



**Bundesstelle für Seeunfalluntersuchung**  
**Federal Bureau of Maritime Casualty Investigation**  
Federal Higher Authority subordinated to the Ministry of Transport,  
Construction and Urban Affairs

## **Summary Investigation Report 180/08**

### **Marine Casualty**

### **Near-collision and Grounding of the Sailing Yacht INTENTION IV on 3 May 2008 off Warnemünde**

2 March 2009

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 16 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.

The present report should not be used in court proceedings or proceedings of the Maritime Board. Reference is made to art. 19 para. 4 SUG.

The German text shall prevail in the interpretation of the Investigation Report.

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## 1 Summary of the Marine Casualty

On 3 May 2008 the yacht INTENTION IV, which is used and licensed for training purposes, left its mooring at the Alten Strom in Warnemünde. On board were the Skipper and four participants, on a training voyage for the Coastal Skipper Certificate<sup>1</sup>. Shortly after casting off, while close to the moles, the visibility rapidly worsened because of thick fog. The Radar unit and the VHF marine radio on board the yacht were not used sufficiently, so that a near-collision resulted with an incoming ferry. Afterwards the yacht kept proceeding out to sea and there was a further near-collision with another yacht. Once at sea, the visibility improved.

After manoeuvre training, INTENTION IV was supposed to return to Warnemünde port. To do so the yacht had to re-enter the area of reduced visibility, where a close quarters situation occurred with another pleasure craft. Later the sails were taken down and the yacht proceeded under engine. In this part of the voyage too, the crew only used the technical equipment present in an inadequate manner. This led to the yacht running aground approximately 220 m west of the West Mole. The yacht could only be freed with outside help. Nobody was injured and there was no damage to the vessel.

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<sup>1</sup> Sportküstenschifferschein

## 2 Scene of the Accident

Type of Event: Marine Casualty, Running Aground and Getting Free with Outside Help  
Date/Time: 3 May 2008/1656  
Location: Warnemünde, Beach area west of the West Mole  
Latitude/Longitude:  $\phi$  54°11,125'N  $\lambda$  012°05,200'E

Section from Nautical Chart 1672, Federal Maritime and Hydrographic Agency

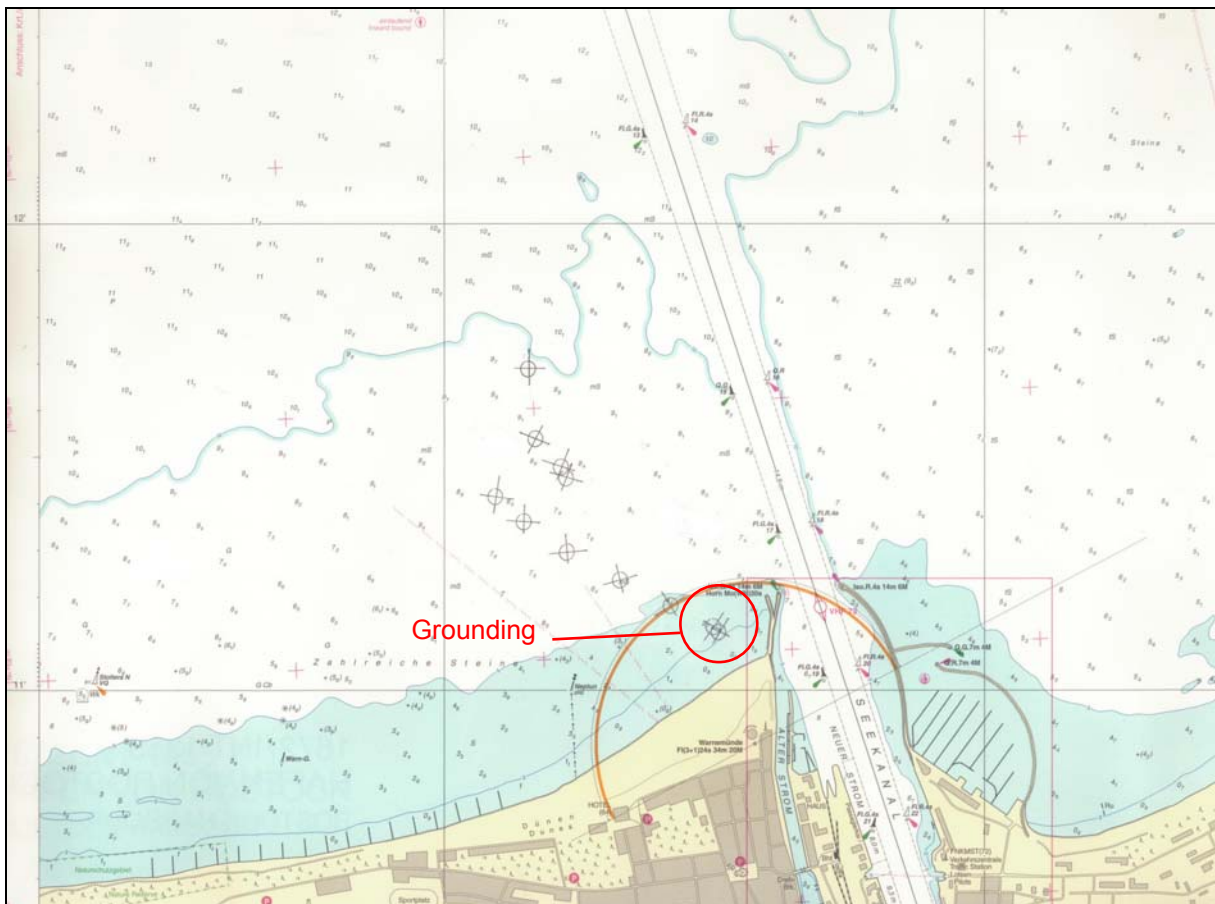


Figure 1: Course approaching the port and the position when running aground outside Warnemünde

### 3 Vessel Particulars

#### 3.1 Photo



© Bavaria Yachtbau GmbH

Figure 2: Bavaria 46 cruiser

#### 3.2 Particulars

|                              |  |
|------------------------------|--|
| Name of the vessel:          | INTENTION IV   |
| Type of vessel:              | Sailing Yacht, Bavaria 46                            |
| Nationality/Flag:            | Federal Republic of Germany                          |
| Port of registry:            | Burg auf Fehmarn                                     |
| Call sign:                   | DK2978   |
| Owner:                       | Wassersportzentrum Dümmer                            |
| Year built:                  | 2008   |
| Shipyard:                    | Bavaria Yachtbau GmbH                                |
| Length overall:              | 14.40 m  |
| Breadth overall:             | 4.35 m   |
| Empty weight:                | 11,000 kg  |
| Draught at time of accident: | 1.85 m   |
| Engine rating:               | 41 kW  |
| Main engine:                 | Volvo Penta D 2-55                                   |
| Sail area:                   | Buttoned main sail with genoa ca. 118 m <sup>2</sup> |
| Hull material:               | GRP  |
| Number of crew:              | 5  |

## **4 Course of the Accident**

### **4.1 Preparation for the Sailing Voyage**

A 7-day training voyage for the Coastal Skipper Certificate was planned with the sailing yacht INTENTION IV. The voyage was offered by a sailing school. The participants' places could be booked on the internet and in other ways. On board was the instructor, who was also the skipper, and four trainee crew members.

It was reported that before the start of the voyage the crew members were made familiar with the technical equipment on board and they were given a full safety briefing.

### **4.2 The Outbound Passage**

The following was reported about the outbound passage from Warnemünde:

The voyage began on 3 May 2008 at around 1200 in Warnemünde at the Alten Strom. In order to familiarise themselves with the yacht, in the sea area outside Warnemünde manoeuvres were planned under sail and under engine. Afterwards the crew was due to return to Warnemünde. All crew members wore a lifejacket. In the area of the mole very thick fog developed. Visibility was around 10 m. At this time one of the crew members was at the helm. The crew suddenly heard a fog signal very close on the port side. Shortly afterwards a ferry appeared out of the fog. The skipper jumped from the mast to the helm and got the yacht out of danger with a "Full-ahead" manoeuvre. The ferry passed close astern. One of the crew members estimated that it passed about 3 m distance away from the yacht.

Then the yacht continued towards the sea, and there the crew set the sails. The wind was blowing at force 3 to 4 Bft.

Ten to twenty minutes later there was a further near-collision. From the port side another sailing yacht approached quickly without warning. A collision was only avoided through the fast reaction of the other yacht. From this time onwards the crew of INTENTION IV sounded fog signals.

Later the fog cleared and the wind decreased. The skipper then decided to return to Warnemünde even though it meant re-entering the fog. A discussion ensued about this with the other crew members, who suggested going into a Danish harbour as an alternative.

### **4.3 The Inbound Passage**

The following was reported about the inbound passage back towards Warnemünde:

When approaching the port the visibility was between 10 m and 20 m. The wind was blowing at approx. force 2 Bft. On INTENTION IV the signal horn was sounded at one minute intervals. Another crew member now steered the yacht towards the harbour entrance. He could follow his course and position on a chart plotter attached to the steering pedestal. However the display showed this on a small scale. In order to stay out of the way of commercial shipping the helmsman kept a bit to the west.



With respect to what happened next, the crew gave different accounts. The helmsman said that he had not been given a compass course. Instead the skipper had told him to steer towards Warnemünde. Meanwhile the skipper and one of the other crew members took down the sails. Then suddenly the fog cleared and he recognised the beach ahead of him. At that time the skipper was at the chart table inside the yacht. After a warning shout he rushed out of the cabin. At this very moment the yacht ran aground. The echo sounder showed 2 m.

These statements were confirmed by another crew member

The skipper said that while heading back towards the port the sails were taken down. The visibility was approx. 90 m. After the sails were taken down, he had specified a course of 145°. Then he went down below deck to plot the course and listen to the local VHF radio channel. During this time the yacht was going at approx. 3 kts (knots) boatspeed. He considered this a safe speed. In the navigation area, in addition to another chart plotter, there was a computer with navigation software. The skipper checked their position on the computer and it was to his satisfaction. Afterwards he went back on deck to the mast to clear things up. While this work was happening the helmsman veered off course, and the yacht ran aground on a sandbank near the mole.

According to the logbook, the INTENTION IV ran aground at 1705.

#### **4.4 Recovery**

Their own first attempts to get free using the equipment on board and with the help of smaller motorboats did not lead to success. Through a crew member taken ashore, a larger motorboat later came out to assist. This was able to move the yacht sufficiently so that it was then able to free itself using its own engine at approx. 2030.

The yacht sustained no damage because of running aground, nor because of the recovery. An ingress of water that occurred during the continuation of the voyage the next day had another cause.

The waterway police were informed about the marine casualty event by other pleasure craft drivers. A boat reached the scene of the accident at approx. 2000. The waterway police visited the yacht after it was moored in the Alten Strom. On account of the circumstance that the INTENTION IV was licensed as a training vessel through the See-Berufsgenossenschaft (See-BG), a temporary detention order was issued. On the next day the order was vacated by the See-BG. The waterway police did not secure the logbook entries or the nautical charts.

## **5 Investigation**

### **5.1 Yacht**

The INTENTION IV is a yacht of the type Bavaria 46. The boat was first launched by its owner at the beginning of the season. The equipment of the boat, according to the website of the sailing school, included:

- Instrument displays for log, speed and depth with a repeat set at the chart table,
- Radar with overlay technology,
- Wind measuring device,
- Navtex receiver,
- Electronic Chart System,
- Compass and
- Autopilot.

According to the statement of the skipper, among other things there was a computer with navigation and weather software and a VHF marine radio on board. At the steering pedestal were attached displays for the log, echosounder and wind information and a Raymarine C70 chart plotter.

The skipper did not list the presence of the radar unit. When one of the other crew members asked about it he said there was not a radar unit on board.

For the radar information there was no independent display unit. Possibly the skipper thus assumed that no radar display was possible. However the Raymarine C70 unit is also capable of displaying various information on a split screen. Aside from the nautical chart, in this manner can be displayed a radar picture, navigation data or the Echosounder information.

According to the statement of the owner, during the trip there was a radar unit on board that was ready for use.

### **5.2 Crew**

Since 1999 the skipper has held the Recreational Boat Licence-Sea (Sportbootführerschein-See). In 2001 he got the Recreational Sea Skipper Licence (Sportseeschifferschein) and in 2003 the Recreational Offshore Skipper Licence (Sporthochseeschifferschein). Three of the other crew members hold the Recreational Boat Licence–Sea.

### **5.3 The Outbound Passage**

The Federal Bureau of Maritime Casualty Investigation was informed by the waterway police about the marine casualty event of INTENTION IV.

While questioning the other crew members the near-collision with the incoming ferry became known about.

After casting off in the Alten Strom the crew of the yacht obviously did not know enough about the traffic situation on the Warnow river. No radar observation was conducted. The marine radio was neither used during the preparations before casting off nor after the voyage had started for situation reports from the Vessel Traffic Service or the position reports of the seagoing vessels under obligation to report. Even after the worsening of visibility that happened in the area of the mole the crew

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did not use the radio in order to report to the Vessel Traffic Service or keep themselves informed. Subsequently this led to a near-collision with the Danish-flagged ferry KRONPRINS FREDERIK, since they crossed into the Seekanal and therefore the main fairway in ignorance of the traffic situation.

The Warnemünde Vessel Traffic Service supplied the recorded radar pictures and a log of the VHF radio transmissions.

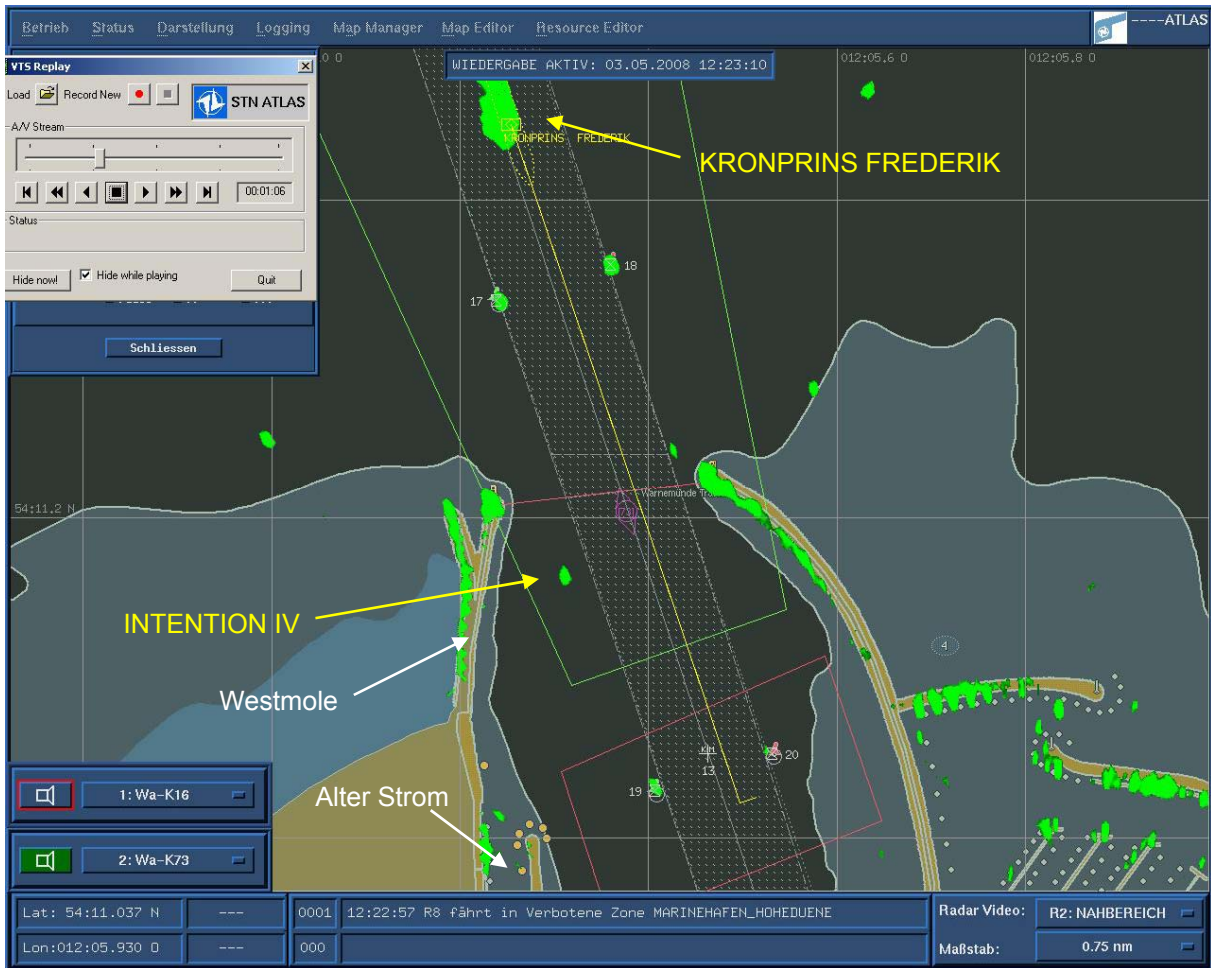


Figure 3: Outbound passage of INTENTION IV, distance to KRONPRINS FREDERIK approx. 400 m, time 12:23:10

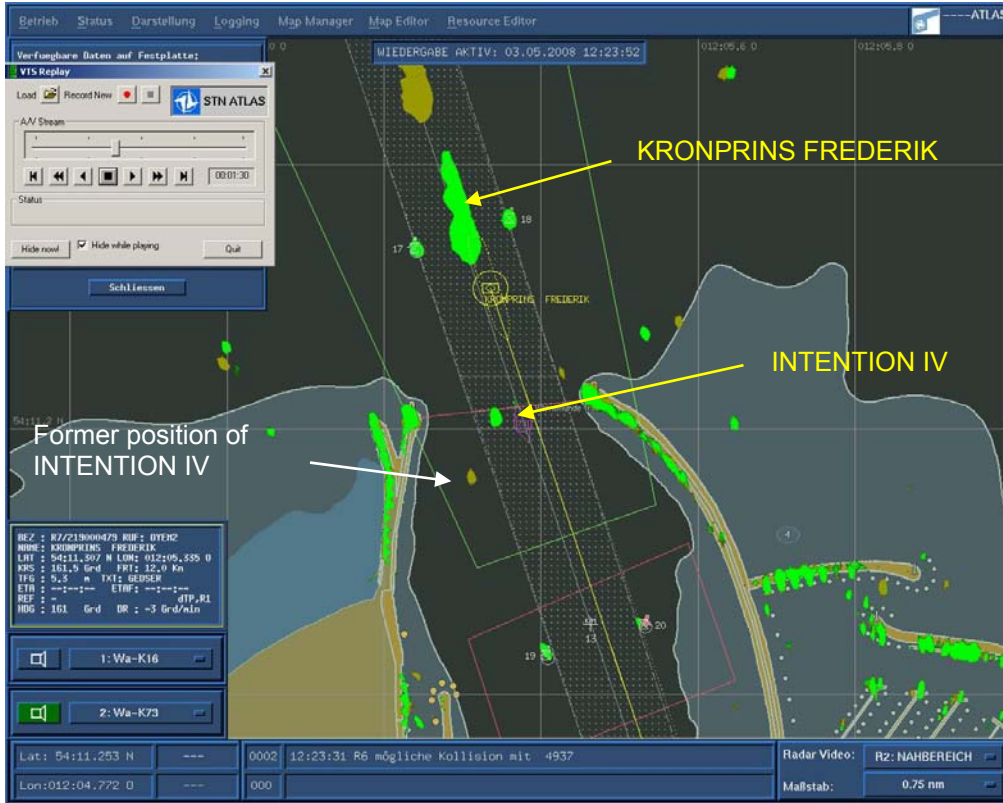


Figure 4: Outbound passage of INTENTION IV, distance to KRONPRINS FREDERIK approx. 200 m, time 12:23:52

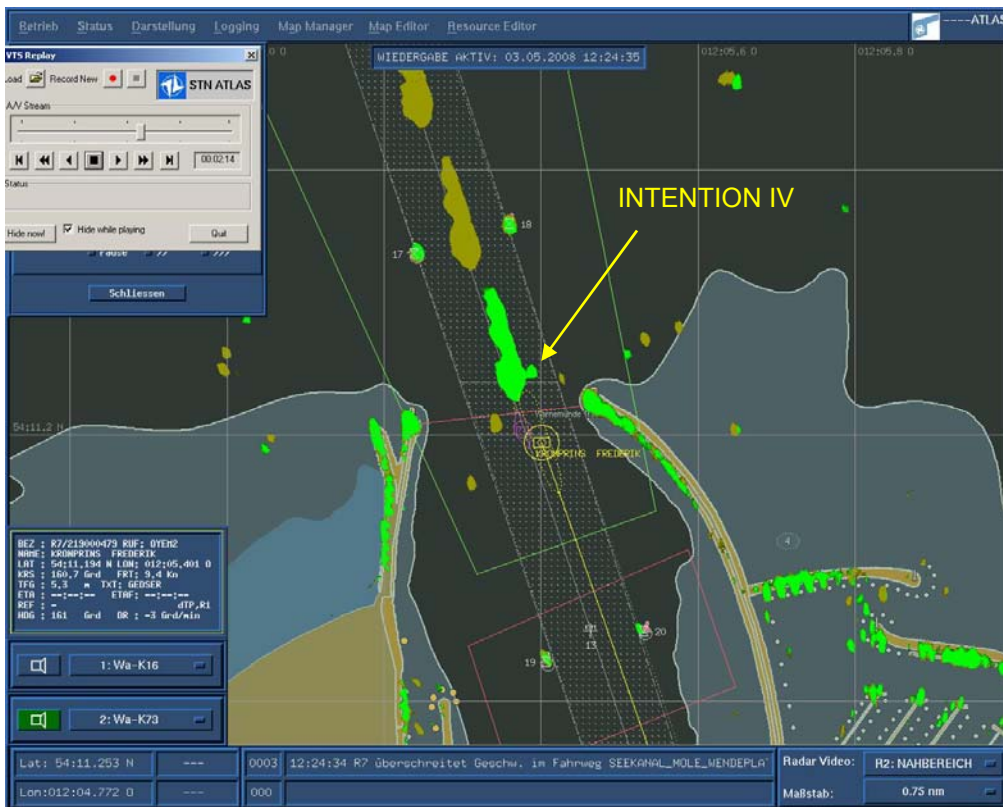


Figure 5: Outbound passage of INTENTION IV, time 12:24:35



Figure 6: Section from Nautical Chart 1672

The log of the radio communication between VTS Warnemünde (call name: Warnemünde Traffic = WT) and the ferry KRONPRINS FREDERIK (KF) was as follows:

- KF „Warnemünde Traffic - KRONPRINS FREDERIK“
- WT „KRONPRINS FREDERIK – Warnemünde Traffic“
- KF „Yes, we almost had a collision with a sailing yacht. It crossed the ship channel.“
- WT „KRONPRINS FREDERIK had a near-collision with a crossing sailing yacht. Nothing happened, did it?“
- KF „No, we did not hit. But it was very, very close.“

#### 5.4 The Inbound Passage

The skipper, when giving his statement about the grounding, handed over a nautical chart with the course taken by the yacht in the Warnemünde port entrance area.

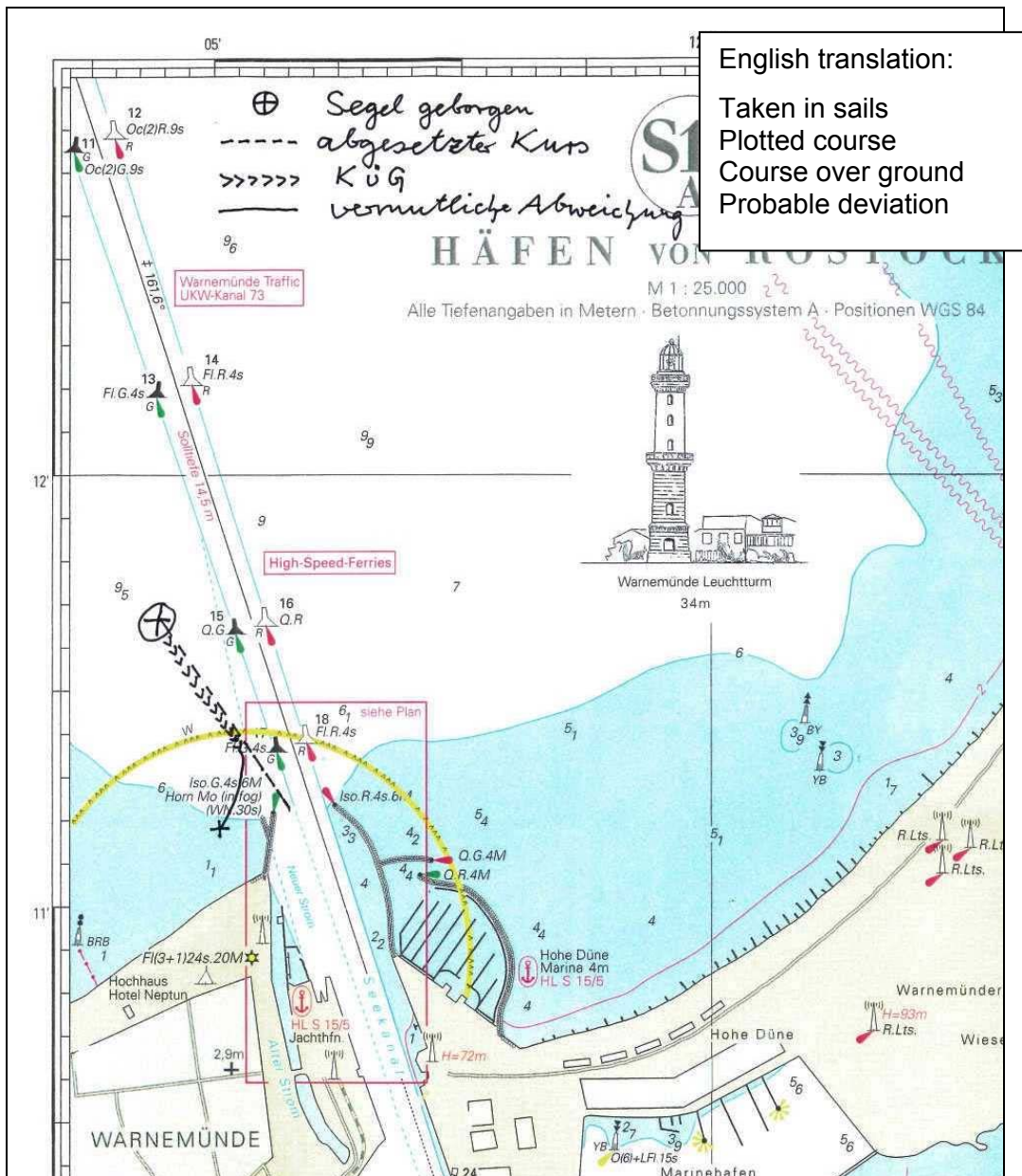


Figure 7: Course of the yacht according to statement of the skipper

The skipper also handed over a copy of the logbook page from the day of the accident. Due to the circumstances that the entries on one hand only contained time, course and speed and on the other hand neither the start position nor, after a manoeuvre timeframe of 25 minutes, an interim position had been entered, no conclusions could be drawn about the actual course taken between the radar data recorded by VTS Warnemünde.

The inbound passage of INTENTION IV had also been recorded by the Vessel Traffic Service. During the inbound passage there was apparently a close quarters situation with another pleasure craft (see Figures 8 and 9).

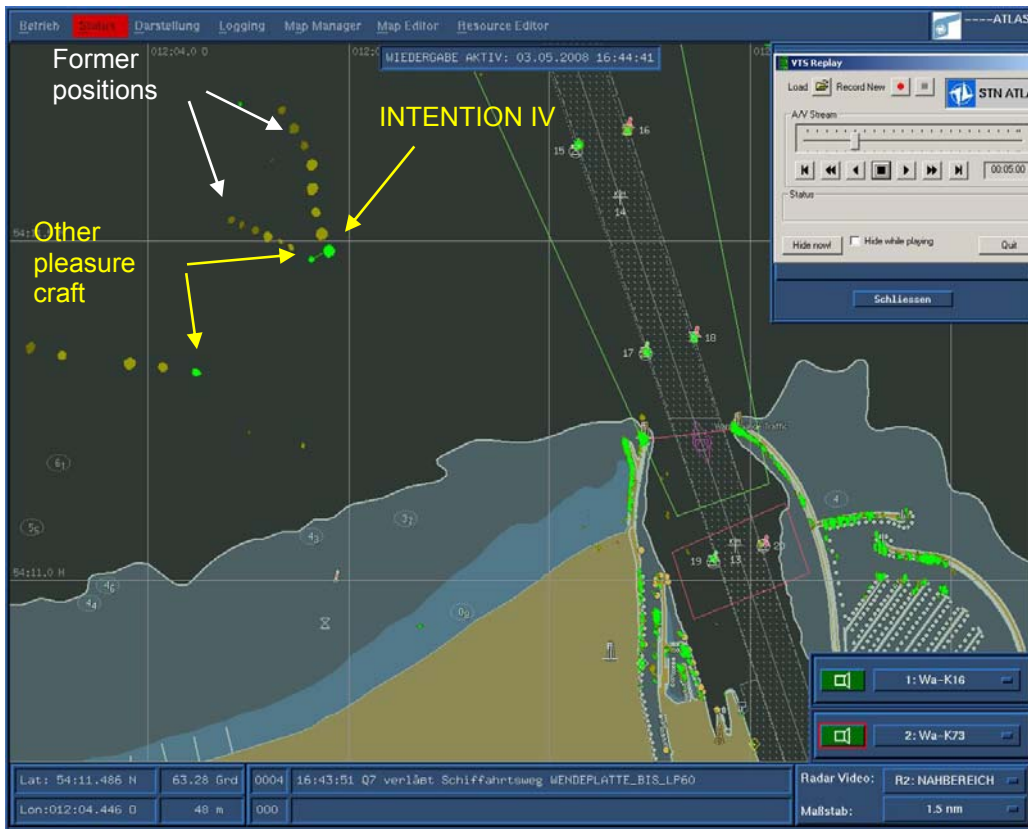


Figure 8: Inbound passage of INTENTION IV, time 16:44:41

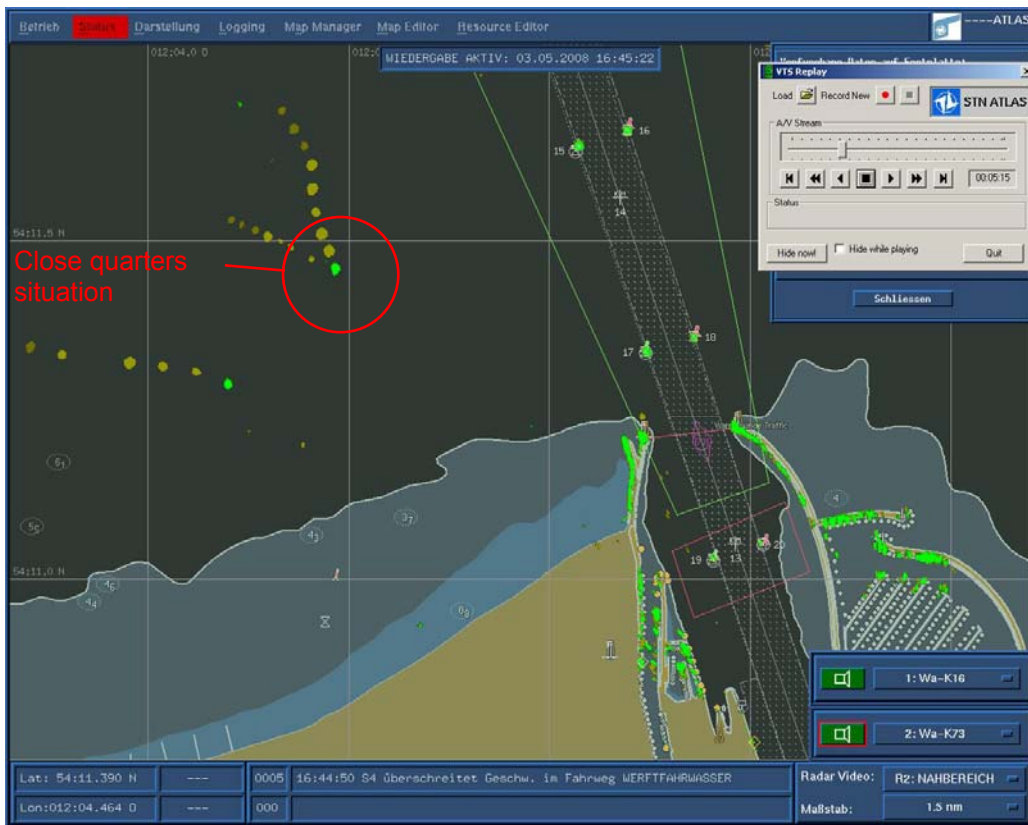


Figure 9: Inbound passage of INTENTION IV, close quarters situation with another pleasure craft, time 16:45:22

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According to an entry in the logbook, from 1650 the yacht proceeded under engine. At this time the skipper said that he instructed the helmsman to steer a course of 145°. According to the radar record, from 1650 onwards a course of 145° was not steered for a significant amount of time. Instead the general course of the yacht from 1650 was 119°. If the yacht had been steered on a course of 145°, this course would have led even further away from the entrance between the two moles.

According to the radar plot the yacht's speed was 5.6 kts.

The westward course from 1645 seems to have been for the purpose of taking in the sails.

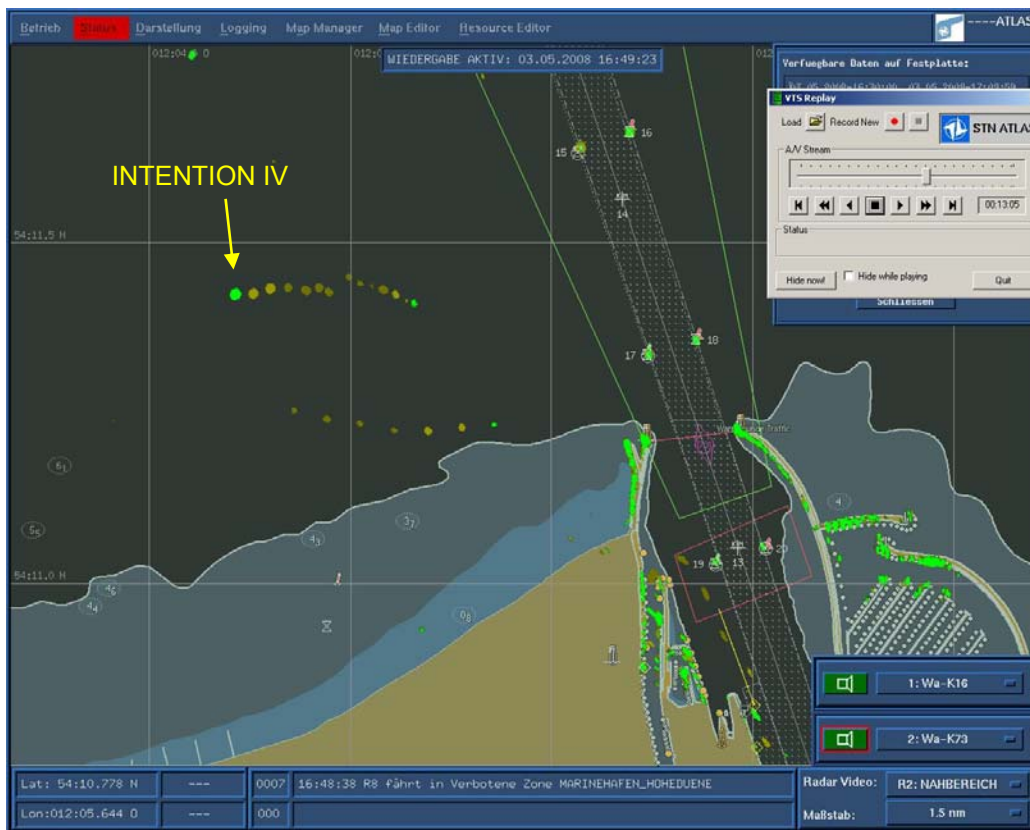


Figure 10: Inbound passage of INTENTION IV, time 16:49:23



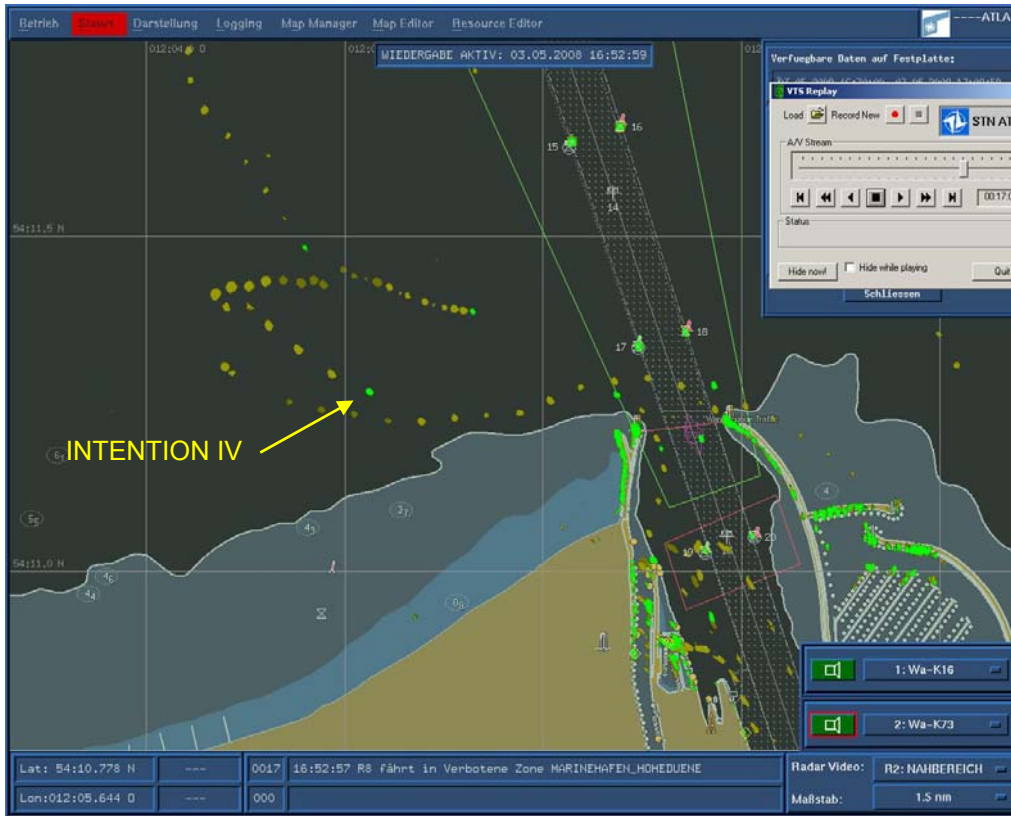


Figure 11: Inbound passage of INTENTION IV, time 16:52:59

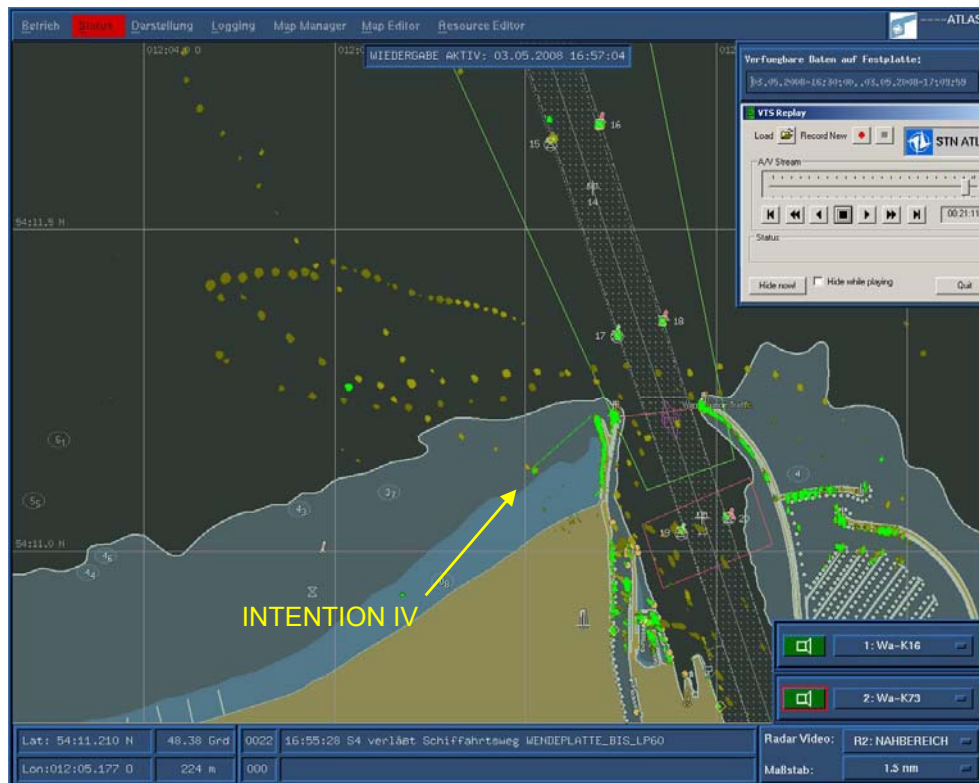


Figure 12: Grounding of INTENTION IV, distance to the mole 224 m, distance to the beach 171 m, time 16:57:04

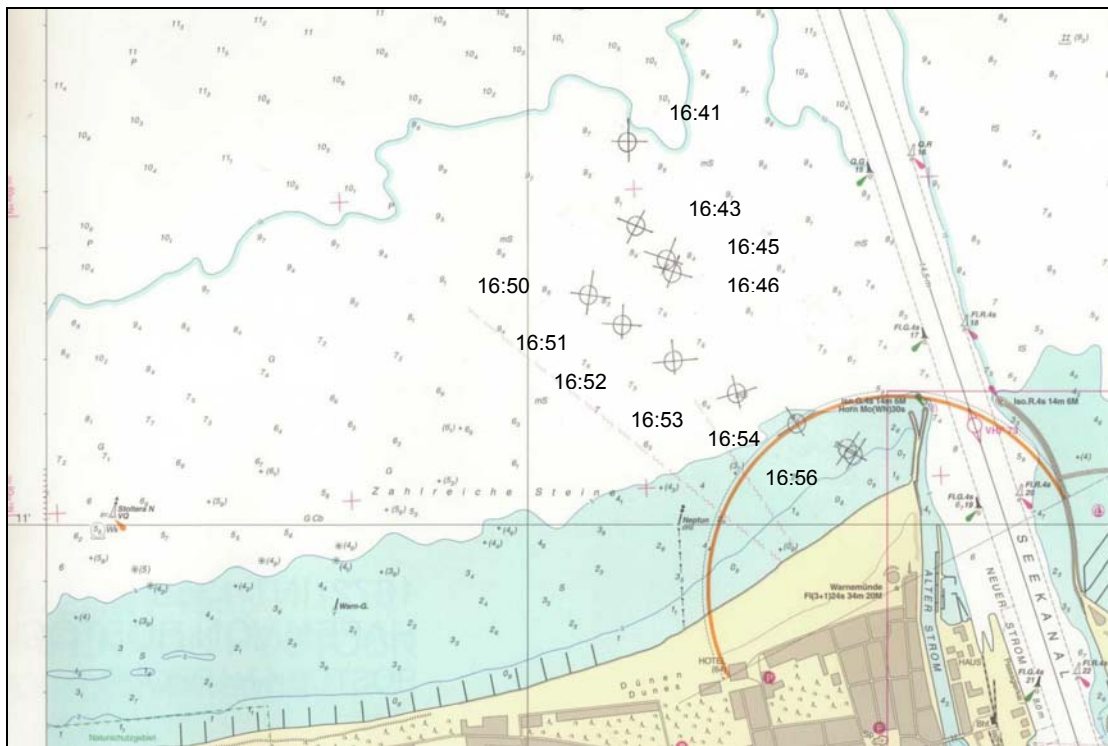


Figure 13: Positions of INTENTION IV copied from the radar record of the VTS

During the investigation the skipper of INTENTION IV was asked to the course deviating from his statement. But this resulted in no new information for the BSU.

According to the statement of the owner the logbook function in the chart plotter was not activated, so that afterwards the course could not be ascertained.

The shallow water alarm function of the echosounder was not used. According to the opinion of the investigators an alarm after crossing the “5 Metre Depth Line” could have prevented a grounding.

### 5.5 Visibility

For the traffic situation reports VTS Warnemünde obtained and released the following visibility distances:

|      |          |
|------|----------|
| 1115 | 2012 m   |
| 1315 | 596 m    |
| 1515 | 180 m    |
| 1715 | 220 m    |
| 1915 | 10500 m. |

With the weather conditions prevailing on the day of the accident, local variations in visibility distances were possible. For instance the close quarters situation between 1644 and 1646 was not noticed by any of the crew members of INTENTION IV.

## 6 Conclusion

The Federal Bureau of Maritime Casualty Investigation investigated the events that happened on board the INTENTION IV on 3 May 2008 for the following reasons. Firstly, the near-collision with the KRONPRINS FREDERIK was an event according to art. 1 para. 2 no. 4 Seesicherheits-Untersuchungs-Gesetz (SUG) (Maritime Safety Investigation Law), since here “a danger for a person or vessel” had been caused. Secondly, the grounding was an event according to no. 2 of the same paragraph. The happenings on board the INTENTION IV are especially suitable for showing the skippers of recreational vessels and their crews the imperativeness of good preparation for a voyage and the necessity to use the aids available on board. Even more so because this voyage was a training trip.

On the day of the accident the sailing yacht was under the command of an experienced skipper, who on account of his qualifications also had the knowledge to evaluate correctly a radar picture. Yet the crew when preparing for leaving the harbour and after casting off did not undertake all required means that would have been necessary for the safe conduct of the trip.

The electronic aids, as well as the VHF radio, were only used insufficiently by the crew. They did not react to the decrease of visibility that occurred in the area of the mole. The main fairway was crossed without any overview of the traffic situation.

The inbound passage occurred without sufficient control of the position and/or the course. During this part of the trip also, the crew did not use the technical aids on board in an adequate manner.

The track of the yacht could not be verified, on account of missing positions in the logbook, a nautical chart that was not handed over and the logbook function not being activated in the chart plotter by the skipper.

Overall during this voyage the basic requirements for the areas of voyage planning, executing and monitoring were only partially met. The demands resulting from the special environmental conditions were not adequately reacted to.

## **7 Sources**

- Reports of the waterway police Rostock
- Witness accounts
- Nautical Chart of the Federal Maritime and Hydrographic Agency (BSH)
- Radar and VHF recordings of VTS Warnemünde