



**Bundesstelle für Seeunfalluntersuchung**  
Federal Bureau of Maritime Casualty Investigation  
Federal Higher Authority subordinated to the Ministry of Transport  
and Digital Infrastructure

# 2013 Annual Report



© Hamburger Abendblatt

Fire on the con-ro ship ATLANTIC CARTIER on 1 May 2013  
in the port of Hamburg

**July 2014**

## Table of contents

|  |    |
|--|----|
| Foreword .....   | 3  |
| Structure of the BSU .....   | 4  |
| Main investigations .....  | 6  |
| Safety recommendations .....   | 10 |
| Publications .....   | 11 |
| International .....  | 12 |
| Inside the BSU .....   | 12 |
| Division 1 (investigation teams) .....   | 13 |
| Events .....   | 18 |
| <b>Statistics</b> .....  | 20 |
| Global reporting and marine casualties reported in 2013 .....  | 21 |
| Marine casualties in total.....  | 23 |
| Marine casualties in German waters .....   | 24 |
| Marine casualties involving German ships .....   | 25 |
| Breakdown of marine casualties by the type of accident and ship in 2013 .....                                      | 27 |
| Breakdown of marine casualties by sea area.....  | 28 |
| Summary of closed and ongoing investigations.....  | 28 |
| Investigated marine casualties that were closed with an investigation report in 2013 .....                         | 29 |
| Interim investigation reports in 2013 .....  | 29 |
| Investigated marine casualties that were closed with an<br>internal investigation report in 2013 .....             | 30 |
| Marine casualties handed over to flag State in 2013.....   | 31 |
| Investigations ongoing at 31 December 2013 .....   | 32 |
| Investigations ongoing at 31 December 2013, published between<br>January and end of May 2014 .....                 | 33 |
| Investigations ongoing at 31 December 2013, interim reports<br>published between January and end of May 2014 ..... | 33 |
| Investigation of marine casualties involving recreational craft by the BSU .....                                   | 33 |
| Fatalities involving recreational craft from 2003 to 2013.....   | 35 |

## Foreword

The work of the Federal Bureau of Maritime Casualty Investigation (BSU) is based solely on unpleasant events, notably, maritime casualties with severe or moderate consequences. Inasmuch, it is at least positive to note that not a single fatal accident occurred in German merchant shipping or on ships operating in German territorial waters in 2013. As the first few months of 2014 have shown, this is no indication of a lasting trend, however.

After 2012 was a year of change in terms of staff, as well as with regard to new legislation and procedures, 2013 may be referred to as a year of consolidation. The post of chief administrator was refilled in May, thus returning the BSU to full strength.

With regard to the number and severity of marine casualties, 2013 may be rated a 'good' year. Only one case gave rise to fatalities, notably during the rescue operation after Training Yacht MERI TUULI capsized off Portugal's Atlantic coast near the port of Figueira da Foz on 11 April when a crew member of the MERI TUULI and a Portuguese police officer lost their lives.

Overall, the accident reports reveal a downward trend. This is especially true in respect of less serious marine casualties, i.e. accidents merely involving material damage with no serious consequences or only minor injuries. The number of serious accidents opposed this trend and doubled, however. See the statistics section further below for details.

Next to the hard facts and without making any public disclosures, I would like to give you an understanding of the work carried out by the staff of the BSU in this year's annual report. Therefore, this report comments on the work of the BSU's Division 2 at length in places when it discusses technical preparation of the fundamentals and data, without which the subsequent investigation reports would often not be possible.

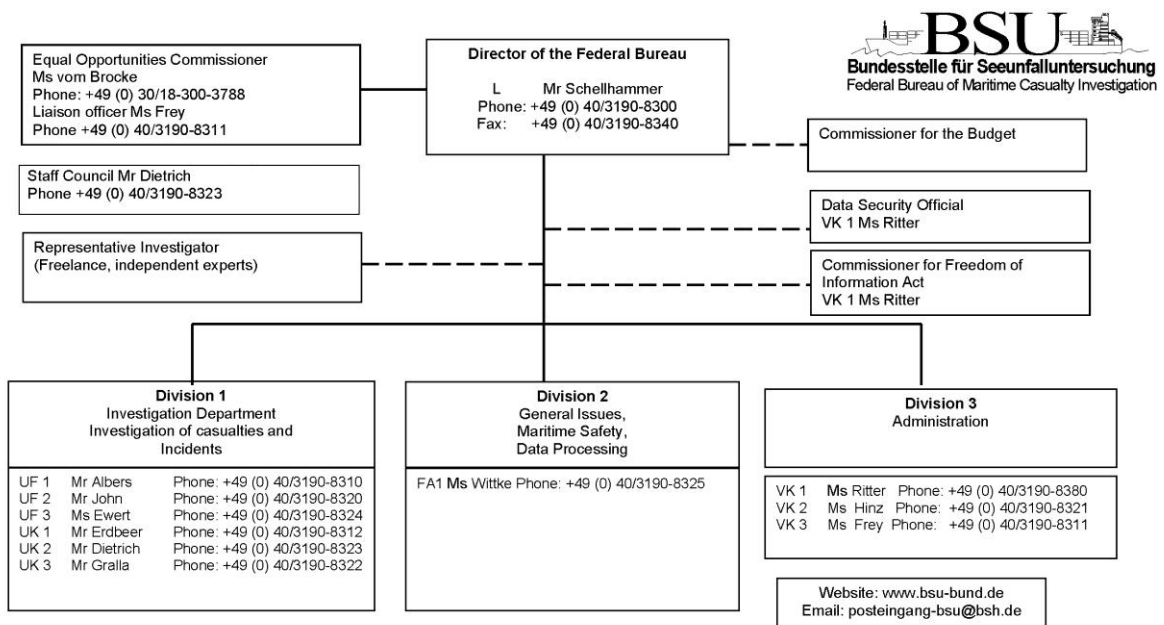
Volker Schellhammer

## Structure of the BSU

The BSU is a federal higher authority based in Hamburg, which is currently staffed by 11 people. It has a single-level administrative structure and is under the direct supervision of Department WS 22 of the Federal Ministry of Transport and Digital Infrastructure.

Necessary decisions are made quickly and independently by the BSU's director. In particular, he is not subject to instructions vis-à-vis the decision as to whether an investigation is initiated, or not. He represents the BSU outwardly at national, European, and international level. Moreover, he is responsible for strategic planning and control. He is also responsible for press, media, and general PR work.

### BSU organisational chart



UF = Lead Investigator  
 UK = Investigator

FA = Basic Issues  
 VK = Administrator

Outside office hours

Mobile II – On-call service: +49 (0) 170-5865675

Information as of 05/2014

## **Basis for the work**

The German Maritime Safety Investigation Law (SUG) forms the basis for the work of the BSU.

It defines the competence of the BSU for the investigation of marine casualties

- on or involving seagoing ships of all flags
  - within German territory;
  - within the German Exclusive Economic Zone (EEZ);
  - during traffic movements on German navigable maritime waterways, as well as to, from, and in ports connected to them;
- on or involving seagoing ships flying the flag of Germany anywhere in the world, and
- in other countries if the Federal Republic of Germany has substantial interest in the investigation thereof.

Next to the actual investigative work, the BSU plays a role in improving maritime safety with a focus on preventing marine casualties by

- keeping and analysing statistics;
- publishing information on marine casualties;
- forwarding marine casualty data to the European EMCIP (European Marine Casualty Information Platform) database, as well as to the IMO database,
- GISIS (Global Integrated Shipping Information System), and
- participating in seminars.

Transposition of 'Directive 2009/18/EC of the European Parliament and of the Council establishing the fundamental principles governing the investigation of accidents in the maritime transport sector' into German law made an amendment to the SUG necessary. On the one hand, the readability of the SUG has been improved by this amendment, which came into force on 1 December 2011, in that hitherto cross-references to sections in the Aviation Accident Investigation Law (FluUG) have been dispensed with. On the other hand, necessary adjustments resulting from the EU Directive have been made. In particular, the deadline for submitting comments on draft reports of the BSU has been shortened to 30 days from 60 days previously. The addressees of a safety recommendation issued by the BSU are now obliged to report any action planned or already taken to implement the safety recommendation to the BSU. Due to the basic obligation to investigate every very serious marine casualty on or involving seagoing ships, and to conduct at least a preliminary investigation for any serious marine casualty, the BSU may no longer decide on the prioritisation of the investigation of accidents to the extent provided in the old law.

The rule under which the BSU must now publish the final investigation report within 12 months of a marine casualty occurring is also of particular importance. In complex cases such as that of the MSC FLAMINIA, this is virtually impossible even if a large percentage of the resources available for this purpose are pooled. Moreover, this has implications insofar as other accidents may need to be postponed. An interim investigation report must be prepared if the one-year limit cannot be adhered to. Essentially, this contains the facts and current level of progress.

The BSU is not or no longer responsible for marine casualties involving only

1. ships of war, troop ships and other ships owned or operated by Germany's federal or state governments and used only on government non-commercial service;
2. ships not propelled by mechanical means, wooden ships of primitive build, pleasure yachts and pleasure craft not engaged in trade, unless they have prescribed manning and carry more than 12 passengers;
3. fishing vessels with a length of less than 15 metres, and
4. fixed offshore drilling units.

In practice, this is of particular significance insofar as privately used recreational craft are now no longer subject to the SUG. Therefore, the BSU has no legal mandate to investigate accidents involving recreational craft. It is only possible for the BSU to investigate accidents involving recreational craft in (rare) exceptions and even then only when an accident occurs in waters within the jurisdiction of Germany or in the German Exclusive Economic Zone.

### **Main investigations**

Nine investigations were closed with an investigation report in 2013. This appears rather low to begin with. However, it is put into perspective by the fact that two extremely labour-intensive cases were dealt with in the form of the now completed investigation of the MSC FLAMINIA accident and the work on investigating the accident involving the cruise ship COSTA CONCORDIA.

As can be derived from the investigations ongoing at 31 December 2013 (see table on page 32), almost all the old cases, i.e. cases dealt with under the old legislation, are now closed.

Compared to 2012, all the accidents involving merchant shipping passed more or less with no serious consequences in 2013, i.e. most importantly without fatalities. Causing two fatalities, the accident with the most severe consequences involved a commercial recreational craft (capsize of Training Yacht MERI TUULI), while the accident that attracted the most public attention was undoubtedly the fire on the ATLANTIC CARTIER in the port of Hamburg, especially because the German Protestant Church Congress was opened nearby at the same time. Both cases are still being worked on at this annual report's time of publication; however, they are expected to be completed soon.

Some facts on the most important cases of 2013 are given below.

#### Very serious marine casualty involving the charter sailing yacht MERI TUULI off the coast of Portugal

At 0830 on 10 April 2013, the German training craft, Sailing Yacht MERI TUULI, sailed out of Peniche in Portugal with five crew members. Her destination was Figueira da Foz. The distance and speed calculated for the voyage were 55 nm and 8 kts respectively, meaning the time of arrival would be at about 1630 in the afternoon in high tide. The MERI TUULI did not reach her port of destination. After the sails were struck, she abruptly heeled to port south-west of the northern jetty of the port of Figueira da Foz on the 10 m line because of groundswell at 1641. The mast broke and four crew members fell overboard in the process. A police officer and a crew member died in a semi-rigid inflatable dinghy that capsized during the ensuing rescue operation by Portuguese emergency services. In addition, four crew members and two police officers were injured and had to seek medical attention.



Images above and below: the MERI TUULI after she capsized and drifted onto the beach





The beach at Figueira da Foz after the accident involving the capsized boats<sup>1</sup>

Serious marine casualty involving the con-ro cargo ship ATLANTIC CARTIER

On 1 May 2013, a fire occurred in an enclosed vehicle deck on the Swedish flagged con-ro cargo ship ATLANTIC CARTIER in the port of Hamburg. The brand new cars stowed there were destroyed in the process. The fire did not result in any injuries. The ship's command called for assistance from the Hamburg fire brigade after an unsuccessful attempt to fight the fire from on board the ship. This was successful by deploying extensive units to prevent the spread of fire to other parts of the ship and cargo. The fire was extinguished after a mission lasting some nine hours.

---

<sup>1</sup> Photos: GPIAM (Portuguese marine casualty investigation authority)





Extinguishing work on the burning ATLANTIC CARTIER<sup>2</sup>



Brand new cars damaged after the fire on the ATLANTIC CARTIER

---

<sup>2</sup> Photos: Dipl.-Ing. Lars Tober

### Serious marine casualty involving the cargo ship ROSEBURG

The Antigua & Barbuda flagged cargo ship ROSEBURG, 1,999 GT (IMO number 8817370), threatened to capsize in Kiel Firth off Friedrichsort on the evening of 5 November 2013. The ship threatened to capsize after she developed a heavy starboard list. This caused part of the cargo (3,000 cubic metres of sawn timber) to go overboard. A crew member of the ROSEBURG also fell into the Firth but only suffered hypothermia. Shipping was severely obstructed because of the accident.



Shifted cargo on the ROSEBURG<sup>3</sup>

### **Safety recommendations**

In line with the IMO Code for the Investigation of Marine Casualties, the work of marine casualty investigation authorities is defined as 'safety investigation' in EU Directive 2009/18 and correspondingly in the SUG. This emphasises the fact that marine casualty investigations are not intended to clarify issues of fault or liability, but are solely for the purpose of improving maritime safety. That is also the reason why safety recommendations are issued. A safety recommendation points to an identified gap in safety and aims to help the addressee avoid or at least reduce the impact of future situations similar to those that led to an accident in the case investigated.

Therefore, a safety investigation by the BSU focuses not only on the events on board, but also looks at organisation ashore. Consequently, in addition to the crew, addressees of safety recommendations could include pilots, shipowners, shipyards, manufacturers of equipment, the Maritime Administration, the legislature, or others.

---

<sup>3</sup> Photo: ADOMS IID, Bremerhaven

The BSU may issue an early alert in the form of preliminary safety recommendations before the publication of an investigation report. This is to prevent accidents if it has been found that a safety risk exists, for which notification must be provided immediately, i.e. before publication of the final report.

One or more safety recommendation(s) are not issued for every investigation report. This can have various reasons, e.g. that no specific deficits were evident. Recommendations that are too general in nature should be avoided. In 2013, the BSU issued safety recommendations in three final reports.

All the recommendations published by the BSU are available for reading sorted by year of publication on the BSU website ([www.bsu-bund.de](http://www.bsu-bund.de)) under 'Publications'.

## **Publications**

All the reports and safety recommendations published by the BSU are available sorted by year of publication on the BSU website ([www.bsu-bund.de](http://www.bsu-bund.de)) under 'Publications'.

The BSU's discretion to investigate or not investigate marine casualties is more restricted than hitherto by the EU Directive on marine casualty investigation and its transposition into national law. For example, any very serious marine casualty (VSMC) reported within the BSU's area of responsibility must be investigated and any serious marine casualty (SMC) at least evaluated in the course of a preliminary investigation. Deviations from this principle must be justified to the European Maritime Safety Agency (EMSA), which the European Commission has appointed for that purpose. When deciding whether to investigate a SMC by means of only a preliminary investigation, consideration must be given, in particular, to the severity of the accident, the type of ships involved and their cargo, and the question of whether new knowledge for preventing future marine casualties may be gained from a full safety investigation. Cases discontinued after a preliminary investigation are usually concluded with an internal report. Main investigations that do not give rise to important conclusions with respect to preventing future accidents, for example, because matters pertaining to safety have been discussed previously in a similar accident, are usually concluded with a summary investigation report. This does not contain safety recommendations but may refer to previous reports and recommendations of the BSU or foreign marine casualty investigation authorities.

The BSU's investigation reports follow a certain pattern, which is also provided by Directive 2009/18/EC. In addition to the required indication of the purpose of the safety investigation, notably, the prevention of future accidents and malfunctions, but not the determination of blame, liability, or claims, each report contains

- a summary of the accident;
- factual information, in particular, ship and voyage particulars;
- a detailed account of the course of the accident and investigation;
- an analysis of the investigation;
- ensuing conclusions, and
- as a rule, safety recommendations.

The publication of so-called interim investigation reports is also required if it is not possible to prepare a final report within one year of the date of an accident.

## **International**

The need for international collaboration in the field of marine casualty investigation is emphasised more and more – not least by the IMO Code and EU Directive 2009/18. During any investigation, the staff of the BSU work together with other European and international marine casualty investigation authorities if the interests of different countries are affected. Here, the BSU maintains close contact with foreign marine casualty investigation authorities. In this regard, it works at international level with the Marine Accident Investigators' International Forum (MAIIF), as well as with its regional forum, the European Marine Accident Investigators' International Forum (EMAIF), and at European level with EMSA, which has its headquarters in Lisbon.

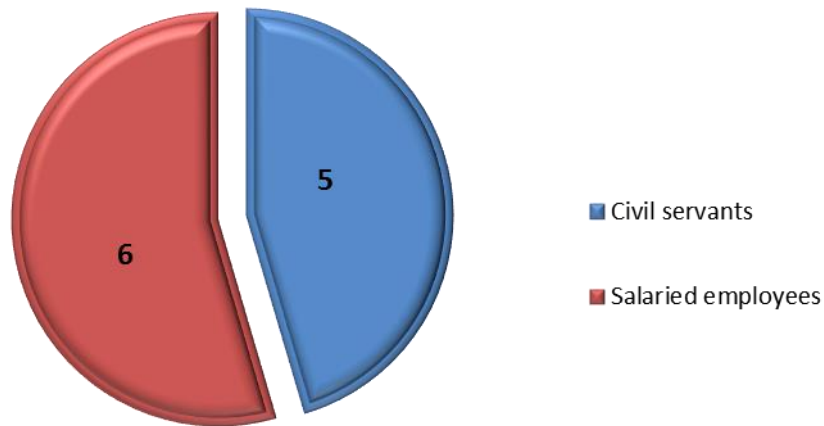
Since Directive 2009/18/EC came into force, collaboration in the conduct of safety investigations has been mandatory within the European Union if the interests of several Member States are affected. Furthermore, a framework for permanent collaboration (Permanent Co-operation Framework – PCF) has been created, within which the investigative bodies of the Member States are required to liaise on the modalities for collaboration. Apart from the actual investigative work, one of the tasks in relation to collaboration is to ensure that data are entered and maintained in the European database for marine casualties (European Maritime Casualty Information Platform – EMCIP). Information about distressed ships is recorded and stored in this, thus enabling EMSA to provide the European Commission with fundamentals for making decisions concerning the maintenance and improvement of traffic safety in maritime navigation. To facilitate the accomplishment of this objective, the master data on the ships involved and course of the accident are recorded in EMCIP for each marine casualty reported. For marine casualties processed in a preliminary or main investigation, additional data must be entered by the investigator responsible. Since the structure of the EMCIP database is very complex, this represents significant additional effort.

Globally, marine casualty data are also recorded in a database at the IMO (Global Integrated Shipping Information System - GISIS).

## **Inside the BSU**

The SUG forms the legal foundation for official marine casualty investigations and thus for the activities of the BSU. The BSU conducts its safety investigations independently; however, it must satisfy the legal requirements derived from EU Directive 2009/18/EC.

A core workforce of 11 staff members (five civil servants and six salaried employees) is now available again to complete the tasks associated with marine casualty investigation. In spite of this low staffing level, the occupational fields in the BSU are varied. For example, job profiles include that of the navigator, naval architect, lawyer, mechanical engineer, as well as commercial and typical administrative disciplines. In addition to being highly qualified, work at the BSU requires great enthusiasm, flexibility and professionalism.



As can be seen from the organisational chart (page 4), the BSU is separated into three divisions.

### **Division 1 (investigation teams)**

The actual core work of the BSU, notably the investigation of marine casualties, is performed in Division 1. At full strength, six investigators are engaged in processing accidents and preparing accident reports.

In each case, an investigator is available 24 hours a day, seven days a week as part of the BSU's on-call service on the phone number below.

**EMERGENCY PHONE NUMBER: +49 (0) 170 – 58 65 67 5**

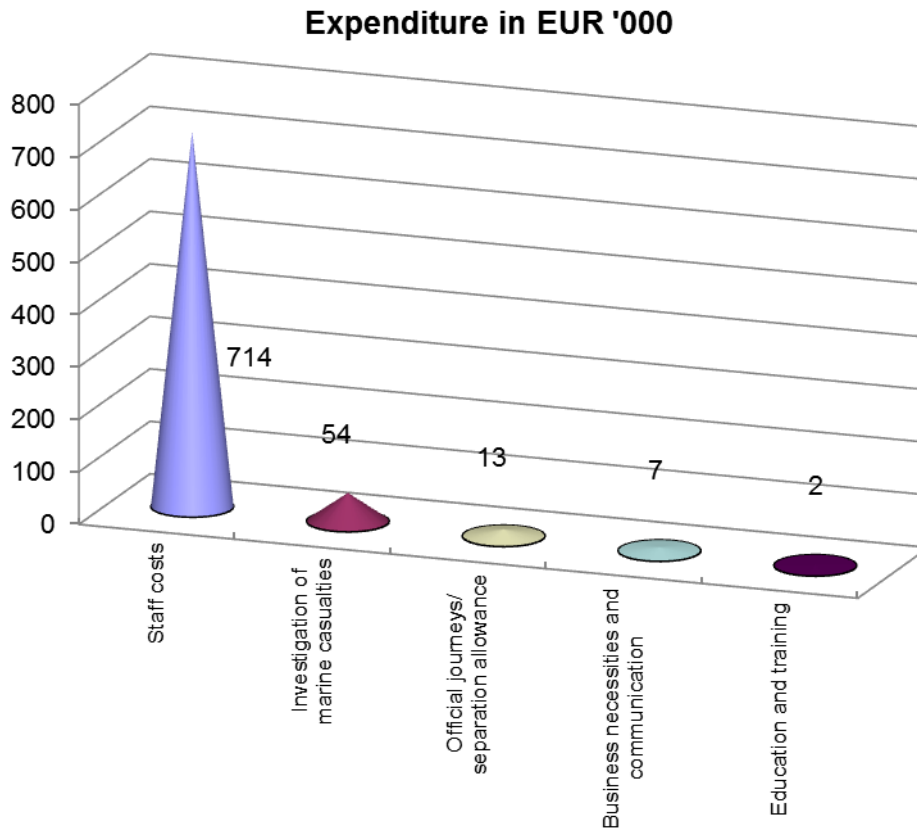
The investigators are the people who initiate or coordinate the necessary first measures as quickly as possible and who arrive at the scene of an accident should the need arise.

Division 2 provides the necessary support for the work of Division 1 in technical matters, such as securing and analysing technical recordings made on board ships and ashore. This is discussed in more detail below.

### **Division 3 (administration)**

Division 3 – Administration – has been manned by three staff members again since May 2013. One of those staff members works on a part-time basis. This division deals with most of the administrative tasks. In particular, all the tasks relating to registering initial notifications after accidents and incidents, the publication of reports, the maintenance of international databases and, on occasion, preparing translations are taken care of here. However, Division 3 also deals with tasks relating to staffing, budgeting, procurement and organisation, as well as data protection and occupational safety.

The 2013 financial year closed with total expenditure of EUR 790,000 (excluding expenditure incurred for IT because this is not managed by the BSU directly). In particular, the cost of marine casualty investigations and staffing have risen as compared to the previous year.



BSU expenditure in 2013 (without IT expenditure)

**Division 2 (technology and IT)**

This year, we would like to pay increased attention to Division 2, which is mainly responsible for providing technical support to the six marine casualty investigators.

With only one staff member, Division 2 is the smallest of the three divisions in the BSU.

The tasks of Division 2 include overall management of the BSU's website (updating, organisation and maintenance), participation in special interest groups (Marine Casualty Database and Performance Standards for Voyage Data Recorder), creation of technical papers or concepts (procurement of new software and IT solutions), data backups, and analysis of accident data.

By far the largest part of its work is to secure, present and analyse marine casualty data in the course of the maritime safety work. Marine casualty data can include video, photographic, and audio recordings, AIS data, as well as data from a voyage data recorder (VDR). Most of the data on marine casualties are delivered by the VDR (also known as the black box). A VDR is a shipboard recorder that collects data from every sensor on a ship, so that video, audio and engine data are available for the analysis of a marine casualty.

This type of data backup was born out of aviation accident investigations. A flight recorder is a recording device carried on board aircraft. It stores relevant flight and aircraft parameters during a flight with a time axis and consists of flight data and voice recorders. It provides an additional opportunity to trace the main events and parameters after an accident, thus helping to understand the course of the accident.

Chapter V Regulation 20 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS 74), defines which ships must carry a VDR:

- 1 *To assist in casualty investigations, ships, when engaged on international voyages, subject to the provisions of regulation 1.4<sup>4</sup>, shall be fitted with a voyage data recorder (VDR) as follows:*
- *.1 passenger ships constructed on or after 1 July 2002;*
  - *.2 ro-ro passenger ships constructed before 1 July 2002, not later than the first survey on or after 1 July 2002;*
  - *.3 passenger ships, other than ro-ro passenger ships, constructed before 1 July 2002, not later than 1 January 2004, and*
  - *.4 ships, other than passenger ships, of 3,000 gross tonnage and upwards constructed on or after 1 July 2002.*
- 2 *Administrations may exempt ships, other than ro-ro passenger ships, constructed before 1 July 2002 from being fitted with a VDR where it can be demonstrated that interfacing a VDR with the existing equipment on the ship is unreasonable and impracticable.*

Article 5 SUG provides the legal foundation for backing up VDR data (Organisational measures for investigations):

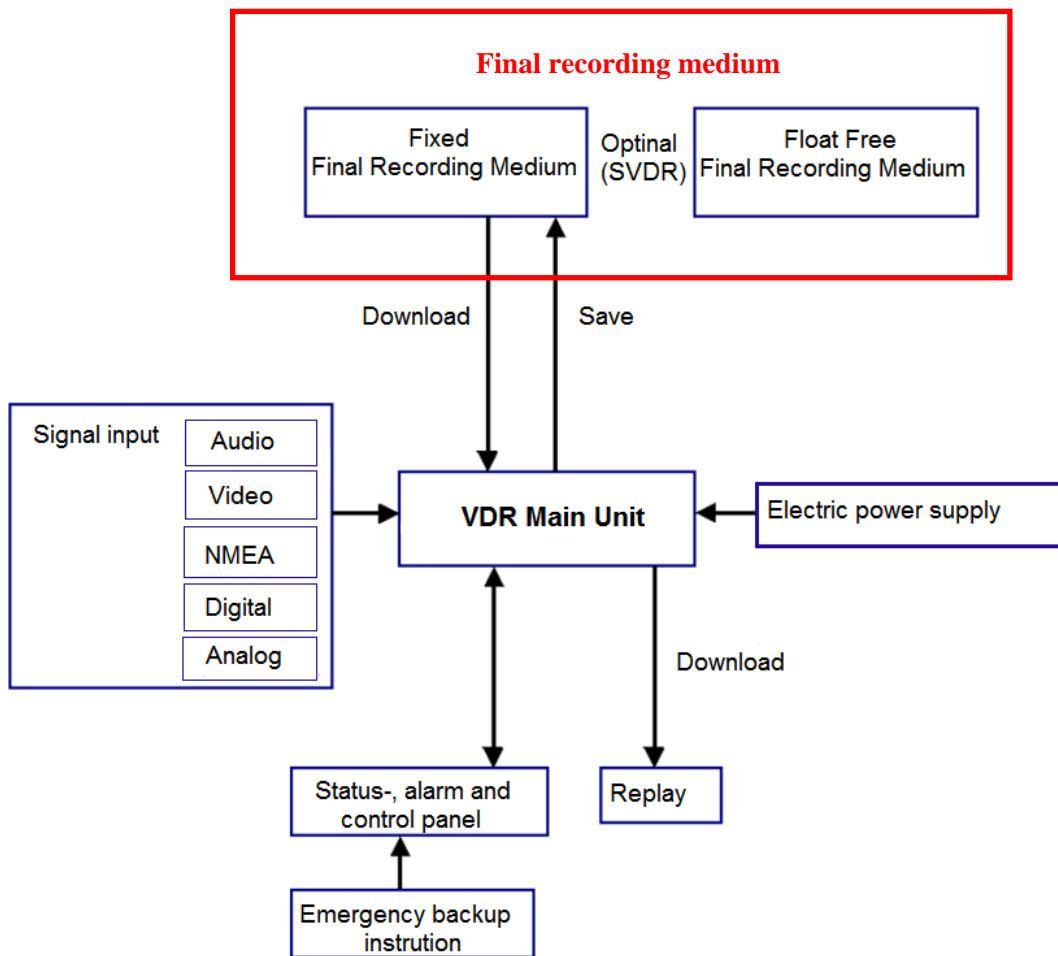
*The owner of a ship bearing the flag of Germany is responsible for ensuring that*

1. *in its company, marine casualties within the meaning of Article 4 involving this ship are reported to any person within the company mandated with the safety of shipboard operations;*
2. *the respective ship's command is given clear instructions to*
  - a) *backup any data from nautical charts, deck log books, electronic and magnetic recordings and video tapes, including data from VDRs and other electronic devices over the period preceding, during and after an accident, as well as protect such devices against interference;*
  - b) *prevent the overwriting or other alteration of the data referred to in point a), and*
  - c) *ensure that all evidence is collected and preserved expeditiously for the purposes of the safety investigations.*

A VDR consists of several components, including the main unit with corresponding signal inputs (audio, video, NMEA, digital and analogue), the (emergency) power supply, a status, alarm and control panel for activating an emergency backup, and the final recording medium. Optionally, a shipboard VDR can also be equipped with its own playback system.

---

<sup>4</sup> Applies only to ships of less than 150 GT and fishing vessels



A VDR stores the following data at minimum:

- audio data (conversations on the bridge and wings via integrated microphones and recorded radio traffic);
- video data (images of at least one radar scanned at 15-second intervals);
- date, time (based on UTC);
- ship's position;
- speed through water or over ground;
- compass heading;
- depth below the keel;
- wind speed and direction of anemometer if the ship is equipped accordingly;
- main alarms, including the status of all the mandatory alarms on the bridge;
- rudder (order and response);
- engine status and propeller control (order and response);
- status of openings in the hull, and
- status of watertight and fire-screen doors.

There are currently more than 20 different VDR manufacturers around the world. Each manufacturer often offers different types and makes of VDR.



Next to the VDRs on new vessels built in or after July 2002, simplified voyage data recorders (S-VDRs) were installed on older ships. The main difference between these devices can be found in the requirements for the final recording medium and scope of data to be stored.

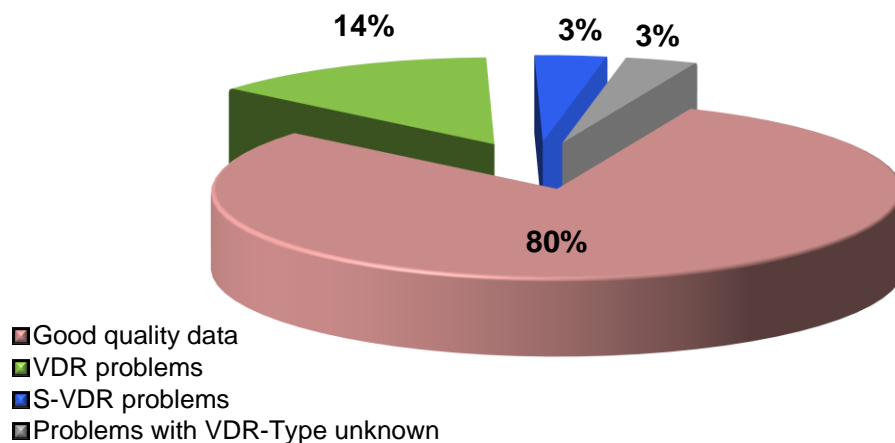
Due to the reduced scope of the data to be stored and less stringent requirements for the final recording medium, S-VDRs cost less to buy, are easier to install, and have a simpler design.

An S-VDR only needs to store the following data:

- audio data (conversations on the bridge and wings via integrated microphones and recorded radio traffic);
- scanned radar images (15-second intervals) or AIS recordings;
- date, time (based on UTC);
- ship's position;
- speed through water or over ground, and
- compass heading.

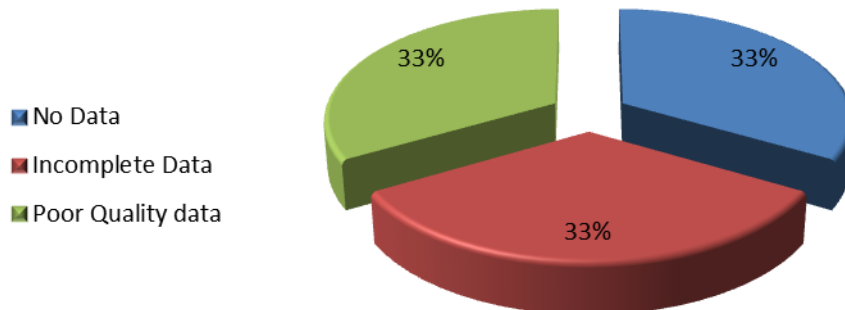
That is the theory. However, the practice reveals a variety of problems. For example, an attempt was made to analyse data from 61 VDRs in the years 2010 to 2013. While there were no problems in 49 cases, the analysis was problematic to impossible in 12 cases.

The following graphs show the deficiencies in percentage terms.



This figure shows that good data quality existed in 80% of the cases. In 14% of the cases there were problems with 'standard' VDRs and the remaining 6% concerned S-VDRs or VDRs whose manufacturer was not known to the BSU.

Of the 12 faults observed, four faults resulted in no data being available, four other faults to incomplete data, and another four faults to poor data quality.



Possible causes of the total absence of VDR/S-VDR data could be VDR system errors, operator errors or faulty downloads. Incomplete data are present if the replay software is faulty or not synchronised for the VDR data, if ports/interface within the VDR are faulty or impaired or if the data are simply faulty. Poor VDR data quality means the quality of audio and video recordings is inadequate.

Due to the rapid technological progress of today, it is assumed that the error rate will reduce considerably in the years ahead.

## Events

Since the investigation of marine casualties is an international business by its very nature, ideas and experience are exchanged vigorously at international level.

Regular international events attended by staff members of the BSU include:

- the annual MAIIF conference, which is held at various locations around the world (Busan, South Korea, in 2013);
- the annual EMAIIF conference, which is held at various locations around Europe (Interlaken, Switzerland, in 2013);
- the annual PCF conference at EMSA in Lisbon, Portugal;
- the EMCIP User Group's annual conference at EMSA in Lisbon, Portugal, and
- the annual session of the Third Subcommittee of the IMO in London, UK.

In addition to the events that are held regularly, staff members of the BSU attended various other external events in 2013. These include the German Council on Jurisdiction in Traffic at Goslar, Germany, the Second Maritime Security Conference in Busan, Korea, the annual conference of the Federation of European Maritime Associations of Surveyors and Consultants (FEMAS) in Genoa, Italy, the 34th Duisburg Colloquium on Shipbuilding and Marine Technology of the University of Duisburg-Essen, as well as many other national and international events.

In most cases, BSU staff members did not just attend these events, they also gave various presentations. A total of 24 presentations were given in 2013, five at international level. Most of the national presentations were addressed to the key contacts of the BSU, namely the waterway police of the various German states, as well as the German Federal Police. Presentations were also given at events of the German Shipowners' Association, universities, as well as during events for the sport and recreational boating sector.

On the other hand, there is also the advanced training requirements of BSU's own staff members. BSU staff members attended 22 relevant seminars and other advanced training courses, including at EMSA in Lisbon and at the British Marine Accident Investigation Branch (MAIB) in Southampton.

## Statistics

This statistics section requires a number of explanatory notes.

The amended version of the SUG defines the term 'marine casualty' as

1. any event that has at least one of the following consequences:
  - the death or serious injury of a person caused by or in connection with the operation of a ship;
  - the disappearance of a person on board a ship caused by or in connection with the operation of a ship;
  - the loss, presumed loss or abandonment of a ship;
  - material damage to a ship;
  - the grounding or constructive total loss of a ship or the involvement of a ship in a collision;
  - material damage caused by or in connection with the operation of a ship;
  - environmental pollution resulting from damage to one or more ships caused by or in connection with the operation of one or more ships, and
2. any event caused by or in connection with the operation of a ship that poses a risk to a ship or a person or the consequences of which could cause serious damage to a ship, an offshore structure or the environment.

Depending on the consequences, the generic term 'marine casualty' is divided further into

### Very serious marine casualty (VSMC):

Fatality, constructive total loss of a ship or an accident with substantial environmental pollution

### Serious marine casualty (SMC):

Marine casualty not classified as a VSMC, but which involves, in particular,

- the failure of the main engine;
- substantial damage to the accommodation spaces;
- serious damage to the ship's structure;
- a leak in the underwater shell plating with which the ship becomes unseaworthy;
- pollution, regardless of the volume of pollutants released, and/or
- damage that necessitates towing or shore-based assistance.

### Less serious marine casualty (LSMC):

Any marine casualty not classified as a VSMC or SMC

In this respect, there is broad consensus between the international rules of the IMO Code, the provisions of European legislation in Directive 2009/18/EC, and the national SUG that this does not apply to the term 'incident'. The SUG provides the following definition:

"Any event caused by or in connection with the operation of a ship that poses a risk to a ship or a person or the consequences of which could cause serious damage to a ship, an offshore structure or the environment."

The definition of 'incident' in the international rules is similar, but the wording is not identical. However, it is problematic in that an 'incident' is not the same as a marine casualty according to international rules, while the SUG deems it a subcategory of a marine casualty.

In particular, the aforementioned definitions are of significance because they apply throughout Europe and form the basis for the entries in the European marine casualty database, EMCIP, and for the IMO database, GISIS. Therefore, the international systems are applied for the statistics presented here.

Accidents or incidents involving only recreational craft or small fishing vessels are not recorded in Europe. Since there is still a requirement to report such accidents, a national database is kept for this purpose.

Moreover, the law does not apply to inland waterway vessels, ships of war, troop ships and other ships owned or operated by Germany's federal or state governments and used only on government non-commercial service.

As a consequence of that, the BSU not only feeds the EMCIP and GISIS databases in accordance with international legislation, but also/additionally a (simplified) national database. Occasionally, this leads to friction and sometimes even inconsistencies in the statistics.

### Global reporting and marine casualties reported in 2013

The following table provides a summary and comparison of the events reported to the BSU in 2012 and 2013.

|                                | <b>2012</b> | <b>2013</b> |
|--------------------------------|-------------|-------------|
| VSMC                           | 3           | 2           |
| SMC                            | 8           | 16          |
| LSMC                           | 332         | 221         |
| Incidents (I)                  | -           | 44          |
| Other (marine) casualties (OC) | 54          | 92          |
| - of which recreational craft  | 42          | 73          |
| Non-marine casualty (NC)       | 65          | 42          |
|                                |             |             |
| <b>Total number of reports</b> | <b>462</b>  | <b>417</b>  |

This shows that the total number of reports has fallen by about 10% from 462 to 417. This trend was already indicated in the previous year.

After the introduction to the statistics, this table also requires an explanation. All incoming reports are recorded here.

This table only shows those VSMCs, SMCs, LSMCs, and Is according to international rules.

Incidents are reported separately for the first time this year. Last year, they were still reported as marine casualties in accordance with the national rules in the SUG. The problem with regard to categorising incidents is that ultimately nothing has happened. In turn, this means that the tendency to report such incidents will be rather low, which will probably lead to a relatively high number of unreported cases. A typical incident would be a blackout; for example, an engine failure and emergency anchoring manoeuvre that does not lead to damage to a ship, environmental pollution or bodily harm.

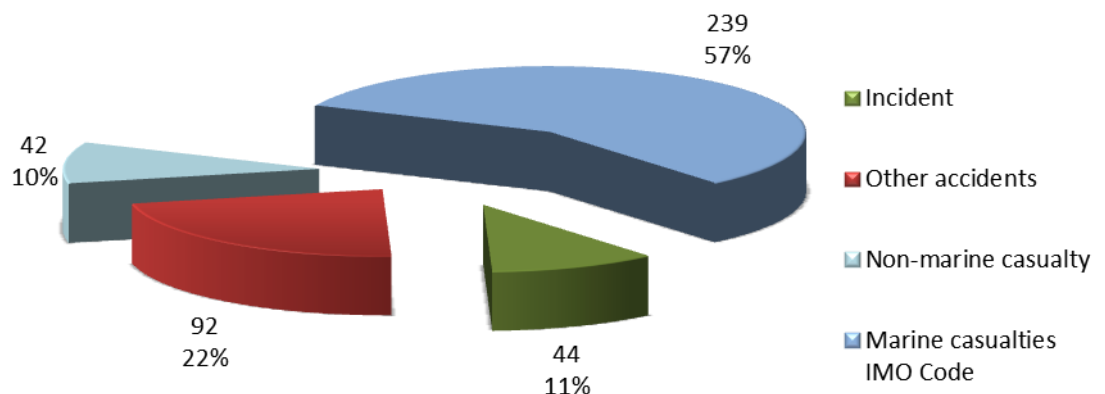
Although OCs are marine casualties, they do not fall under the scope of the international or national rules. These primarily concern accidents that only involve recreational craft used for non-commercial reasons, as well as navy or other government ships.

The NC category encompasses any other report that does not concern a marine casualty, e.g. accidents involving inland waterway vessels or passengers on ferries or cruise ships and crew members in general falling ill.

The content of the table shows a drop in LSMCs, while SCs have doubled. In respect of the two VSMCs, it is noted that neither were connected with merchant shipping.

In the case of OCs, it is evident that reports concerning recreational craft have increased again significantly.

## Global reporting 2013



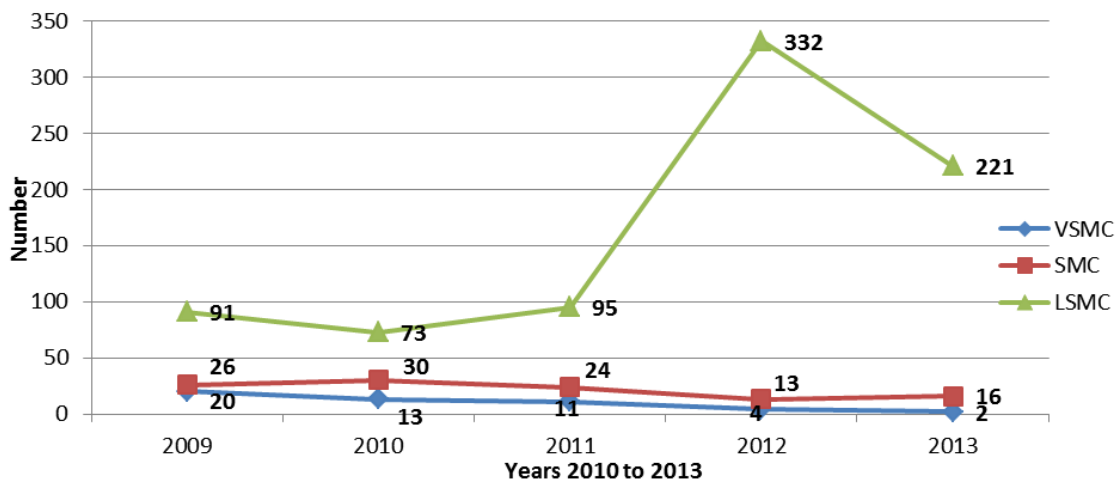
**Marine casualties in total**

Of the 417 cases reported, 239 are classified as marine casualties and include two very serious and 16 serious accidents.

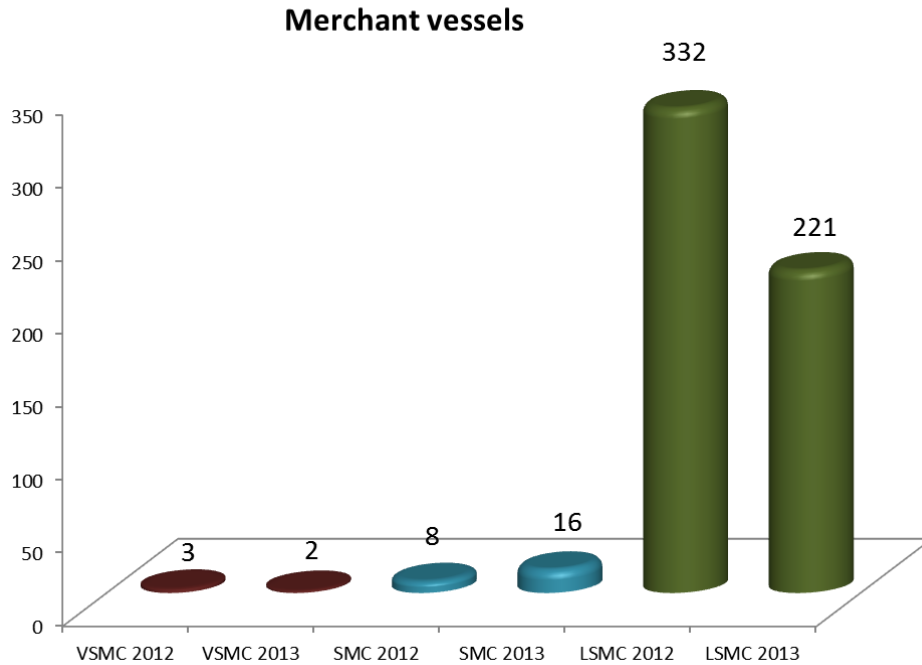
The following table provides a summary of the trend over the past five years, where it must be remembered that in 2012 the entire system was adapted to meet the rules that apply internationally. The stringent classification rules that now apply did not exist until then, meaning the discretion of the head of the agency was more important. The trend displayed, which shows that LSMCs have increased significantly while SMCs have dropped, is the result.

Looking at the foregoing objectively, the number of serious and very serious accidents seem to be declining, nevertheless.

**Marine casualties reported to the BSU**

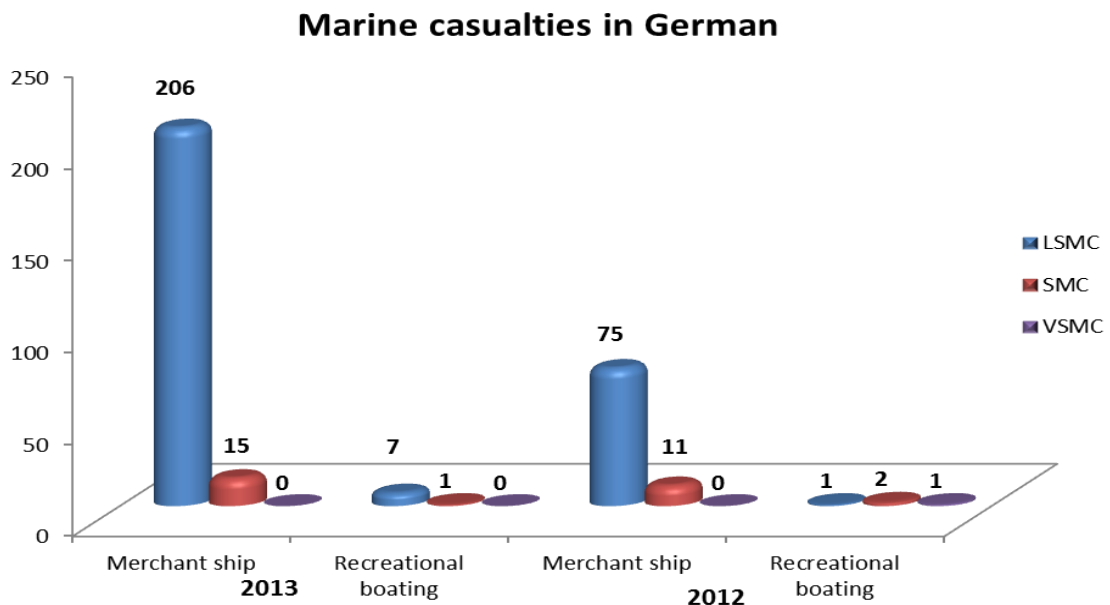


The following graph shows a direct comparison between 2012 and 2013



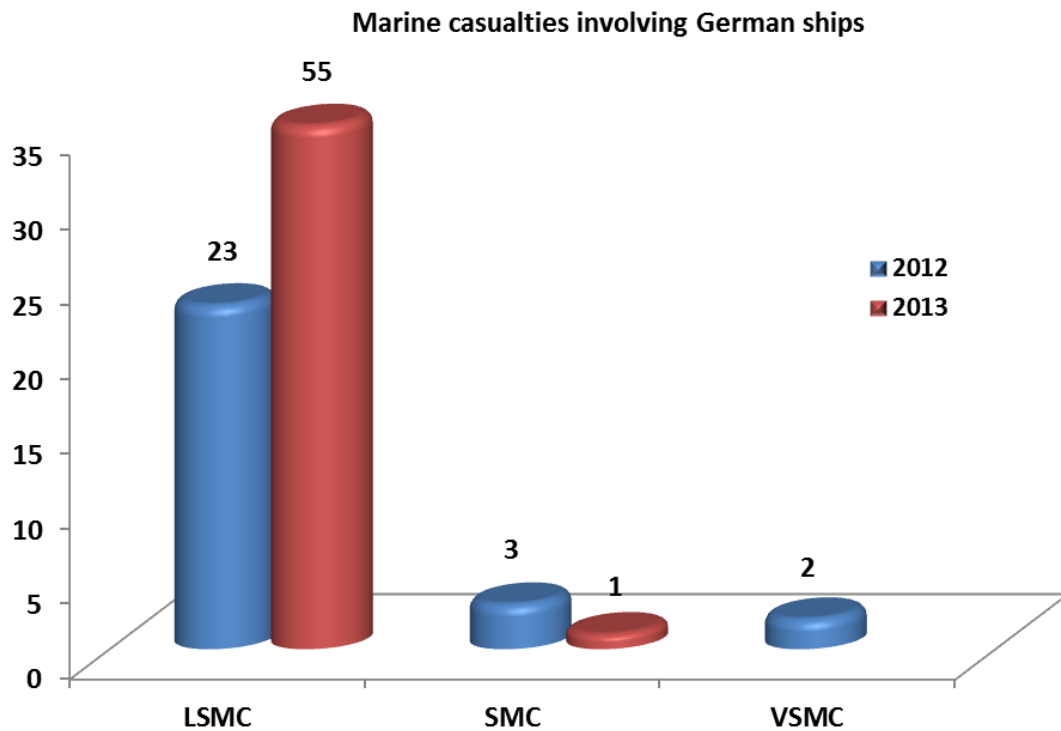
### Marine casualties in German waters

229 of the 239 marine casualties reported occurred in German waters in 2013. These consist of 213 LSMCs and 16 SMCs. It follows that not one VSMC occurred in German waters in 2013, i.e. no fatalities, no constructive total loss of a ship, and no substantial environmental pollution.





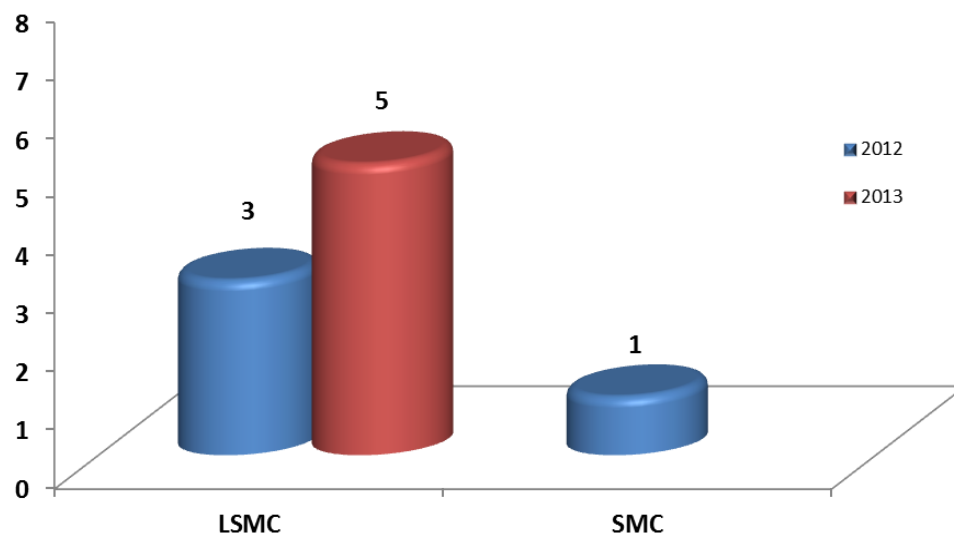
**Marine casualties involving German ships**



56 marine casualties occurred on board seagoing ships flying the German flag. These consisted of 55 LSMCs and one SMC, as well as five marine casualties (none of which was serious or very serious) on board fishing vessels.

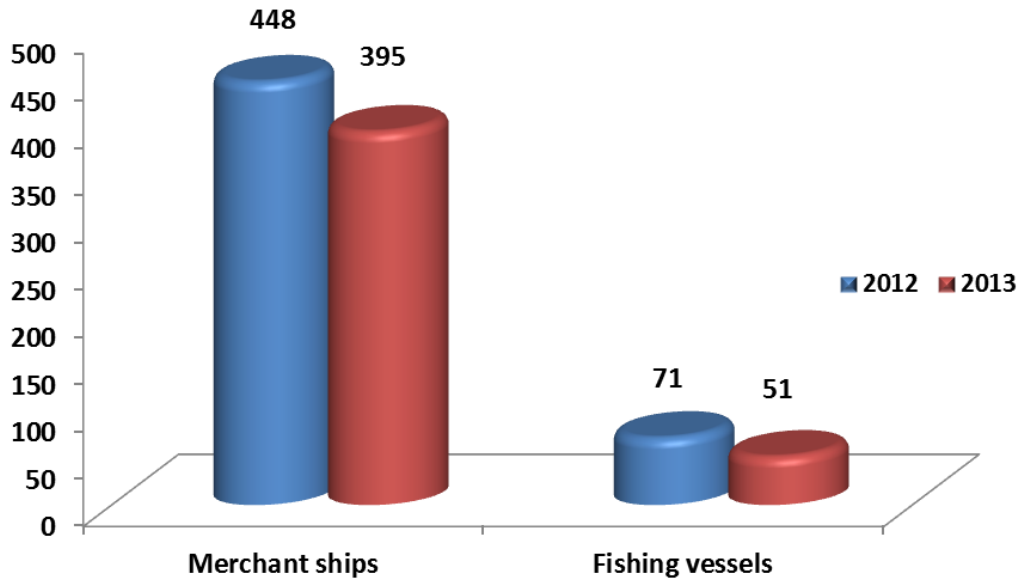
On 31 December 2013, there were 395 (2012: 448) merchant ships and 51 (2012: 71) seagoing fishing vessels registered under German flag<sup>5</sup>. Accordingly, there was another drop compared to the previous year of about 12%.

**Marine casualties involving German seagoing fishing vessels**



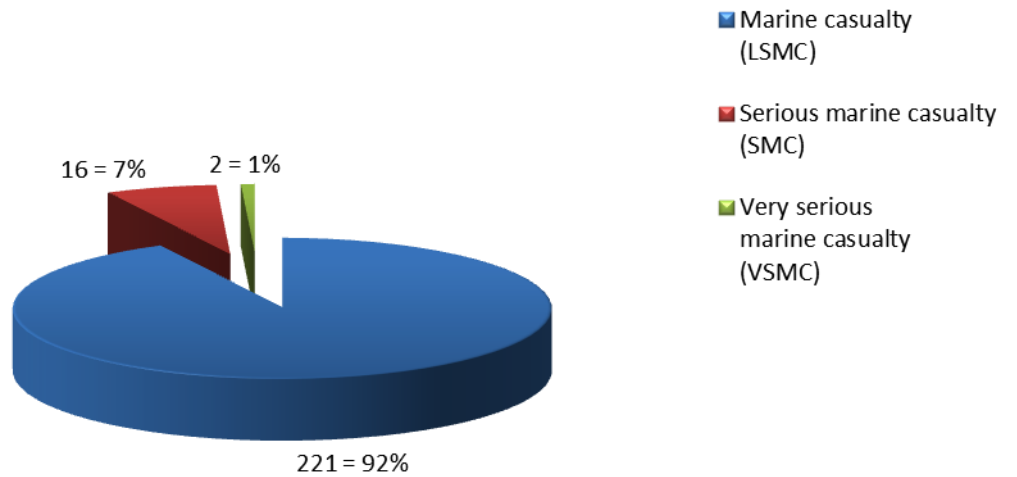
<sup>5</sup> Source: Federal Maritime and Hydrographic Agency

### Ships flying the German flag in 2012 and 2013

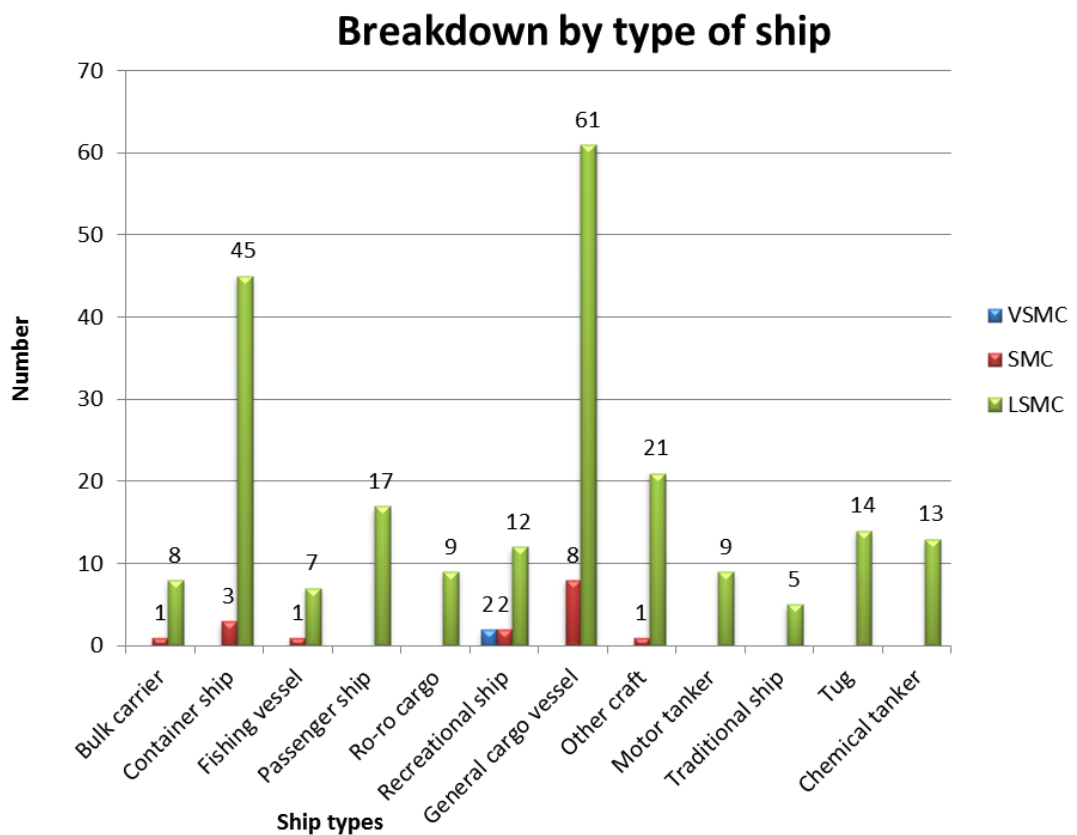
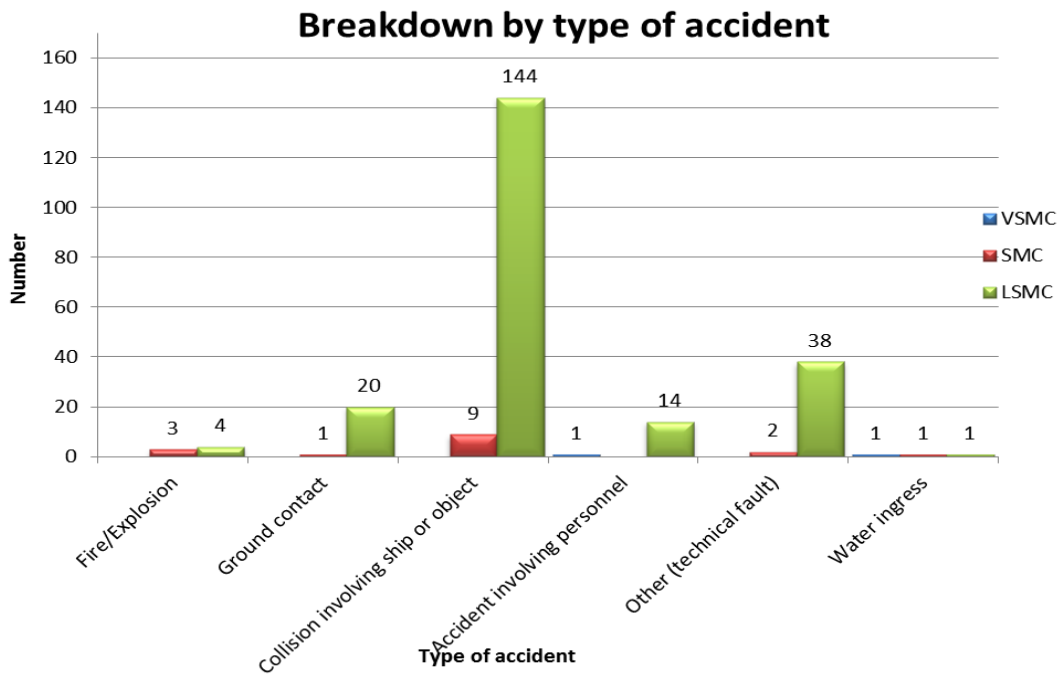


Source: Federal Maritime and Hydrographic Agency

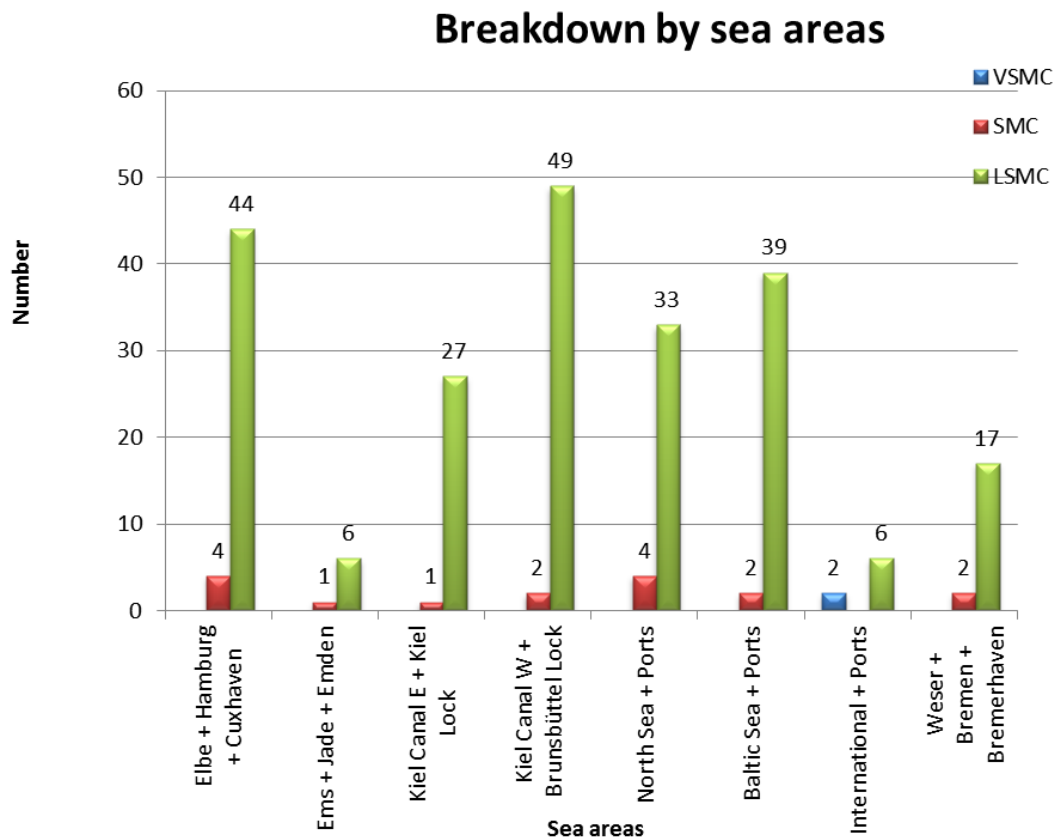
### Marine casualties according to the IMO Code



Breakdown of marine casualties by the type of accident and ship in 2013



## Breakdown of marine casualties by sea area



As mentioned above, there was not a single fatality in the merchant shipping sector in 2013. The only two fatalities this year are the victims of an accident involving a commercially used recreational craft that capsized off the coast of Portugal (Ref.: 86/13, MERI TUULI). It is especially tragic that in addition to a crew member, a Portuguese police officer who was involved in the rescue operation lost his life. The two other fatalities reported did not concern marine casualties (one was a diving accident and the other a natural death).

Altogether, 58 people in 45 reports were injured as a result of work or leisure.

Merchant shipping: 40 injured people in 32 reports

Recreational boating: 18 injured people in 13 reports

### Summary of closed and ongoing investigations

In 2013, nine investigations were closed with the publication of an investigation report – three from 2011, five from 2012, and one from 2013. Another 20 investigations were closed with an internal report – one from 2009, two from 2010, three from 2011, three from 2012, and the remaining 11 cases from 2013. Finally, four cases were handed over to the competent flag State.

Two interim reports were also published.

Accordingly, 22 accidents were being processed at the end of 2013. Details are given in the following tables.

### Investigated marine casualties that were closed with an investigation report in 2013

|   | Published  | Report no | Date of accident | Name of ship                  | Type of ship                                      | Nationality                     | Scene of accident               | Type of accident             |
|---|------------|-----------|------------------|-------------------------------|---|---------------------------------|---------------------------------|------------------------------|
| 1 | 28/01/2013 | 507/11    | 22/11/2011       | MOL Efficiency/<br>Splittnes  | Container ship/<br>Bulk carrier                   | Panama/<br>Antigua &<br>Barbuda | River Weser,<br>buoy 53         | Collision                    |
| 2 | 21/03/2013 | 156/12    | 22/03/2012       | Sigrid ST8                    | Fishing vessel                                    | Germany                         | W Rantum, Sylt                  | Fire                         |
| 3 | 07/05/2013 | 326/11    | 07/08/2011       | Seewind/<br>Surfer            | Recreational craft/<br>Surfboard                  | Germany/<br>Germany             | Lübeck Bay                      | Accident involving personnel |
| 4 | 02/05/2013 | 154/12    | 03/05/2012       | Nils Holgersson/<br>Urd       | Ro-ro passenger vessel/<br>Ro-ro passenger vessel | Germany/<br>Denmark             | Lübeck-<br>Travemünde           | Collision                    |
| 5 | 15/08/2013 | 422/11    | 28/09/2011       | Taucher O. Wulf<br>5          | Tug   | Germany                         | Cuxhaven                        | Accident involving personnel |
| 6 | 06/09/2013 | 13/12     | 19/01/2012       | E.R. Stralsund                | Container ship                                    | Germany                         | En route from<br>Spain to Ghana | Accident involving personnel |
| 7 | 06/09/2013 | 179/12    | 01/05/2012       | Red Cat <sup>6</sup>          | Cargo ship  | Panama                          | Bremen                          | Accident involving personnel |
| 8 | 31/10/2013 | 248/12    | 12/07/2012       | Aruni Rickmers/<br>Blue Angel | Container ship/<br>Bulk carrier                   | Germany/<br>Malta               | Busan, South<br>Korea           | Collision                    |
| 9 | 18/12/2013 | 53/13     | 02/03/2013       | Herm Kiepe/<br>Empire         | Container ship/<br>General cargo vessel           | Antigua &<br>Barbuda/<br>Malta  | Kiel Canal                      | Collision                    |

### Interim investigation reports in 2013

|   | Published  | Report no | Date of accident | Name of ship | Type of ship   | Nationality | Scene of accident | Type of accident   |
|---|------------|-----------|------------------|--------------|----------------|-------------|-------------------|--------------------|
| 1 | 01/08/2013 | 289/12    | 14/08/2014       | Katja        | Oil tanker     | Bahamas     | River Jade        | Ground contact     |
| 2 | 19/06/2013 | 255/12    | 14/07/2012       | MSC Flaminia | Container ship | Germany     | Atlantic          | Fire/<br>Explosion |

<sup>6</sup> Due to the similarity of the event, this report was combined with the report on the accident involving 'E. R. Stralsund'.

### Investigated marine casualties that were closed with an internal investigation report in 2013

|    | Date                    | Ref. no        | Date of accident | Name of ship                             | Type of ship                                 | Nationality                      | Scene of accident          | Type of accident             |
|----|-------------------------|----------------|------------------|--|--|----------------------------------|----------------------------|------------------------------|
| 1  | Discontinued 18/06/13   | 457/09         | 19/10/2009       | Noormann/<br>Pontoon<br>HH2016           | Tug/<br>Work pontoon                         | Germany/<br>Germany              | Bodden waters off<br>Rügen | Capsize                      |
| 2  | Discontinued 18/06/13   | 146/10         | 29/01/2010       | Sophie Scholl                            | Fishing Vessel                               | Germany                          | Glowe, Baltic Sea          | Foundering                   |
| 3  | Discontinued 02/10/2013 | 555/10         | 16/12/2010       | Grande Nigeria/<br>Victoria              | Car carrier/<br>Passenger ship               | Italy/<br>Germany                | Port of Hamburg            | Collision                    |
| 4  | Discontinued 17/01/2013 | 365/11         | 11/08/2011       | Carola/<br>Galan                         | Traditional ship/<br>General cargo<br>vessel | Germany/<br>St. Kitts &<br>Nevis | Dahmeshöved                | Collision                    |
| 5  | Discontinued 02/12/2013 | 460/11         | 23/10/2011       | Hecht VI/<br>Saparua                     | Recreational craft/<br>Recreational craft    | Germany/<br>Germany              | River Elbe, buoy<br>115    | Ground contact               |
| 6  | Discontinued 30/09/13   | 487/11         | 06/11/2011       | Kösterberg/<br>CMA CGM<br>Jamaica        | Tanker/<br>Container ship                    | Gibraltar/<br>Cyprus             | Port of Hamburg            | Collision                    |
| 7  | Discontinued 17/01/2013 | 485/12         | 21/08/2012       | Cosco Germany                            | Container ship                               | Germany                          | Suez Canal                 | Ground contact               |
| 8  | Discontinued 22/10/2013 | 326/12         | 09/09/2012       | Antares                                  | Ferry  | Norway                           | Travemünde                 | Collision                    |
| 9  | Discontinued 02/10/2013 | 407/12         | 19/11/2012       | Andrea                                   | Fishing vessel                               | Germany                          | Jade Bight                 | Accident involving personnel |
| 10 | Discontinued 09/04/2013 | 60/13          | 16/03/2013       | Lolland                                  | Cargo ship                                   | Germany                          | Randers, Denmark           | Ground contact               |
| 11 | Discontinued 06/05/2013 | 101/13         | 23/04/2013       | Victoria<br>Seaways                      | Ferry  | Lithuania                        | Off Bornholm,<br>Denmark   | Fire                         |
| 12 | Discontinued 28/07/2013 | 118+<br>119/13 | 20/05/2013       | Vohburg/Crystal<br>Skye                  | Container ship/<br>Tanker                    | Antigua &<br>Barbuda/<br>Malta   | Kiel Canal                 | Contact with embankment      |
| 13 | Discontinued 14/06/2013 | 137/13         | 20/05/2013       | Neuland                                  | Bulker                                       |                                  | Husum                      | Collision with buoy          |
| 14 | Discontinued 24/10/2013 | 150/13         | 17/06/2013       | Wilson Mosel                             | Cargo ship                                   | Malta                            | Papenburg                  | Collision with pier          |
| 15 | Discontinued 01/10/2013 | 185/13         | 14/07/2013       | Jettie Martha                            | Fishing vessel                               | The Netherlands                  | Off Sylt                   | Fire                         |
| 16 | Discontinued 15/10/2013 | 275/13         | 15/08/2013       | Evert Prahm                              | Cargo ship                                   | Germany                          | Randers Fjord,<br>Denmark  | Ground contact               |
| 17 | Discontinued 23/09/2013 | 311/13         | 13/09/2013       | Mecklenburg-<br>Vor-<br>pommern/Bär      | Frigate/Tug                                  | Germany/<br>Germany              | Wilhelmshaven              | Collision                    |
| 18 | Discontinued 02/12/2013 | 306/13         | 05/10/2013       | Doschi                                   | Sailing yacht                                | Germany                          | Bay of Kiel                | Fire                         |
| 19 | Discontinued 15/11/2013 | 362/13         | 18/10/2013       | Lomonosov/<br>Mohican                    | Cargo ship/<br>Sailing yacht                 | Russia/UK                        | Off Cape Arcona            | Collision                    |
| 20 | Discontinued 06/11/2013 | 335/13         | 22/10/2013       | Gral. Manuel<br>Belgrano/<br>BBC Citrine | Car carrier/<br>Cargo ship                   | Germany/<br>Antigua &<br>Barbuda | Zarate (Argentina)         | Collision                    |

### Marine casualties handed over to flag State in 2013

|   | Ref. no | Date of accident | Name of ship           | Type of ship              | Nationality                            | Scene of accident | Type of accident             |
|---|---------|------------------|------------------------|---------------------------|--|-------------------|------------------------------|
| 1 | 17/13   | 02/02/2013       | Statengracht/<br>Katre | Cargo ship/<br>Cargo ship | The Netherlands/<br>Malta <sup>7</sup> | North Rügen       | Collision                    |
| 2 | 96/13   | 16/04/2013       | Ibaizabal Diez         | Tug                       | Spain                                  | North Helgoland   | Accident involving personnel |
| 3 | 151/13  | 17/06/2013       | Sure Progress          | Offshore supply vessel    | UK                                     | EEZ               | Accident involving personnel |
| 4 | 252/13  | 22/08/2013       | BSLE Teresa            | Cargo ship                | Malta                                  | Port of Hamburg   | Accident involving personnel |

<sup>7</sup> Investigation led by Malta, report at <https://mti.gov.mt/en/Pages/MSIU/Safety-Investigations-2013.aspx>

### Investigations ongoing at 31 December 2013

|    | Ref. no | Date of accident | Name of ship                | Type of ship                                  | Nationality                                    | Scene of accident               | Type of accident             |
|----|---------|------------------|-----------------------------|---|--|---------------------------------|------------------------------|
| 1  | 010/11  | 07/01/2011       | Frisia II                   | Ferry   | Germany  | Norddeich                       | Accident involving personnel |
| 2  | 117/11  | 14/04/2011       | Tyumen-2/<br>OOCL Finland/  | General cargo vessel/<br>Container ship       | Russia/<br>Germany                             | Kiel Canal, km 32               | Collision                    |
| 3  | 250/11  | 21/06/2011       | CSAV Petorca/<br>CCNI Rimac | Container ship/<br>Container ship             | Liberia/<br>Germany                            | Yellow Sea – Yanhan             | Collision                    |
| 4  | 330/12  | 13/01/2012       | Costa Concordia             | Cruise ship                                   | Italy  | Giglio Island, Italy            | Capsize                      |
| 5  | 19/12   | 15/01/2012       | Deutschland                 | Cruise ship                                   | Germany  | Ushuaia, Argentina              | Ground contact               |
| 6  | 255/12  | 14/07/2012       | MSC Flaminia                | Container ship                                | Germany  | Atlantic                        | Fire/<br>Explosion           |
| 7  | 289/12  | 14/08/2012       | Katja                       | Tanker  | Bahamas  | River Jade                      | Ground contact               |
| 8  | 397/12  | 08/11/2012       | Ulusoy 14                   | Ferry   | Turkey   | Flensburg                       | Accident involving personnel |
| 9  | 15/13   | 31/01/2013       | Coral Ace/<br>Lisa Schulte  | Bulker/<br>Container ship                     | Panama/<br>Cyprus                              | Neue Weser Reede (anchorage)    | Collision                    |
| 10 | 86/13   | 11/04/2013       | Meri Tuuli                  | Commercial recreational craft/<br>Police boat | Germany/Portugal                               | Figueira da Foz, Portugal       | Capsize                      |
| 11 | 94/13   | 18/04/2013       | Norfolk Express             | Cargo ship                                    | Bermuda  | Outer Weser, Bremerhaven        | Ground contact               |
| 12 | 99/13   | 01/05/2013       | Atlantic Cartier            | Con-ro carrier                                | Sweden   | Port of Hamburg                 | Fire                         |
| 13 | 160/13  | 21/06/2013       | Rakel                       | Traditional ship                              | Germany  | South of Helgoland              | Water ingress                |
| 14 | 212/13  | 28/07/2013       | Westund/Perseus             | Tug/Barge                                     | Denmark/<br>Denmark                            | Kiel Canal, Brunsbüttel Lock    | Collision                    |
| 15 | 213/13  | 26/07/2013       | Westund/SB7020              | Tug/Barge                                     | Denmark/<br>Denmark                            | Kiel Canal, Brunsbüttel Lock    | Collision                    |
| 16 | 265/13  | 09/08/2013       | Falado von Rhodos           | Traditional ship                              | Germany  | Open sea off Iceland            | Foundering                   |
| 17 | 291/13  | 08/08/2013       | Kroelle                     | Motor yacht                                   | Germany  | Fehmarn                         | Fire                         |
| 18 | 417/13  | 07/05/2013       | Conmar Avenue/Maersk Kalmar | Container ship/Container ship                 | Antigua & Barbuda/The Netherlands              | Outer Weser                     | Collision                    |
| 19 | 330/13  | 28/10/2013       | Syderfly/<br>Coral Ivory    | Cargo ship/<br>Chemical tanker                | Saint Vincent & the Grenadines/The Netherlands | Kiel Canal                      | Collision                    |
| 20 | 342/13  | 05/11/2013       | Roseburg                    | Cargo ship                                    | Antigua & Barbuda                              | Kiel-Holtenua Reede (anchorage) | Near capsize                 |
| 21 | 346/13  | 15/11/2013       | Hanjin Chicago/Jin Xue Yuan | Container ship/Motor coaster                  | Germany/China                                  | China Sea                       | Collision                    |
| 22 | 373/13  | 12/12/2013       | Merweborg/<br>Caroline Russ | Cargo ship/Cargo ship                         | Dutch Antilles/<br>Antigua & Barbuda           | Cuxhaven                        | Collision                    |



**Investigations ongoing at 31 December 2013, published between January and end of May 2014**

|   | Published  | Report no | Date of accident | Name of ship    | Type of ship     | Nationality | Scene of accident        | Type of accident |
|---|------------|-----------|------------------|-----------------|------------------|-------------|--------------------------|------------------|
| 1 | 21/03/2014 | 19/12     | 15/01/2012       | Germany         | Cruise ship      | Germany     | Ushuaia, Argentina       | Ground contact   |
| 2 | 28/02/2014 | 255/12    | 14/07/2012       | MSC Flaminia    | Container ship   | Germany     | Atlantic                 | Fire/Explosion   |
| 3 | 10/04/2014 | 94/13     | 18/04/2013       | Norfolk Express | Cargo ship       | Bermuda     | Outer Weser, Bremerhaven | Ground contact   |
| 4 | 25/02/2014 | 160/13    | 21/06/2013       | Rakel           | Traditional ship | Germany     | South of Helgoland       | Water ingress    |

**Investigations ongoing at 31 December 2013, interim reports published between January and end of May 2014**

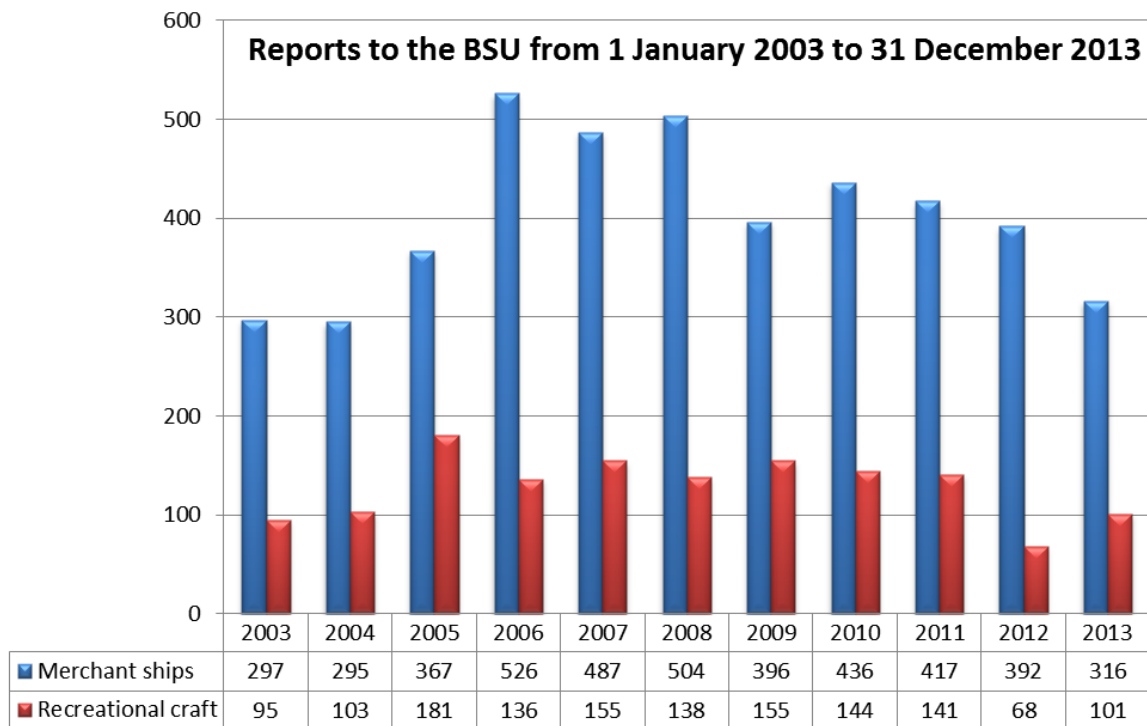
|   | Published  | Report no | Date of accident | Name of ship               | Type of ship              | Nationality       | Scene of accident            | Type of accident |
|---|------------|-----------|------------------|----------------------------|---------------------------|-------------------|------------------------------|------------------|
| 1 | 31/01/2014 | 15/13     | 31/01/2013       | Coral Ace/<br>Lisa Schulte | Bulker/<br>Container ship | Panama/<br>Cyprus | Neue Weser Reede (anchorage) | Collision        |
| 2 | 29/04/2014 | 99/13     | 01/05/2013       | Atlantic Cartier           | Con-ro carrier            | Sweden            | Port of Hamburg              | Fire             |

**Investigation of marine casualties involving recreational craft by the BSU**

Since Germany's SUG entered into force in June 2002 and the Federal Bureau of Maritime Casualty Investigation was established in Hamburg, accidents involving recreational craft have been investigated on the basis of the IMO Code. Since the reform of the SUG in 2011, accidents involving recreational craft outside German territorial waters and accidents involving fishing vessels of less than 15 m are no longer investigated by German authorities.

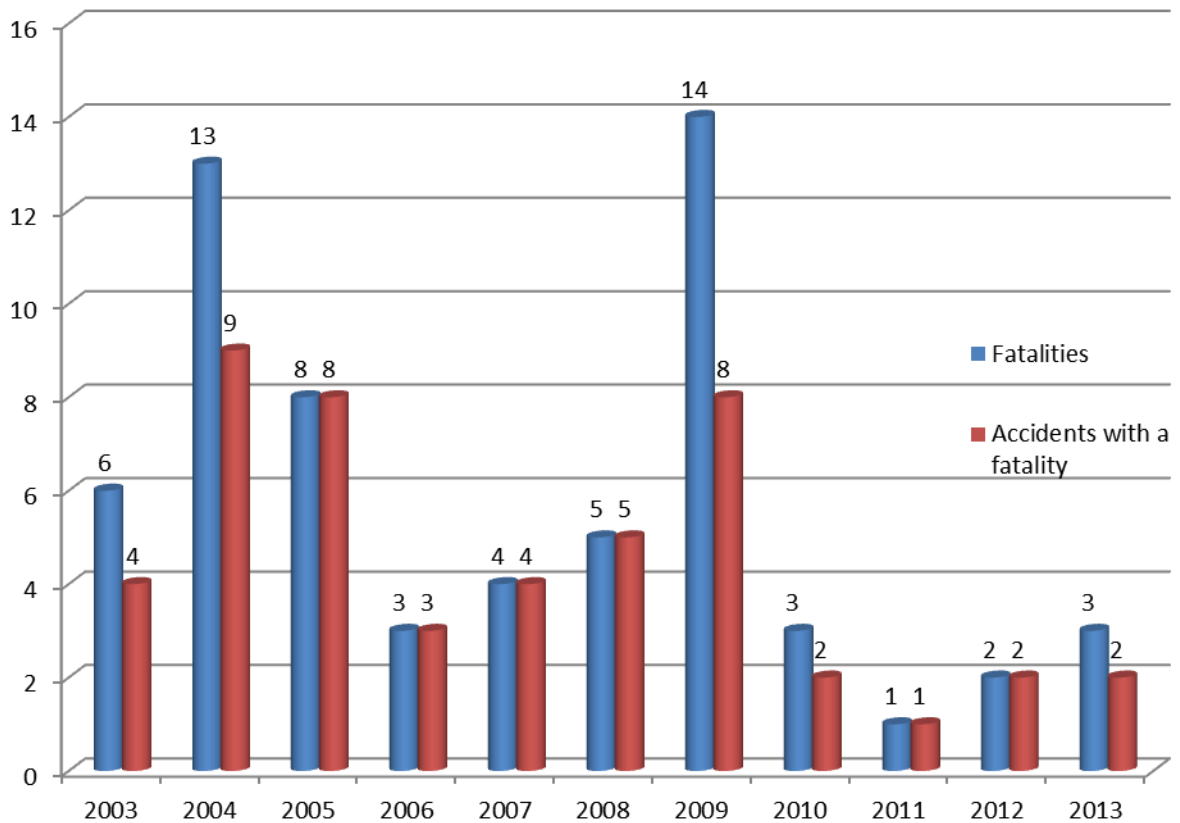
The legislature established a saving clause (Article 1(4) SUG) for marine casualties that involve only recreational craft in German waters and the German Exclusive Economic Zone. The BSU can continue to investigate such cases if it is expected that the findings will increase maritime safety, in particular, by improving applicable regulations or equipment for maritime navigation.

Regardless of the elimination of the investigation of accidents on the open sea involving recreational craft, there is still an obligation to report such accidents to the BSU under Article 1 of the Ordinance on the Safety of Shipping (SeeFSichV 1993), meaning statistics for such cases are at least kept. Inasmuch, this statistical part should continue to deal with accidents involving recreational craft.



This graph shows the trend for all the reports received by the BSU. While a continuous decline is at least noted in the merchant shipping sector since 2010, recreational craft reports have climbed again this year. The reason is probably that it is now common knowledge that recreational craft accidents still have to be reported, even though an investigation is not normally carried out.

**Fatalities involving recreational craft from 2003 to 2013**



Finally, this figure shows the trend for accidents with a fatal outcome. With regard to the noticeable decline in fatal accidents, the figures for the past four years are quite encouraging. It should also be noted that basically there was no typical recreational craft accident with a fatal outcome in 2013. In fact, the two fatalities in connection with the MERI TUULI did not lose their lives during the actual accident, but tragically in the course of the ensuing rescue operation, while the third fatality was due to natural causes.