



MARITIME ACCIDENT REVIEW 2010



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EXECUTIVE SUMMARY

This is the fourth in a series of annual reviews, aimed at making both the EU maritime community and EU citizens aware of the accidents happening in and around EU waters. This includes the Atlantic coast (incorporating the North Sea and the English Channel), the Baltic Sea and the EU related parts of the Mediterranean Sea and the Black Sea, as well as the waters around Norway and Iceland.

The information contained in this review comes from a number of sources, including the media monitoring service of the European Commission, reliable accident information sources, recognised shipping information systems, the maritime and general media and a wide range of internet based publications (the acknowledgements at the end of the review show the most prominent sources). The information has been aggregated in a database in order to generate the tables, graphs, charts and maps in the document. Unless it states to the contrary, the figures in the text refer to the number of vessels involved, as opposed to the number of accidents. It is believed that the figures represent a relatively accurate overview of the accidents that happened in and around EU waters during 2010, although comprehensive reporting cannot be fully guaranteed.

There have now been no shipping accidents on the scale of the **Estonia** disaster in the Baltic Sea for nearly 17 years, and no accidents involving major pollution since the **Prestige** disaster off Spain over 8 years ago. This may be an indication that the various maritime safety initiatives taken by authorities at the national, EU and global levels are having a significant positive effect.

However, although the severity of accidents has substantially reduced in recent years, the 2010 figures show that both the total number of ships involved in accidents and also the number of lives lost, are once again increasing. In addition, the progressively lower number of potential pollution incidents spotted by EMSA CleanSeaNet system satellites might suggest that shipping is becoming more aware of being monitored from above. The marked decline in the number of accidents and the loss of life in 2009 in comparison with the economic boom years of 2007/2008, followed by a smaller increase in 2010, suggest that there is a link between accident numbers and economic activity.

During the year, there were several occasions on which the damage caused by individual accidents gave cause for concern. There were also a number of accidents where the consequences could potentially have been much worse (see the "Most Significant Accidents" sub-sections in Chapter 3). However, the clear message from this 2010 review is that, while there have been no major disasters for almost a decade, there continue to be many hundreds of accidents every year, with a substantial proportion leading to vessel damage, pollution and/or loss of life. Consequently, it is important that initiatives aimed at improving ship, cargo and/or pollution monitoring, accident response and maritime safety in general continue to be implemented.

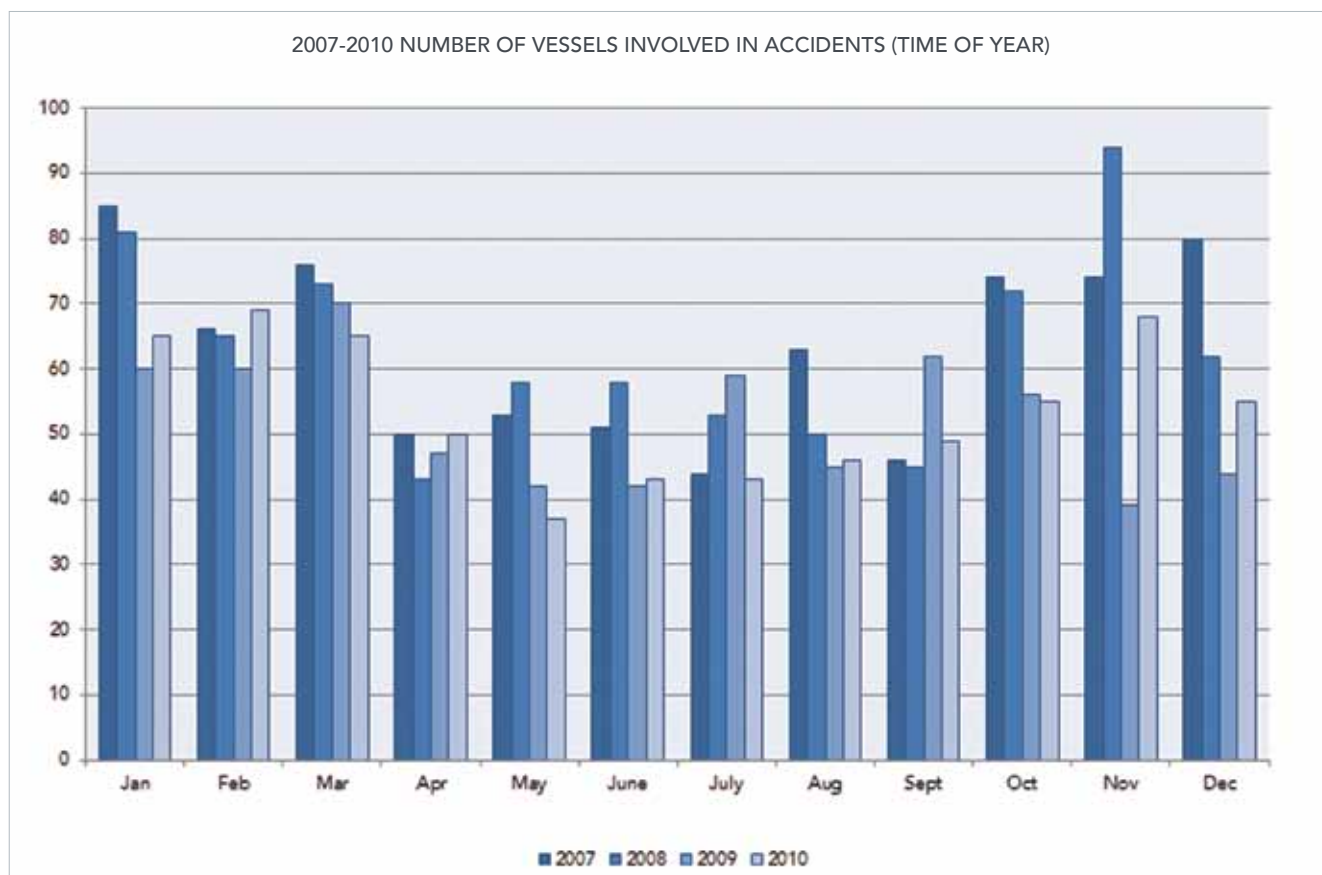
Looking ahead, there is the potential for greater accident consequences with the delivery of bigger and bigger ships. There are questions about the ability of current response systems to deal with the removal of some of these very large vessels from an accident site, and any associated pollution.

With the exception of January and December, 2010 showed a classic annual accident profile with winter peaks and lows in the warmer months when the weather was better. The period at the end of 2009 and the beginning of 2010 was particularly interesting, because there was a jump from around 40 accidents each in November and December 2009, to 60-70 accidents each in January, February and March 2010 (an increase of over 50%).

With respect to loss of life, February (11 lives lost) and March (15 lives lost) together accounted for around 43% of the total fatalities (see section 4.1). For accidental pollution, the only significant spills in 2010 occurred in February, June, October and December (2) (see section 4.2).

Total Numbers for 2010

644 vessels were involved in 559 accidents (sinkings, collisions, groundings, fires/explosions and other significant accidents) in and around EU waters during 2010. The figures show that, although the number of vessels involved in accidents in 2010 was substantially lower than in the peak years of 2007/2008, it was still higher than in 2009. In this regard, it is important to note the difference in the overall numbers of vessels involved in accidents before and after the start of the economic downturn at the end of 2008.



Post-2008, it is estimated that maritime traffic dropped by between 15-20% and so it is not surprising that, as a result, there have been fewer accidents.

It was reported that 61 seafarers lost their lives on commercial vessels operating in and around EU waters in 2010 (compared with 52 in 2009 and 82 in both 2008 and 2007). The majority of these were in accidents involving fishing vessels (33%), while accidents on general cargo ships accounted for 28% of lives lost in 2010 (see section 4.1).

In 2010, it was reported that the largest number of vessels involved in accidents were involved in collisions and contacts with infrastructure (45%). Around 22% were involved in groundings (substantially lower than previous years) and around 13% in fires and explosions. Less than 5% sank, making the number of reported sinkings in 2009/2010 significantly lower than the levels in 2007/2008.

Number of vessels involved in accidents (2007-2010)

	2007	2008	2009	2010
Sinkings	55	61	28	32
Collisions/Contacts	304	308	292	288
Groundings	197	217	177	143
Fires/Explosions	91	89	67	83
Other	115	79	62	98
Total	762	754	626	644

With regard to accidental pollution, there were five cases where spills of over a hundred tonnes were reported, and several others well below 10 tonnes each (see section 4.2). Without a particular jet fuel spill (from the double-hulled crude oil tanker **Mindoro** off the southern Netherlands coast in October 2010), the estimated amount of oil spilled in reported accidents would have once again reduced, this time to 1,000-1,500 tonnes (in comparison with 1,500-2,000



There is some seasonality in accident prevalence: accidents are more frequent in the period October-March than during the summer months (see chart, p.5).

tonnes in 2009, 2,000-3,000 tonnes in 2008 and 7,000-8,000 tonnes in 2007). However, the jet fuel spill was estimated at around 7,000 tonnes by the Dutch authorities, which increases the 2010 estimate to over 8,000 tonnes. This would have been of greater concern if it had been heavy oil.

20% of the vessels involved in accidents in 2010 were reported to be under 500 gross tonnage (gt), 41% were in the 500-5000 gt category and 39% were over 5000 gt. 76% of the vessels which sank were under 500 gt, with 72% of these being fishing vessels. Over 52% of the lives lost were on vessels under 500 gt, with the great majority being on fishing vessels and general cargo ships. Pollution spills over a hundred tonnes were from a variety of larger vessels (see sub-section 4.2.2).

By country of registry, the majority (63%) of the vessels involved in accidents in and around EU waters were registered in EU countries, while around 37% flew non-EU flags. These proportions have been relatively consistent over the last four years.

In 2010, the proportion of accidents in and around EU waters involving vessels that were not certified by classification societies was around 24%, and the proportion involving vessels certified by EU recognised organisations was around 74%. The proportion of accidents involving vessels classed by classification societies that are not EU recognised organisations was once again in the 1-2% range. EU recognised organisations class well over 90% of the world fleet in terms of tonnage, although the proportion is lower in terms of vessel numbers. From the figures used in this review, around 98% of commercial vessels sailing in and around EU waters are either certified by EU recognised organisations, or by the Member States themselves.

Of the ships involved in accidents in and around EU waters, around 81% were EU managed (similar to previous years). 80% of the lives lost were on EU managed vessels, and four of the five vessels involved in significant accidental pollution events were also EU managed (see sub-section 4.2.2). The most serious accidents that occurred in 2010 are described in more detail in Chapter 3.

1. INTRODUCTION

This review focuses on significant accidents involving commercial vessels of all ages and sizes (including fishing vessels) which occurred during 2010. For the purpose of the review, significant accidents include all total/partial sinkings, collisions, groundings, fires and explosions on board ships while underway, under tow, anchored, berthed or under construction/maintenance. In addition, significant accidents involving crew members/passengers lost overboard, significant cargo loss, major heavy weather damage, structural failure, lifeboat accidents and infrastructure collapse are also included.

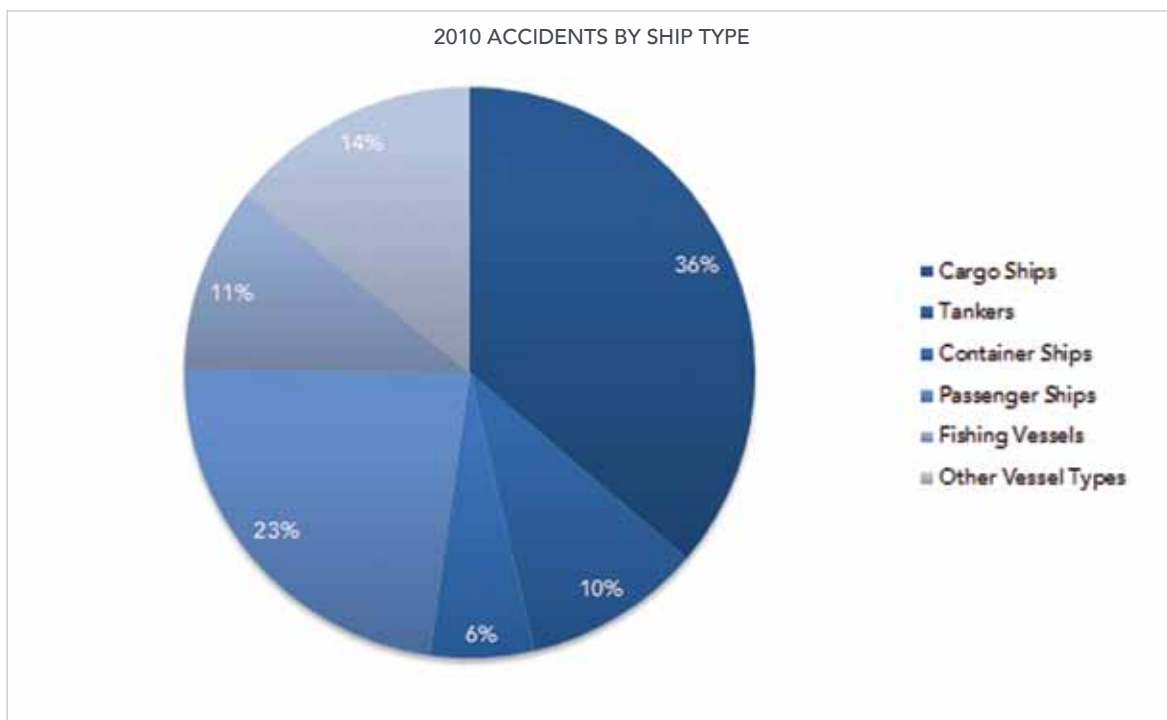
Unless otherwise stated, figures refer to the number of vessels involved in accidents, rather than the number of accident events (e.g. two or more vessels can be involved in a single collision event, even though only one of the vessels involved might collide, ground and/or sink). When a vessel has been involved in more than one event at the same time (sinking, collision, grounding, fire, etc.), only the event judged to be the most significant is recorded. For example,

if a vessel collides and then sinks, it is recorded here as a sinking, or if a vessel has a collision and then runs aground, it is recorded under the category which causes the greatest damage and/or which is judged to have had the greatest effect.

The figures do not include machinery failures (i.e. those which had no further impact), minor cargo losses, anchor losses, etc. Although figures for loss of life from incidents involving commercial vessels are included in the report, there is a risk of under-reporting, particularly for fishing vessel accidents. For vessels of less than 50 gt only sinkings and accidents involving loss of life have been recorded in this review.

Finally, the review does not focus on the causes of accidents, which are for the relevant accident investigation bodies to consider as part of their analysis. This review is designed simply to be a digest of accident reports and statistics from a variety of sources, for the purpose of raising awareness of the number and type of shipping accidents occurring in and around the waters of the European Union.

2. ACCIDENTS BY SHIP TYPE



2.1. Cargo ships

For the purposes of this review, this category comprises general, ro-ro and refrigerated cargo ships, bulk carriers and vehicle carriers, which collectively represent the great majority of commercial shipping. In 2010, this was once again by far the biggest category for vessels involved in accidents in and around EU waters, and the figures showed a significant reduction in the number of vessels involved in accidents in the economic crisis years (2009/2010) when compared to the boom years (2007/2008). Two of the year's biggest spills (the general cargo ship **North Spirit** and the bulk carrier **Antonis**) both fell into this category (see sub-section 4.2.2).

Number of cargo ships involved in accidents (2007-2010)

Cargo Ships	2007	2008	2009	2010
Sinkings	11	10	6	6
Collisions/Contacts	132	120	93	97
Groundings	108	115	76	72
Fires/Explosions	29	26	30	17
Other	50	36	20	42
Total	330	307	225	234

As in 2009, cargo ships accounted for around 36% of the vessel accidents for the year (compared with around 41% in 2008 and 43% in 2007). There were a number of serious accidents in the category in 2010, including the sinking of several general cargo ships (see sub-section 3.1). Importantly, although there were two significant spills from these ships, the environmental consequences of these accidents were less severe than in cargo ship accidents in 2009.

Within this category, general cargo ships comprise the great majority of the vessels involved in accidents. Bulk carriers are the only other really significant ship type within the category in terms of accidents, and at 17-18%, the proportion of bulk carriers in the cargo ship accident total was slightly greater than in 2009 (16%).

Most general cargo ships, and many bulk carriers and other cargo ships, are in the 500-5000 gt range. In 2010, as in previous years, most of the accidents involved groundings or collisions, while contacts with infrastructure, fires/explosions and other types of accidents were less significant. However, the number of fires reported was almost half that reported in 2009, while the number of "other types of accident" doubled.



Cargo ships are vital to the functioning of the European economy. Accident figures compiled by EMSA over the past four years suggest that there is a correlation between the rise-and-fall in cargo ship accidents and the peaks and troughs in marine traffic.

The number of vessel accidents in the consolidated figures increased slightly from 2009, but was much lower than in 2008 and 2007. In 2009/2010, the number of sinkings, collisions/contacts and groundings were all significantly lower than in the economic boom years of 2007 and 2008. In 2010, loss of life in this category continued to decrease, with 17 seafarers lost (down from 19 in 2009, 24 in 2008 and 20 in 2007).

2.2. Tankers

This category includes all types of tankers. The vast majority operating in and around EU waters are now double hulled, in line with the international requirement to phase out single hulled tankers.

Although there has been no major coastal pollution caused by tankers in recent years, substantial numbers of fairly serious tanker accidents (collisions in particular) are still occurring (see section 3).

Number of tankers involved in accidents (2007-2010)

Tankers	2007	2008	2009	2010
Sinkings	0	1	0	0
Collisions/Contacts	23	31	30	34
Groundings	23	20	28	17
Fires/Explosions	11	11	2	7
Other	6	13	7	7
Total	63	76	67	65

The total of 65 reported tanker accidents represented 10% of the total number of vessel accidents in and around EU waters in 2010, which was almost the same proportion as in 2009 and 2008.

80% of the tankers involved in accidents were oil tankers, while gas tankers accounted for 3% and the remaining 17% involved chemical and other types of tanker. Five people were reported to have lost their lives in accidents on tankers in 2010 (up from two in 2009, and down from nine in 2008 and three in 2007).



Although no major oil spill has been recorded in Europe since the Prestige accident (2002), tankers remain a constant presence off the European coastline. Preparation for a future oil spill is one of EMSA's core activities.

2.3. Container ships

The low number of accidents involving container ships in 2010 is welcome, continuing a downward trend in accident figures since 2007. 38 container ships were reported as being involved in accidents in 2010 (down from the high of 65 in 2007) accounting for less than 6% of the EU vessel accident total. The most notable observation is that collisions/contacts and groundings have reduced substantially. Once again, 2010 does not seem to have been a particularly significant year for container losses, although EMSA does not have comprehensive figures available.

Number of container ships involved in accidents (2007-2010)

Container Ships	2007	2008	2009	2010
Sinkings	1	0	0	0
Collisions/Contacts	42	31	30	23
Groundings	10	18	10	4
Fires/Explosions	3	4	2	4
Other	9	7	10	7
Total	65	60	52	38

If the downward trend in accidents continues, it will be beneficial, given that the consequences of container ship accidents can be expensive. Some of the latest container ships on order can carry 18,000 TEUs. Such ships can carry four times as many containers as the **MSC Napoli**, and over twelve times as many as the **Rokia Delmas**. Should a serious accident occur with these larger vessels, the salvage operation could be more complex.

2.4. Passenger ships

This category includes ferries and cruise ships. 2010 was a relatively poor year in terms of the number of vessels involved in accidents, but better in terms of the damage consequences. The number of passenger vessels involved in accidents represented almost 23% of the EU total, and was almost the same as the high point in 2007. Loss of life was relatively small, although there were a number of accidents where the consequences could have been much worse. Pollution was not a significant issue.

Chapter 3 describes the most significant accidents in this category, including the major fire on the passenger/ro-ro



Container ships are getting bigger.

ferry **Lisco Gloria** off Germany. In addition to the effort put into passenger ship design, the EU work on improving the stability of ro-ro ferries is of particular importance in maintaining and even improving safety in this sector.

Number of passenger ships involved in accidents (2007-2010)

Passenger Ships	2007	2008	2009	2010
Sinkings	4	0	0	2
Collisions/Contacts	73	77	80	70
Groundings	24	26	30	22
Fires/Explosions	17	17	11	30
Other	31	14	14	23
Total	149	134	135	147

147 passenger ships (126 ferries and 21 cruise ships) were reported as being involved in accidents in 2010 (an increase of almost 10% from 2009 and 2008). This was again the second highest category for vessel accidents, some way behind cargo ships, but well ahead of tankers. Contacts between ferries and infrastructure remained the main accident category, and accounted for around 35% of all passenger ship accidents. A significant development was the increase in the number of fires/explosions (from 11 in 2009 to 30 in 2010), along with the significant increase in the number of times that damage was inflicted by large waves. Notably, the figures do not show a significant decrease in the number of vessels involved in accidents in the economic downturn (2009/2010), as is apparently the case with some other ship categories.

The two passenger ships that sank (the 60-year-old 5,500 gt cruise ship **Melody** and the 48-year-old passenger/ro-ro ferry **Egholm II**) were non-operational ferries. One was laid up and the other was under tow to a shipyard.



The European cruise industry is currently experiencing strong growth.

2.5 Fishing vessels

Number of fishing vessels involved in accidents (2007-2010)

Fishing Vessels	2007	2008	2009	2010
Sinkings	27	29	18	18
Collisions/Contacts	17	14	22	15
Groundings	14	20	20	16
Fires/Explosions	16	14	9	15
Other	4	3	5	4
Total	78	80	74	68

The number of fishing vessels reported to have been involved in accidents was low in comparison to recent years. As in 2009, only 18 fishing vessels were reported to

have sunk (in comparison with 29 in 2008). They accounted for 56% of all commercial vessel sinkings in and around EU waters in 2010. To put the figures in context, it should be remembered that the figures for types of accident other than sinkings and those involving loss of life are only reported for larger fishing vessels over 50 gt.

20 crew members were reported to have lost their lives in fishing vessel accidents during 2010. Although this is an increase from the 16 reported in 2009, it still indicates an important trend in improved fishing vessel safety in and around EU waters, as the number of lives lost is down from 31 and 30 in 2007 and 2008 respectively. The most serious individual fishing vessel accidents are described in subsection 4.1.2. However, under-reporting of accidents is very likely to occur in this category.



Fishing remains one of the world's most dangerous professions, reflected in terms of lives lost in European waters each year. 2010 was no exception.

2.6. Other vessel types

This category covers all of the other types of vessel that are engaged in commercial work in and around EU waters, including tugs, offshore support vessels, mobile oil platforms/drill ships, anchor handlers, barges, research vessels, heavy lift vessels and dredgers. In 2010, 92 of these vessels (some 14% of those involved in accidents in and around EU waters) were involved in accidents, which is a substantial increase from 73 in 2009 and is approaching the high of 97 in 2008.

There were only five sinkings, which was an improvement when compared with the relatively high number of sinkings in 2008. 12 lives were reported lost, which was similar to the previous two years. Once again, collisions were by far the most common accident type for this category, with other types of accidents at significantly lower levels.

2010 saw two serious accidents in this category. Three crew members lost their lives when the dredger **DN 31** sank after colliding with the chemical/oil products tanker **Crystal Topaz** off Belgium in December (see sub-section 3.1.2) and two were lost when the tug **Fairplay-22** sank off the Netherlands on 11th November.

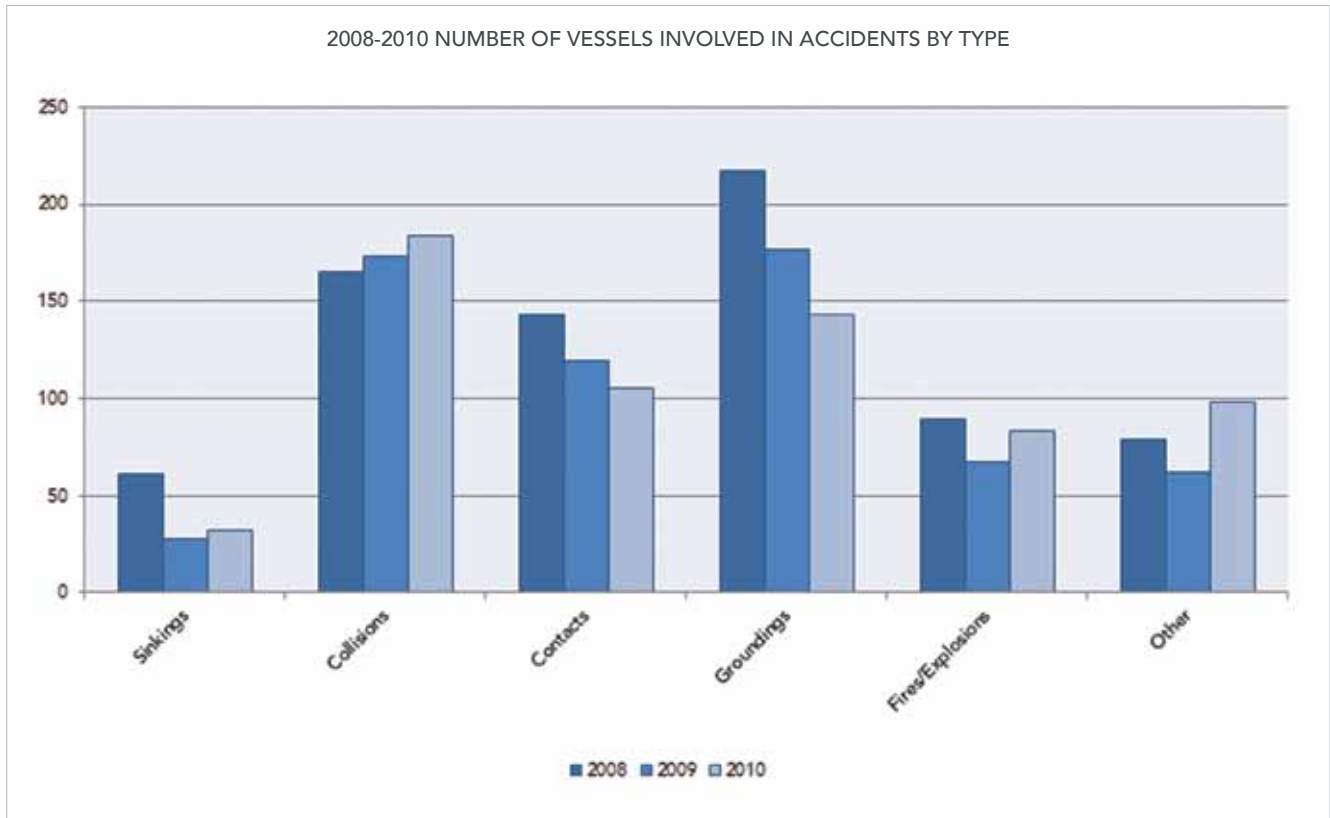
Number of other types of vessel involved in accidents (2007-2010)

Other Vessel Types	2007	2008	2009	2010
Sinkings	12	21	4	5
Collisions/Contacts	17	35	37	50
Groundings	18	18	13	12
Fires/Explosions	15	17	13	10
Other	15	6	6	15
Total	77	97	73	92



The 'Other Vessel Types' category embraces a variety of vessels, involved in diverse activities both close-to-port and offshore.

3. TYPES OF ACCIDENTS



This review deals with accident types in five different categories (sinkings, groundings, collision/contacts, fires/explosions and other types of accident), although collisions and contacts have been separated in the diagram for comparative purposes. From the 2008-2010 figures overall, the number of sinkings has reduced substantially in the last two years, while the number of collisions have slowly increased. The number of contacts with infrastructure and groundings have progressively reduced, while fires/explosions and other types of accidents has increased slightly in number after falling in 2009. Each of the following sections provides a more detailed overview of the figures, followed by a closer look at some of the more significant accidents that happened throughout the year. Accident locations and concentration areas can be seen in the regional breakdown in Chapter 5.

3.1. Sinkings

3.1.1. Overview

Fortunately, 2010 saw no sinkings involving significant loss of life or marine pollution, although there were several serious accidents.

Overall, the figures show a major reduction in sinkings in 2009/2010, in comparison with 2007/2008. The vessels concerned were mainly in three categories (cargo ships, fishing vessels and "other vessel types"). However, of the 32 vessels that did sink in waters around the EU in 2010, seven were over 1,000 gt.

Sinkings by Ship Type	2007	2008	2009	2010
Cargo Ships	11	10	6	6
Tankers	0	1	0	0
Container Ships	1	0	0	0
Passenger Ships	4	0	0	3
Fishing Vessels	27	29	18	18
Other Vessel Types	12	21	4	5
Total	55	61	28	32



On 10 December, the 7148 dwt motor vessel *North Spirit* foundered near Cape Ortegal, Spain in the Bay of Biscay. After receiving the ship's distress call, the Spanish authorities successfully deployed helicopters to rescue the 17 crew members onboard the vessel. No casualties were reported.

3.1.2. Most significant accidents

The worst sinking reported in 2010 was that of the 33-year-old, 2,300 gt general cargo ship *Karim 1*, which sank after colliding with the 11,200 gt double hulled chemical/oil products tanker *Alessandro DP* in the Black Sea off Cape Emine, Bulgaria, on 29th November. Five crew members were rescued, but five lost their lives. The freighter, which was outbound from Varna with a cargo of scrap at the time, took on water and sank quickly after the collision.

Also, three crew members are reported to have lost their lives when the 360 gt dredger *DN 31* sank after colliding with the 7,900 gt double hulled chemical/oil products tanker *Crystal Topaz* in bad weather in the River Scheldt outside Antwerp, Belgium, on 8th December. The tanker was outbound from Antwerp for Rotterdam and after the collision, the dredger capsized, but continued to float for some time before it finally sank. Ship movements in and out of Antwerp were suspended for some time as a result.

The largest ship to sink in and around EU waters in 2010 was the 9,800 gt refrigerated cargo ship *Kea*, which was significantly larger than the biggest vessel to sink in 2009 (at 2,300 gt). The *Kea* was first reported to be drifting out of control with a 60 degree list in heavy seas off north-western Spain with a cargo of ammonium nitrate on board on 30th March. It eventually sank later the same day with the loss of two crew members. The ship was carrying over 1,000 tonnes of fuel oil when it sank, and 2-3 km oil slicks were detected in the vicinity on 1st April.

The second largest was the 6,400 gt general cargo ship *North Spirit*, which sank off north-western Spain after taking on a large quantity of water in stormy sea conditions on 10th December. The accident happened in the Bay of Biscay while the freighter was carrying a cargo of timber from Sweden, and the resultant spill was estimated at up to 400 tonnes of fuel oil. The Spanish authorities subsequently sent vessels to monitor the oil pollution and recover the packaged timber that was floating on the sea surface.

3.2. Groundings

3.2.1. Overview

2010 saw a substantial improvement in the total number and severity of groundings, following an already significant improvement in 2009. However, there were still a number of accidents that involved substantial damage. The primary reduction in accident numbers was in the container ship, tanker and ferry categories. The total number of vessels involved in groundings was at a significant four year low, and represented 22% of the total number of vessel accidents in and around EU waters. A contributory factor appears to be the 34% reduction in the number of groundings reported around the Norwegian coastline.

Groundings by Ship Type	2007	2008	2009	2010
Cargo Ships	108	115	76	72
Tankers	23	20	28	17
Container Ships	10	18	10	4
Passenger Ships	24	26	30	22
Fishing Vessels	14	20	20	16
Other Vessel Types	18	18	13	12
Total	197	217	177	143

As in previous years, by far the largest number of vessels that ran aground in and around EU waters was in the cargo ship category, although this was the lowest figure for four years. Of significance was the reduction in container ship groundings.

3.2.2. Most significant accidents

There were no groundings involving substantial pollution or loss of life in 2010.

The biggest ship reported to have been significantly damaged was the 59,200 gt double hulled crude oil tanker **Pacific Empire**, which ran aground in the Gulf of Finland off the island of Aegna, Estonia, on 2nd January. The tanker, which sustained significant damage below the waterline, had strayed into shallower waters while manoeuvring to anchor at the designated anchorage to await a pilot.

Another serious grounding involving a large ship was that of the 31,100 gt bulk carrier **Baltic Panther** on the River Weser, Germany, on 2nd September. On this occasion, the bulker sustained significant bottom damage and was taken to a shipyard at Bremerhaven for repairs.



The Stadiongracht spent over a week aground in December 2010 in south-western Finland.

The 16,600 gt general cargo ship **Stadiongracht** ran aground on rocks outside the deep fairway into the port of Rauma, south-western Finland, with a cargo of china clay on board on 29th December. As a result of the accident, seven holes were found in the hull and a ballast tank was flooded. The freighter was aground for over a week.

The 5,000 gt cruise ship **Polar Star** ran aground off Hornsund, southern Spitsbergen, in the Svalbard archipelago off northern Norway, with 67 passengers and 46 crew members on board on 30th June. The hull was cracked and the ship sustained water ingress, so all passengers were transferred to another cruise ship.

Also, a significant accident involving a smaller passenger ship occurred when the 230 gt passenger ferry **Fjorddrott** ran aground on rocks while entering the port of Kvitsoy, south-western Norway, on 27th October. As a result, all four passengers and four crew members jumped into the sea and managed to swim to a nearby island without sustaining any injuries. The ferry sustained a hole in its hull and damage to its propeller and blocked the harbour entrance for some time.

3.3. Collisions/Contacts

3.3.1. Overview

In 2010, the number of serious tanker collisions increased slightly and the number of serious passenger ship collisions/contacts decreased in comparison to 2009 (see sub-section 3.3.2). However, none of these resulted in major coastal pollution or loss of life.

Collisions/Contacts by Ship Type	2007	2008	2009	2010
Cargo Ships	132	120	93	97
Tankers	23	31	30	34
Container Ships	42	31	30	23
Passenger Ships	73	77	80	70
Fishing Vessels	17	14	22	15
Other Vessel Types	17	35	37	50
Total	304	308	292	289

Collisions/contacts accounted for almost 45% of vessels reported to have been involved in accidents in and around EU waters in 2010, which was in a similar range to 2009. This

was once again by far the biggest vessel accident category. Cargo ships (mainly general cargo ship collisions/contacts) and ferries (contacts) accounted for the great majority of these types of accidents. Also of note is that the number of groundings reported for tankers and "other vessel types" was the highest they had been for four years, while the number of groundings involving container ships and cruise ships were the lowest for four years.

3.3.2. Most significant accidents

There were a number of collisions involving significant pollution and/or damage in and around EU waters during 2010.

The worst reported accident happened when the double hulled crude oil tanker **Mindoro** collided with the container ship **Jork Ranger** off Scheveningen, southern Netherlands, spilling thousands of tonnes of kerosene (jet fuel) into the sea (see sub-section 4.2.2).

Another serious tanker collision happened when the 4,800 gt double hulled chemical/oil products tanker **YM Uranus** collided with the 87,600 gt bulk carrier **Hanjin Rizhao** around 95 km off the port of Brest, Brittany, north-western France, on 8th October. The tanker was reported to have sustained a 5 x 8 metre hole in its outer hull on the port side, although the inner hull remained intact. The ship, which was carrying a cargo of 6,400 tonnes of pyrolysis gasoline and over 400 tonnes of fuel oil at the time, flooded following the collision and listed heavily, to the extent that it was feared that it might capsize and sink. It was subsequently towed into Brest.

Among the other tanker collisions that resulted in significant damage were two involving single hull tankers. The most serious happened when the 4,800 gt double hulled chemical/oil products tanker **Kardeniz** collided with the 2,000 gt single hulled LPG tanker **Trout** off the coast of the Netherlands on 28th November. Although the **Trout** was holed in the stern, no pollution was reported.

The 350 gt tug **Francia** collided with the 65,000 gt fully cellular container ship **CMA CGM Strauss** off the port of Genoa on 19th February. On this occasion, around 180 tonnes of fuel oil is reported to have been spilled.



The YM Uranus accident illustrated how a double hull design helped to prevent a potentially serious marine pollution accident.

Also, when the 26,000 gt bulk carrier **Antonis** hit part of a dock at the port of Liverpool in December, it was holed and released around 250 tonnes of fuel oil. However, neither accident resulted in significant coastal pollution.

2010 was better than 2009 in terms of the number of significant passenger ship collisions, and the ships involved were much smaller. When the 2,400 gt passenger/ro-ro ferry **Oglasa** was involved in a bow-to-bow collision with the 1,300 gt general cargo ship **Ocean Drop** around 3 km off the port of Piombino, eastern Italy, on 8th January, the bulbous bow of the ferry inflicted heavy damage to the cargo ship, including a large hole in the hull near the waterline.

Also, the 1,200 gt general cargo ship **Lisa D** collided with the 200 gt passenger ship **Sven Johannsen** off the breakwater at the port of Travemunde, Germany, on 13th March. The cargo ship hit the ferry on the starboard side with its bow, and as a result, although there were no injuries, both ships were seriously damaged.

3.4. Fires/Explosions

3.4.1. Overview

Both the number of, and the damage caused by, fires on ships increased in 2010 relative to 2009, although the total number was still lower than in 2007/2008. The 83 reported ship fires represented almost 13% of the overall EU vessel accident total.

Fires/Explosions by Ship Type	2007	2008	2009	2010
Cargo Ships	29	26	30	17
Tankers	11	11	2	7
Container Ships	3	4	2	4
Passenger Ships	17	17	11	30
Fishing Vessels	16	14	9	15
Other Vessel Types	15	17	13	10
Total	91	89	67	83

The most significant finding was that the numbers of fires/explosions for some ship types showed great variations between 2010 and other years. In particular, the number that occurred on ferries was up almost 170% from the relatively low number in 2009. Fires on tankers were also substantially higher than the number reported in 2009. Conversely, the number of fires reported on cargo ships was substantially down in comparison to the previous three years.

3.4.2. Most significant accidents

One of the most serious ship fires in the last two years occurred on 9th October, when the 20,100 gt passenger/ro-ro ferry **Lisco Gloria** was destroyed by fire after an explosion on board when it was in the southern Baltic Sea near the island of Fehmarn, Germany. 248 passengers and crew abandoned ship in life rafts, or directly into the sea,

and were subsequently rescued. The blaze is reported to have begun in a truck on the upper, open car deck and then to have spread and gutted the decks below. The ship suffered several severe explosions and developed a list of 20 degrees before stabilising at anchor. The accident occurred on a major shipping route, which meant that other vessels were quickly on the scene to rescue people. The burned out ferry was finally taken into the Odense Fjord by four tugs on 24th October with fires still burning on board. It was subsequently allowed to dock near Odense, and the fire services eventually extinguished the remaining fires.

On 10th June, the bosun was killed, and the chief mate and another crew member were hospitalised after an explosion that happened when they were inspecting a tank on the 8,700 gt chemical/oil products tanker **Kemal KA** off the port of Cadiz, southern Spain.



Spectacular photos of the Lisco Gloria fire were seen on TV screens across the world in October 2010. There were no fatalities.

Also, 13 crew members were taken to hospital with smoke inhalation problems after the 2,800 gt chemical tanker **Onarfjell** had a fire on board when it was north-west of Smola, central Norway, on 23rd May. It is reported that the fire was finally extinguished the following day.

All crew members were evacuated, and several were injured, when the 55,700 gt bulk carrier **Yeoman Bontrup** had a fire on board off the Glensanda quarry, western Scotland, northern UK on 2nd July. The fire burned for several days.

On 27th October, 111 crew members had to be evacuated from the 7,800 gt fish factory **Athena** after a fire broke out on board when it was south-west of the Isles of Scilly, south-western UK. The fire continued to burn for around two weeks before it was finally brought under control.

At the port of Kirkenes, northern Norway, a blaze on the 800 gt fishing trawler **Tobago** on 28th February was eventually extinguished on 3rd March, but only after causing extensive damage.

3.5. Other types of accident

3.5.1. Overview

This section includes structural failures, passengers/crew members lost overboard, lifeboat accidents, heavy weather damage, significant cargo loss and infrastructure (e.g. crane) collapse.

Other Accidents by Ship Type	2007	2008	2009	2010
Cargo Ships	50	36	20	42
Tankers	6	13	7	7
Container Ships	9	7	10	7
Passenger Ships	31	14	14	23
Fishing Vessels	4	3	5	4
Other Vessel Types	15	6	6	15
Total	115	79	62	98

There were more accidents in this category during 2010 than in 2008/2009, but the number was still significantly lower than that reported in 2007. Cargo ships accounted for a far greater proportion of the vessels involved in accidents than the other ship types.

3.5.2. Most significant accidents

In an accident with far-reaching consequences, the 20,800 gt bulk carrier **Timberland** dragged its anchor and hit and severely damaged one of the sea cables supplying the island of Bornholm with power from southern Sweden on 9th January, thus causing a massive electricity failure on the island.

There were a number of accidents in which severe weather was a factor in 2010. The worst case was when, of 1,350 passengers on board, two were killed, and many others were injured when the 40,100 gt cruise ship **Louis Majesty** was hit by three 8 metre rogue waves north-east of Barcelona on 3rd March. Another was when around 30 passengers were injured when the 90,000 gt cruise ship **Brilliance of the Seas** was hit by 9-10 metre waves when it was east of Malta on 17th December. Two women were also seriously injured, and other passengers were also taken to hospital, after the 6,400 gt passenger/ro-ro ferry **Villum Clausen** encountered huge waves off the southern Baltic island of Bornholm, Denmark, on 11th January.

Two tourists died when their vehicle fell into the sea while disembarking from the 22,500 gt passenger ro/ro cargo ship **Moby Otta** at Genoa on 26th September. Some other passengers had a lucky escape when the 9,100 gt passenger/ro-ro ferry **Bohus** was disembarking vehicles at the port of Stromstad, south-western Sweden, on 31st July. The accident occurred when a mezzanine car deck on the port side was raised instead of lowered, as a result of which some of cars were crushed against the deck above.



The *Louis Majesty* in port. A video of the wave hitting the vessel in March 2010 was posted on the internet, and has since been heavily circulated in maritime safety circles.

4. CONSEQUENCES OF ACCIDENTS

4.1. Lives Lost

4.1.1. Overview

The number of lives reported lost in 2010 has increased by 17% from 2009, but is still substantially lower than the 2007/2008 figures. Given their larger numbers, the majority of losses were on general cargo ships and fishing vessels, with “other vessel types” also being significant, although the number of lives lost on cargo ships was still the lowest for four years.

The container ship category was the only sector with no reported loss of life for the whole year. It is also of note that the record for fishing vessels has substantially improved since 2007/2008, although it should be borne in mind

Lives Lost by Ship Type	2007	2008	2009	2010
Cargo Ships	20	24	19	17
Tankers	3	9	2	5
Container Ships	0	2	1	0
Passenger Ships	10	6	4	7
Fishing Vessels	31	30	16	20
Other Vessel Types	18	11	10	12
Total	82	82	52	61

that there may be a higher level of under-reporting in this category.

4.1.2. Most significant accidents

Some of the worst accidents of the year, in terms of loss of life, have already been mentioned in sub-section 3.1.2 (for example, the collision between the *Alessandro DP* and the *Karim I* in the Black Sea).



The Alessandro DP, which survived a collision with the Karim I in November.

Despite the improved fishing vessel loss of life figures in 2009 and 2010, there were still a number of very serious accidents. One of the worst cases occurred when the fishing vessel **Fabio e Joao** disappeared off the port of Peniche, central Portugal, on 18th February, with the loss of all four crew members. In addition, three crew members were reported lost, and two were rescued and taken to hospital with hypothermia and trauma, after the fishing vessel **Vimar** was hit by large waves, capsized and sank off Playa de Modelo, Camina, northern Portugal, on 3rd March. Also, three people died after an unspecified small fishing vessel sank near the Gulf of Cagliari, Sardinia, Italy, on 18th July.

4.2. Pollution

4.2.1. Overview

There were no accidental spills by commercial vessels which caused extensive pollution to the EU coastline in 2010. Despite the fact that coastal pollution from shipping in and around EU waters in recent years has been limited, there were a number of significant spills which could have had a much greater impact if the oil types and/or locations and/or weather/current conditions had been different (e.g. the **Mindoro** incident - see sub-section 4.2.2).

The EMSA CleanSeaNet satellite monitoring system continued to provide a clear picture of both accidental pollution and operational discharges in 2010, although the latter are not covered in the figures in this review. Year-on-year, the situation has improved, with the number of potential slicks detected reducing from 3,296 in 2008 to 2,107 in 2009 and 1,981 in 2010 (this represents a reduction of 40% when comparing the 2008 and 2010 figures). This suggests that comprehensive surveillance has had a progressively positive effect over the last three years.

4.2.2. Pollution events of significance

There were five events of significance which involved commercial vessels in and around EU waters in 2010.

As mentioned in sub-section 3.3.2, although there was no significant coastal pollution, by far the biggest pollution event occurred when the 58,400 gt double hulled crude oil

tanker **Mindoro** collided with the 7,900 gt, 803 TEU, fully cellular container ship **Jork Ranger** in the approaches to the River Maas off Scheveningen, southern Netherlands, on 12th October. As a result, the tanker, which was carrying a cargo of kerosene (jet fuel) at the time, sustained a 5 x 6 metre hole on the port side close to the water line and began leaking its highly flammable cargo into the sea. Eventually, the great majority of the fuel in the tank flowed out, resulting in an estimated spill of around 7,000 tonnes. However, it was reported that the fuel evaporated rapidly.

The other significant spills were much smaller. When the 6,400 gt general cargo ship **North Spirit** sank in a storm in the Bay of Biscay off north-western Spain on 11th December. It was reported that a spill of up to 400 tonnes of fuel oil had to be contained. However, as the pollution was released clear of the coast and then continued to drift north-west away from the coast, it dispersed naturally, apparently resulting in little impact.



The *Mindoro* suffered a large gash to the port side of the hull (see photo, inset).

The 26,000 gt bulk carrier **Antonis** was holed when it hit part of a dock at the port of Liverpool, north western UK, on 13th December. As a result, it was reported that around 330 tonnes of heavy fuel oil was released and a major clean-up operation had to be put in place. Fortunately, the spill was contained within the dock and was not released into the River Mersey.

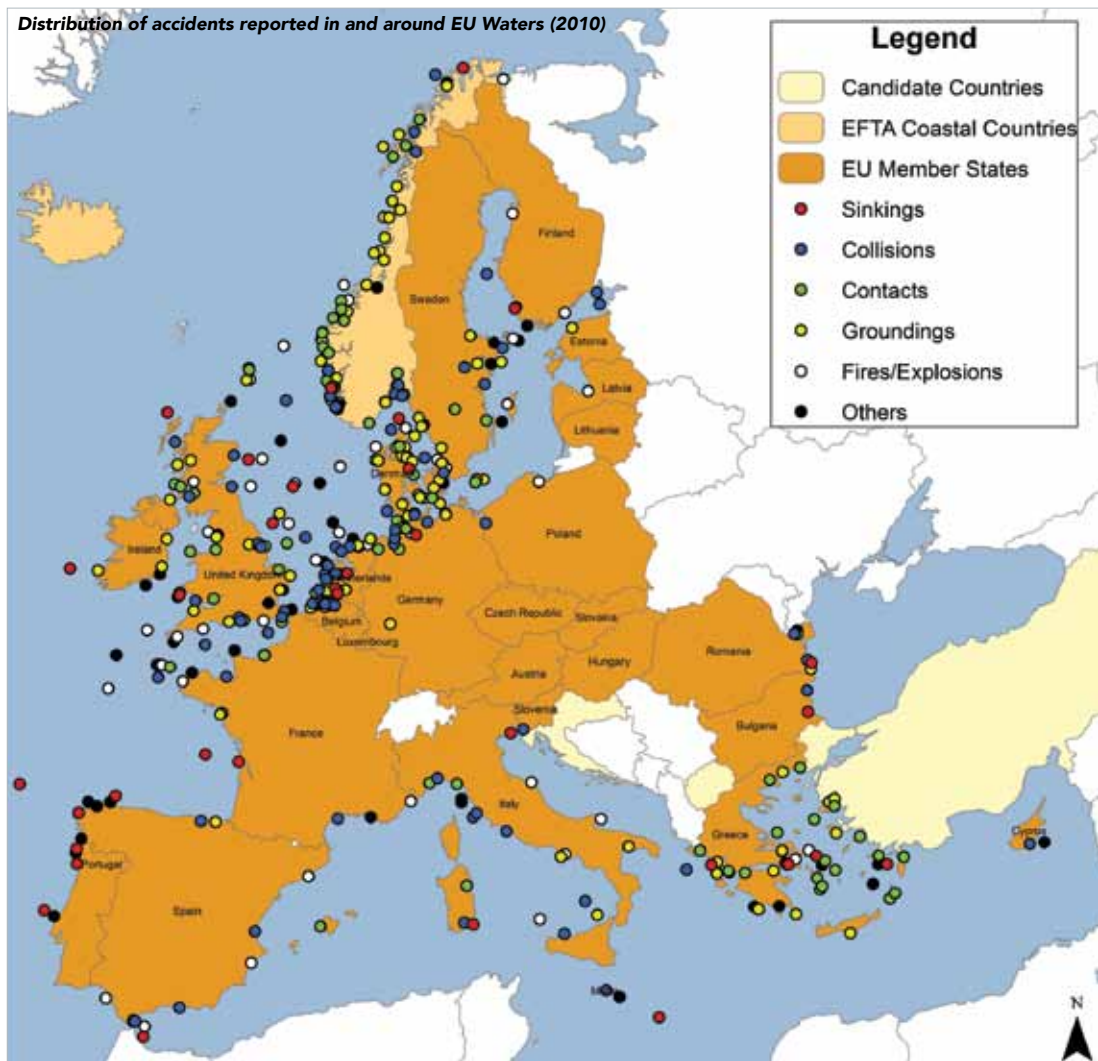
Another spill of significant size happened when the 350 gt tug **Francia** hit the 65,000 gt fully cellular container ship **CMA CGM Strauss** in bad weather around 1.5 km off the port of Genoa, north-western Italy, on 19th February. The collision resulted in a hole in a fuel tank and the reported spillage of up to 180 tonnes of fuel oil. The resultant slick drifted westwards until it came within 10-11 km of the city of Nice, south-eastern France, before either dissipating

or being recovered with relatively minimal effect on the coastline.

Finally, another accident occurred when the 15,600 gt mobile drilling platform **Maersk Resolute** was reported to have released up to 130 tonnes of crude oil into the North Sea on 20th June. The spill was caused by a defective pump, and the resultant slick covered an area of around six square kilometres. Eventually, around 10% of the oil was recovered, but as the accident happened offshore, the rest eventually dispersed naturally.

There were a number of other occasions when commercial ships were reported to have spilled oil into the sea in 2010, but these were almost all reported to be no more than 10 tonnes in volume each.

5. REGIONAL BREAKDOWN



The characteristics of the coastlines of the different countries of the European Union vary greatly. The combination of the prevailing weather and the different physical features has a significant effect on the number and types of accidents that occur. This section provides an overview of the nature of the different regions, and of the accidents occurring in each during 2010.

The EU accident location map, together with the regional maps on the following pages, provide information on where accidents happened, the distribution of the different types of accident and the areas of concentration. The following points should be borne in mind when interpreting the maps:

(1) Many of the accidents occurred in areas of high concentration (e.g. ports, port approaches, locks, channels, small islands) and it is not always possible to visually distinguish between individual accidents on maps of this scale.

(2) The tables of figures in this review relate to the numbers of vessels involved in accidents, whereas the maps show the accident locations.

(3) When a collision has occurred and, as a result, one or more of the vessels has a subsequent accident (e.g. sinking, grounding, contact or fire), only the event considered to be the most significant is shown on the maps.

(4) Some of the accidents in the tables occurred in parts of the EU which are beyond the limits of the map (e.g. Canary Islands, Azores, Madeira).

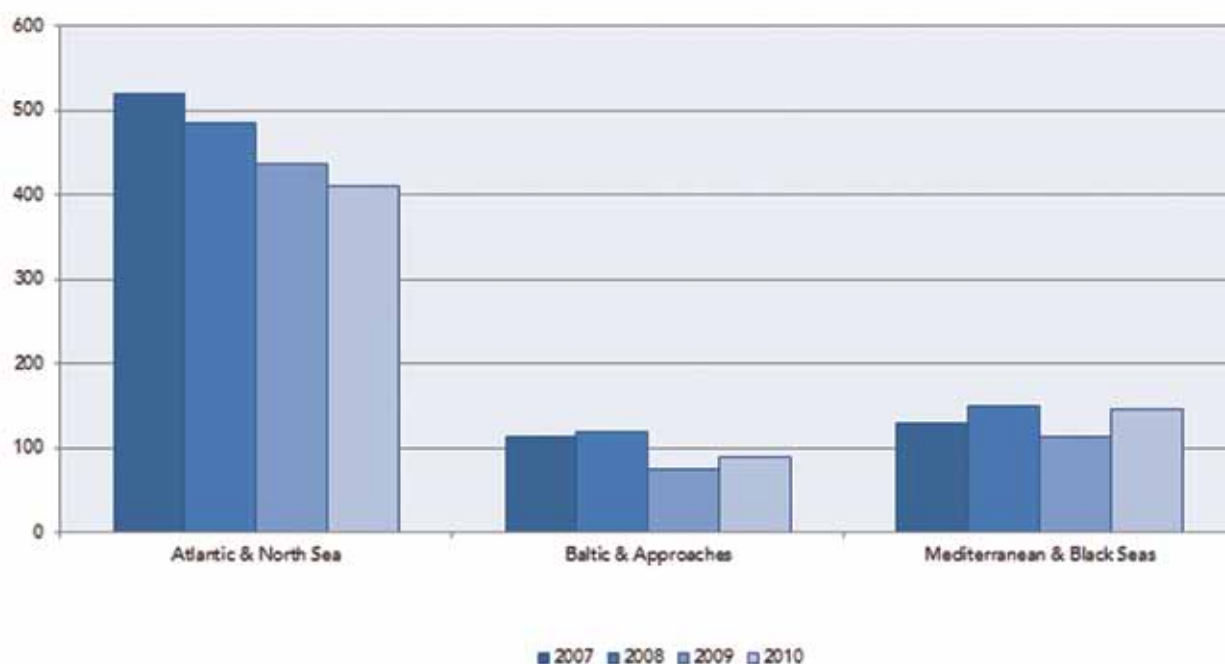
The number of accidents in the Atlantic and North Sea region has been progressively reducing over the last four years. The numbers in the Baltic Sea region have also reduced. However, the figures for the Mediterranean and Black Sea region show no clear trend.

5.1. The Atlantic Coast, North Sea and English Channel

5.1.1. Overview

Included in this region are the coastlines of Portugal, north-western and south-western Spain, northern and western France, the UK, Ireland, Belgium, the Netherlands,

2007-2010 VESSELS INVOLVED IN ACCIDENTS BY REGION



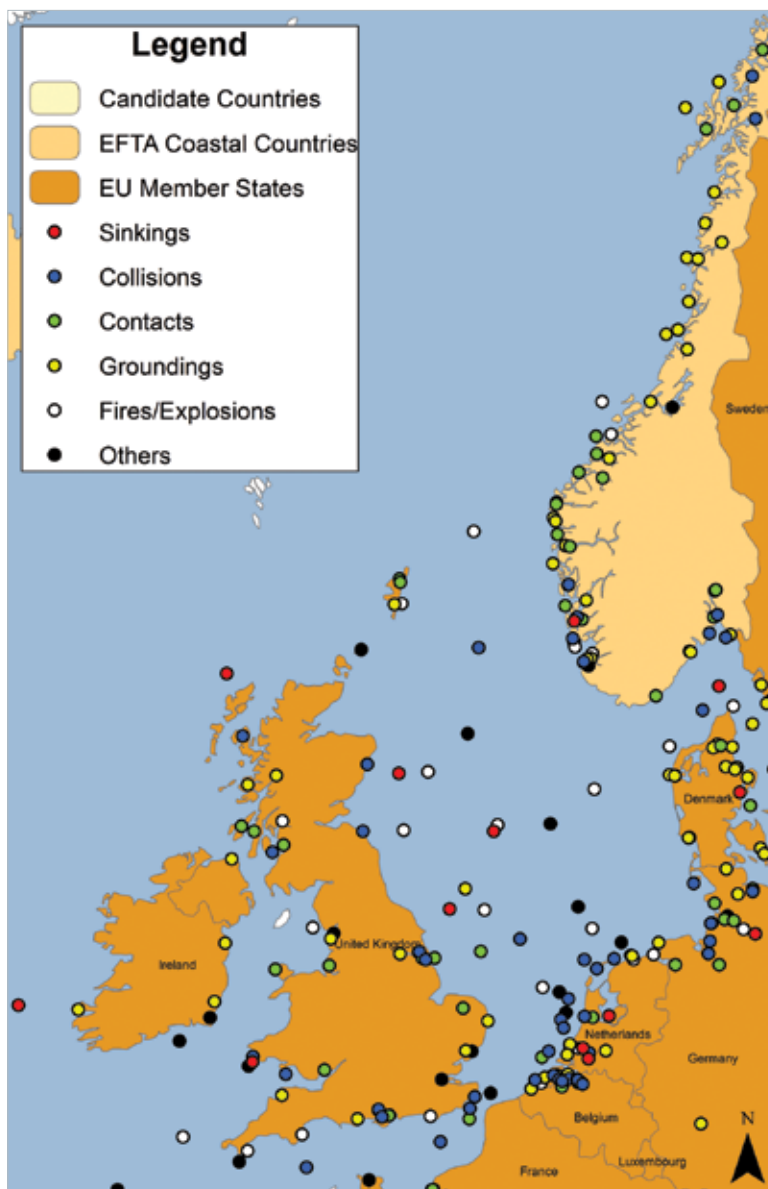
north-western Germany, western Denmark, Norway and Iceland. The northern part of the coastline of the region is particularly intricate, and this, combined with the full effects of the weather systems coming across the northern Atlantic Ocean and the density of shipping operating between the Atlantic Ocean and northern EU ports, increases the potential for accidents.

5.1.2. Accident analysis/concentrations

During 2010, 411 vessels were reported to have been involved in accidents in the Atlantic and North Sea areas, which was 22% lower than in 2007. This figure represents almost 64% of the EU total for the year.

Types of Accident	2007	2008	2009	2010
Sinkings	41	47	22	21
Groundings	128	128	124	88
Collisions/Contacts	218	197	197	190
Fires/Explosions	55	59	46	54
Other Types	86	54	48	58
Total	528	485	437	411

Once again, the reported number of sinkings was relatively low (45% of the 2008 figure and also well down on 2007). Collisions/contacts consistently account for the greatest number of vessels involved in accidents every year, and in 2010, 46% of the region's vessel accidents fell into



Distribution of accidents reported in and around NW EU Waters (2010)

this category (although most did not result in significant damage). The number of vessels involved in collisions was 119, while 71 were involved in contacts with infrastructure. However, while collisions/contacts maintained similar levels to previous years, there was a very significant reduction in the number of groundings reported.

48 lives were reported lost in the region in 2010, which was higher than the number reported in 2009 (34) and not far off the total number lost in EU waters as a whole in 2009 (52). The regional total accounted for almost 79% of the EU total for 2010. An overview of the EU situation for loss of life can be seen in sub-section 4.1.2.

Four of the significant spills in and around EU waters in 2010 occurred in this region (see sub-section 4.2.2).

Given the traffic density in these areas, it is not surprising that the great majority (over 80%) of the region's accidents occurred in the waters around Germany, the Netherlands, Norway and the UK, and accounted for over 51% of the EU total (down from 55% in 2009).

The number of accidents reported along the Norwegian coast saw a significant decrease in comparison with 2009, with groundings remaining the predominant accident category.

As in past years, the highest concentrations of accidents occurred in the region's main bottlenecks, where large numbers of vessels are regularly brought together with less room to manoeuvre and where there are different types of obstructions to navigate through and around. For example, such concentrations occurred in and around the biggest ports in Belgium, Germany and the Netherlands (Antwerp, Rotterdam, Hamburg, etc.) and in the Kiel Canal. In 2010, as is usually the case, these bottlenecks saw a significant number of collisions and groundings.

With respect to sinkings, these were more evenly distributed around the different countries in the region in 2010 than in 2009. When looking at accidents further from the coast, the North Sea and the English Channel consistently see the largest concentrations, mainly as a result of the combination of heavier traffic and weather conditions. However, these did not account for a large proportion of the regional total.

5.2. The Baltic Sea and approaches

5.2.1. Overview

The EU coast of the Baltic Sea and its approaches include the coastlines of Sweden, eastern Denmark, north-eastern Germany, Poland, Finland, Estonia, Latvia and Lithuania. The Baltic coast also includes two regions of the Russian Federation (the eastern end of the Gulf of Finland and Kaliningrad), but the accidents that occurred in these areas are not included in this review. This part of the EU coastline is by far the most prone to ice conditions, with most occurring in the northern Baltic and also the Gulf of Finland. The extent of the ice varies from year to year, and the winter of 2009/2010 saw more ice than had been experienced in the previous 20 years. This was after relatively mild Baltic winters in 2007/2008 and 2008/2009. This period of heavier than normal ice meant that many ships needed icebreakers to free them after they had become stranded.

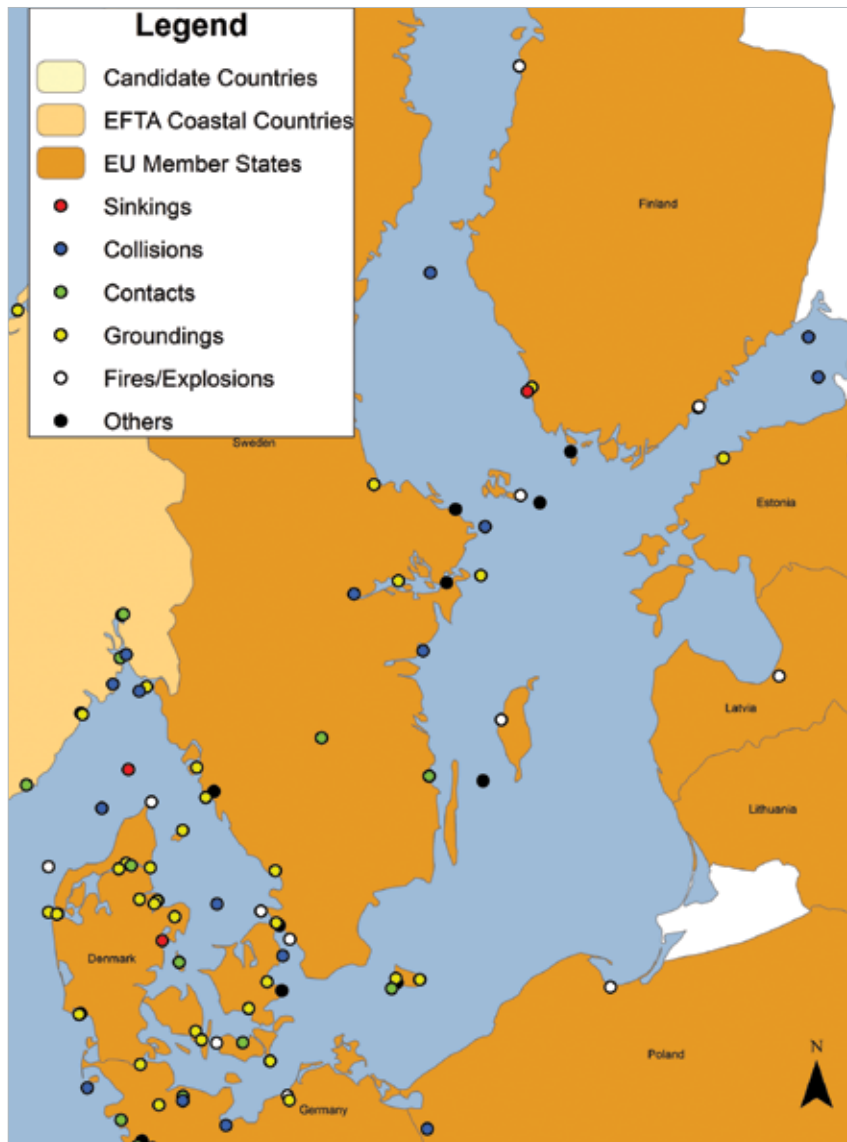
The great majority of the shipping traffic in the region uses the southern and central parts of the Baltic Sea and the Gulf of Finland, and despite the present economic conditions, ship voyages and cargo volumes are generally increasing. One of the main reasons for this may be the transport of crude oil from the Russian Federation.

The main bottlenecks in the region are in the south-western approaches between Denmark and Sweden, while the Finland-Aland-Stockholm corridor and parts of the Gulf of Finland also see a significant number of accidents. These areas also have the greatest traffic concentrations.

5.2.2. Accident analysis/concentrations

The total number of vessels involved in accidents in the region in 2010 (89) was up almost 19% on 2009, but significantly lower than the high in 2008. Once again, the relatively low levels of accidents in 2009/2010 coincided with the economic crisis.

Types of Accident	2007	2008	2009	2010
Sinkings	3	5	3	2
Groundings	49	52	33	32
Collisions/Contacts	23	35	24	28
Fires/Explosions	16	17	10	13
Other Types	15	11	5	14
Total	106	120	75	89



Distribution of accidents reported in and around the Baltic Sea (2010)

The Baltic Sea vessel accident total represented almost 14% of the EU total for the year, which is similar to previous years. The most notable observation is that, although the vessel accident total was higher than in 2009, the 2010 figures were substantially lower than in 2007/2008.

Reported groundings, in particular, were at much lower levels during the last two years. These represented 36% of the regional accident total. Collisions and contacts together accounted for over 31% of the regional total, which was similar to 2009, but up on previous years. Although always significantly lower than the other EU regions, the Baltic Sea achieved a four year low for the number of sinkings in 2010. It also achieved a four year low for the number of lives lost,

and none of the five relatively large oil spills reported in 2010 occurred in the region (see sub-section 4.2.2).

As seen in previous years, the largest number of vessels were involved in accidents along the Swedish and Danish coastlines, and particularly in the south-western approaches off eastern Denmark. The vessel accidents in these areas accounted for 73% of the regional total, and for almost 88% of the groundings. The areas also accounted for 68% of the collisions and contacts, and for over 71% of the fires on board ships. The potential for accidents increases significantly when ships operate in relatively confined waters, such as in parts of eastern Denmark, in bad weather and/or without a pilot.

5.3. The Mediterranean and Black Seas

5.3.1. Overview

This region incorporates two of the three main inland sea areas around the European Union. The EU parts of the Mediterranean Sea comprise the coasts of eastern Spain, southern France, Italy, Malta, Slovenia, Greece and Cyprus, while the EU parts of the Black Sea include the coastlines of Bulgaria and Romania. The two sea areas also include the North African, eastern Adriatic, eastern Mediterranean and northern and eastern Black sea countries and Turkey. However, these are not included in the figures.

When looked at together, the Mediterranean and Black Sea areas have a number of areas of high traffic density, with domestic traffic being of great significance. This is particularly the case in and around Greek waters where both passenger and freight traffic is significant (in this case to, from and between the islands). The through traffic is also heavy, with the largest volume using the main east-west lanes between the Indian and Atlantic Oceans, with ships passing between the Suez Canal and the Straits of Gibraltar. In addition, there is also a large volume of through traffic using the main north-south lanes that pass through the Aegean Sea between Greece and Turkey. This includes a significant number of tankers, due largely to the requirement to move oil from both the Black Sea and Gulf regions to different markets. An important point to note is that, although the Mediterranean and Black Seas are both enclosed bodies of water, and although the sea conditions are usually not as bad as in more northerly waters, major storms and heavy seas can still occur in both from time to time (as illustrated by the two cruise ship heavy weather incidents mentioned in sub-section 3.5.2).

5.3.2. Accident analysis/concentrations

Unfortunately, the total number of ships reported to have been involved in accidents in the region in 2010 was 144. This was significantly up from 2009 (27%), and near the 4 year high reported in 2008 and represented over 22% of the EU accident total (up from 18% in 2009 and 17% in 2008). The number of sinkings in the region returned to

the 2007/2008 levels after reducing in 2009. In particular, the size of ships sinking and the severity of the accidents increased, particularly in the EU parts of the Black Sea. When taken together, collisions/contacts was still the largest accident category, but this only represented 49% of the regional vessel accident total in 2010 (in comparison to 62% in 2009 and 51% in 2008). The number of vessels involved in accidents in the "other types" category reached the highest level in the past four years.

Types of Accident	2007	2008	2009	2010
Sinkings	11	9	3	9
Groundings	20	37	20	23
Collisions/Contacts	63	76	71	70
Fires/Explosions	20	13	11	16
Other Types	14	14	9	26
Total	128	149	114	144

A total of 12 lives were reported lost on commercial vessels in the region in 2010 (20% of the EU total). This was up from 9 in 2009, but was only a half of the 24 reported lost in 2008. When looking at pollution, the only significant event reported was the around 180 tonne fuel oil spill off north-western Italy in February (see sub-section 4.2.2).

Geography has a significant impact on accidents. The Aegean Sea has the highest accident concentrations, mainly because of the huge volume of traffic to and from the islands, between the islands, and between the Mediterranean Sea and the Black Sea.

It is of note that the number of accidents reported in and around Greek waters substantially reduced in 2010 (down 24% from 2009 and 45% from 2008), and was the lowest reported in the last four years. This total represented around 40% of the vessel accidents in the Mediterranean/Black Sea region (substantially down from around 70% in 2008 and 2009). Historically, ferry contacts with infrastructure have been the greatest contributor to the Aegean accident figures, but in 2010, the record improved substantially over previous years.



Distribution of accidents reported in and around SE EU Waters (2010)

A significantly greater number of vessels were reported to have had accidents in the EU sector of the Black Sea in 2010 than in the previous three years, and the loss of life and damage caused was also greater. However, it should be noted that the overall number reported is always relatively small in comparison to the other EU regions. The 18 vessel accidents reported in 2010 was over 150% up on 2009 and 64% up on 2008, with collisions being the predominant accident category (around 45% of the vessels were involved in this type of accident). 7 people were reported to have

lost their lives on board ships in the region in 2010, which is an increase on the figures for 2009, but this was largely the result of the *Karim I* sinking off Cape Emine, Bulgaria, with the loss of 5 lives.

There were no significant spills reported by ships in this region in 2010. The apparently low number of accidents reported in the EU sector of the Black Sea is probably due to relatively low traffic volumes in the area.

FURTHER INFORMATION

The EMSA website contains further information on this and all the other activities of the Agency, and it can be accessed at: <http://www.emsa.europa.eu>.

Although the information comes from a large variety of sources, EMSA would, in particular, like to thank the following information providers for their input to this review:

European Commission Joint Research Centre

Equasis

Lloyds List / Lloyds List Intelligence

Tradewinds

Fairplay

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About EMSA

The European Maritime Safety Agency is one of the European Union's decentralised agencies. Based in Lisbon, the Agency provides technical assistance and support to the European Commission and Member States in the development and implementation of EU legislation on maritime safety, pollution by ships and maritime security. It has also been given operational tasks in the field of oil pollution response, vessel monitoring and in long-range identification and tracking of vessels.



<http://www.emsa.europa.eu>