



Bundesstelle für Seeunfalluntersuchung
Federal Bureau of Maritime Casualty Investigation

Federal Higher Authority subordinated to the
Ministry of Transport and Digital Infrastructure



Annual Report 2017

June 2018

Foreword

Dear Reader,

If you take hold of this annual report and then browse through it with a degree of interest, great headway will have been made. It will mean you are presumably interested in maritime safety and not least in the work of the BSU, which aims to increase precisely this safety even further.

When I joined the BSU in the summer of 2017, half the period with which this annual report deals was already over. I found a team of highly qualified and extremely dedicated staff members who show genuine enthusiasm for and promote the work they do. They made my early days more than pleasant and have always given me their help and advice, making it possible to tackle the second half of the year successfully.

In addition to the change of director, 2017 saw a number of other changes affecting the BSU, which were hardly noticeable from outside. Apart from other changes in personnel, BSU has also evolved a little further into the modern age as an employer. Teleworking was made available specifically for staff members with family responsibilities so as to better reconcile work and family life. Mobile working opportunities were also made available. The BSU team has received both these instruments positively, which is something I find extremely gratifying, of course.

New approaches were also taken in 2017 when it comes to one of the BSU's main fields of activity, investigation reports. For example, a press conference was held in October to accompany the publication of the report on the foundering of the fishing vessel CONDOR. Received positively by journalists and covered extensively in various media – from television reports through to articles printed in newspapers – this was the first such event. It demonstrates that the work of the BSU is of public interest and appreciated. This is important because the BSU has no means of enforcing the safety recommendations it issues. Our work is based on co-operation with every stakeholder – from crews across shipowners through to equipment manufacturers, from waterway police (WSP) across traffic management through to federal ministries. And much can be gained in terms of safety if you, as an interested reader of our reports, discuss and promote our recommendations.

Ulf Kaspera

Table of contents

1. Marine casualty investigation	4
1.1 Principles	4
1.2 The investigation procedure.....	5
1.3 Investigation reports and safety recommendations	6
2. Main investigations.....	8
2.1 FV JAN MARIA	8
2.2 WISSEMARA	9
2.3 STETTIN and FINNSKY	12
2.4 SEATROUT and USOLIE	14
2.5 GLORY AMSTERDAM	15
3. Organisation of the BSU	18
3.1 Division 1 – Investigation	18
3.2 Division 2 – Technology and IT.....	18
3.3 Division 3 – Administration.....	19
3.4 Budget.....	20
4. Public relations.....	21
5. International	24
5.1 International co-operation	24
5.2 Activities within Europe	25
6. Statistics.....	27
6.1 General information and explanatory notes	27
6.2 Ships flying the German flag.....	30
6.3 Breakdown of marine casualties by sea area	32
6.4 Breakdown of marine casualties by kind of accident and type of ship.....	33
6.5 Investigation of marine casualties involving pleasure yachts by the BSU.....	34
6.6 Published investigation reports	35

The BSU is a federal higher authority subordinated to the Ministry of Transport and Digital Infrastructure (BMVI). It is based in Hamburg and employs 13 members of staff (full-time and part-time contracts). It has a single-level administrative structure and is under the supervision of Department WS 22 of the BMVI.



The offices of the BSU in Hamburg at the premises of the BSH. The piers are visible in the foreground and in the background to the right the so-called 'Dancing Towers' and to the left the Astraturm (source: Fotolia)

1. Marine casualty investigation

1.1 Principles

In accordance with the international Casualty Investigation Code (Resolution MSC.255/84), the work of marine casualty investigation authorities is defined as 'safety investigation' in EU Directive 2009/18 and, correspondingly, in Germany's Maritime Safety Investigation Law (Seesicherheits-Untersuchungs-Gesetz – SUG). This makes clear that marine casualty investigations are not intended to clarify issues of fault or liability, but are solely for the purpose of improving maritime safety. A marine casualty investigation aims to deliver a comprehensive account and analysis of the course of events leading up to and during an accident to prevent future accidents. It should consider any direct and indirect causes, facilitating factors, as well as the overall circumstances including possible rescue operations and safety systems. Due to legislation, the BSU is guided by a no blame approach within the framework of a safety partnership.

The SUG constitutes the primary legal foundation for the work of the BSU. The SUG transposes international rules and regulations, such as those mentioned above, as well as the international Casualty Investigation Code and the EU's Directive 2009/18/EC into the German judicial system.

Other provisions that apply under German law include Regulation (EU) No 1286/2011 and International Maritime Organisation (IMO) Resolution A.1075(28), which harmonise the methodology and implementation of the investigation of accidents at international level.

According to the SUG, the BSU is responsible for the investigation of marine casualties involving seagoing ships of all flags

- within German territorial waters;
- within the German Exclusive Economic Zone (EEZ), and
- during traffic movements on German navigable maritime waterways, as well as to, from, and in ports connected to them.

In addition to those areas, the BSU investigates marine casualties on or involving seagoing ships flying the German flag or if the Federal Republic of Germany has a substantial interest in the investigation of a marine casualty abroad (if German nationals are affected, for example).

The SUG also regulates those cases in which the BSU does not take action. The BSU is not responsible for marine casualties involving only

- 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;
- 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;
- fishing vessels with a length of less than 15 m, and
- fixed offshore drilling units.

This is of particular relevance in the area of pleasure craft. The SUG does not cover privately used pleasure yachts (unlike those used commercially), meaning the BSU's legal mandate does not include investigating accidents involving pleasure yachts. This applies regardless of damage. It is only possible for the BSU to investigate such accidents in (rare) exceptions and then only when an accident occurs in Germany's territorial waters or EEZ.

The SUG distinguishes between four categories¹ of marine casualty – incident, marine casualty (to distinguish from the generic term, referred to as 'less serious marine casualty'), serious marine casualty and very serious marine casualty – and in the case of the latter requires that the BSU always conduct an investigation.

1.2 The investigation procedure

After an accident report is received, the BSU's director (or the deputy director in his absence) decides on the initiation of an investigation and usually assigns the subsequent processing of the accident to a team of two people. The BSU is free from instructions in this decision and in all other aspects of the investigation. The BSU is able to exercise extensive rights when investigating the course of events leading up to and during an accident, including in respect of access to the scene of the accident, preservation and analysis of evidence, questioning witnesses, and the engagement of experts.

¹ See the explanatory notes in the Statistics section for more information

These rights are not limited to entities/individuals directly involved in the accident (the ship, her crew and possibly pilots), but can also be asserted against third parties (e.g. shipowners, shipyards or classification societies) or authorities (e.g. the Federal Waterways and Shipping Administration and the Ship Safety Division (BG Verkehr)).

An important cornerstone of the work of the BSU is co-operation with the members of European and non-European investigative bodies. Based on European and international principles, the BSU conducts investigations in international co-operation. These can be limited to merely supporting the other investigative body or may extend to a full joint investigation and joint final report.

1.3 Investigation reports and safety recommendations

The investigation report is the product of a safety investigation and made available to the public. An accident investigation concludes with the publication of the report. The BSU's investigation reports follow a certain pattern, which is 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, including but not limited to 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 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. Cases discontinued after a preliminary investigation are usually closed with an internal report.

Safety recommendations constitute the key element of an investigation report. 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. A safety investigation by the BSU focuses not only on events on board, but also looks at organisation ashore or the safety system where appropriate. In short, any factors that may have facilitated the accident are investigated and evaluated. Consequently, in addition to the crew, addressees of safety recommendations could include pilots, shipowners, shipyards, manufacturers of equipment, the Maritime Administration, the legislator, or others. Safety recommendations can also be directed at several addressees but should be sufficiently specific. Addressees should be able to clearly discern what is being recommended to them. Accordingly, recommendations of a general nature should be avoided.

The BSU may also 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 be for a variety of reasons, e.g. that no specific deficiencies were apparent or the speculative addressees had already closed a gap in safety identified by the BSU through their own action while the investigation was ongoing. In 2017, the BSU issued 36 safety recommendations in eight out of 14 final reports. Safety recommendations were dispensed with in six cases.

Safety recommendation addressees in 2017 included (number of recommendations in brackets):

- ship's command/crew (6);
- owner (8);
- manufacturer/distributor (3);
- Federal Ministry of Transport and Digital Infrastructure (8);
- Directorate-General for Waterways and Shipping (6);
- Ship Safety Division (BG Verkehr) (8);
- German Social Accident Insurance (1), and
- other (1).

Preliminary safety recommendations were not published in 2017.

2. Main investigations

This section deals with current main investigations into marine casualties that occurred in 2017. Investigations should be completed after one year. Unfortunately, this is not possible in many cases. The reasons for this are as varied as the actual accidents. However, the rule is that the length of the investigation rises with the degree of complexity of the events surrounding the accident and number of parties involved. The BSU obviously makes every effort to analyse accidents quickly and publish the final report within one year.

Various accidents that occurred in 2017 and resulted in a main inspection by the BSU which is still ongoing are presented on the following pages. A complete and up-to-date list of current main inspections can be found on the BSU's website.²

2.1 FV JAN MARIA

During the search for fishing grounds in the Mauritanian EEZ at about 0113 on 21 March 2017 local time, the German-flagged fishing and processing vessel JAN MARIA sailed over the anchor warp of a non-illuminated Mauritanian fishing boat that was not visible on the radar. The boat's anchor warp caught on the underwater hull of the JAN MARIA. As a result, the fishing boat was caught by the JAN MARIA and dragged to her hull.



The JAN MARIA in the port of Las Palmas after the accident (source: BSU)

The fishing boat, which was manned by six fishermen, was a so-called pirogue, which is a simple open boat made of wood. People from the area use this type of boat on the coast of Mauritania for extended inshore fishing.

² www.bsu-bund.de

They generally have no safety equipment, no radio system, no radar reflector and are – if at all – usually only very sparsely illuminated at night.



The above photograph shows a typical pirogue off the Mauritanian coast (source: JAN MARIA)

Caught by her anchor warp on the JAN MARIA, the pirogue was immediately dragged to a cooling water outlet, which was in permanent operation, and the jet of water from the outlet



The open cooling water outlet of the JAN MARIA (source: BSU)

poured into the open boat. Due to the large amount of steadily flowing water, the pirogue filled with water extremely quickly. The six-member crew was surprised by the sudden contact with the JAN MARIA while asleep. They were no longer able to cut the anchor line and move away from the JAN MARIA. The pirogue foundered in the sea in next to no time at all.

The accident was noticed on board the JAN MARIA due to the grinding noises resulting from contact with the pirogue and ensuing calls for help from the fishermen. Three fishermen were rescued during the immediately initiated rescue operation. It was not possible to locate the fishing boat's other three crew members even after the JAN MARIA's lifeboat was deployed.

Despite the large fishing vessels apparently in the vicinity, emergency calls made by the JAN MARIA were not answered by them.

2.2 WISSEMARA

The traditional ship WISSEMARA is a replica of a 14th century cog. She was built and is operated by Förderverein Poeler Kogge e.V., a Wismar-based friends' association. Day trips are regularly organised for interested visitors from all over the world.



The Poeler Kogge WISSEMARA (source: Fotolia)

One such day trip ended at about 1400 on 24 May 2017 with the seasoned berthing manoeuvre in the port of Wismar. This involved turning on the turning circle, so as to approach the pier sternward. The stern line was the first line to be passed ashore. While springing on this line, an unexpected gust of wind occurred. Despite bow thruster, this gust turned the ship so far away from the pier that the load on the line became excessive. However, rather than the line parting, the wooden cleat that held the line on board broke.



Cleats on the WISSEMARA (source: BSU)

Despite the repeated requests of crew members made beforehand to avoid the aft area of the ship during the berthing manoeuvre, one passenger had not left the danger area on the berthing side and sat so close to the cleat that she was struck by flying wooden splinters and sustained minor injuries.

She was taken to hospital as a precaution after berthing. Fortunately, the injuries were only minor and she could be discharged after outpatient treatment.

Another crew member also sustained minor injuries to the leg due to splinters. These injuries did not require any complex medical treatment, either.

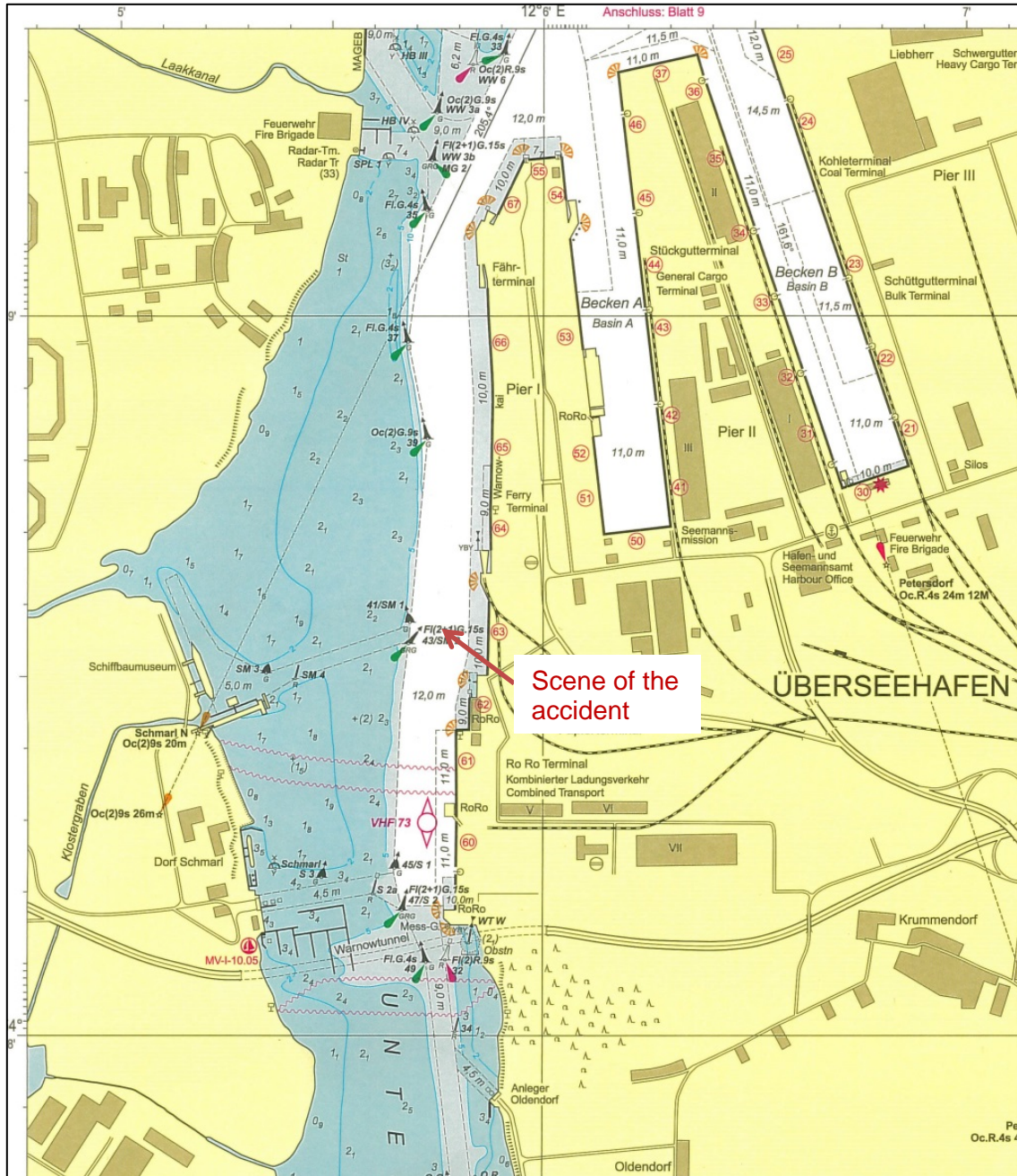
The ship's command/management of the association stated to the BSU on its own initiative that the wooden cleats on board would be replaced by metal ones as soon as possible. Moreover, it is aware that assertiveness toward every passenger is needed where the safety of the ship and everyone on board is concerned in future.

2.3 STETTIN and FINNSKY



The steam icebreaker STETTIN (source: Jabs@email.de) and the FINNSKY (source: Hasenpusch-Photo-Productions)

At about 0955 on 12 August 2017, the Finnish-flagged FINNSKY, sailing inbound on the Warnow, collided with the outbound German steam icebreaker STETTIN (a traditional vessel) during the Hanse Sail. The FINNSKY had turned on the turning circle and manoeuvred sternward on the western side of the fairway to Berth 60. The STETTIN was on a guest cruise with more than 100 passengers on board. She was sailing at low speed, also to the western side of the fairway, and attempted to pass the oncoming FINNSKY on her port side. The risk of collision was recognised too late and an immediate course alteration to port by the STETTIN with hard-over rudder angle was no longer sufficient. As a result, the two vessels collided. During the collision, the starboard side of the STETTIN struck the FINNSKY's aft deflector (the so-called ducktail).



Extract from Navigational Chart 3005, Sheet 11, Unterwarnow (source: BSH)

The STETTIN was torn open level with the boiler room above the waterline. The length of the tear was about 2 m and the height about 30 cm. The FINNSKY's ducktail at the stern was slightly deformed on the port side and had a hole of 15 cm in length and 3 cm in height. There were ten casualties on board the STETTIN.



Torn shell plating on the STETTIN (source: WSP)

2.4 SEATROUT and USOLIE

On the morning of 20 September 2017, the German-flagged oil tanker SEATROUT collided with the Liberian-flagged bulk carrier USOLIE during an overtaking manoeuvre by the SEATROUT on the River Scheldt in the area of the border between the Netherlands and Belgium. Shortly before, both ships had left the port of Antwerp for the sea and headed for the English Channel. After the collision, the tanker ran aground in the Western Scheldt outside the fairway. The container ship CSCL JUPITER also ran aground only a few weeks earlier on the same narrows. The SEATROUT was towed free in the afternoon during high tide. Although both ships were damaged, there were no injuries or harm to the environment.



The distressed SEATROUT (source: Stan Müller)

Both the SEATROUT and the USOLIE were under pilotage when the accident occurred. Traffic monitoring in the area of the accident is performed jointly by the Dutch and the Belgians. The BSU and the Belgian investigating authority, FOSO, assisted with the investigation, which was led by the Dutch investigating authority, DSB. Among other things, the investigation looks at co-ordination difficulties that arose between the two ships involved in the accident, general traffic planning and control in the Western Scheldt, as well as radio discipline and communication with oncoming ships.



Damage to the SEATROUT (left figure: deep scratches on the underwater hull; right figure: dents and abrasion marks on the starboard side (source: BSU))

2.5 GLORY AMSTERDAM

The case that aroused most interest among the general public occurred on 29 October 2017, as northern Germany was in the firm grip of Cyclone Herwart. Sailing under the flag of Panama, the 225-metre-long bulk carrier was reported drifting north of Langeoog early in the morning with anchors dropped. The Central Command for Maritime Emergencies (CCME) in Cuxhaven took charge of the case and immediately took action to provide assistance. For example, various ships, in particular the seagoing tug NORDIC, were sent to the distressed vessel to establish a towing connection in order to prevent her from drifting into shallow waters and then grounding.

In addition, plans were made to carry a boarding team to the GLORY AMSTERDAM by helicopter to assist the crew on board.



The GLORY AMSTERDAM drifting in heavy seas (source: CCME)

However, wind forces of 8-9 Bft with gusts up to as much as 12 Bft and wave heights of up to eight metres meant the prevailing weather conditions were extremely difficult, which complicated the rescue operation considerably. Accordingly, although it was possible to establish a towing connection as the day progressed, this broke again for reasons that have yet to be clarified. Due to the forces acting, a bollard was ripped out and a fairlead destroyed on board. It was not possible to set down the boarding team until the afternoon, either. All measures to assist were ultimately unsuccessful and the GLORY AMSTERDAM ran aground just off Langeoog in the early hours of the evening.



Ripped out bollards and destroyed fairlead on board the GLORY AMSTERDAM (source: BSU)

Only in the course of the following day did the weather improve, making it possible to start pumping out ballast water to make the ship lighter. This was necessary to achieve a draught that would make it possible to pull the GLORY AMSTERDAM back into deeper waters at high tide and refloat her.

On 2 November, thus three days later, sufficient water had been pumped out and the ship was light enough to pull her off with combined forces during the morning high tide and then tow her to Wilhelmshaven.



The GLORY AMSTERDAM grounded off Langeoog (source: NABU Deutschland, K. Karkow)

Fortunately, nobody was injured during the accident and there was no water pollution due to leaking fuel, for example.

3. Organisation of the BSU

The BSU is managed by a director. He makes the decisions necessary quickly and independently and is not subject to instructions vis-à-vis the decision as to whether an investigation is initiated, or not. The director represents the BSU outwardly at national, European, and international level and is responsible for strategic planning and control. He is also responsible for press, media, and general PR work.

The BSU is divided into three divisions. Despite the low headcount, the staff of the BSU have an extremely varied range of qualifications, which include shipbuilding, navigation, law, engineering and administration. In addition to the huge commitment with which the staff undertake their duties, this diversity symbolises the work of the BSU and permits an investigation based on comprehensive technical expertise.

3.1 Division 1 – Investigation

is the largest with seven staff members. This is where the investigators carry out their work. It was possible to adequately fill a newly acquired budgetary unit in 2017, meaning the BSU is currently 'complete'. The investigation teams carry out the investigative work in the narrower sense. They survey vessels and assess damage, question those involved, review documents and evaluate them. One investigation team normally consists of two people, with more added if necessary. An accident is never investigated by one person alone. The principle of dual control is followed in all activities connected with an investigation, which is also essential for the protection of staff members.

Accidents have no interest in working hours. It is often necessary to respond immediately, i.e. an on-scene assessment before the ship goes to the shipyard at short notice or the scene of the event is visited just before any clearing work begins, for example. Since this might also occur on weekends or at night, a 24/7 on-call service is set up in Division 1. Accident reports can be made day or night on the

emergency phone number +49 170 58 65 675.

An investigator is always available and decides immediately on the measures to be set in motion, where appropriate after consulting with the management team.

3.2 Division 2 – Technology and IT

is the smallest division in numeric terms and staffed by only one person. Its central task is the preparation and analysis of data from voyage data recorders (VDR). The VDR is an instrument that – similar to a black box in aviation – stores communication on the bridge, as well as other data, such as machinery logs and navigation data. Due to the many different devices and software applications on the market, all of which need to be mastered, as well as the sometimes extremely poor sound quality (mostly in a foreign language), making this data usable often resembles a truly Herculean task.



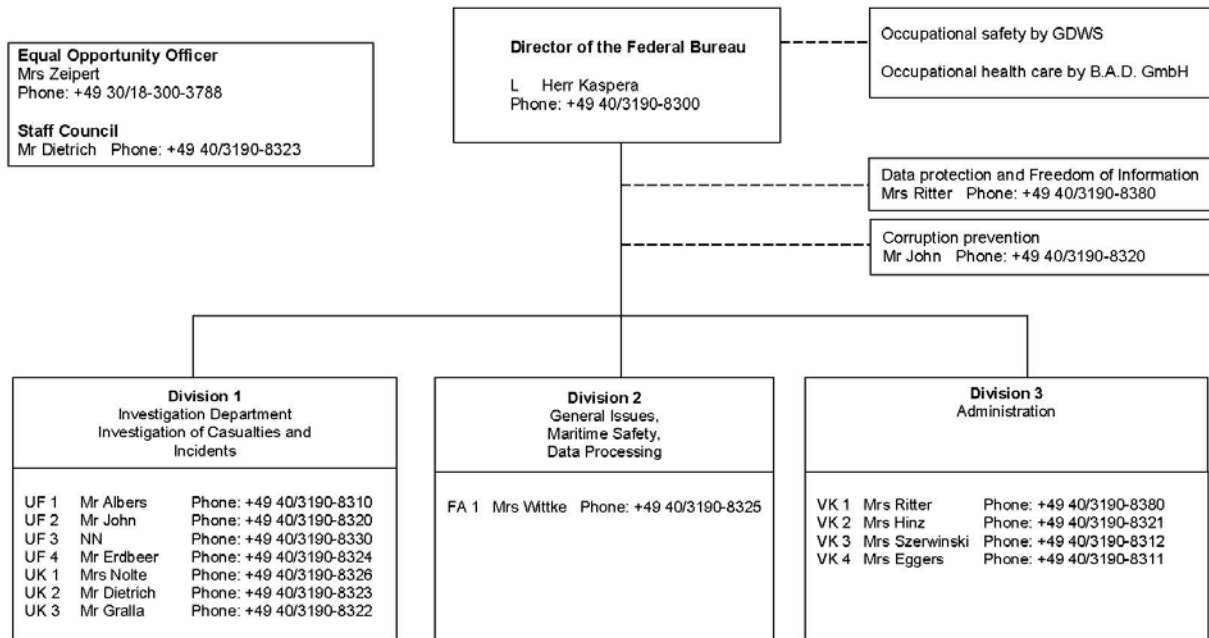
VDR storage capsule (source: BSU)

In addition to the extremely time-consuming work with VDRs, Division 2 also assists the investigation teams with the evaluation and preparation of other data, such as photographs and video files, or IT-related issues. It also takes care of IT matters at the BSU and monitors development of the databases in the relevant international special interest groups.

3.3 Division 3 – Administration

rounds off the organisational picture at the BSU. Four staff members take care of the administration activities typical of any administrative body or enterprise. Equipment has to be ordered, funds managed, files updated and personnel administrated. Another focal point of the administration activities is supporting the investigation teams by maintaining the specialist databases and compiling accident statistics.

There are also special tasks, such as developing a data protection conception or the introduction of the simplified electronic file. Autumn saw the BSU receive an inspection visit from the Federal Commissioner for Data Protection, who wanted to ensure that the BSU's data protection system was up to date and that personal data are protected adequately. The BSU's handling of this sensitive topic was confirmed in the process, which is a finding that pleases us, of course. Implementation of the requirements of the new European data protection regulation will continue to occupy the BSU considerably in 2018.



UF = Lead Investigator
UK = Investigator

FA = Basic Issues
VK = Administrator

24/7 Duty: +49 170/5865675
E-Mail: posteingang-bsu@bsh.de
Homepage: www.bs-bund.de
Fax: +49 40/3190-8340

Information as of 05/2018

BSU organisational chart

3.4 Budget

The BSU disposes of its own budget, i.e. Parliament allocates a certain budget to it each year. Readers interested will find the BSU's budget in chapter 1219 of the German Federal Budget. As in previous years, the BSU's total budget is slightly more than one million euro – EUR 1,107,000 to be precise. Most of it is again accounted for by personnel expenses, which amounted to EUR 773,755 last year. Other notable items include expenditure of about EUR 65,000 directly related to the investigation of marine casualties, of about EUR 12,000 for general business necessities, consumables and protective equipment, and of about EUR 24,000 for training, continuing education and official journeys.

The Federal Budget also contains the establishment plan, where the BSU is assigned six civil servant posts and six salaried employee positions. Explanation: A post/position is always required when an individual is employed by an administrative body for an indefinite period. All positions were filled in 2017, meaning the required strength was achieved.

4. Public relations

Both Article 14 of Directive 2009/18/EC and Article 28 SUG stipulate that investigation reports and safety recommendations must be published. Given that the aim is to make the reports and especially the findings for improving safety gained from them, which are reflected in the concluding safety recommendations, known to the widest possible public, this is more than necessary, too. The benefits of an investigation arise not only from revealing gaps or deficiencies in safety to those directly concerned, but rather to every individual who deals with ship safety. Apart from reviewing the case in question, an investigation report is chiefly about preventing similar accidents and the related shortcomings in the future – in emergency management, for example. It is quite obvious that this cannot be achieved without publications, which people can and should discuss readily. Publication is achieved through posting on the BSU's website, which is referred to regularly in press releases. There is also a wide circle of interested parties to whom reports are sent regularly or on request.

We are also keen to benefit from co-operating with the media to get our message across. Press interest in the reports of the BSU is usually rather subdued. Related articles appear regularly in the THB (Täglicher Hafenbericht), a journal that is widely read in the shipping industry and thus reaches an audience potentially interested in marine casualty reports. In addition, accident report summaries are publicised in German and English in the notices to mariners.

Media interest (albeit normally local) increases when an accident happens on the doorstep, as it were, even if there is no or only material damage but, e.g. the marine environment was polluted or at least at risk of being polluted. As a rule, unusual fatal accidents involving merchant shipping also receive special attention, while purely occupational accidents tend not to be of relevance to the press. Finally, provided they are actually investigated, dramatic accidents involving pleasure yachts are addressed and commented on in trade publications, in particular. Once passenger ferries or even cruise ships are involved, media interest rises significantly, as can be seen from the foundering of the COSTA CONCORDIA in 2015, for example. However, in view of existing legal regulations, the BSU can only provide general information on an accident, such as on the course of the accident or damage caused, until an investigation has been concluded with a report. Admittedly unsatisfactory vis-à-vis the members of the public concerned, this situation stems from the nature of marine casualty investigations. Since it concerns an investigation that must ignore questions of fault and liability, and where all parties involved must be given the opportunity to comment before its conclusion, detailed information on the cause of an accident or the factors facilitating it cannot be published beforehand. Accidents that were met with a huge response from the public occurred in 2017, too. These primarily concern the collision between the steam icebreaker STETTIN and ferry FINNSKY during the Hanse Sail at Rostock-Warnemünde in August, and especially the grounding of the GLORY AMSTERDAM off Langeoog in late October.

It was with that in mind that the BSU took a new approach in 2017 during the case of the foundering of the fishing vessel CONDOR, so as to allow the members of the public concerned to engage with the findings of the investigation. Can you remember? The fishing vessel CONDOR foundered in the waters of the Baltic Sea off the island of Fehmarn in February 2016, which resulted in the loss of two fishermen. The accident was presumably caused by an incorrect stability calculation combined with incorrect loading at the time of the accident.

Moreover, both rescue systems on board tragically failed and the crew members were both recovered dead. The case had already triggered a large response from local media back in 2016. It was covered extensively in the press and on television. The BSU used this as an opportunity to organise its first ever press conference to accompany the publication of the report in October, so as to make the findings known to the public at large. It is reasonable to say that this approach was crowned with success. In addition to four camera teams, newspaper and radio reporters were also present. The conference began with a short presentation of the course of both the accident and the investigation, as well as the findings gained together with safety recommendations. After that, the investigators answered the journalists' questions in a personal interview. It was covered in detail in the media that same afternoon. This type of beneficial co-operation will definitely be continued.

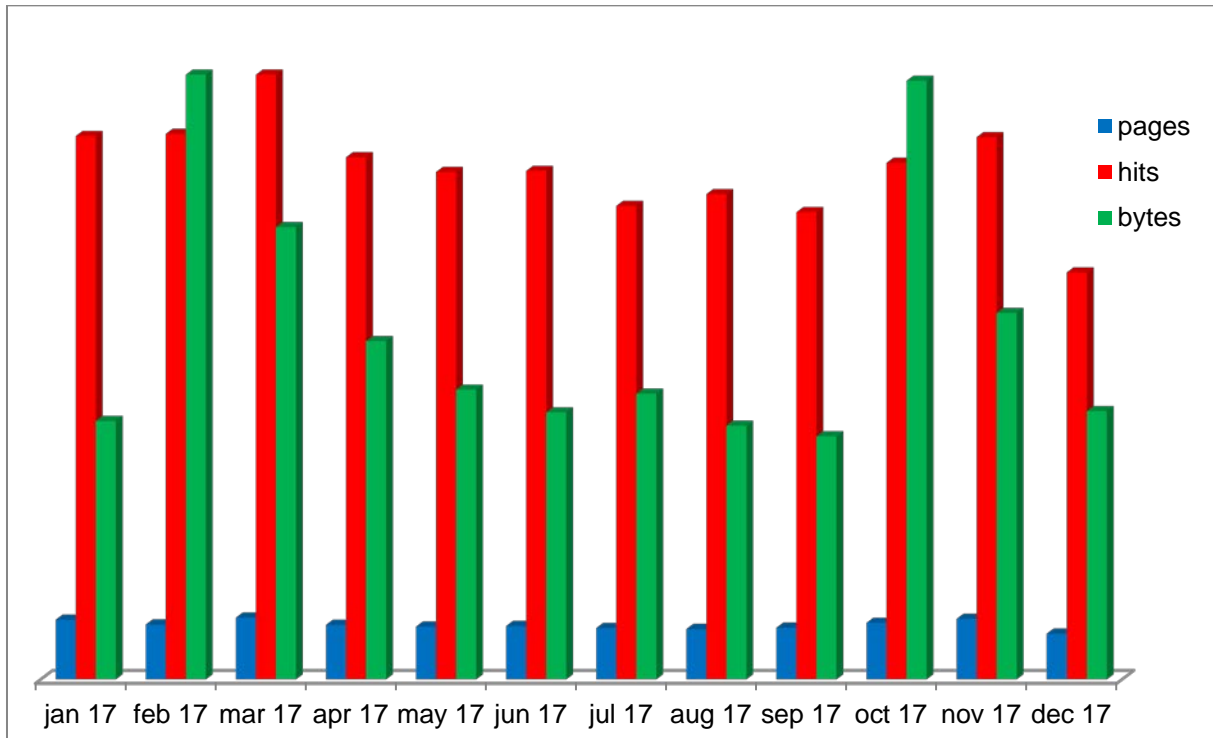


The press conference for the presentation of the CONDOR investigation report was well attended (source: BSU)

Among other things, the BSU's website offers visitors the opportunity to obtain information on the activities and structure of the BSU, the historical development of marine casualty investigation, as well as the legal foundation. Visitors are also able to register for the BSU's newsletter there. Of even greater interest will certainly be that every accident report and safety recommendation published since the BSU was founded can be viewed on the website. This information is usually fully or for the most part accessible to people with disabilities.

As mentioned above, public interest in the accident reports of the BSU varies greatly. This is clearly visible from the webpages opened and corresponding downloads. The below graph shows the number of pages and hits, as well as the volume of bytes downloaded.

month	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total
pages	42.228	38.858	43.733	38.587	37.383	37.813	36.336	35.642	36.562	40.004	42.842	32.356	462344
hits	385.419	386.975	428.976	370.346	359.904	360.647	335.818	344.158	331.390	366.355	384.599	288.604	4343191
bytes	35,36	82,80	61,90	46,29	39,64	36,53	39,09	34,71	33,25	81,96	50,15	36,71	578.39 GB



The numerous events that staff of the BSU attend as experts, where they contribute to a lively exchange of experience with lectures and their specialist knowledge, should not go unmentioned in this section. In addition to the conferences discussed in the section on 'International co-operation', the BSU's experts are also called on for national events on ship safety. These include such diverse events as trade fairs (Hanseboot), the German Council of Transport Authorities, the Maritime Safety Committee, as well as training courses at the Waterway Police Academy, at which the excellent co-operation between the police and BSU is intensified. Although many of these events are not open to the general public, they do have an impact on it through the decisions and recommendations made there. In addition to participating as competent panellists, the BSU's experts often initiate discussion through technical presentations. For example, in 2017 a total of 12 presentations were once more given on the national and international stage.

5. International

Maritime shipping has always been and remains a predominantly international business. The same applies to marine casualty investigation. Although each flag and coastal States generally has its own investigating authority (the BSU in Germany), international interdependence not only makes co-operation necessary and beneficial, it is also an international requirement. For example, investigations concerning different states (e.g. flag State on the one hand and coastal State on the other) involve close co-operation between the respective authorities. This can range from simply assisting with data collection through to a joint investigation.

Influenced by this international character and based on the common international legal standards, a working relationship that reaches beyond accident investigation and is marked by the spirit of co-operation has developed with other states, which is reflected in joint fora, workshops or political bodies. More than just exchanging experience or harmonising investigative activities, the aim is also to develop proposals for new safety regulations, the need for which arises from the accidents investigated, which are then addressed within the IMO based in London, UK. The Marine Accident Investigator Forum (MAIFF) and its European regional forum the European Marine Accident Investigator Forum (EMAIF) are particularly noteworthy here. Close contact is also maintained with the Lisbon-based European Maritime Safety Agency (EMSA).

The BSU sends its experts to the respective bodies and committees to contribute the experience gained in Germany. The following events should be highlighted for 2017.

5.1 International co-operation

As discussed in the first section under 'Principles', the legislation and thus the work of marine casualty investigation authorities are based on the internationally valid legislative framework of the IMO, e.g. the Casualty Investigation Code, Resolution MSC.255(84). The IMO's relevant 'Implementation of IMO Instruments' (or IIM for short) sub-committee met for the fourth time in September 2017 and again this year set up a dedicated working group for accident investigation, in which representatives of the BSU also participated. Work focused on the analysis procedure of the IMO personnel and the ensuing lessons learned, which are published in the IMO's Global Integrated Shipping Information System (GISIS) database. Many countries have expressed concerns about the current procedure because the IMO personnel only have the relevant accident reports for their analysis but not the more detailed information acquired but not processed within the report by the respective investigating authority. However, a comprehensive analysis with subsequent publication of recommendations as to what could be learned from a particular accident would require all the information on an accident, which would go beyond the scope of the current analysis procedure. It was not possible to arrive at a final decision on how to move forward with the analysis procedure during the meeting. The matter has been delegated to a correspondence group, which has been instructed to make proposals for the next meeting in 2018.

The annual MAIFF meeting (26th) for marine casualty investigation authorities from around the world was held in November 2017. The host country was New Zealand, which organised the meeting on the North Island in the town of Rotorua. 72 delegates from 31 Member States and guests from scientific institutions contributed to various topics.

The forum was chaired by Capt. Marc-André Poisson from Canada. MAIIF enables investigating authorities from around the world to exchange experience. Completed investigations are used as a basis for establishing priority topics and the extent to which existing gaps in safety can be closed is jointly examined. Furthermore, practices and procedures are discussed and everybody gains from the experiences of others.

Priority topics this year included:

- collisions due to ambiguous or lacking VHF communication;
- fire in engine rooms;
- fatigue as the cause of an accident;
- malfunctioning life-saving appliances;
- occupational accidents on board ships, and
- improving international co-operation.

Besides the priority topics, some personnel changes are also on the horizon. For example, the hitherto general secretary, Capt. Nick Beer (UK), will resign at the next MAIIF meeting. The hitherto treasurer, Steve Clinch (UK), was nominated as his successor, which all delegates welcomed. The chairman will not stand for re-election after the next MAIIF meeting, either, meaning a suitable successor must be found. Lianne van der Veen (NL) and Capt. Wu Yanguo (CHN) were elected for two vacant assistant chairman positions.

5.2 Activities within Europe

The 13th EMAIIF meeting was held in Stockholm in May 2017. The event was chaired by Ron Damstra (NL). Topics included:

- studies on fatigue;
- the use of animation software to illustrate the course of an accident, and
- accidents involving fishing vessels.

The last point was the priority topic of the event. We regret to report that recent years have seen many fatal accidents in deep-sea fishing. Resulting in the loss of two fishermen, the foundering of the CONDOR in the spring of 2016 can be used as an example for Germany. Since an amendment to safety regulations is problematic and time-consuming, the primary focus is on prevention and raising safety awareness.

As commercial shipping falls within the competence of the European Commission, marine casualty investigations are also subject to European regulations. Since Directive 2009/18/EC came into force, co-operation in the conduct of safety investigations has been mandatory when the interests of several Member States are affected. Furthermore, a framework for permanent co-operation (Permanent Co-operation Framework – PCF) has been established, within which the investigative bodies of Member States liaise on the modalities for co-operation. EMSA hosted this year's PCF meeting in June 2017 in Lisbon.

While the MAIIF and EMAIIF place more emphasis on accidents as such, the PCF tends to concentrate more on the legal component and questions concerning the interpretation of European legal standards. Important topics were:

- clarifying issues of definition;
- procedure for preserving evidence;
- publication of safety recommendations;
- human factors in a marine casualty, and
- future development of the European Marine Casualty Information Platform (EMCIP) database.

The last point was also the focus of EMSA's activities relating to marine casualty investigation this year. The European EMCIP database, which all European investigative authorities enter accidents they investigate into, was completely revised and restructured in 2017. In short, the plan is to move from a pure database with options for evaluation to an analysis tool connected to the IMO's international GISIS database. EMSA has already taken a big step in this direction: Member States were informed about the new database in late 2017 and early 2018 and it is due to become operational in mid-2018. The process was accompanied by a user group in which experts from the Member States, including colleagues from the BSU, were able to contribute their expertise as users. Anyone interested in finding out to what extent the 'old' EMCIP was already capable of making statements is recommended to read EMSA's '[ANNUAL OVERVIEW OF MARINE CASUALTIES AND INCIDENTS 2017](#)'³. However, 'Annual' only applies partially, as EMSA incorporates the results of the last six years in most evaluations, thus opening up various opportunities for comparison.

Further activities of EMSA took place on a more concrete level within the framework of workshops and training sessions. On the one hand is the extensive training for investigators, which familiarises newcomers with the legal framework and methods. The BSU also sent a participant this year. We should conclude this section by mentioning two very special workshops. The topic of the first was fire on the decks of RoRoPax ferries, the second dealt with the significance of the human factor in accident investigations and how to identify it. Both workshops delivered important new approaches and ideas, including for the work of the BSU, although we must unfortunately qualify this by adding that not all of them are achievable. For example, much of the information required to investigate the human factor is subject to personal data protection, meaning the BSU's investigators cannot/are not permitted to ask for it.

³<http://www.emsa.europa.eu/implementation-tasks/accident-investigation/items.html?cid=141&id=3156>

6. Statistics

6.1 General information and explanatory notes

This statistics section first requires a number of explanations.

Article 1a SUG defines the term 'marine casualty' as being 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 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 (incident, Article 1b SUG).

Depending on the consequences, German law states that the generic term 'marine casualty' be 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, which includes but is not limited to

- 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, SMC or incident (as defined above).

incident (as defined above).

With regard to 'incident', there is a discrepancy between German law, on the one hand, and the internationally applicable regulations of the IMO and EU, on the other.

Although the definition of 'incident' is similar in the international regulations, the wording is not identical. Beyond that, and more important in terms of practice, an 'incident' is not the same as a marine casualty according to international rules, while the SUG deems it a sub-category of a marine casualty.

This discussion is not just purely academic. In particular, the aforementioned definitions are of significance because they apply throughout Europe and form the basis for entries in the European marine casualty database, EMCIP, and for the IMO database, GISIS. Incidents are not stored there as marine casualties, while this is the case with the German database. This explains the discrepancy between the corresponding statistics.

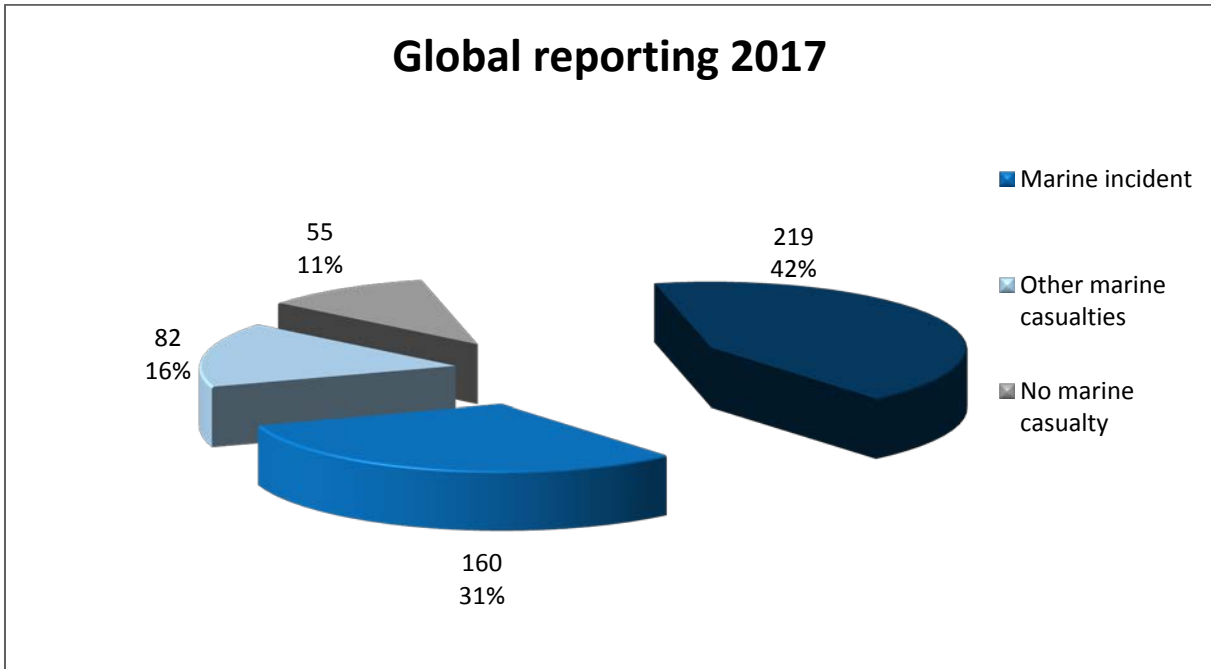
Accidents or incidents involving only pleasure yachts or small fishing vessels are not recorded in Europe. Since there is still a requirement to report such accidents, the BSU maintains an internal database for this purpose. Moreover, the law does not apply to inland waterway vessels, ships of war, troop 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 attends to the EMCIP and GISIS databases in accordance with international legislation, but also/additionally has its own (simplified) internal database to maintain. Occasionally, this leads to discrepancies and sometimes even contradictions in the statistics.

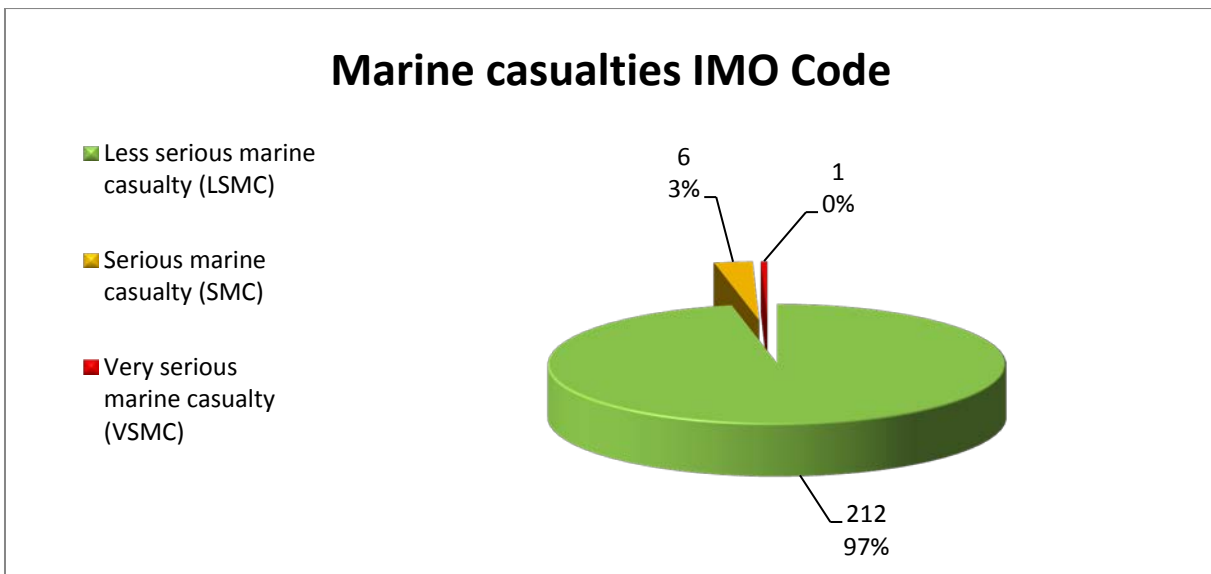
Although **other casualties (OCs)** are marine casualties, they do not fall under the scope of international or national regulations. These primarily concern accidents that only involve pleasure yachts used for non-commercial reasons, as well as navy or other government ships.

The **non-casualty (NC)** category encompasses any other report that does not concern a marine casualty, e.g. accidents involving vessels for inland navigation on inland waterways, or passengers on ferries or cruise ships and crew members in general falling ill.

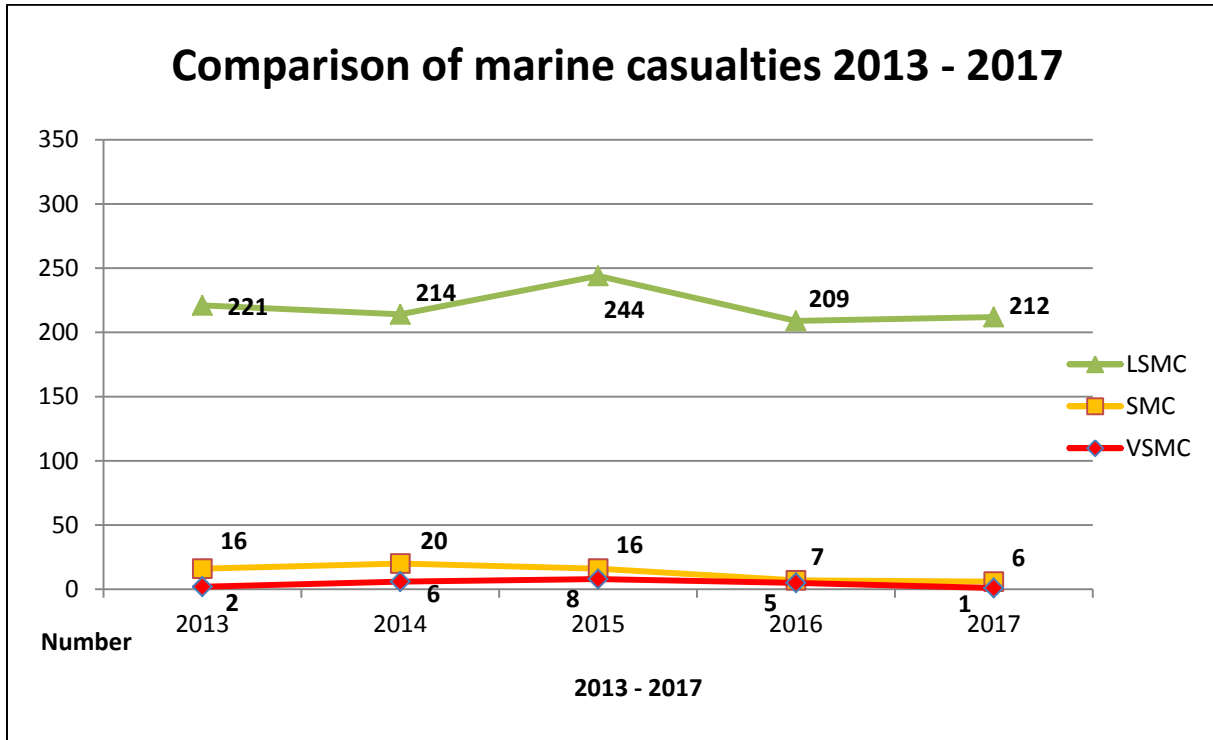
The total number of reports increased slightly again year-on-year (469 in 2016 compared to 516 in 2017). However, the figures have remained almost unchanged in the categories of significance from an international perspective: LSMC, SMC and VSMC.



The statistics presented here and below are based on the international systems and definitions.

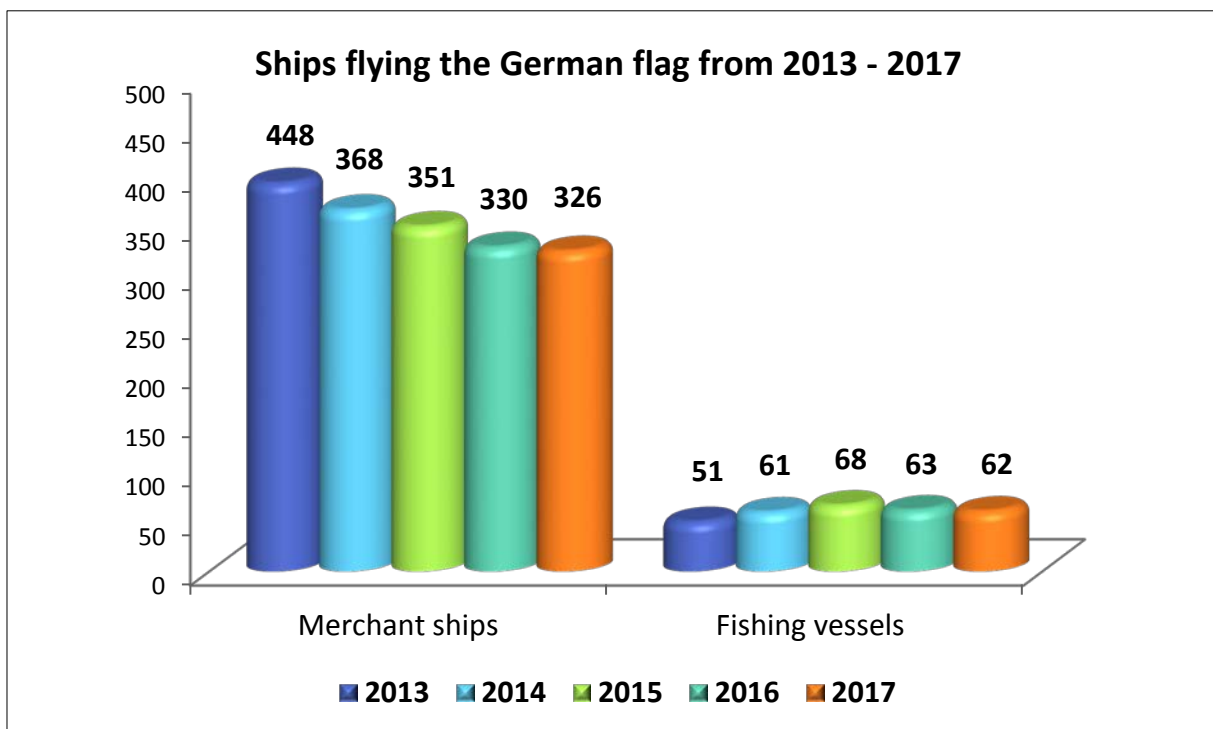


The following table summarises the trend over the past five years. It is evident that the number of LSMCs remains almost unchanged but that the number of SMCs and VSMCs is still declining. This is an extremely positive development and possibly the result of the degree of importance ship safety now has.



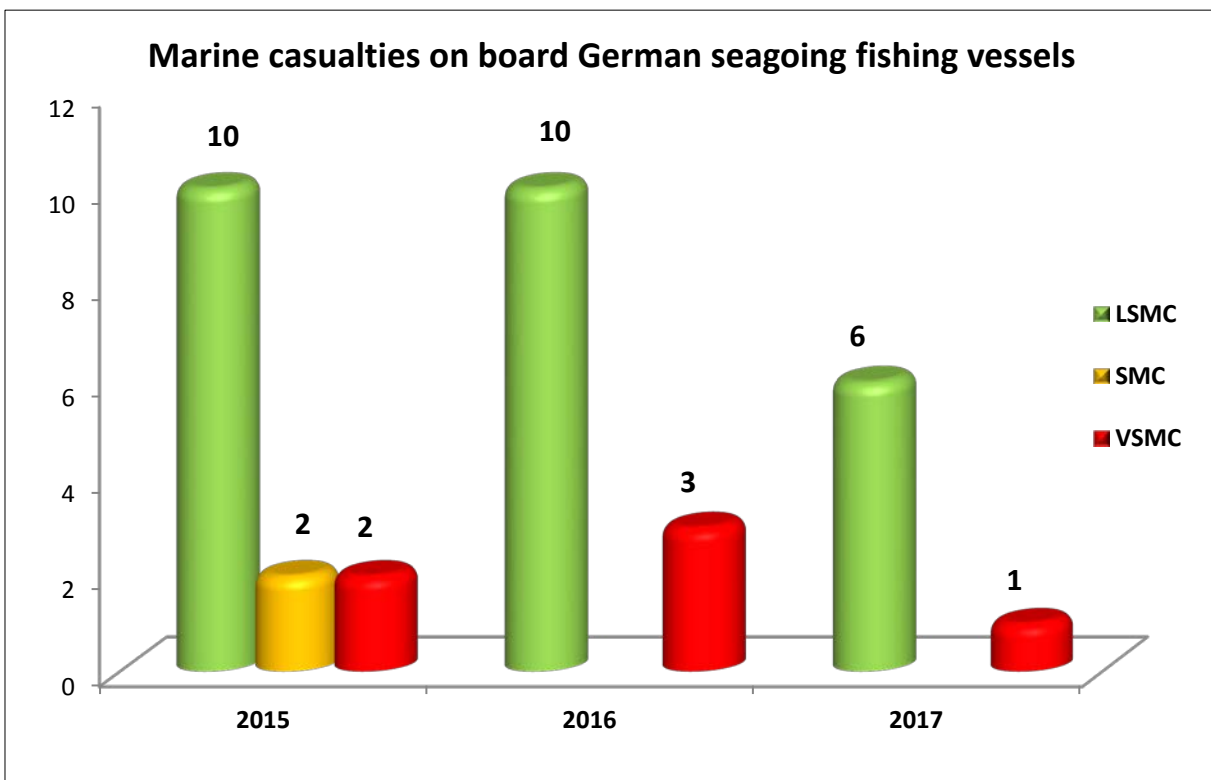
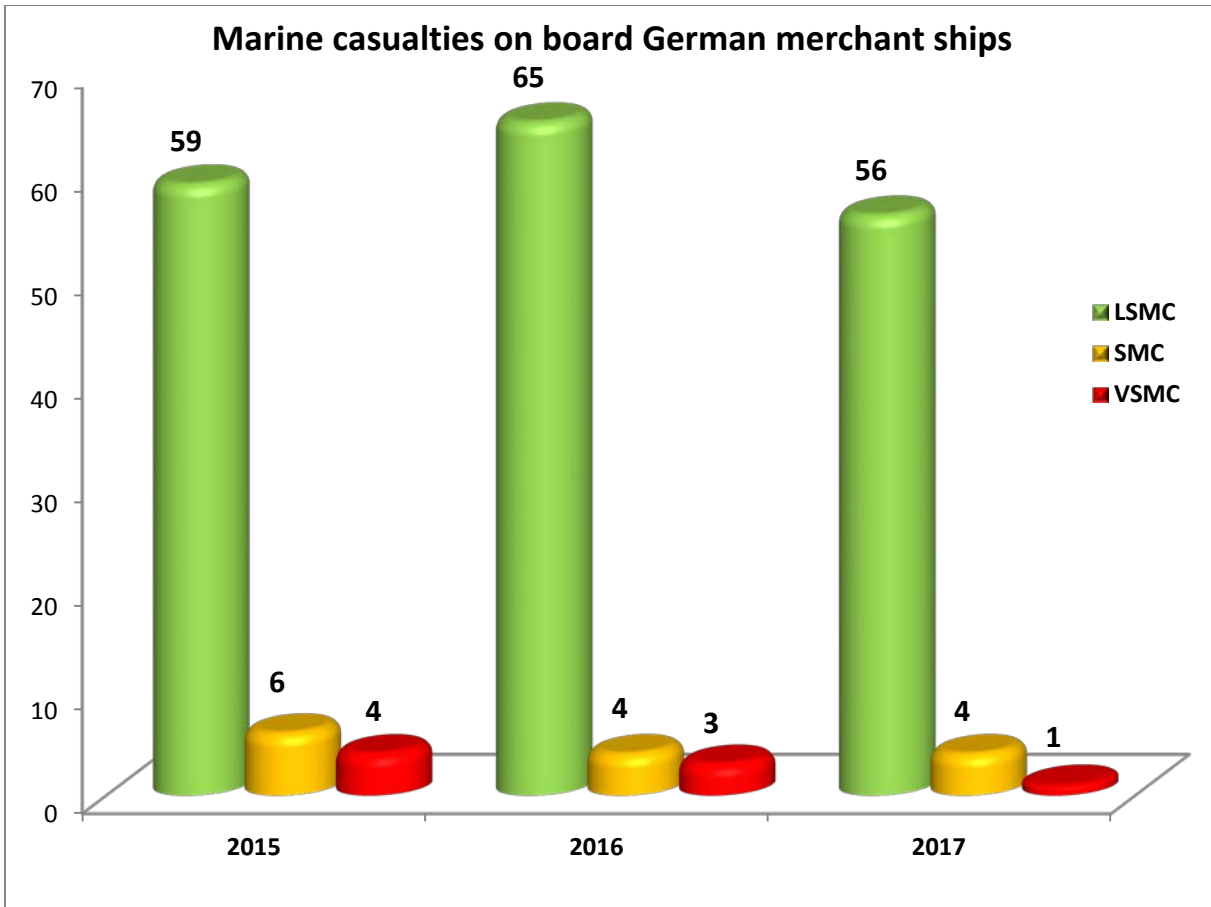
6.2 Ships flying the German flag⁴

The number of merchant ships registered under German flag fell again in 2017, albeit only moderately. This is possibly an indication that the trend, which has led to a considerable contraction of Germany's merchant fleet in recent years, has at least been stopped. The number of fishing vessels flying the German flag remained virtually unchanged. Further developments remain to be seen.



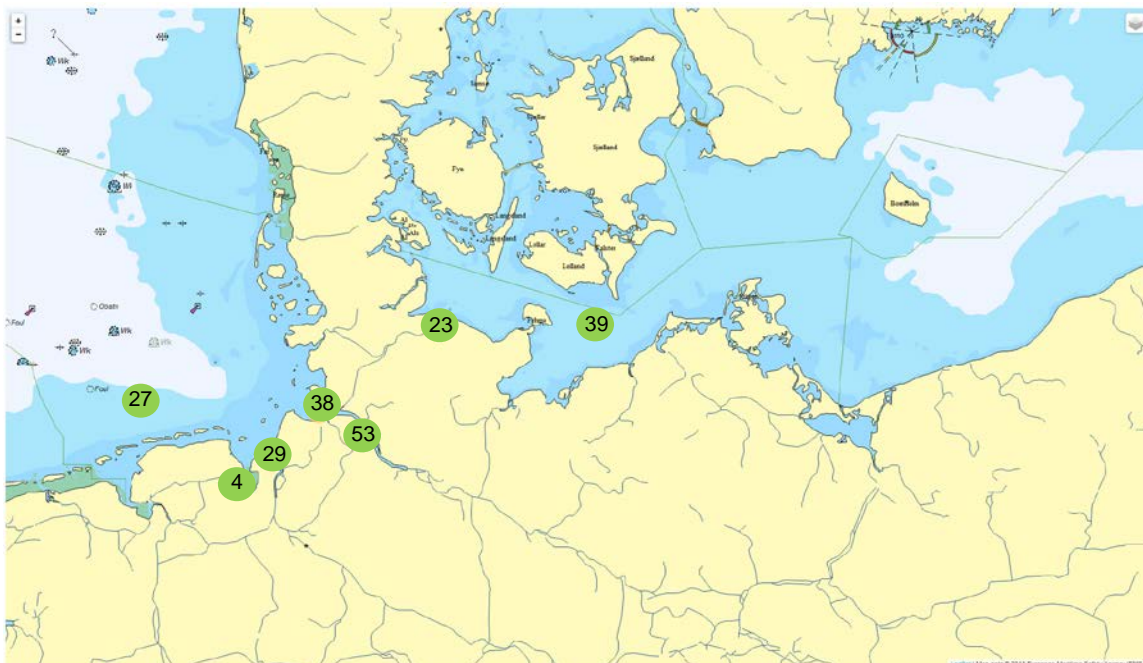
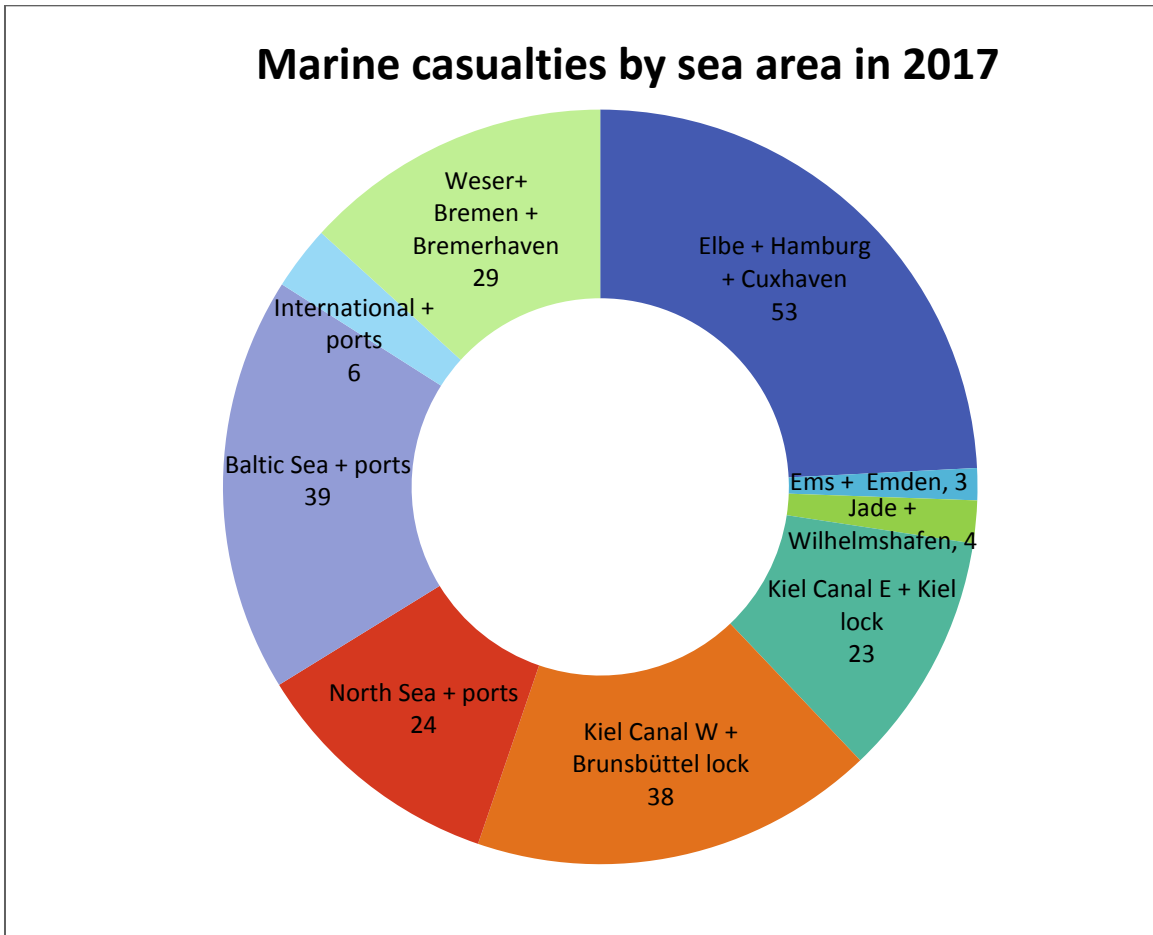
⁴ Source: Federal Maritime and Hydrographic Agency

Fewer marine casualties occurred on merchant ships and fishing vessels flying the German flag in 2017 than in the two years previous. This is true of all three categories.



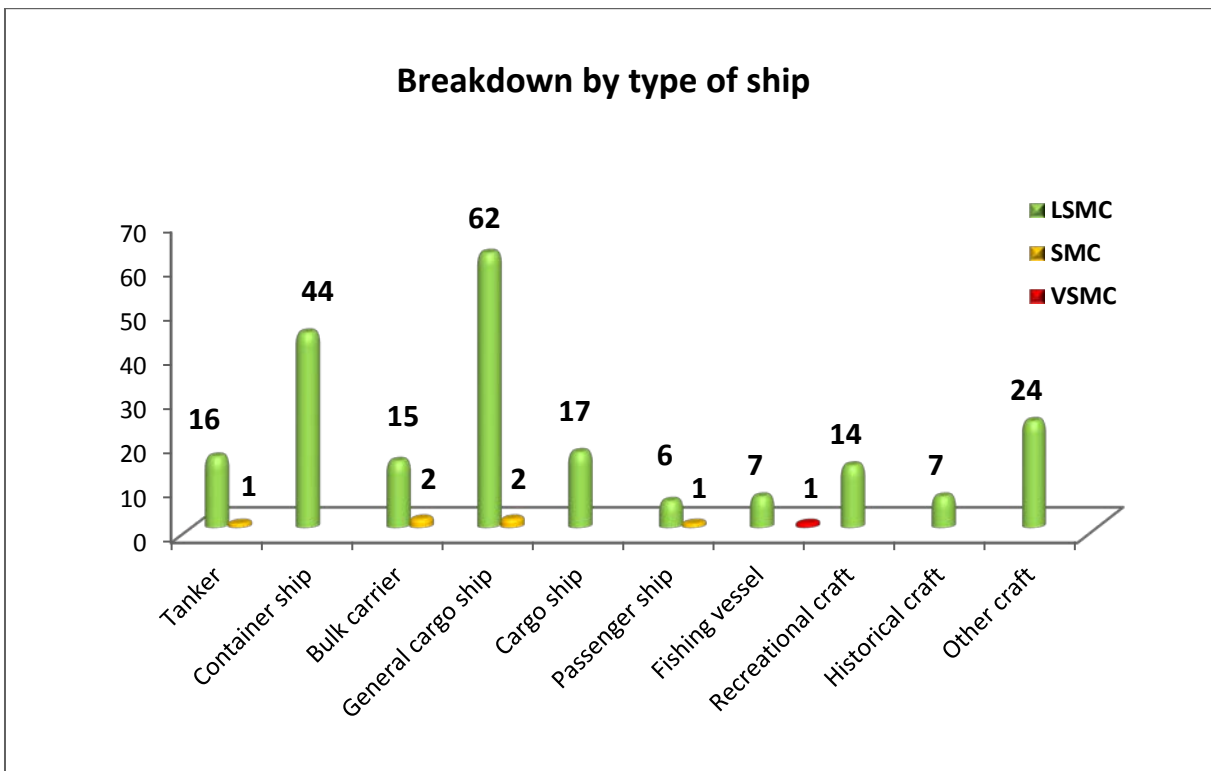
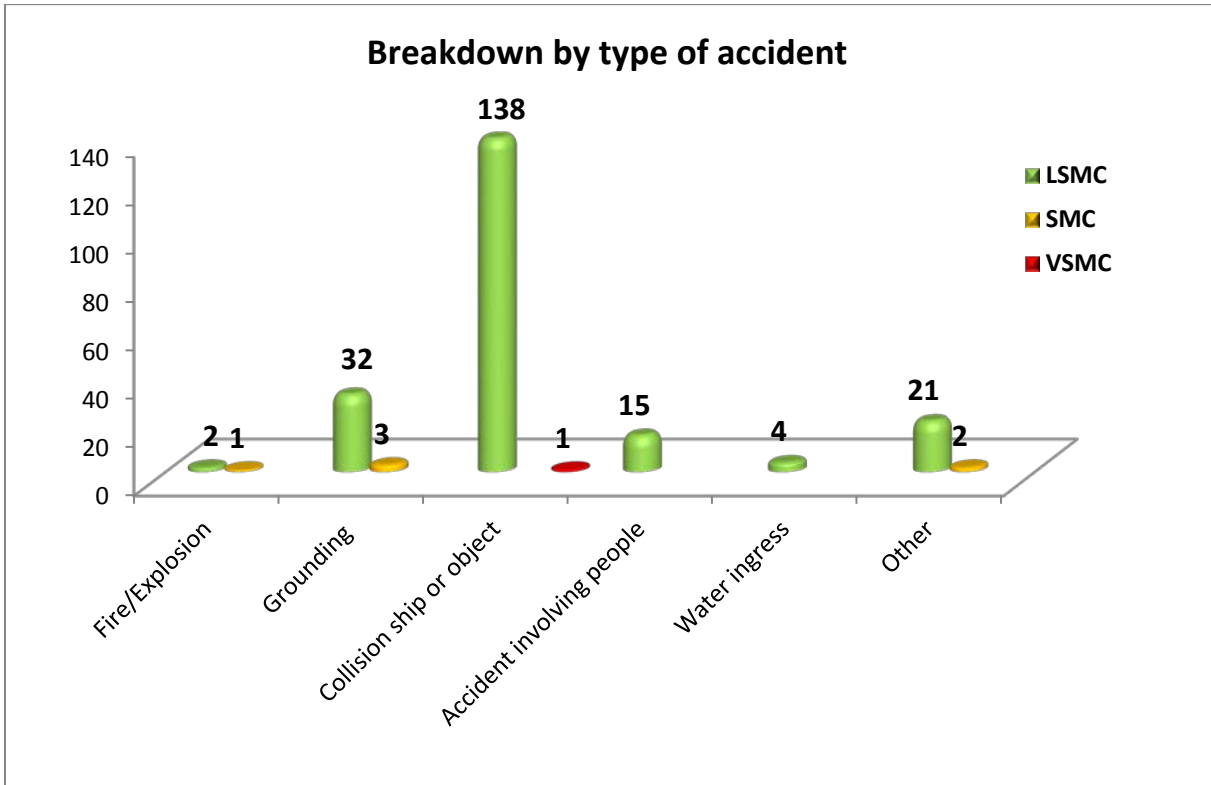
6.3 Breakdown of marine casualties by sea area

The distribution of accidents within German sea areas has remained virtually unchanged. Areas with the highest volume of traffic (Elbe from Cuxhaven to Hamburg, Kiel Canal) are also the sea areas with the highest accident figures in 2017, as reflected by the second presentation on the chart, in particular.



6.4 Breakdown of marine casualties by kind of accident and type of ship

The distribution of accidents by kind of accident and type of ship did not differ significantly from the figures for 2016. It should be noted here that the kind of accident 'Other' includes such technical defects as engine or rudder failure and that in the case of the type of ship, 'Other' applies to seagoing ships covered by the SUG that have yet to be mentioned, e.g. tugs, pilot boats and offshore supply vessels.

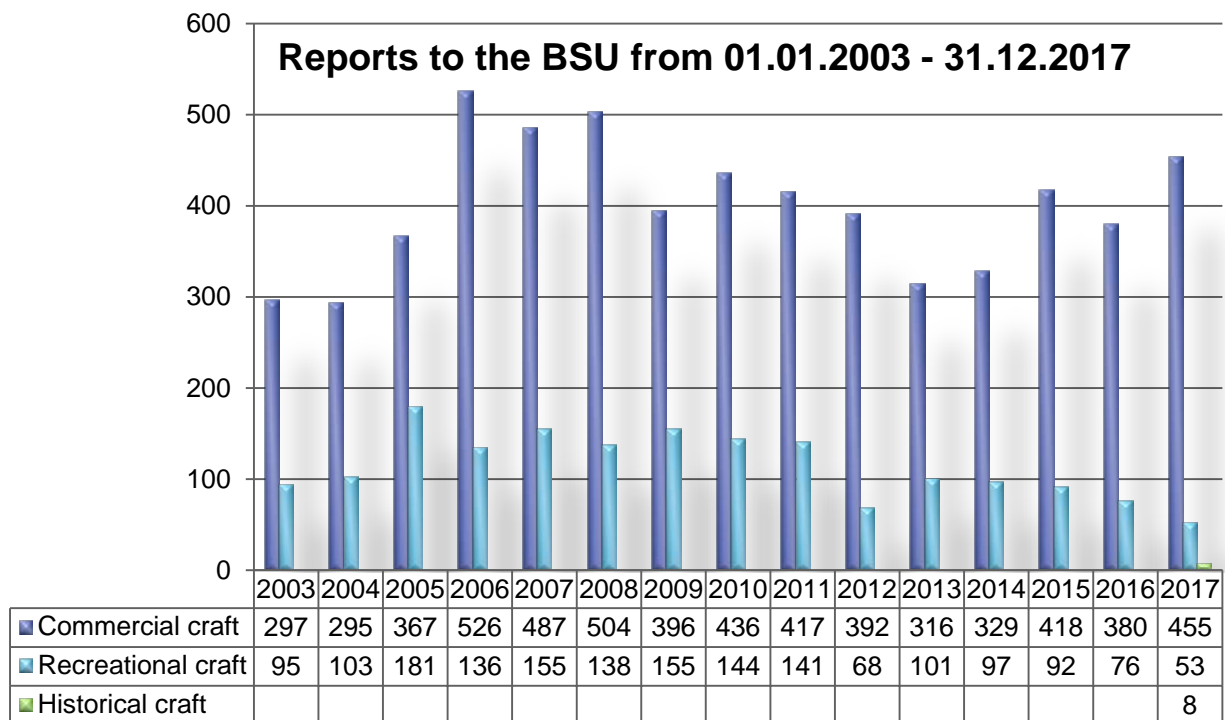


6.5 Investigation of marine casualties involving pleasure yachts by the BSU

Since the reform of the SUG in 2011, accidents involving pleasure yachts not used commercially and outside German territorial waters or fishing vessels of less than 15 m are no longer investigated by German authorities.

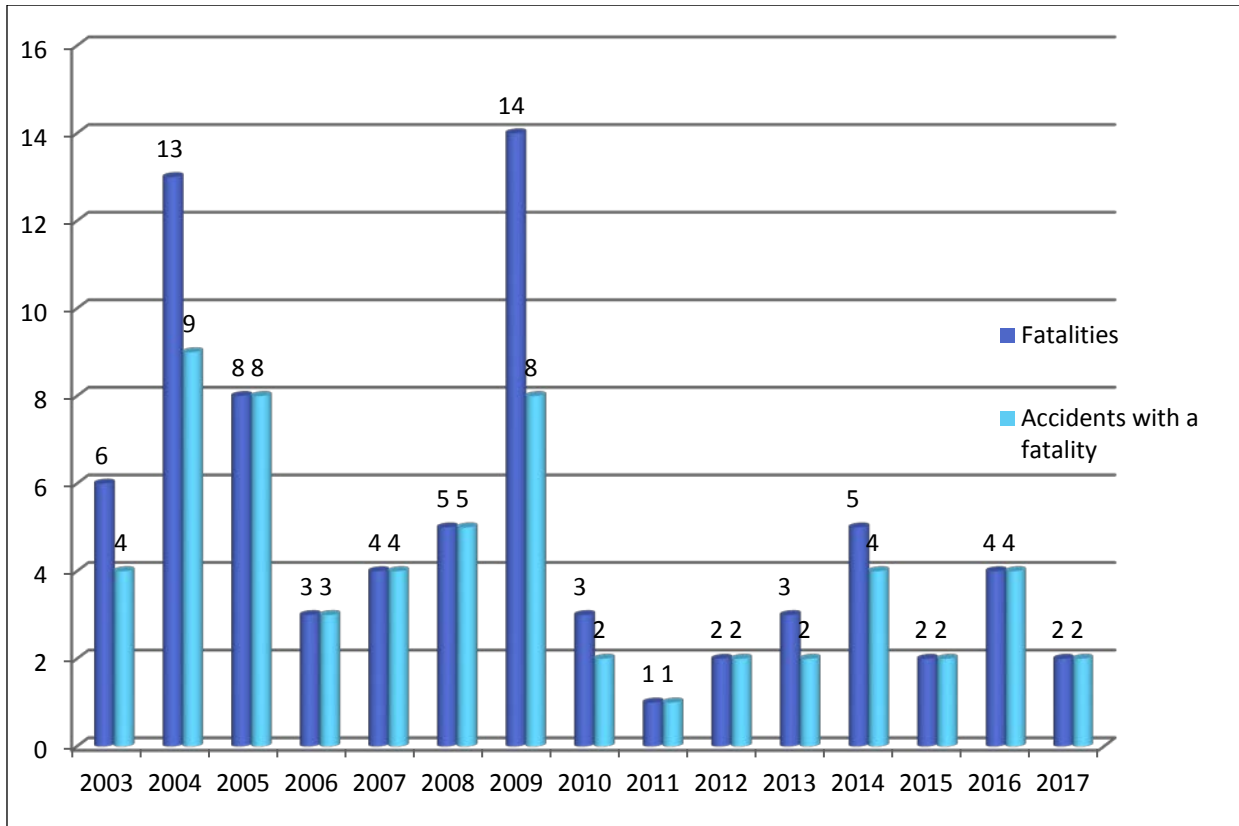
However, the legislator established a saving clause (Article 1(4) SUG) for marine casualties that involve only pleasure yachts in German waters and Germany's EEZ or fishing vessels of less than 15 m in length. The BSU may continue to investigate such cases if it is expected that the findings will increase maritime safety, in particular, by improving applicable regulations or equipment for maritime navigation.

Regardless of the foregoing, there is still an obligation to report such accidents to the BSU under Article 1 of the Ordinance on the Safety of Shipping (Verordnung über die Sicherung der Seefahrt – SeeFSichV 1993), meaning statistics for such cases are at least kept. Inasmuch, this statistical section should continue to deal with accidents involving pleasure yachts. The number of pleasure craft accidents reported has been falling for years and concerned little more than one third of the number reported in 2009, for example. In the best case, this means that safety is becoming increasingly important in the pleasure craft sector, too.⁵



⁵ Shown separately in the table for the first time, traditional vessels were allocated to merchant ships in previous years

Fatalities involving pleasure craft from 2003 to 2017



6.6 Published investigation reports

It is appropriate to close this statistics section and thus also this annual report with the summaries of the published investigation reports (including interim).

The BSU published 14 investigation reports in 2017. Two accidents from 2014, eight accidents from 2015 and four accidents from 2016 were closed.

	Published	Report number	Date of accident	Name of ship	Type of ship	Flag	Scene of accident	Kind of accident
1	02/02/2017	46/16	08/02/2016	Pesorsa Dos	Fishing vessel	Germany	West of Ireland	Fatal accident (person overboard)
2	03/02/2017	43/16	06/02/2016	CMV Maersk Kure	Container ship	Greece	Bremerhaven	Fatal line accident
3	23/02/2017	470/15	03/12/2015	Emsmoon	General cargo ship	Antigua & Barbuda	Weener, Ems	Collision with railway bridge
4	24/02/2017	189/14	30/05/2014	Nobile / Werker	Traditional ship / worksite craft	Both Germany	Flensburg Firth	Collision
5	01/03/2017	268/15	14/07/2015	CMV Dublin Express	Container ship	Germany	Atlantic	Fatal accident
6	07/03/2017	225/15	16/06/2015	Frisia V	Ferry	Germany	Norddeich	Collision with quay
7	14/03/2017	499/15	17/12/2015	BBC Maple Lea	Multi-purpose carrier	Germany	Canada	Grounding
8	12/04/2017	262/14	16/08/2014	Andrea	Fishing vessel	Germany	Baltic Sea	Foundering with subsequent fatality
9	26/04/2017	402/15	21/09/2015	Desdemona	Charter	Germany	Warne-	Fatal accident

					yacht		münde	
10	15/06/2017	42/15	06/02/2015	Askoe	Dry bulk cargo ship	Antigua & Barbuda	Baltic Sea	Fatal accident
11	14/07/2017	459/15	29/11/2015	Eendracht / Transcapricorn	Both general cargo ships	Netherlands/ Gibraltar	Lower Elbe/ Ooste	Collision
12	05/10/2017	44/16	18/02/2016	Condor	Fishing vessel	Germany	Baltic Sea	Foundering with subsequent fatality
13	02/11/2017	55/15	18/02/2015	Kristina	Fishing vessel	Germany	North Sea	Foundering
14	29/11/2017	439/16	04/12/2016	CMV Hanni	Container ship	Germany	Hamburg	Grounding

The BSU also issued four interim investigation reports. These are necessary when the BSU is unable to meet the annual deadline for publishing an investigation.

	Published	Report number	Date of accident	Name of ship	Type of ship	Flag	Scene of accident	Kind of accident
1	09/01/2017	12/16	08/01/2016	Evert Prahm	General cargo ship	Germany	Rendsburg, Kiel Canal	Collision with transporter bridge
2	06/02/2017	44/16	18/02/2016	Condor	Fishing vessel	Germany	Baltic Sea	Foundering with subsequent fatality
3	11/05/2017	168/16	17/05/2016	Pesora Curato	Fishing vessel	Germany	Atlantic	Fatal accident
4	16/11/2017	423/16	20/11/2016	Meridian / Newyorker / Diana	Multi-purpose carrier/ Container ship/ Container ship	Germany / Panama / Liberia	Bremerhaven	Collision