - German Bight" coastal traffic zone, not entering waters less than 10 m deep.

Due to the wind blowing from SW, the left tack was favourable. Approaching the route of the vessels, the yacht turned to an unfavorable right tack, which usually led straight to the south, close to land. Depths were observed on the echo-sounder. Navigation was carried out on

an electronic plotter with Navionics maps, with two 12-inch displays placed at the helmsman's station and at the navigation table inside.

Tacking in this way the yacht passed the East Frisian Islands Wangerooge, Spiekeroog, Langeoog and traverse of the Accumer Ee strait, separating Langeoog from Baltrum.

At 18:19 approaching by the southern course the coast of the Baltrum Island, the yacht turned to the left tack at the position $\phi = 53^{\circ} 45.9675' N$ $\lambda = 007^{\circ} 22.1200' E$. Before the turn, the yacht was sailing with a partially reefed mainsail and genoa at the speed of 6 – 7 k, heeling to ca. 12° (according to the master's assessment). The watch was performed by the boatswain, and he made the turn in the assistance of the master who went to the cockpit for that purpose. After the turn the yacht gained speed and within a few minutes accelerated to over 6 k, continuing its voyage towards $KD = 284^{\circ}$.

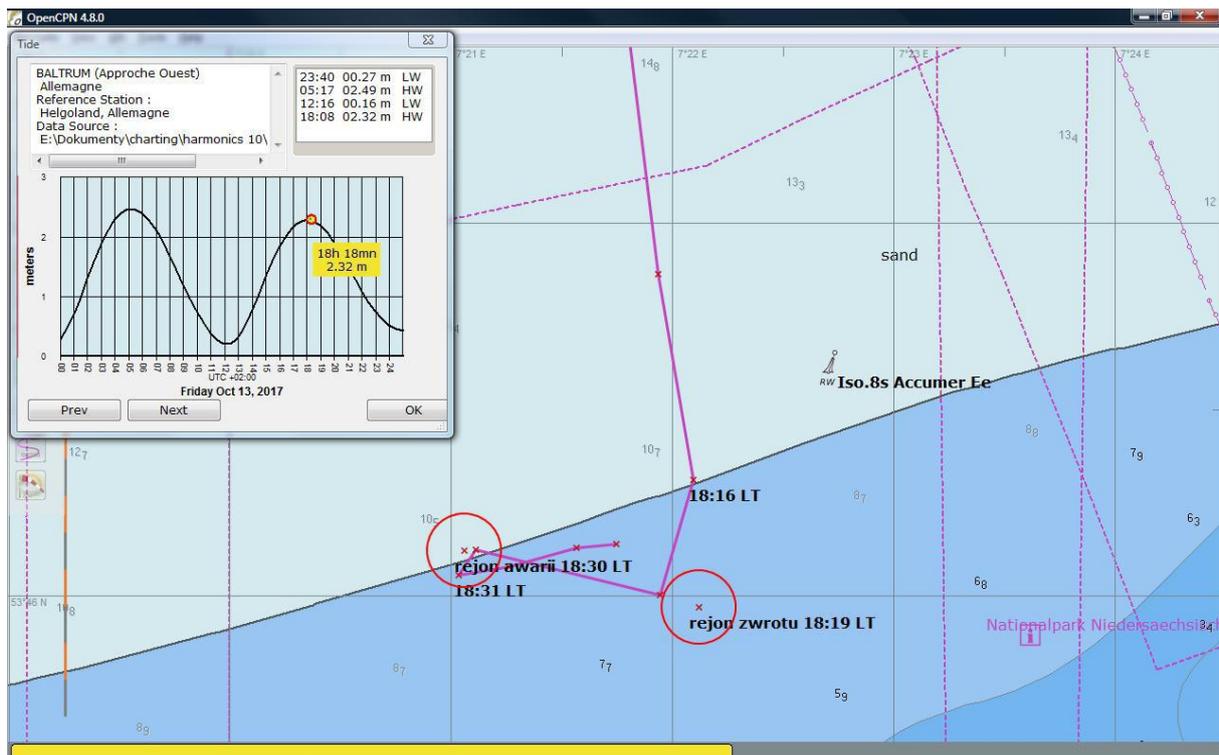


Figure 2: A detailed record of the route in the area where the break-down took place²

At ca 18:25, the boatswain keeping watch and the master inside felt an impact and heard a loud crash. The third crew member, sleeping in the bow cabin, woke up not before he was

² The route of *Prodigy 2* according to AIS data recorded by Vesselfinder LTD company.



called later to abandon ship. At first, the crew assessed that the cause of impact and the crash could be caused by the door or the flap or the fall of a heavy object. They did not feel that the yacht pulled back or its course was disrupted. The master and the boatswain hastily inspected the stern and midship spaces of the yacht but they did not find anything unexpected.

Approximately two minutes after the first crack there were two more, weaker ones. This time the sound clearly came from under the floor inside the central cabin. After lifting the floor flap, a strong inflow of water into the bilge was noticed. First, one of the bilge pumps switched on automatically and then the other one.

The crew cleared the sails. For a few minutes the engine was started at idle and the yacht was directed to the shore to be put in the shallows, because the master estimated that the pumps' efficiency was too small to pump out the incoming water.

Seeing the rising water level, the ordered to abandon the yacht and proceeded to launch the Survitec Zodiac 8-seater pneumatic life raft, fastened with straps in the stern basket, which was open from the outside. The launching of the raft required first to leave the 3-meter RIB, carried on the davits behind the transom that blocked the raft. To accelerate the launch of the RIB, the master cut the slings fixing the boat.

At 18:38, the master sent a distress signal using a VHF radiotelephone with DSC. The MRCC Bremen center immediately confirmed the signal and launched a rescue operation.

The crew took some part of their personal belongings from the cabins and at ca 18:42, they moved to the raft joined by a painter with the drifting yacht without sails. A portable VHF radiotelephone was taken to the raft and the master used it for further communication with the rescue center and vessels participating in the rescue action.

The painter was cut off and the crew could observe for a short time the sinking yacht, filming it and taking pictures with a mobile phone. In the last photograph taken at 18:52, despite it being blurred, one can see the yacht without heel, still emitting stern light.



Photograph 3: Prodigy 2 with no crew on board (source: Marcin Ciszewski)



Photograph 4: Stranded wreck of the yacht on Langeoog



A few minutes later, the yacht turned over to the port side and was drifting with a visible white spot of the detached layer of laminate on the starboard side of the bottom covered with dark antifouling paint.

At 19:14, a tug boat *Nordic* (FRG flag) came to the site and collected the crew from the raft using the ship's rescue boat. A SAR service helicopter which came to the site took the survivors ashore to Wilhelmshaven.

The wreck of the yacht was drifting on the surface further east, finally on 16 October settling on the shore of Langeoog near the position $\varphi = 53^{\circ} 45,73$ 'N $\lambda = 007^{\circ} 34,58$ ' E, ca 8 miles from the scene of the accident. The action of waves led to the total destruction of the yacht.

The ballast fin detached from the hull along with the part of its sheathing was not found.

4. Initial Analysis and Comments about Factors Causing the Accident

As a result of the investigation carried out so far, the Commission could not clearly determine the causes of the casualty and it is of opinion that in order to find out all causes of the casualty it is necessary to undertake further investigation related to the assessment of the durability of the hull and the compliance of the yacht's design, construction, and supervision stages with the RCD³ directive and associated standards.

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³ RCD – (Recreational Craft Directive) of the European Parliament and Council 2013/53/EC of 20 November 2013 concerning recreational and personal watercrafts and abrogating the 94/25/EU Directive (OJ UE L 354 of 28.12.2013, p. 90 and OJ EU L 297 of 13.11.2015, p. 9).



7. Information Sources

Notification of the accident;

Yacht's documents issues by: Polish Sailing Association [PZZ], Polish Register of Shipping [PRS], Office of Electronic Communications [UKE] and City Hall [UM] in Gdynia;

Materials and documents submitted by the designer, constructor and PRS;

Photographs and films submitted by crew members, the company Stefan Zucker & Partner GmbH, PRS and the constructor;

Hearing of the SMAIC;

Reports from the SAR action;

Expert opinions made by:

- The company GMA – Werkstoffpruefung.GmbH at the request of Stefan Zucker & Partner GmbH,
- A. Banaszek – the SMAIC expert,
- P. Carlson – the SMAIC expert.

8. Composition of the Investigative Team

Until 23 April 2018:

the team leader: Eugeniusz Chodań – the Chairman of the SMAIC;

the team member: Krzysztof Kuropieska– the Member of the SMAIC.

After 23 April 2018:

The team leader: Tadeusz Wojtasik – Deputy Chairman of the SMAIC;

The team member: Eugeniusz Chodań – the Chairman of the SMAIC.

9. Anticipated Date of Publishing the Final Report

It is expected that the Commission will prepare the draft of the final report and shall send it for consultation to interested parties. Therefore the final report should be published until 31 March 2019.