



**Bundesstelle for Seeunfallinvestigation**  
**Federal Bureau of Maritime Casualty Investigation**  
Federal Higher Authority subordinated to the Ministry of Transport,  
Building and Urban Affairs

Investigation Report 166/05

**Very Serious Marine Casualty**

**Fatal Sailing Accident on Board  
SY SINFONIE SYLT  
in the Flensburger Förde  
on May 5<sup>th</sup>, 2005**

**1 June 2006**

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.

Issued by:  
Bundesstelle für Seeunfalluntersuchung - BSU  
(Federal Bureau of Maritime Casualty Investigation)  
Bernhard-Nocht-Str. 78  
20359 Hamburg  
Germany

Head: Jörg Kaufmann  
Fon: +49 40 31908300  
posteingang-bsu@bsh.de

Fax: +49 40 31908340  
<http://www.bsu-bund.de>

## Table of Contents

|   |   |    |
|---|---|----|
| 1 | SUMMARY OF THE MARINE CASUALTY .....                    | 5  |
| 2 | SCENE OF THE ACCIDENT .....                             | 6  |
| 3 | VESSEL PARTICULARS .....                                | 7  |
|   | 3.1 Photo .....   | 7  |
|   | 3.2 Particulars .....                                   | 7  |
| 4 | COURSE OF THE ACCIDENT .....                            | 8  |
|   | 4.1 Preliminary notes on the yacht and her crew.....    | 8  |
|   | 4.2 Weather conditions at the time of the accident..... | 8  |
|   | 4.3 Course of the voyage .....                          | 9  |
| 5 | ANALYSIS.....   | 12 |
|   | 5.1 Course of the accident .....                        | 12 |
|   | 5.2 The sudden turn of the main boom.....               | 12 |
|   | 5.3 Summary and conclusions .....                       | 15 |
| 6 | SAFETY RECOMMENDATIONS .....                            | 17 |
| 7 | SOURCES .....   | 18 |

## Table of Figures

|   |    |
|---|----|
| Figure 1: Chart.....                                | 6  |
| Figure 2: Photo of the vessel .....                 | 7  |
| Figure 3: Port side steering stand.....             | 10 |
| Figure 4: Position of the fall .....                | 10 |
| Figure 5: Control unit of the automatic pilot ..... | 14 |

## 1 Summary of the marine casualty

On 5 May 2005, a fatal sailing accident occurred on board the sailing yacht SINFONIE SYLT in the Flensburger Förde. The yacht type Grand Soleil 70 with three experienced yachtpersons familiar with the boat on board had left her anchorage off the Danish harbour of Höruphav towards 08.30 a.m.<sup>1</sup> and was sailing on a general course of about 140° with wind from the stern on her way to Kiel. At the time of the accident the helmsman and yachtwoman were staying on deck. According to her observations, shortly after the helmsman had switched on the automatic pilot – but possibly had only thought he did so – and had left the port side control stand going to the cockpit, the yacht fell off to the lee side at 09.05 a.m. with a subsequent accidental gybe.<sup>2</sup> On this occasion the helmsman was hit by the main sheet and thrown against the inner edge of the cockpit. On this occasion he suffered severe head injuries.

The skipper of the yacht, who was made aware of the situation by the joint-sailor's cry for help, rushed on deck and instructed the joint-sailor to furl the head sail, in order to stabilise the boat and to regain control over it. After he had again gone below deck for a short while, in order to make an emergency call via VHF, he then tried to reanimate the unconscious helmsman until the rescue team would arrive on the scene. Towards 09.28 a.m., a boat of the Federal Police<sup>3</sup> arrived at the scene of the accident. Her crew took the seriously injured victim on board and continued the resuscitation efforts until the rescue boat JENS FÜERSCHIPP, which the MRCC<sup>4</sup> Bremen had ordered to the scene of the accident, arrived on the scene. A doctor who had offered the rescue team of DGzRS<sup>5</sup> his assistance in the port of Gelting Mole and then had accompanied them to the scene of the accident, stated the helmsman's death at 10.01 a.m.

---

<sup>1</sup> All hours in the report are given in local time = Central European Summer Time = UTC + 2h.

<sup>2</sup> An uncontrolled shifting of the boom with the main sail from one side of the vessel to the other, with winds coming from the stern.

<sup>3</sup> Note: In the meantime the Bundesgrenzschutz has been renamed Federal Police, with effect from July 1<sup>st</sup>, 2005.

<sup>4</sup> Maritime Rescue Co-ordination Centre.

<sup>5</sup> Deutsche Gesellschaft zur Rettung Schiffbrüchiger = German Maritime Rescue Service

## 2 Scene of the accident

Type of event: Very serious marine casualty  
Date/Time: May 5<sup>th</sup>, 2005, about 09.05 a.m.  
Location: about 1.5 nm south-east of Kalkgrund lighthouse  
Latitude/Longitude:  $\phi$  54°48,6'N  $\lambda$  009°57,5'E

Section from ENC's of the Federal Maritime and Hydrographic Agency,  
Cell DE 416010 (last revised: 26 August 2005)

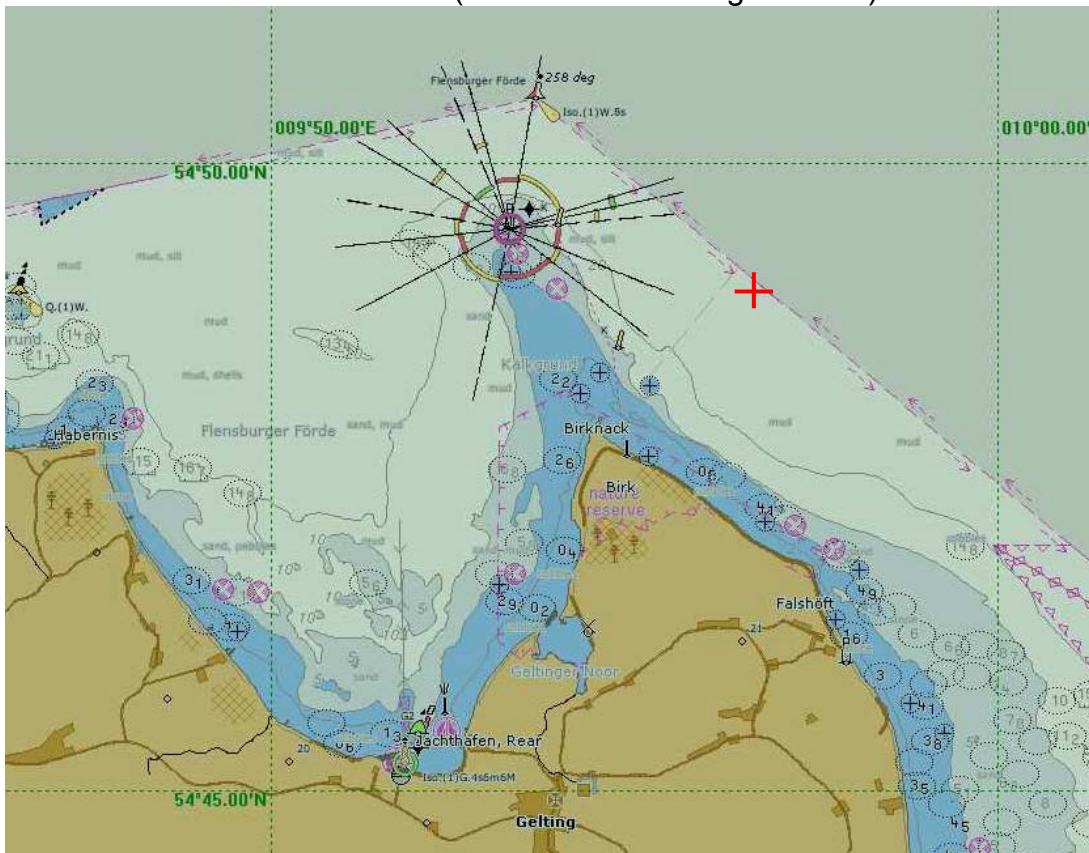


Figure 1: Chart

### 3 Vessel particulars

#### 3.1 Photo



Figure 2: Photo of the vessel

#### 3.2 Particulars

|                       |   |
|-----------------------|---|
| Name of vessel:       | SINFONIE SYLT                                     |
| Type of vessel:       | Recreational craft, Grand Soleil 70 / Custom Line |
| Nationality/Flag:     | Germany   |
| Port of registry:     | Flensburg   |
| Call sign:            | DJMV  |
| Year built:           | 2003  |
| Shipyard:             | Cantiere del Pardo, Italy                         |
| Length overall:       | 21.30 m   |
| Breadth overall:      | 6.00 m  |
| Draught:              | 2.80 m  |
| Displacement:         | 27.00 t   |
| Sail area:            | 255.00 m <sup>2</sup>                             |
| Engine rating:        | 125 kW  |
| Main engine:          | Yanmar Diesel                                     |
| Hull material:        | GFK <sup>6</sup>                                  |
| Number of crew:       | 3 persons   |
| Number of passengers: | none  |

<sup>6</sup> glasfaserverstärkter Kunststoff = glass-fibre reinforced plastic

## 4 Course of the accident

### 4.1 Preliminary notes on the yacht and her crew

SINFONIE SYLT is a luxury yacht built on the Italian yachting shipyard Cantiere del Pardo, a shipyard rich in tradition, in a close cooperation between the owner, the shipyard and the designing office Felci following the building provisions issued by the RINA Classification Society. The layout of hull and deck was deliberately simple, so that the yacht could be sailed with a small crew (2 persons) from the cockpit. The layout of the sails is optimised for performance. The boat disposes of a very long waterline with a steep bow and stern, which allows high speeds.<sup>7</sup>

The technical equipment of the yacht is in keeping with the international provisions<sup>8</sup> as well as with national recommendations and regulations<sup>9</sup>. SINFONIE SYLT is equipped with modern navigation devices manufactured by Raymarine and apart from the prescribed conventional navigation equipment (compasses, charts on paper), she has, among others, a GPS receiver, an ECS<sup>10</sup> and an automatic pilot<sup>11</sup> type Raymarine ST6001+. Life saving appliances and means of signalling are available on board in sufficient number.

The skipper of the yacht disposes of considerable experience in handling sailing yachts and since 1963 holds a Yacht certificate (Sea) for leisure crafts. The sailing joint-sailor also has many years of sailing experience. Both of them participated in several regattas with SINFONIE SYLT.

Even the victim of the accident was very much familiar with the sailing yacht, he held a Yacht certificate (Sea) for leisure crafts, and according to the skipper he had been on board during about  $\frac{3}{4}$  of all nautical miles covered by SINFONIE SYLT (about 15,000 nm).

### 4.2 Weather conditions at the time of the accident

The Federal Bureau of Maritime Casualty Investigation had an official expert opinion prepared by Germany's National Meteorological Service (DWD) – Department Marine Meteorological Services - Hamburg on the weather and seaway conditions in the Flensburger Förde. According to this opinion, the period during which the accident occurred was under the influence of a small ridge of high pressure. The wind was blowing from north-west with middle wind forces of 5 to 6 Bft, which went up to 6 to 7 Bft in gusts. There were no remarkable weather phenomena. The visibility was be-

---

<sup>7</sup> To this cf. also the Homepage by Vento Yachthandel GmbH (exclusive importer for Grand Soleil Yachts for Germany and Denmark) [www.grand-soleil.de](http://www.grand-soleil.de).

<sup>8</sup> Cf. in particular the provisions of KVR and SOLAS Chapter V.

<sup>9</sup> Cf. publication by the BSH: „Sicherheit im See- und Küstenbereich – Sorgfaltsregeln für Wassersportler“, [Safety on Sea and in coastal areas – Rules for Diligent Behaviour for Water Athletes], 5. revised edition 2003; safety rules by the cruiser department of the Deutsche Segler-Verband e.V.: „Ausrüstung und Sicherheit von Segelyachten/Mehrrumpfbooten“ [Equipment and Safety of Sailing Yachts/Boats with Multiple Hulls].

<sup>10</sup> Electronic Chart.

<sup>11</sup> Hereinafter “autopilot”.



tween 25 and 30 km, the sky was loosely overcast. The temperatures of air and water were 9 and 8 °C, respectively.

With the winds mentioned, the DWD proceeds on the assumption of wave heights between 1.0 and 1.5 m with a period of 5 to 6 s. The highest single waves could have come up to a height of 2.0 to 2.5 m.<sup>12</sup>

### 4.3 Course of the voyage

The following descriptions of the course of the accident are based upon the recorded statements which the skipper and his joint-sailor made before the police. In addition, the BSU evaluated the records on the operations by the water police and by the Federal Police, held interrogations of its own and inspected the local situation on board the yacht.

According to the findings made in this respect, in particular the credible and comprehensible statements of the witnesses, who behaved in a very co-operative manner before the BSU, the SINFONIE SYLT had anchored in the Danish harbour of Höruphav on May 4<sup>th</sup>, 2005. She was intended to be transported to Hamburg the following day, where she would take part in a regatta.

On the day of the accident, the crew began their voyage to Hamburg towards 08.30 a.m. Towards 08.45 a.m. the person who later suffered the accident, who, just like the female joint-sailor, was wearing a lifejacket, took over the helm of the yacht from the skipper. After long years of joint sailing experience, this was a routine action. At this time, a course of 140° had been set. The wind had blown at a speed of about 19 knots (6 Bft) from north to north-west, that is, from the stern, and gave the yacht, on which the main sail as well as the Genoa sail (Genoa III) were set, a speed of about 10 knots. She sailed with solid wind from the stern. Both the sails were directed to port side. They took a bearing of the Kalkgrund lighthouse at a distance of about 1.5 nm. A so-called lazy guy<sup>13</sup> had not been set.

Towards 09.00 a.m. the skipper went below deck, in order to prepare breakfast. At first the helmsman navigated the yacht from the port side control. The joint-sailor was sitting immediately next to it on the bench in the cockpit on the port side (cf. fig. 3).

They had sailed quietly and without a hectic mood. Shortly after the skipper had gone below deck, the helmsman had said to the joint-sailor that the helm of the boat could be taken over by the automatic pilot. During this time, he wanted to clean a window of the cockpit. He made the appropriate setting on the automatic pilot. Then he wanted to go forward in the direction of the cockpit. On his way there, SINFONIE SYLT suddenly ran out of the rudder changed to port side, whereby a violent turn of the yacht to port was caused. Now the yacht was completely in the wind with a slight tilt. The helmsman wanted to intervene and therefore had rushed back to the rudder. The joint-sailor noticed how in this moment the main boom with flung from port side to starboard with full force and even shouted to the helmsman that he should take care. However, this warning was too late. Standing in a position about in the middle

---

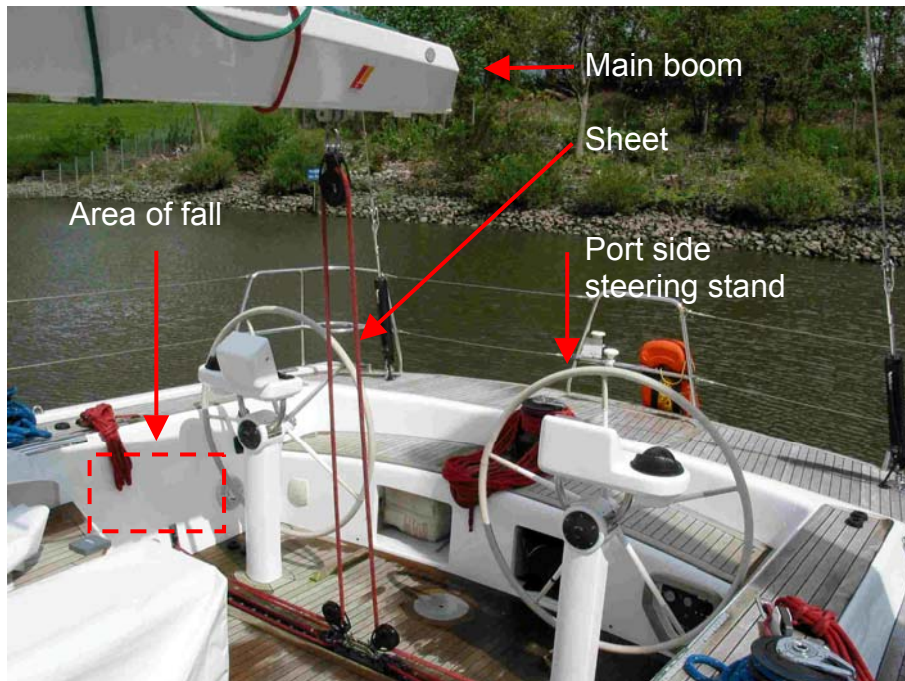
<sup>12</sup> DWD, Official Expertise, Hamburg, June 2005.

<sup>13</sup> A rope making a fixed connection between the end of the main boom and bow of the boat, in order to prevent an uncontrolled, sudden turn of the boom due to a change of the wind direction.

between the two steering wheels, he was hit by the sheet and thrown into the area of the starboard cockpit between the bench and the steering wheel (cf. fig. 4).



**Figure 3: Port side steering stand**



**Figure 4: Position of the fall**

Immediately after the accident, the skipper, on the joint-sailor's cry for help, rushed on deck. There he saw the helmsman bleeding from nose and ears and obviously unconscious lying with the upper body against the inner wall of the cockpit. Now at first the skipper had tried to regain the control of the yacht. To this purpose he advised the joint-sailor to furl the Genoa sail. Then she took the rudder of the yacht. In the meantime, the skipper rushed below deck and made an emergency call via VHF radio, and subsequently he started resuscitation efforts.

The emergency call made by the skipper was received, among others, by the crew of the Federal Police boat BAD DÜBEN (ID: BG 23). Then the boat sailed at full speed to the scene of the accident and reached SINFONIE SYLT at 09.28 a.m. Two officers changed onto the yacht where they continued the first aid for the victim. At about 09.40 a.m., while the resuscitation measures were maintained, the victim was brought on board the police boat to the prepared place of treatment in the mess-room of the boat.

An officer of the Federal Police remained on board the SINFONIE SYLT in order to assist the remaining crew of two persons in the continuation of the transport of the boat to Kiel (Thiessen-Kai).

At 09.48 a.m. the rescue boat JENS FÜERSCHIPP arrived at the scene of the accident, coming from the base of Gelting Mole. The chief of mission of the station had been informed of the accident by the MRCC Bremen.

The sea rescue boat also had a doctor on board who had heard the emergency call by SINFONIE SYLT from his sailing yacht in the port of Gelting. Immediately he had offered the rescue staff his assistance and accompanied them. The doctor and a paramedic changed over onto the police boat and treated the victim. In the meantime the police boat at full speed sailed to the port of Gelting, which was the nearest harbour. It was intended to hand over the seriously injured victim there to a rescue team on the shore. To this purpose, a rescue helicopter and an ambulance had already been ordered to Gelting.

However, the resuscitation efforts on board the police boat failed. At 10.01 a.m., the death of the victim was stated who in the fall on deck had suffered a cerebrocranial trauma with a cerebral haemorrhage.

At 10.19 a.m., BG 23 anchored off Gelting Fähre. Here the rescue boat took over the doctor, the paramedic and the deceased.

## 5 Analysis

### 5.1 Course of the accident

After the evaluation of all available sources of information

- at the time of the accident the sailing joint-sailor who was injured was the helmsman in charge of the yacht.
- the skipper stayed below deck.
- the female joint-sailor was sitting on the port side bench in the cockpit next to the port side control stand.
- the helmsman left the control stand (port side), in order to clean a cockpit window, after he possibly only believed that he had activated the automatic pilot.
- SINFONIE SYLT ran out of the rudder while the helmsman was on his way from the control stand towards the cockpit.
- the helmsman noted that the yacht fell of her course to the lee side and went back to the control stand, in order to head on the course again.
- while the helmsman was on his way back to the control stand, the main sail turned from port side to starboard. On this occasion the helmsman was hit by the sheet and suffered fatal head injuries as he fell into the cockpit.
- the possibility is excluded that the helmsman might not have been hit by the sheet, but by the main boom, as the clearance between the deck floor and the lower edge of the main boom in the area of relevance for the accident is about 2.09 m, thus clearly exceeds the victim's body height.

### 5.2 The sudden turn of the main boom

While the facts presented under 5.1 could be described in a plausible way and in particular are in keeping with the state of the injuries and the real situation on SINFONIE SYLT, the question how the deviation of the yacht to the lee side occurred, i.e. the event causing the accident, could not be clarified with absolute certainty.

In detail, the witnesses gave the following statements on this:

before the policeman of the Federal Police who assisted the crew in the continuation of the voyage of the yacht to Kiel:

- that the helmsman switched the helm to the automatic pilot and left the control stand heading for the bow
- the joint-sailor called the helmsman's attention that he should not do this, then he turned after a few steps
- in this moment the automatic pilot of the yacht altered the course, the main boom, together with the traveller, turned to the other side with great energy.
- the helmsman was hit by the sheet and thrown with great force against the inner edge of the cockpit

before the BSU (by phone):

- the helmsman switched on the automatic pilot
- the latter required a phase of levelling out of 20 to 30 sec.
- the helmsman left the control stand too early
- the joint-sailor warned that the yacht would run out of the rudder; at the same moment, the sails turned
- the helmsman was hit by the main sheet on his way back to the steering stand and thrown down to the floor

before the police:

- Mode of functioning of the automatic pilot: This is operated via the left control stand, and after the first setting it does not keep the course. Then the vessel has to “adjust” herself for a period of about 20 to 30 sec., in order to find the course she has to keep to, then a second activation of the automatic pilot is necessary. Obviously this second activation did not take place.
- Due to a lack of concentration and to negligence, the required second activation of the automatic pilot was not performed, obviously, the automatic pilot was left too early.

before the BSU (questionnaire)<sup>14</sup>:

- the helmsman, believing that he had switched on the automatic pilot, left the steering stand heading for the cockpit
- the automatic pilot had only been switched to standby
- the yacht very much deviated to the lee side
- the helmsman rushed back to the rudder, in order to avoid a further deviation of the yacht
- the yacht had deviated so much that an unwanted jibe (accidental gybe) occurred
- the main sheet hit the helmsman on his upper body and knocked him down

The Federal Bureau of Maritime Casualty Investigation finally questioned both the witnesses due to the discrepancies partly existing in the statements made at different moments. In particular, this concerned the question as to whether or not the automatic pilot was really switched on by the helmsman, which so far had been answered contradictorily, and more detailed explanation on the mode of functioning of the automatic pilot installed on board.

Then the witnesses made clear that each of the statements on the cause of the accidents given at different moments had been presumptions. Therefore, two different approaches to an explanation were possible:

---

<sup>14</sup> Within the scope of the investigation of the accident, the BSU sends, among others, standardized questionnaires in order to obtain basic information on the vessels involved and the course of the accident.

### 1<sup>st</sup> Possibility

When the automatic pilot is activated for the first time, the device, with the boat sailing, requires an adjustment phase until the course straight ahead is taken over. During sailing, the pressure of the sails causes a list, so that despite the fact that the vessel is sailing straight ahead the rudder blade is not positioned 100 % ahead due to this pressure being applied. In the first time, this luff pressure onto the rudder blade steers the automatic pilot off the course, so that the boat luffs up or deviates from the course. In the second phase, the automat is looking for the compass course entered, which may result in an oscillating motion.

### 2<sup>nd</sup> Possibility

Indeed it was intended to activate the automatic pilot, but the (red) automatic key (cf. fig. 5) has not been operated to a sufficient extent. A louder receipt signal for the confirmation of the (real!) switching to automatic control might possibly have prevented this maloperation.

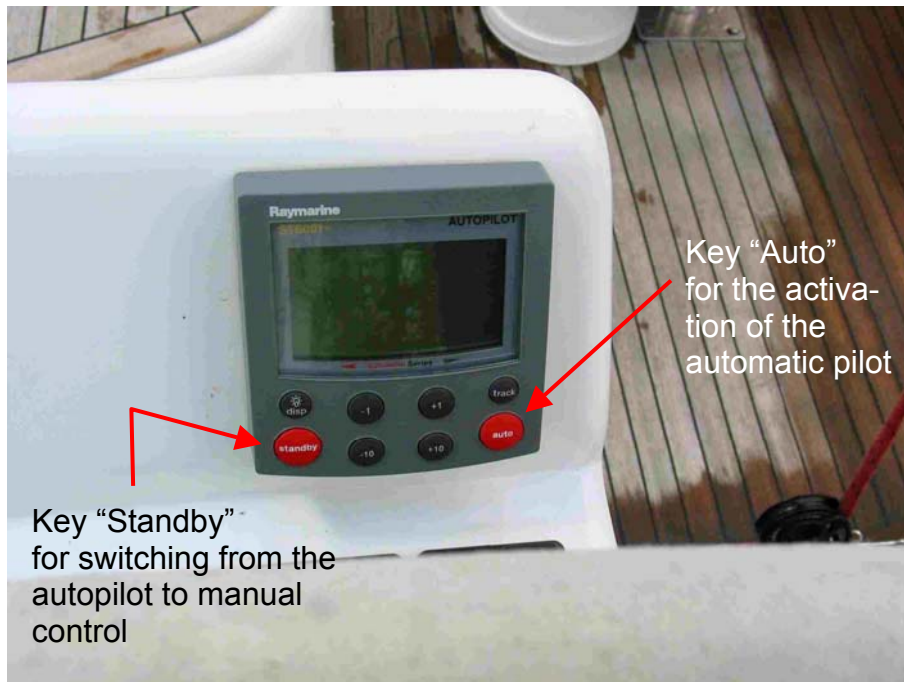


Figure 5: Control unit of the automatic pilot<sup>15</sup>

According to the assessment by the BSU both of the explanation attempts are plausible, can be comprehended with respect to the technical features, and their content does fit within the scope of the statements that both the witnesses made on the occasion of the mentioned earlier interrogations.

<sup>15</sup> Integrated into the port side control stand; cf. fig 3.

### 5.3 Summary and conclusions

The *cause* why the yacht left her course could not be detected any more. However, the course of events presented above as 2<sup>nd</sup> possibility due to which the helmsman only believed that he had activated the automatic pilot seems to be a more plausible cause for the sudden deviation of SINFONIE SYLT and the accidental gybe resulting from that.<sup>16</sup>

A common feature of both the mentioned events that might have caused the accident is that the patent jibe immediately preceding the helmsman's fall is the result of a deviation of the yacht to the lee side due to problems in connection with the (believed) use of the automatic pilot.

But apart from this, in the opinion of the BSU it is also imaginable that the patent jibe that without any doubt took place might possibly not have been caused by a deviation from the downwind course caused by the rudder, but by a sudden change of the wind. In particular with the prevailing wind from the stern SINFONIE SYLT was sailing on it does not seem far-fetched that the sudden turn of the main boom was caused by a change of the wind only.

However, for the conclusions that have to be drawn from this tragic accident, the question of the *external cause* for the accidental gybe is only of marginal importance, as a turn of the sails, considered alone, is a situation which yachtsmen must reckon with at any time when exercising their sport.

However, what has to be considered as very probable in the present case, as far as this can be attributed to the fact that the helmsman only believed that he activated the automatic pilot, the risk of such a maloperation could clearly be reduced by technical means, like, for instance, a loud and clear receipt signal and/or visual indicators.<sup>17</sup>

But even a due activation of the automatic pilot, just on vessels running under sails, does not guarantee that a deviation from the course or a similar dangerous situation can be avoided in any case. The technical possibilities of the relevant systems are limited by the very fact that the influence exercised by the automatic pilot on an involuntary deviation from the course, in particular due to sudden changes of the wind, will not become effective but as a time-lag reaction to the corresponding preceding action.

Thus, apart from the check whether the automatic pilot has really been switched on, it is also important to supervise, for a sufficient period of time, the behaviour of the rudder of the yacht with the automatic pilot activated. Only when the unproblematic functioning of the automatic pilot has been supervised for some minutes, it is allowed to leave the control stand. But even then the steering characteristics of the rudder of the yacht requires a permanent supervision. In addition, for each use of the automatic pilot it must carefully be considered whether the respective wind and seaway conditions really allow to the pass the rudder of the yacht to the automatic pilot.

---

<sup>16</sup> The skipper draws the same conclusion in his own description of the accident scenario in question.

<sup>17</sup> Note: On the autopilot installed on board the SINFONIE SYLT, activations of keys are confirmed acoustically, however, only in a loudness generally usual for technical devices, i.e. relatively low.

The most effective measure for the prevention of accidental gybes is the use of a so-called lazy guy.<sup>18</sup> Critics of the lazy guy do argue that by its use the manoeuvrability of the boat is adversely affected to a considerable extent. However, such problems only occur if the lazy guy is fixed on the bow of the yacht. Whereas the return back into the cockpit of the lazy guy via a block fixed at the vessel's bow, at any time grants the possibility to loosen the "fixation" of the main boom very quickly there, in order to promptly remove the restrictions of the manoeuvrability of the boat resulting from the use of the lazy guy.

---

<sup>18</sup> Cf. Fn. 13 on page 8 of this report.



## 6 Safety recommendations

The Federal Bureau of Maritime Casualty Investigation issues the following safety recommendations:

The following safety recommendations shall not create a presumption of blame or liability, neither by form, number nor order.

1. **Skippers and crews of sailing yachts** are recommended, when switching on an automatic pilot to make sure that this device is really activated. Even after switching on the automatic pilot, the steering characteristics of the yacht should be observed for some minutes before leaving the steering stand. Besides, the use of an automatic pilot does not release the skipper and the crew from the obligation to continuously check the course-keeping behaviour of the yacht even in the following time. When using the automatic pilot, it must be taken into consideration that this device is conceived as an assistance for the skipper in situations that do not make special demands on the helmsman's capacities and skills. Instead, manual steering should be preferred if due to the wind the skipper is required to react as quickly and professionally as possible to extreme situations.
2. When staying on deck, all **crewmembers on yachts under sail** must always act cautiously and be aware of the great dangers caused by changing winds and a resulting sudden turn of the main boom. The stay in turning areas of booms and sheets has to be reduced to a minimum and is only allowed when taking utmost care.
3. **Skippers of sailing yachts** are invited, in particular when sailing with winds from the stern, to seriously consider the use of a so-called lazy guy, in order to prevent a sudden turn of the main sail due to changes of the direction of the wind (so-called patent jibe).
4. **The sailing schools and sailing associations** which offer training are recommended to explain the use of automatic pilots within the scope of their training and in doing so inform about the technical limits of each system and the existing potential of dangers. Likewise, the purpose as well as the correct use of a lazy guy should be taught in an exhaustive manner.
5. **The manufacturers of nautical and technical equipment for operation on board** are recommended to check the control units of the devices for the functionality of the control units for each operation mode. In particular for the use of LCD displays, illuminated switches and acoustic signals it must be taken into consideration that their perception when used in unprotected areas on deck can be greatly limited by external influences (for instance wind sounds, sunbeams).

## 7 Sources

- Records and reports on the operations of the water police and of the Federal Police
- Official expert opinion of Germany's National Meteorological Service on the weather and seaway conditions in the Flensburger Förde on May 5<sup>th</sup>, 2005, between 09.00 a.m. and 10.00 a.m. CEST
- Electronic chart (ENC) by the Federal Maritime and Hydrographic Agency (BSH); Cell DE 416010 (last revised: August 26<sup>th</sup>, 2005)
- Interrogation of the skippers and the joint-sailor by BSU
- Inspection on board performed by BSU
- ST6001+ automatic pilot Control Unit Owner's Handbook, Raymarine (instruction manual for the automatic pilot)
- Homepage by Vento Yachthandel GmbH (exclusive importer for Grand Soleil yachts for Germany and Denmark) [www.grand-soleil.de](http://www.grand-soleil.de)