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# **Marine Casualties and Near-Accidents**

## **Summary of Reported Marine Casualties and Near-Accidents**

**2005**

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## Summary of marine casualties and near-accidents involving Swedish merchant and fishing vessels 2005

### General

In this Notice of the Swedish Maritime Safety Inspectorate, the Administration's Maritime Casualty Investigation Division presents statistics and commentaries on casualties reported to the Administration during 2005, involving Swedish merchant and fishing vessels and other vessels utilized for commercial purposes. The report primarily comprises occurrences or events which the master of the ship is legally obligated to report to the Swedish Maritime Safety Inspectorate in compliance with chapter 6, section 14 (formerly section 70) of the Swedish Maritime Code. For the most part, factual information on casualties and their sequence of events is gathered from the protocol of the maritime declaration as well as from the master's reports. Data are also gathered from the investigations undertaken by surveyors in the Administration's inspection areas, by the coast guard and by police. In police investigations there is often some degree of co-operation between the police authorities and the maritime inspectorate.

The material is presented here as a summary report. The statistical summary can be found on the Administration's home page – [www.sjofartsverket.se](http://www.sjofartsverket.se). Corroborating information and more detailed data can be obtained from the Maritime Casualty Investigation Division; telephone: +46 11 19 10 00, fax: +46 11 23 99 34 or e-mail: [inspektion@sjofartsverket.se](mailto:inspektion@sjofartsverket.se).

### "SjöOlycksSystemet" – SOS – The Sea Casualty System

As from the year 2002 the SOS has been changed to a web application by the Swedish Maritime Administration.

The Maritime Casualty Investigation Division reports regularly to IMO<sup>1</sup> all *serious casualties, founderings* involving convention vessels and *spillages*. The division also reports casualties and spillages regularly to HELCOM<sup>2</sup>. The report has been more extensive since 2004.

### Near-accidents

The number of reported near-accidents is low, although it has increased somewhat in the past few years. Based upon the Act of 1990 and its appended regulations regarding the investigation of accidents, the Swedish Maritime Safety Inspectorate has broadened the mandatory reporting requirement to include all types of accidents at sea. Starting in 1999 the near-accidents are presented in the form of tables and diagrams.

### Non-conformities (Insjö)

The Swedish Maritime Safety Inspectorate, in co-operation with the Swedish Shipowners Association, has developed a system, *Insjö*, for reporting deviations. After four years of build-up the system is now in operation.

When a near-accident or deviation is reported, the report is de-identified before being introduced in the system. The system immediately gives the informant a compilation of all similar occurrences registered in the database and also information on what provisions have been taken. *Insjö* is a simple, user-friendly system for reporting, registering, database handling and analysing deviations and risks. Experiences from accidents, near-accidents and deviations are put together in order to constitute a platform of knowledge in preventive maritime safety work. The system shall meet the requirements of the ISM code<sup>3</sup> as regards

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<sup>1</sup> International Maritime Organization

<sup>2</sup> Helsinki Commission

<sup>3</sup> International Safety Management Code

control and follow-up of the safety work in the shipping companies on land as well as on board ships.

### Follow-up of recommendations

When called for, the Maritime Casualty Investigation Division includes recommendations in its accident investigation reports. In some cases the recommendations may be regarded as general, but in other cases they may concern one or several specific ships and shipowners. Some recommendations may also concern departments within the Swedish Maritime Safety Inspectorate. The Maritime Casualty Investigation Division makes a quarterly follow-up summary of the recommendations that have been made in the accident reports. The summaries are forwarded to the shipowners in question and, within the Swedish Maritime Safety Inspectorate, to persons responsible for implementation. The recommendations are removed from the summary when the parties concerned report back that corrective action has been taken.

### Definition of cause of casualty categories

The investigative material is processed and thereafter codified by the investigators according to a code manual. Using the information, which is available to the investigators, a *primary cause of casualty* is established, as well as contributory causes, if any. An example of the working principle used in determining what can be considered a primary cause and what can be regarded as a contributory cause would be the relatively common accident scenario, where an icebreaker and the ship that it is assisting collide in severe ice conditions. The icebreaker encounters an unexpected ice ridge and gets stuck, and the ship being assisted cannot stop in time. This accident will be coded with “human factor” as the primary cause of accident and “ice conditions affecting the ship's navigation/manoeuvring” as the contributory cause. The casualty causes are divided into seven main groups and corresponding subgroups and *other known cause* and *unknown cause*.

#### Main groups

External factors

Vessel's construction and placement of equipment

Technical failure of on board equipment

Aspects of operation and design of equipment

Aspects of cargo, securing of cargo and handling of cargo/bunker

Aspects of communication, organization and operational practices

Aspects of on board personnel

#### Examples of sub-groups

Currents, winds, tides etc., causing drifting or other manoeuvring difficulties

Stability problems caused by the construction of the vessel

Technical failure of steering gear (including steering machinery)

Instruments/equipment improperly arranged

Cargo inadequately or improperly secured

Navigation bridge procedures not appropriate from a safety aspect

Miscalculations in navigating the vessel

### Definition of categories reported in cases of collision

A collision between Swedish vessels is reported as two events.

A collision between a Swedish vessel and a vessel of other nationality is reported as one event.

A collision between a Swedish vessel and a pleasure boat is reported as one event.

The summary has focused on Swedish registered merchant and fishing vessels.

## Reports

Some fundamentally interesting casualties result in reports according to international practice. A report starts with a summary followed by an account of facts and the course of events. The body of information is evaluated in an analysis.

The purpose of an investigation of an accident is to find out what happened, why it happened and try to find measures to make it not happen again. The following are headlines in a report: Summary, Facts, Course of events, Analysis, Observations, Recommendations, Damage and Conclusion.

The investigation reports are available (in Swedish) on our homepage – [www.sjofartsverket.se](http://www.sjofartsverket.se) – Sjöfartsinspektionen – Olyckor & tillbud – Haverirapporter samling, some of the reports are translated into English, you will find them under [www.sjofartsverket.se](http://www.sjofartsverket.se) – Maritime Safety Inspection – Marine Casualties & Near-Accidents.

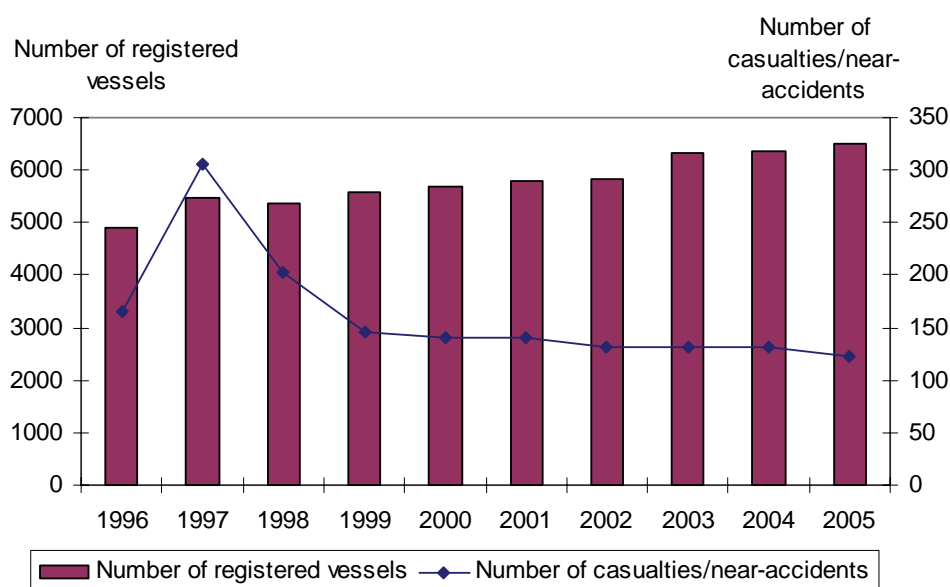
### Publication of reports in 2005, Swedish registered vessels

Date	Name of vessel	Type of vessel	Type of event
31 January, 2005	RIO GRANDE	Tanker	Collision with the ro-pax-vessel POMERANIA
7 March, 2005	STENA DANICA	Ro-ro passenger	Grounding
20 March, 2005	GÖTHEBORG	Passenger (The East India vessel)	Towboat went down in connection with towing
23 June, 2005	NOREN	General cargo	Collision with the pleasure boat FREGATT
19 August, 2005	EKEN	General cargo	Accident to person with fatal outcome
4 October, 2005	SILJA SERENADE/ KBV 046	Passenger/Coast Guard vessel	Near-accident
9 October, 2005	CHARTER 5	RIB (Rigid Inflatable Boat)	Capsizing (on seal safari)
14 October, 2005	LODBROK	Crane vessel	Crashed into the bridge between the Essingen islands, Stockholm

Publication of reports in 2005, the Swedish registered vessels (cont.)

Date	Name of vessel	Type of vessel	Type of event
28 October, 2005	HUCKLEBERRY FINN	Ro-ro passenger	Crashed into a pier
13 November, 2005	FINNSAILOR	Ro-ro passenger	Collision with the Maltese bulk vessel GENERAL GROT ROWECKI

### Number of reported marine casualties and near-accidents 1996–2005 in relation to number of registered vessels<sup>4</sup>



<sup>4</sup> In 1997 and 1998 the Maritime Casualty Investigation Division was notified of 119 and 25 near-accidents respectively which had occurred in connection with the Sound bridge construction work. The near-accidents were reportedly caused by the so-called shock waves from a high-speed craft passing the various work stations at excessive speed. The shock waves have also interfered with other activities related to the bridge construction.

### Number of reported marine casualties and near-accidents 1996-2005 by type of event

Only the initial event is reported for each casualty and not the consequent events.

Accidents to persons and illness are reported under chapter heading **Accidents to persons**. Occurrences which cannot be categorised in any of the groups mentioned earlier are reported under **Other occurrences**.

Type of event <sup>5</sup>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Fire and/or explosion	9	9	20	12	15	14	10	11	13	16	129
Grounding <sup>6</sup>	57	58	48	54	42	38	39	25	30	23	414
Collision with other object	14	32	17	14	11	19	12	9	9	15	152
Collision with other vessel	33	34	21	16	19	20	25	23	21	12	224
Shifting of the cargo <sup>7</sup>			1	2	3		3	2	1	1	13
Leakage/capsize /weather damage	17	12	17	9	10	6	3	8	13	6	101
Engine failure	22	20	21	17	18	22	22	28	24	35	229
Spillage	2	2	4	4	3	4	1	2	8	2	32
Other occurrences											
<b>Total</b>	<b>4</b>	<b>7</b>	<b>11</b>	<b>8</b>	<b>8</b>	<b>5</b>	<b>2</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>63</b>
Near-accident <sup>8</sup>	8	132	42	10	11	12	15	15	8	8	261
<b>Total</b>	<b>166</b>	<b>306</b>	<b>202</b>	<b>146</b>	<b>140</b>	<b>140</b>	<b>132</b>	<b>131</b>	<b>133</b>	<b>122</b>	<b>1618</b>

The date of data printout was 31 May 2006. Additional casualties and near-accidents may have been reported to the Swedish Maritime Safety Inspectorate's Maritime Casualty Investigation Division after the data printout.

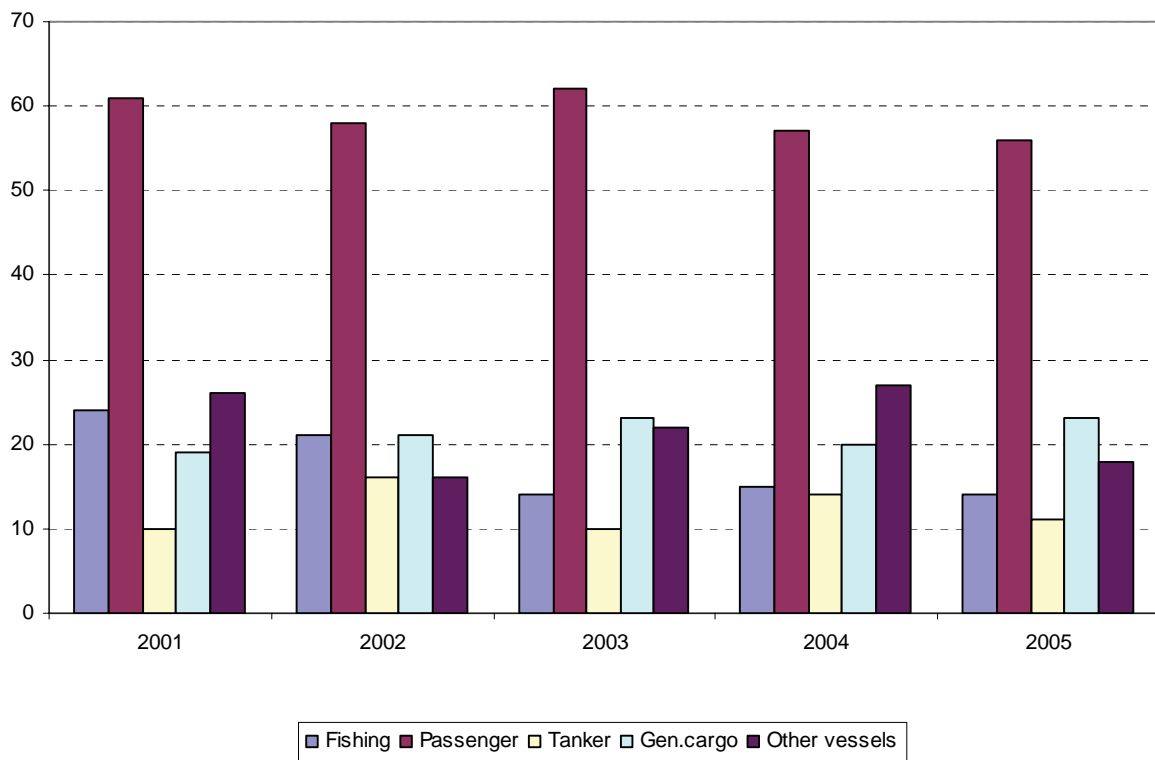
### Number of casualties and near-accidents 2001– 2005 by type of vessel

<sup>5</sup> Starting in 2005 **Type of event** accounts in alphabetical order.

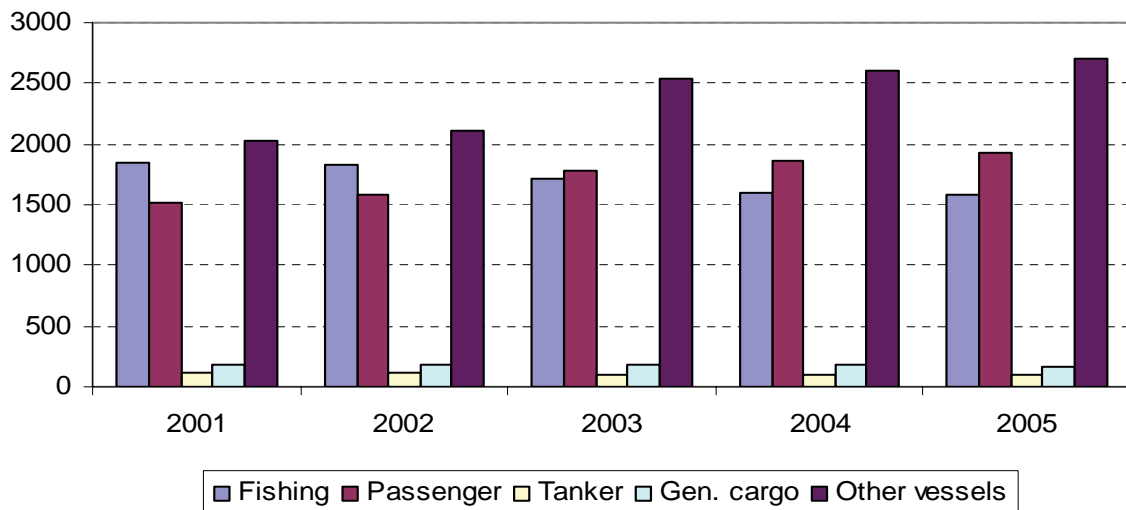
<sup>6</sup>The employment of the ISM code and the use of electronic means such as AIS and electronic charts have increased considerably during this period of time. This might be a reason for fewer groundings and collisions between ships. However, this connection has not been verified.

<sup>7</sup> Starting in 1998 registered as a new type of event.

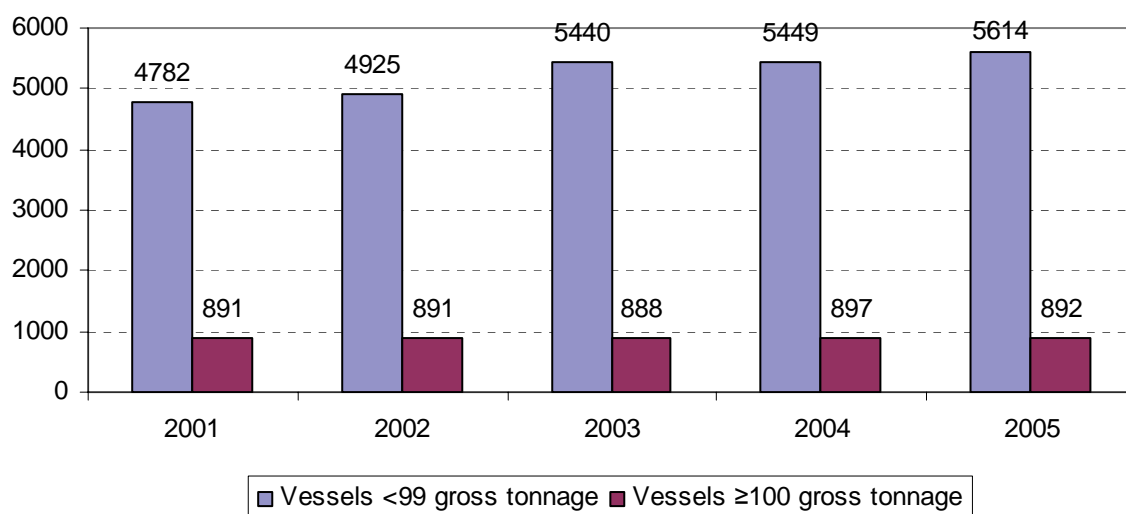
<sup>8</sup> In 1997 and 1998 the Maritime Casualty Investigation Division was notified of 119 and 25 near-accidents respectively which had occurred in connection with the Sound bridge construction work. The near-accidents were reportedly caused by the so-called shock waves from a high-speed craft passing the various workstations at excessive speed. The shock waves have also interfered with other activities related to the bridge construction.



Number of vessels registered in Sweden 2001 – 2005 by type of vessel



**Number of vessels registered in Sweden 2001 – 2005**



**Number of vessels registered in Sweden by type of vessel 2001 – 2005**

Type of vessel	2001	2002	2003	2004	2005
Fishing <sup>9</sup>	1 851	1 822	1 715	1 597	1 589
<i>whereof &gt;20 tons</i>	292	289	280	281	274
Passenger <sup>10</sup>	1 511	1 584	1 781	1 861	1 931
Tanker	112	111	104	102	102
General cargo	179	185	186	176	173
Other vessels <sup>11</sup>	2 020	2 114	2 542	2 610	2 711
<b>Total</b>	<b>5 673</b>	<b>5 816</b>	<b>6 328</b>	<b>6 346</b>	<b>6 506</b>

<sup>9</sup> By virtue of the Fishery Act the Swedish Government has authorized the National Board of Fisheries to issue regulations on vessel permits (FIFS 1994:15). Ships, the length of which is 5 metres or more and which are used for professional fishing, must have a vessel permit issued by the National Board of Fisheries.

<sup>10</sup> The increased number of ships may largely be explained by a complementary addition in the Inspection System (SITS) of the Swedish Maritime Safety Inspectorate concerning ships carrying a maximum of 12 passengers.

<sup>11</sup> A review of ships registered under the headline Other vessels resulted in a complementary addition in SITS in 2003.

### Number of vessels registered in Sweden 2005

The information is taken from "SjöfartsInspektionens TillsynsSystem", the SITS system. Information about fishing vessels from The National Board of Fisheries.

#### Vessels by type

Gross tonnage	- 19	20 - 99	100 - 499	500 - 999	1000 - 4999	5000 - 9999	10000 -	Total
<b>Type of vessel</b>								
Fishing	1 315	168	94	12	-	-	-	1 589
Passenger	1 220	445	208	17	5	5	31	1 931
Tanker	1	20	14	2	25	25	15	102
General cargo	8	38	28	2	31	10	56	173
Other vessels	1 960	439	243	37	26	6	-	2 711
<b>Total</b>	<b>4 504</b>	<b>1 110</b>	<b>587</b>	<b>70</b>	<b>87</b>	<b>46</b>	<b>102</b>	<b>6 506</b>

Classification of type of vessel based on the following description of the vessels:

#### FISHING

Fishing licensed by the National Board of Fisheries\*)

\*) As of 1 September, 1994 boats >5 m with special permit

#### PASSENGER

Passenger (not ro-ro)

Passenger (ro-ro)

Road ferry

Passenger (seasonal)

Passenger, other

#### TANKER

Oil tanker

Gas tanker

Chemical tanker (one chemical)

Chemical tanker (more than one chemical)

Oil/ore

Bulk/oil

Tanker, other

Cob

#### GENERAL CARGO (Gen.cargo)

Reefer

Ro-ro/auto/container

Ore

Bulk carrier, other

#### OTHER

Tug/salvage

Barge/pontoon

Supply

Ice breaker and accommodation platform

Other merchant vessels

### Casualties by type of event and type of vessel 2005

122 marine casualties and near-accidents involving Swedish vessels were reported to the Swedish Maritime Safety Inspectorate in 2005. Out of these casualties **two** were foundered.

Type of event	Fishing	Passenger	Tanker	General cargo	Other vessels	Total
Fire and/or explosion	-	10	1	3	2	16
Grounding	2	11	3	2	5	23
Collision with other object	-	8	-	4	3	15
Collision with other vessel	2	5	2	2	1	12
Shifting of the cargo	-	-	-	1	-	1
Leakage/capsize/weather damage	2	1	-	-	3	6
Engine failure	6	16	2	10	1	35
Spillage	-	2	-	-	-	2
Other occurrences	-	2	1	-	1	4
<b>Total</b>	<b>12</b>	<b>55</b>	<b>9</b>	<b>22</b>	<b>16</b>	<b>114</b>
Near-accidents	2	1	2	1	2	8
<b>Total incl. near-accidents</b>	<b>14</b>	<b>56</b>	<b>11</b>	<b>23</b>	<b>18</b>	<b>122</b>

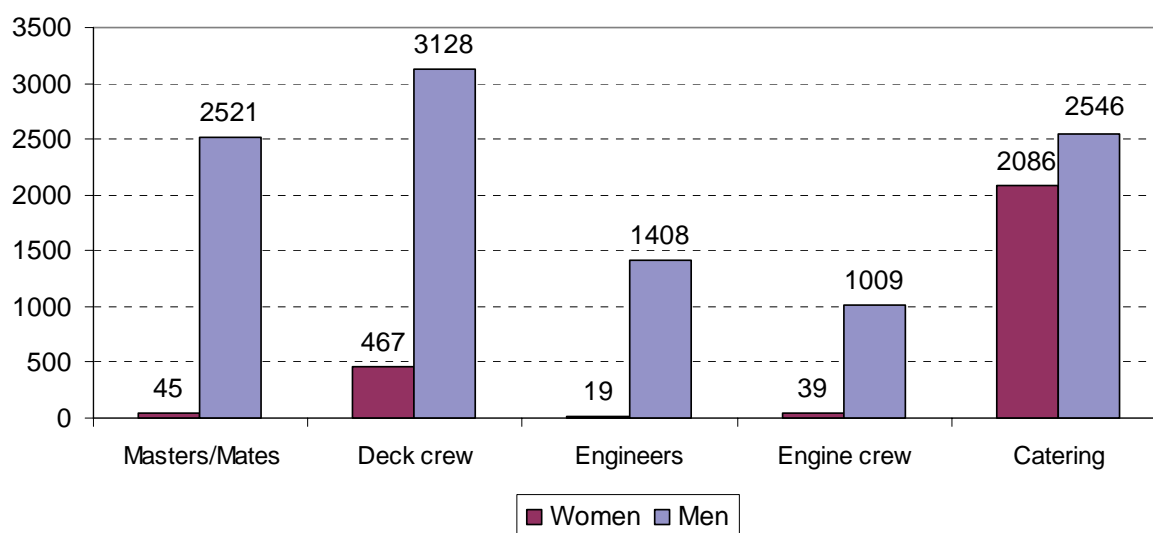
*Note: Other vessels* – see page 10, classification by type of vessel based on description of the vessels.

### Number of active/signed-on seamen 2001 – 2005

Number/year	2001	2002	2003	2004	2005
Active seamen	12 625	13 789	13 337	13 450	13 268
whereof signed-on seamen	5 843	5 901	6 749	6 783	6 915

### Number of active/signed-on seamen 2005

*Active seaman* means that the person has been working in that capacity for at least 3 of the preceding 18 consecutive months. The information is taken from the *Seamen's Register*.



### Signed-on crew on merchant and special purpose vessels having a gross tonnage of 300 and over

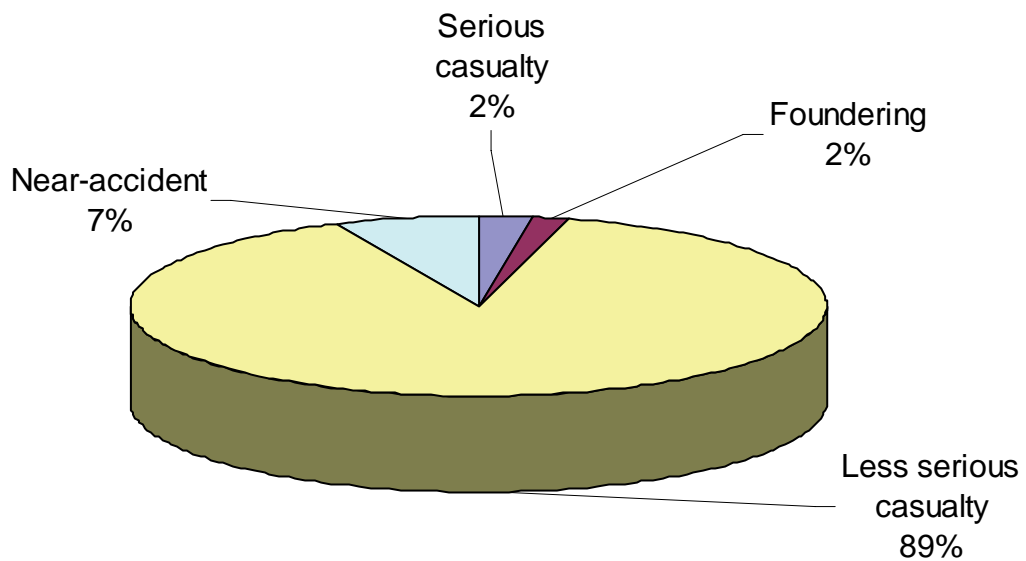
*Signed-on personnel* normally implies personnel being on shipboard duty. However, in near coastal trade personnel might be signed-on on ships for the whole calendar year. The factual duty time is accounted after the end of the year. (Information is taken from the *Seamen's Register* 2005-01-01).

Masters	Mates	Deck crew	Engineers	Engine crew	Catering	Total
368	656	1 319	765	596	3 211	6 915

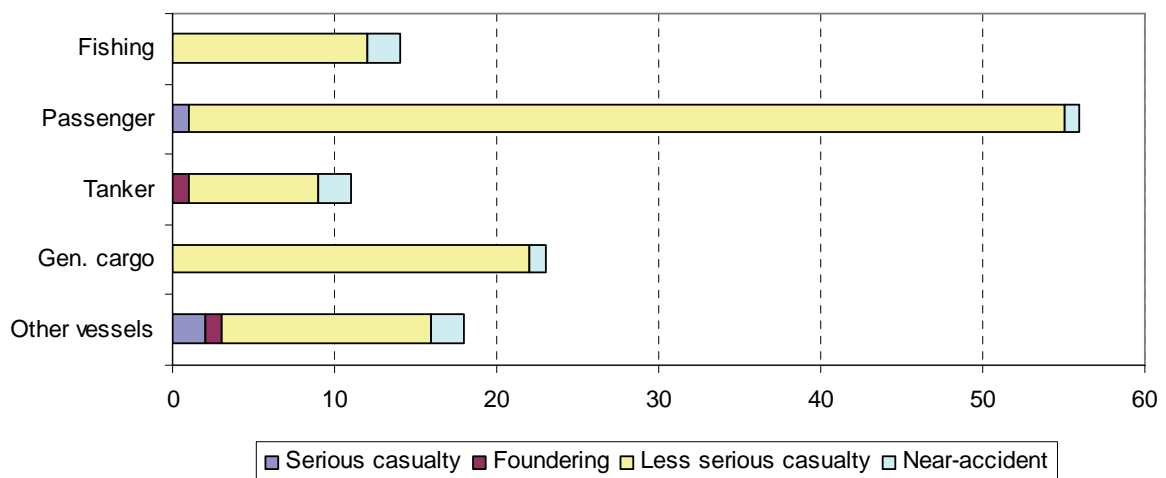
### Marine casualties in 2005 by severity of events

The diagram shows distribution in percentage of total number of events. The severity of the near-accidents is determined by using the same criteria as IMO<sup>12</sup>.

- Foundering* - total loss or constructive loss.
- Serious casualty* - the principal rule is that the vessel is considered to be not seaworthy and/or that loss of life or serious physical injury is the result of the accident.
- Less serious casualty* - the severity of the remaining events.
- Near-accident* - an incident which would have resulted in an accident if extraordinary actions had not been taken.

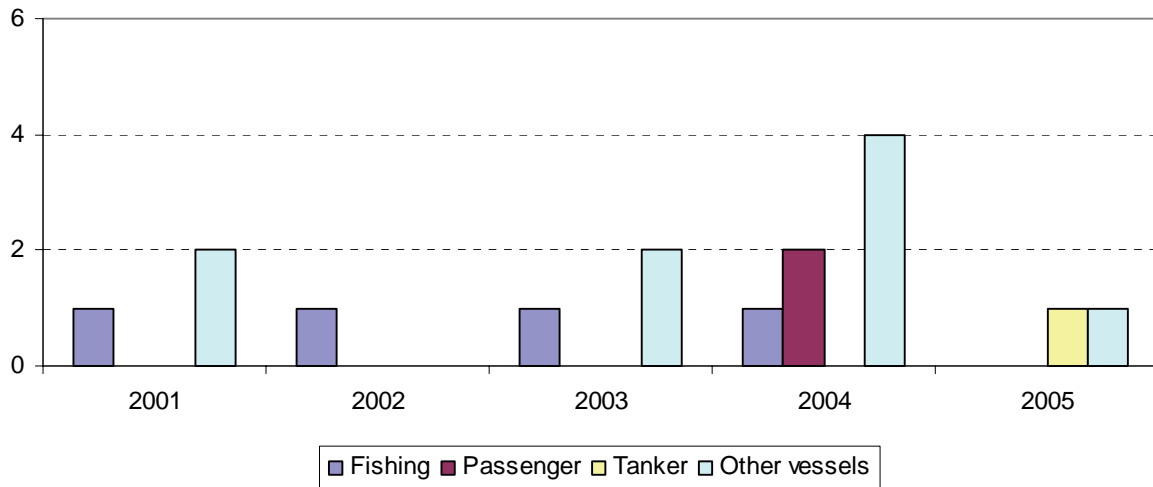


### Severity of event by type of vessel

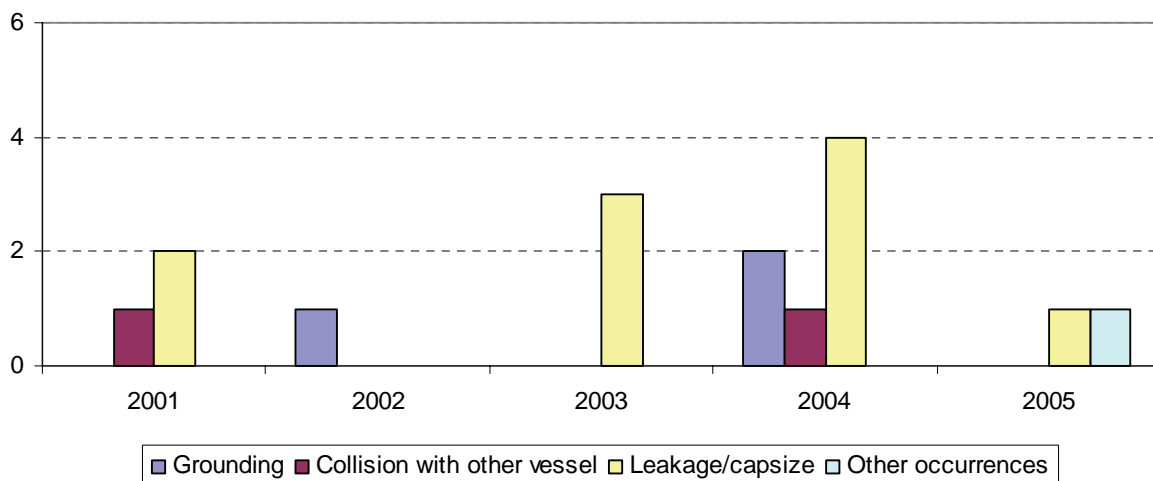


<sup>12</sup> International Maritime Organization

### Number of lost vessels in 2001 – 2005 by type of vessel



### Number of lost vessels 2001 – 2005 by type of event



### Foundered vessels in 2005

*Foundering* – means a total loss or that the vessel is written-off as a total loss (condemned).

During 2005 two founderings were reported:

- A maintenance boat capsized and sank as it was pulled down when the tow rope tightened during towing.
- A tanker was so severely damaged when the tank deck split that the vessel was considered condemned. Approximately 500 l of heavy oil leaked.

See Narrative – foundered vessels, page 15

In the years 2001 – 2005 a number of 16 vessels have foundered, 4 of which were fishing vessels. Another fishing vessel foundered in 2005 following an accident to the only crew member on board, who fell over board and drowned. The vessel drifted, out of control, ran aground and sank finally. The accident is described in the section **Commercial Fishing**.

**Narratives – foundered vessel**

*Tanker:*

<b>Date</b>	<b>Call sign/number Name Construction material Year built</b>	<b>Gross tonnage</b>	<b>Narrative</b>
9 December, 2005	SFPN VÄSTSJÖ Steel 1970	903	<p>The vessel was transferring oil from another vessel when the tank deck split between tanks 1 and 2 portside. The accident was caused by the fact that the ullage meter showed the wrong level and the pumping continued with unreduced capacity. The damage was so great that the vessel was condemned.</p> <p>Spillage: 500 l heavy oil</p> <p>57°41.'4N 011°52.'7E</p>

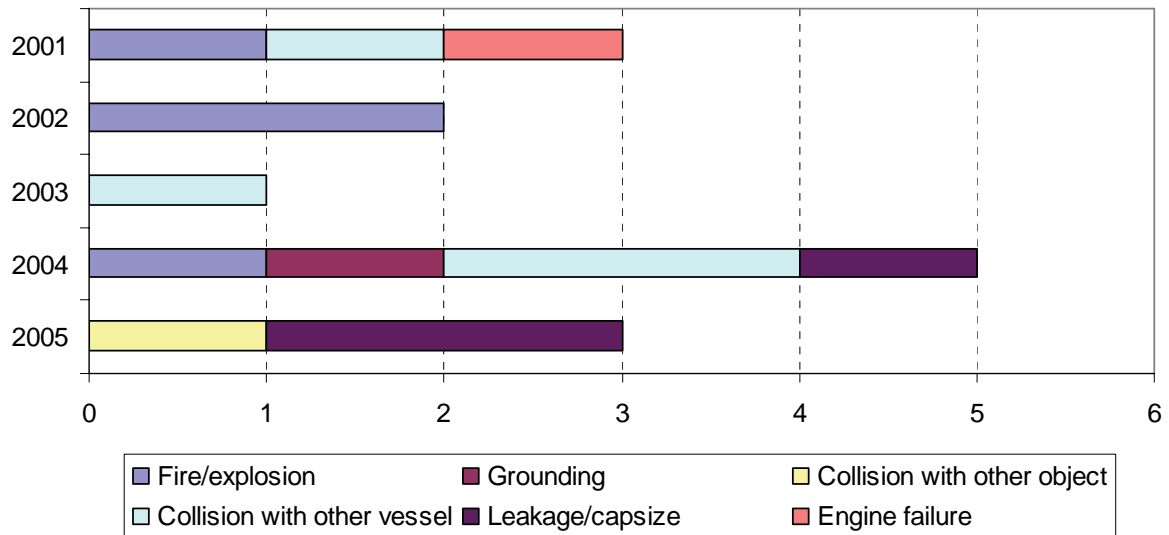
*Other vessels:*

<b>Date</b>	<b>Call sign/number Name Construction material Year built</b>	<b>Gross tonnage</b>	<b>Narrative</b>
18 April, 2005	SFC-6519 BÅTMAN 8 (connected to GÖTHEBORG) Steel 2001	-	<p>The East India vessel, GÖTHEBORG (G), requested help from tugboats to get to the quay side. BÅTMAN 8 (B8) fastened a rope to G. When the rope tightened, B8 was pulled down and sank. One of the crew members went down with the boat but managed to get out of the wheelhouse and up to the surface. The two crew members were picked up by another tugboat and taken to hospital for treatment.</p> <p>57°41.'8N 011°54.'8E</p>

### Serious casualties in 2005

The principal rule is that the vessel is considered to be not seaworthy and/or that loss of life or serious physical injury is the result of the accident. During 2005 three (3) occurrences have been judged to be *serious casualties*.

Serious casualties in 2001 – 2005, by type of event



### Narratives – serious casualties

Passenger:

Date	Call sign/ number Name Construction material Year built	Gross tonnage	Narrative
7 May, 2005	SFC-6601 CHARTER 3 - 2002	-	The two crew members were thrown out of the <b>Rigid Inflatable Boat (RIB)</b> due to an unexpected movement during an exercise. The kill-cord was not set correctly, so the boat continued to go around in circles. Coast Guard No. 451 picked up the men, who wore safety suits, and managed to stop the RIB after a while. The plastic hull sustained minor damage.  59°23.'0N 018°12.'0E

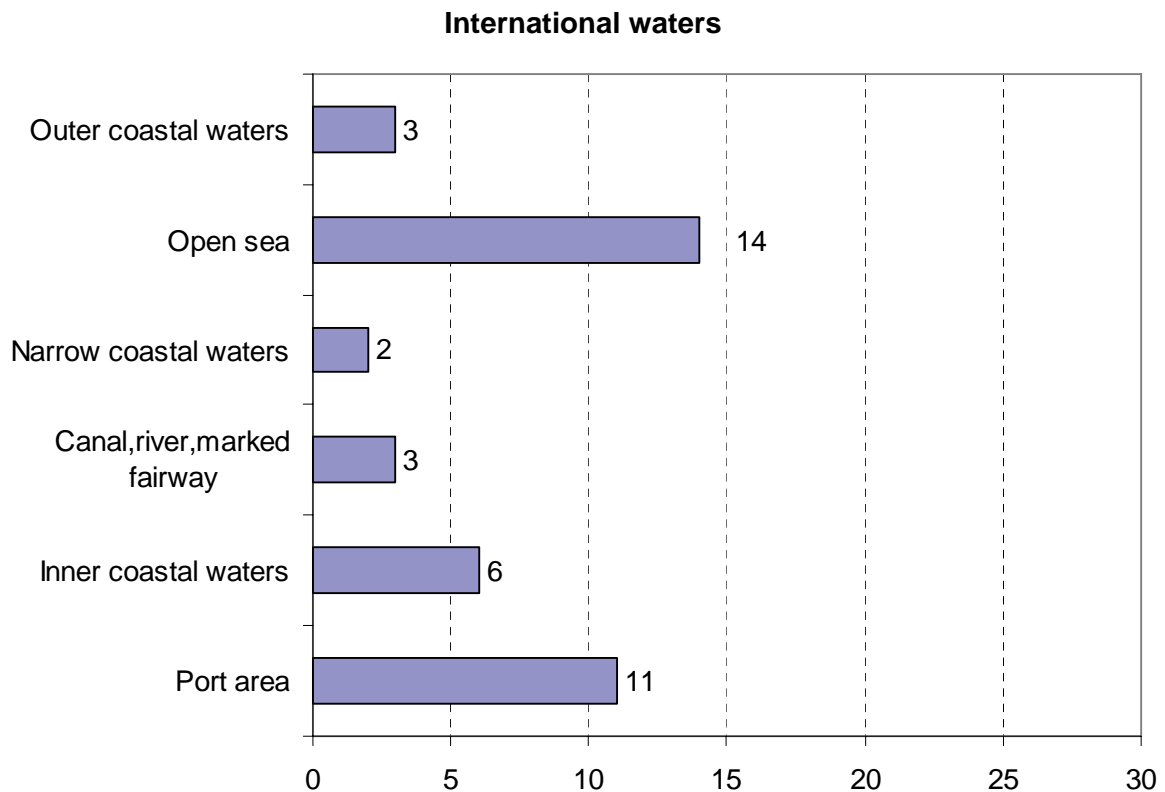
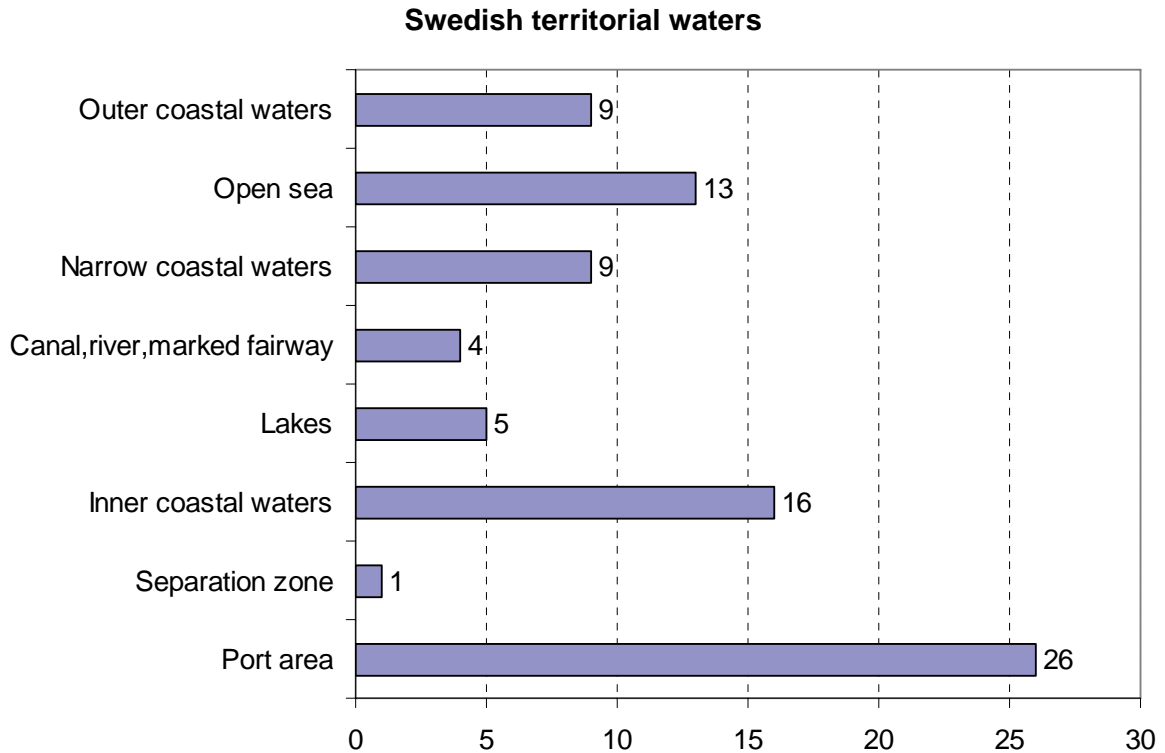
Narratives – serious casualties (cont.)

Other vessels:

Date	Call sign/ number Name Construction material Year built	Gross tonnage	Narrative
9 October, 2005	SFC-7448 CHARTER 5 Plastic 2005	-	<p>A <b>Rigid Inflatable Boat (RIB)</b> was on seal safari in Stockholm outer archipelago. When passing the rock Själbådan the boat ran aground and capsized. All the people on board fell into the water but managed to reach the rock. After about 7 ½ hrs they were winched up by a helicopter. A relative of one of the passengers had raised the alarm when the passengers did not return as planned.</p> <p>59°03.'55N 018°48.'11E</p>
14 October, 2005	SHCB LODBROK Steel 1956	814	<p>The crane vessel <b>LODBROK (L)</b>, assisted by the towboat <b>TUG (T)</b>, was on route from Hammarby Lock to Hornsberg. They chose to go between the two Essingen islands. The Essingen bridge was appr. 8 metres lower than L's crane. The top of the crane crashed into the bridge at a speed of 7 knots. The bridge was initially shut off and then partially closed for a couple of months.</p> <p>59°19.'4N 017°59.'9E</p>

### Marine casualties and near-accidents in 2005 by operating location

Casualties are shown as occurrences in Swedish territorial waters as well as occurrences in international waters.



### Casualties by type of event and cargo/activity

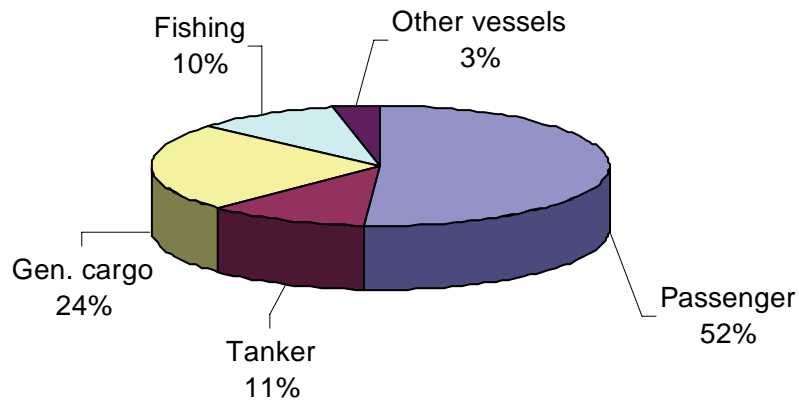
Type of event	Grounding	Collision with other vessel	Collision with other object	Leakage/capsize/weather damage	Shifting of cargo	Fire/explosion	Machinery failure	Spillage	Other occurrences	Near-accident	Total
<i>Cargo</i>											
Other/unknown cargo	1	1	-	-	-	-	1	-	-	4	7
Cars	-	-	-	-	-	-	1	-	-	-	1
Cars and passengers	8	1	3	1	-	-	9	1	1	-	24
Bulk (ore, coal, grain etc.)	1	1	-	-	-	-	1	-	-	-	3
Fish/fish products	-	-	-	2	-	-	3	-	-	2	7
Oil/oil products	1	3	-	2	-	-	1	-	1	-	8
Passengers	1	7	4	4	-	1	4	-	-	1	22
Dry cargo/mixed cargo/containers	-	1	2	1	1	-	3	-	-	-	8
Trailers/flat beds	2	-	1	1	-	-	4	-	-	-	8
<b>Total with cargo</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>27</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>88</b>
<b>Ballast/empty</b>	<b>2</b>	<b>9</b>	<b>5</b>	<b>1</b>	<b>-</b>	<b>5</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>34</b>
<b>Total incl. ballast/empty</b>	<b>16</b>	<b>23</b>	<b>15</b>	<b>12</b>	<b>1</b>	<b>6</b>	<b>35</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>122</b>

**Casualties by type of event and vessel's gross tonnage and year built**

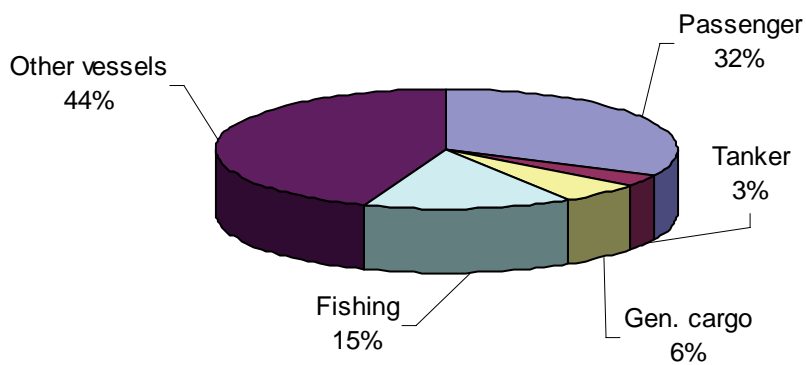
Type of event	Grounding	Collision with other vessel	Collision with other object	Leakage/capsize/weather damage	Shifting of cargo	Fire/explosion	Machinery failure	Spillage	Other occurrences	Near-accident	Total
Gross Size (gross tonnage):											
0 – 19	-	2	-	1	-	2	2	-	-	-	7
20 – 99	2	10	3	3	-	1	7	1	-	1	28
100 – 499	2	4	2	3	-	-	8	-	-	1	20
500 – 2999	2	2	3	-	-	-	5	-	2	3	17
3000 – 9999	-	3	-	3	-	-	2	-	1	2	11
10000 – 49999	10	1	7	2	-	-	10	1	-	1	32
50000 and over	-	-	-	-	1	-	1	-	-	-	2
Unknown	-	1	-	-	-	3	-	-	1	-	5
<b>Total</b>	<b>16</b>	<b>23</b>	<b>15</b>	<b>12</b>	<b>1</b>	<b>6</b>	<b>35</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>122</b>
<b>Year built:</b>											
<b>To 1975 inclusive</b>	5	11	2	5		1	11	1	2	2	40
1976 – 1980	2	2	2	1	-	1	5	1	-	1	15
1981 – 1985	2	3	1	2	-	1	6	-	-	-	15
1986 – 1990	1	2	2	2	-	-	1	-	-	1	9
1991 – 1995	1	1	1	1	1	-	-	-	-	2	7
1996 – 2000	3	3	4	-	-	-	4	-	-	1	15
2001 – 2005	2	1	3	1	-	3	8	-	1	1	20
Unknown	-	-	-	-	-	-	-	-	1	-	1
<b>Total</b>	<b>16</b>	<b>23</b>	<b>15</b>	<b>12</b>	<b>1</b>	<b>6</b>	<b>35</b>	<b>2</b>	<b>4</b>	<b>8</b>	<b>122</b>

**Casualties by type of vessel and cargo/activity**

**Loaded vessel - by type of vessel**

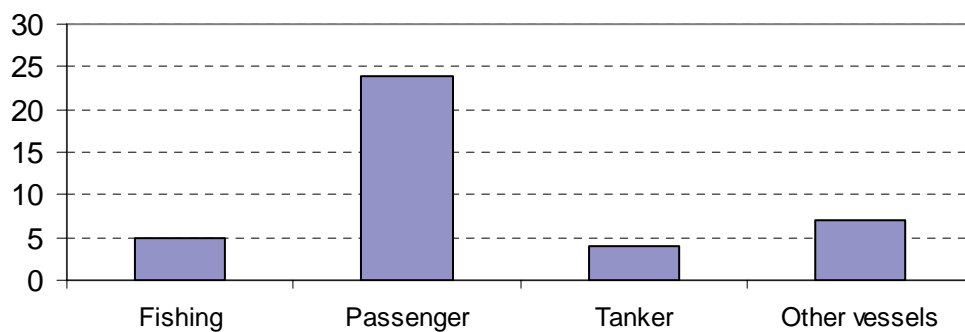


**Ballasted/empty vessel - by type of vessel**



**Ships involved in casualties built to and including 1975 by type of vessel**

Number



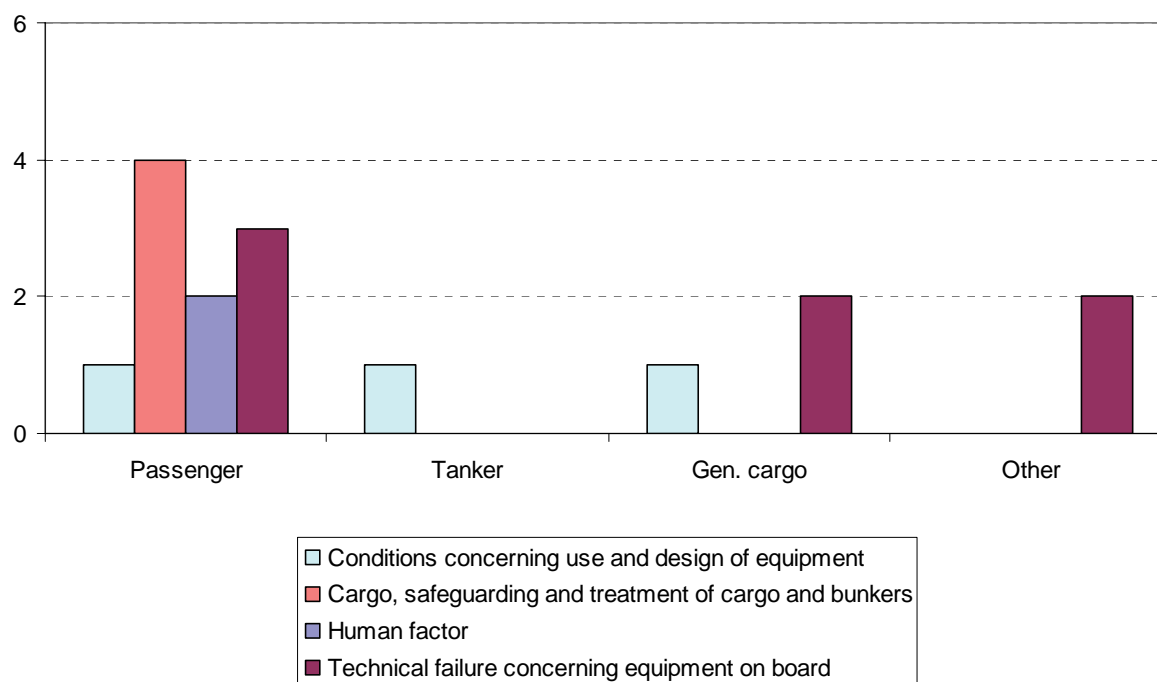
### Fire/explosion

All occurrences have been considered to be *less serious casualties*. “Fire in engine room” has been the cause in seven of the accidents. None of the accidents has caused hazardous discharge, as far as can be determined.

*Fire/explosion by type of vessel*

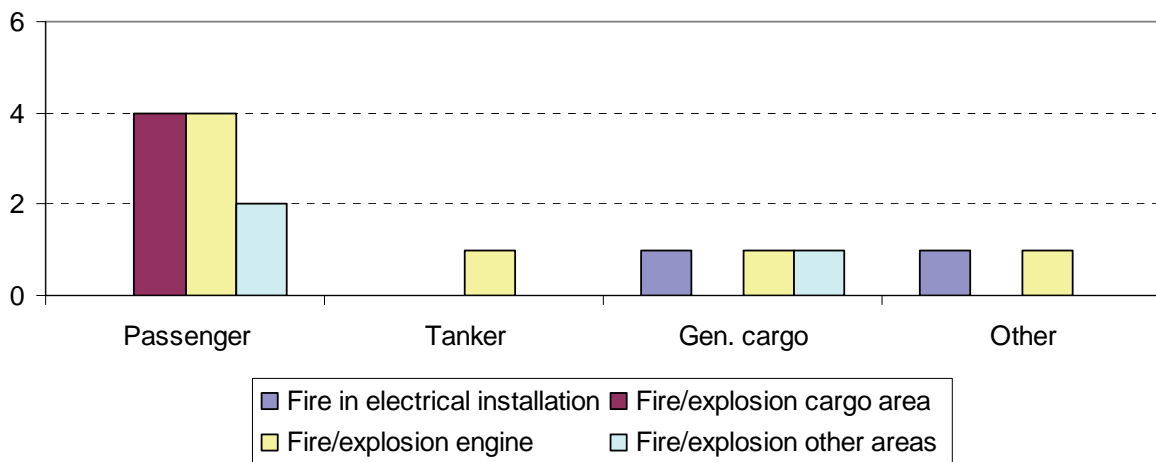
Fishing	Passenger	Tanker	General cargo	Other	Total
-	10	1	3	2	16

**Primary cause by type of vessel**



Fire/Explosion (cont.)

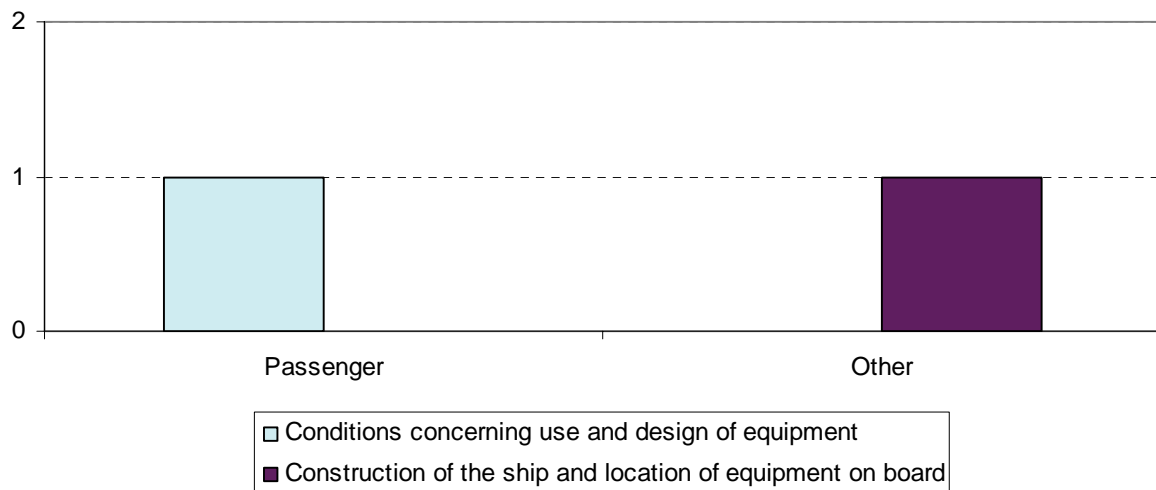
Place on board at the occurrence, by type of vessel



The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel. Contributory causes are i.a.: *Maintenance neglected.*

*Other conditions concerning the construction and maintenance of the ship.*

Contributing cause by type of vessel

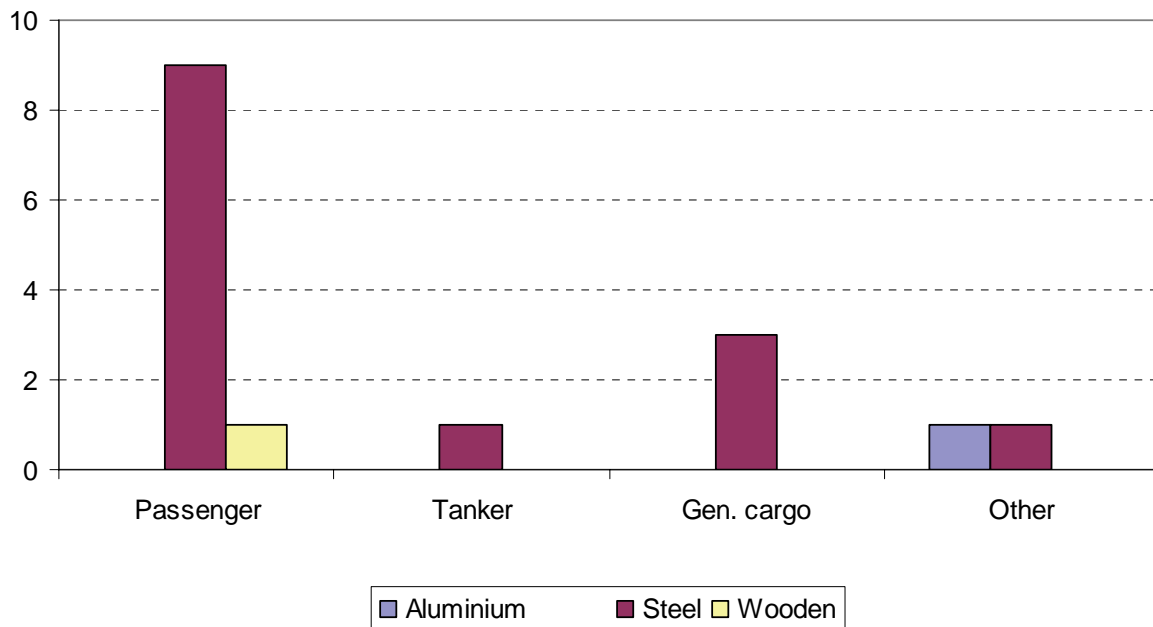


Fire/Explosion (cont.)

Operational mode of the vessel

Operational mode of the vessel	Fishing	Passenger	Tanker	General cargo	Other	Total
Moored to quay	-	3	1	2	-	6
At sea	-	6	-	-	2	8
Port arrival	-	-	-	1	-	1
Port departure	-	1	-	-	-	1
<b>Total</b>	<b>-</b>	<b>10</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>16</b>

The figure shows fire/explosions by type of vessel and construction material



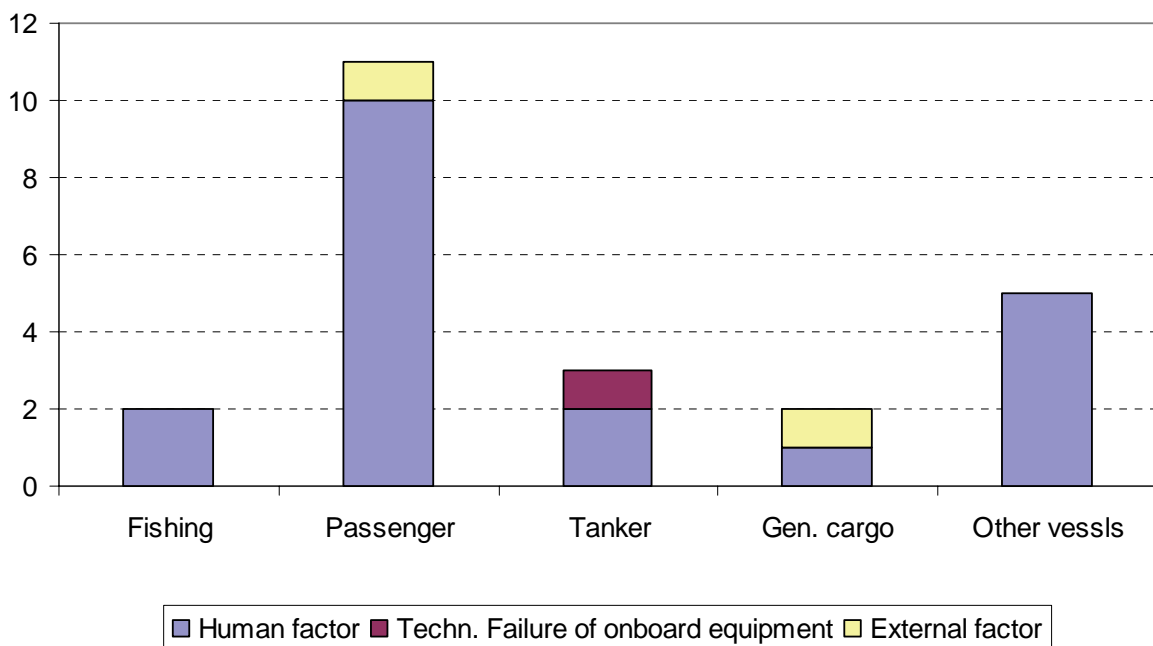
### Grounding

All the occurrences have been considered to be *less serious casualties*. No hazardous discharge is known to have occurred.

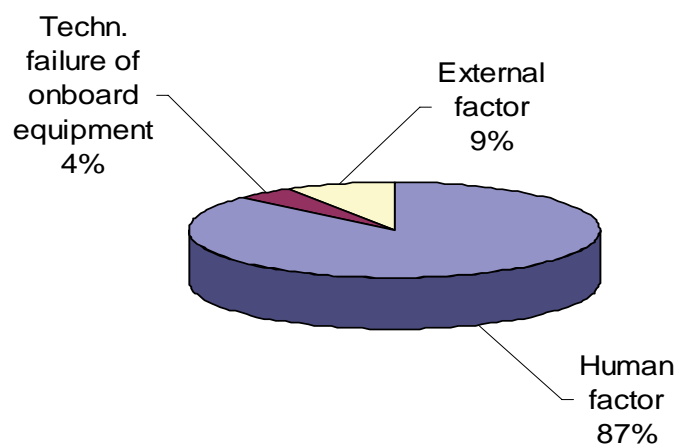
*Distribution by type of vessel.*

Fishing	Passenger	Tanker	General cargo	Other	Total
2	11	3	2	5	23

### Primary cause by type of vessel



### Primary cause – over-all distribution



Grounding (cont.)

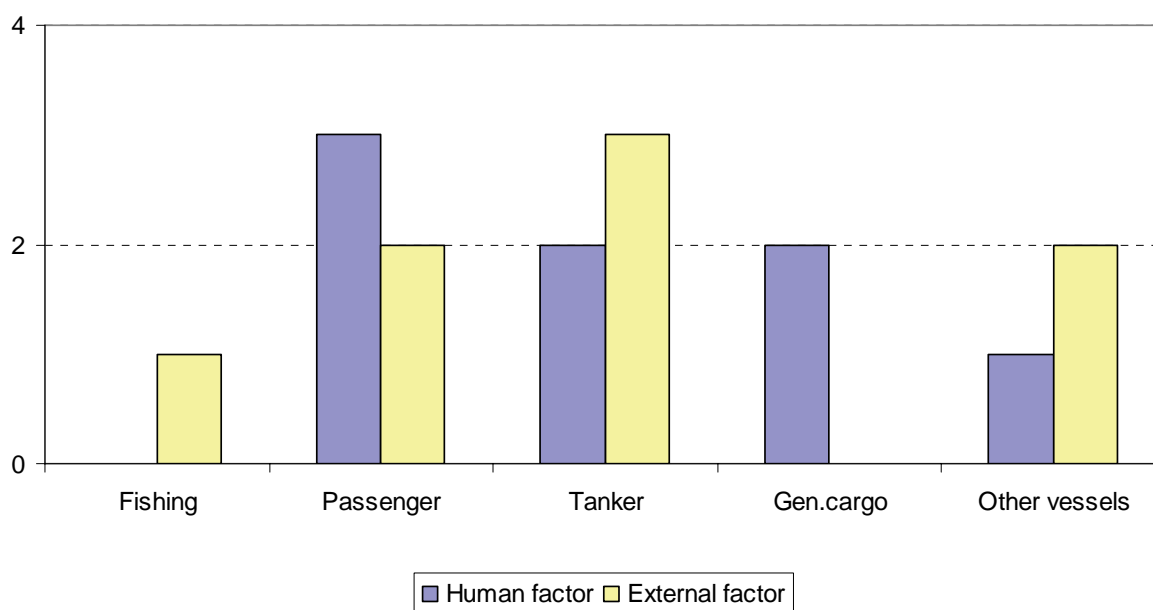
The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel. Contributory causes are i.a.:

*Too high speed*

*Task not well planned*

*Current, wind etc. led to strong drift or other manoeuvre difficulties*

**Contributing cause by type of vessel**



**Consequences of damage to the hull**

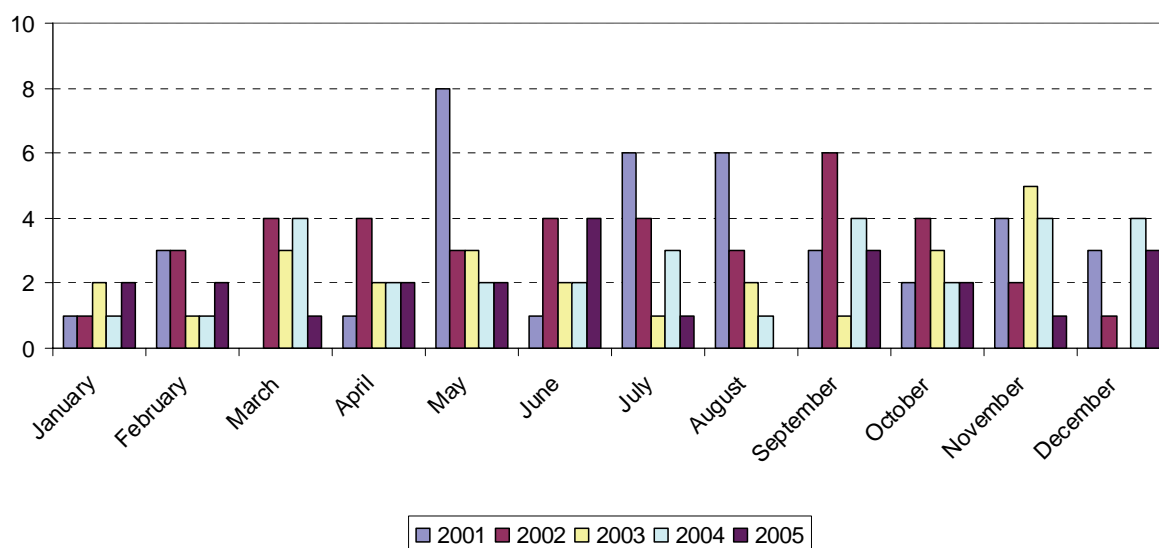
Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	1	7	2	1	4	15
Minor leakage	1	3	1	1	1	7
Unknown		1				1
<b>Total</b>	<b>2</b>	<b>11</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>23</b>

Grounding (cont.)

**Pilot on board/not on board/pilot exemption cert. connected to the occurrence**

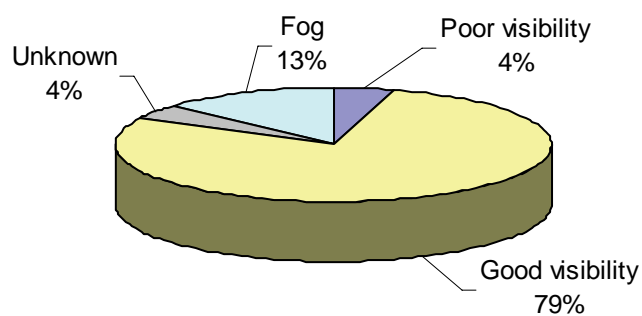
Pilot	Fishing	Passenger	Tanker	General cargo	Other	Total
Not on board	2	10	-	1	5	18
On board	-	-	3	-	-	3
Pilot exemption cert.	-	1	-	1	-	2
<b>Total</b>	<b>2</b>	<b>11</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>23</b>

**Number of groundings per month and year 2001-2005**

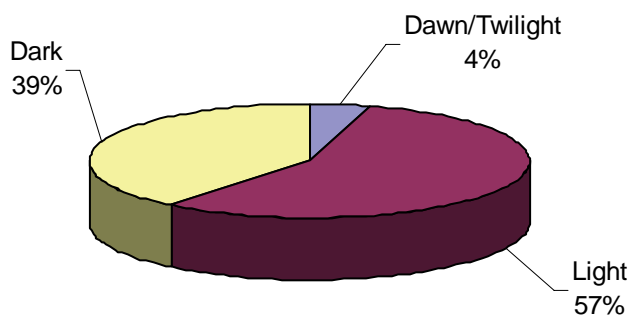


Grounding (cont.)

**Visibility conditions in %**



**Light conditions in %**



**Definition of visibility conditions**

Good visibility	>5	M	Haze, light fog, precipitation	0.25–0.5 M
Moderate visibility	2–5	"	Fog	<0.25 "
Poor visibility	0.5–2	"		

### Collisions with other objects

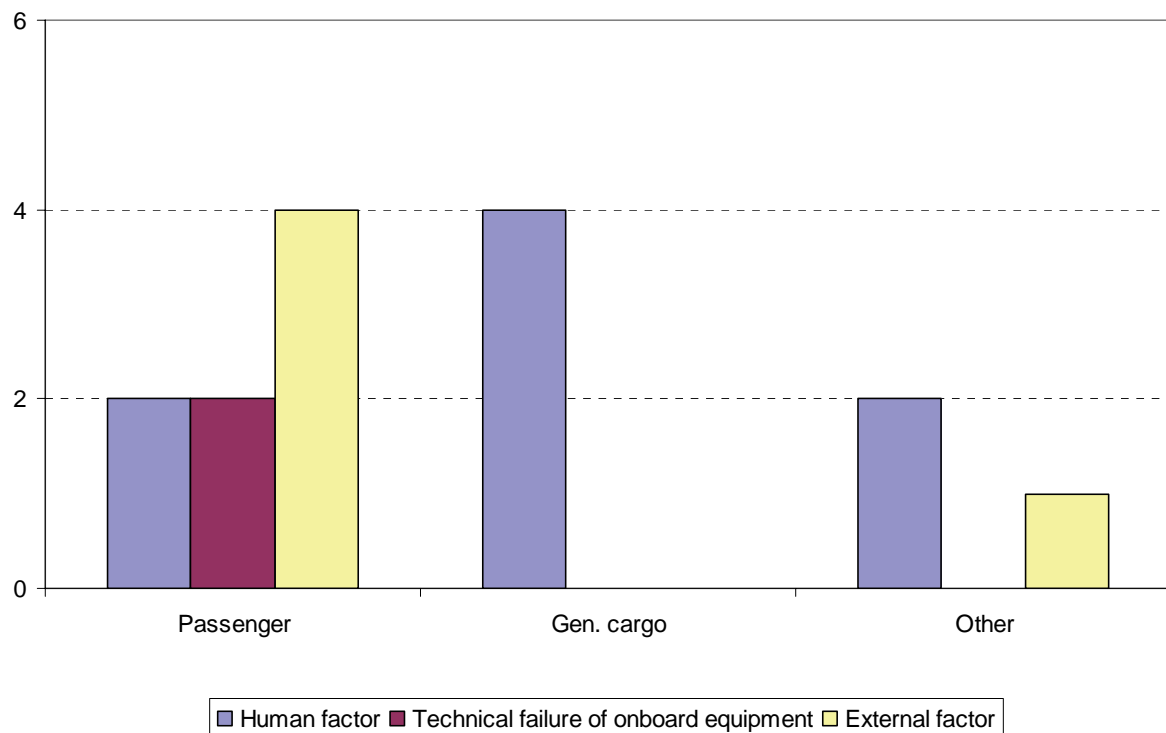
One occurrence has been considered to be a *serious casualty*, see Narratives – Serious Casualties, page 16. The remaining 14 occurrences have been considered to be *less serious casualties*. No foundering and no hazardous discharge is known to have occurred.

**Near-accident:** At departure, due to the fact that another ship was also going outward, one had to position the ship along the riverside with its stern against the wind and was close to collide with the riverbank.

Collisions with other objects by type of vessel

Fishing	Passenger	Tanker	General cargo	Other	Total
-	8	-	4	3	15
<b>Near-accident</b>					
-	1	-	-	-	1

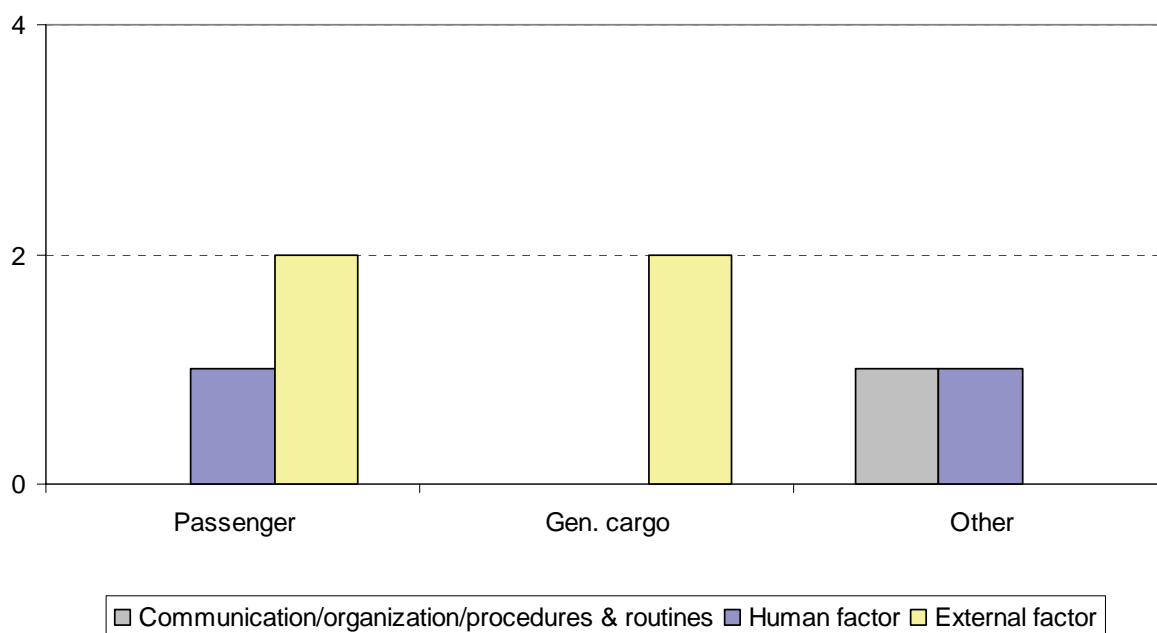
### Primary cause by type of vessel



Collisions with other objects (cont.)

The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel. Contributory causes are i.a.: *Misjudgement of own vessel's movements*  
*Task not well planned*

**Contributing cause by type of vessel**



**Consequences of the damage to the hull**

Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	-	7	-	4	3	14
Minor leakage	-	1	-	-	-	1
<b>Total</b>	<b>-</b>	<b>8</b>	<b>-</b>	<b>4</b>	<b>3</b>	<b>15</b>

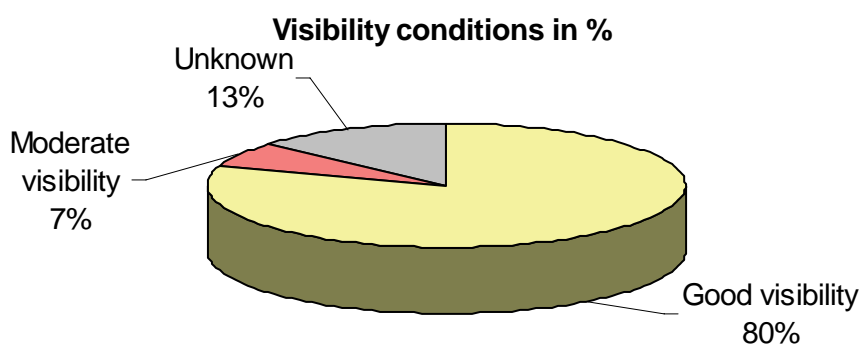
Collisions with other objects (cont.)

**Information if pilot was on board/not on board/pilot exemption certificate**

Pilot	Fishing	Passenger	Tanker	General cargo	Other	Total
Not on board	-	5	-	2	3	10
On board	-	-	-	2	-	2
Pilot exemption cert.	-	3	-	-	-	3
<b>Total</b>	<b>-</b>	<b>8</b>	<b>-</b>	<b>4</b>	<b>3</b>	<b>15</b>

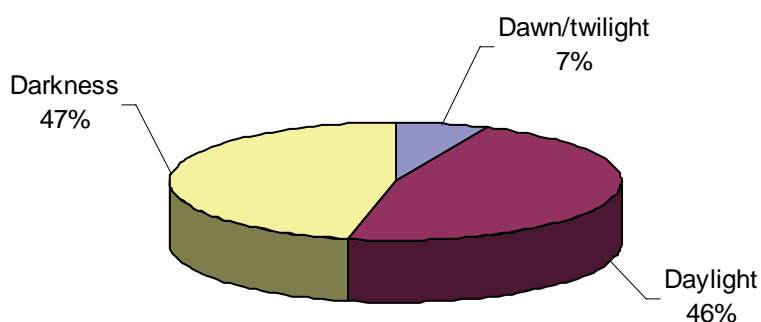
**Operational mode of the vessel**

Operational mode of the vessel	Fishing	Passenger	Tanker	General cargo	Other	Total
Moored to quay	-	1	-	-	-	1
At sea	-	3	-	1	3	7
Port arrival	-	3	-	3	-	6
Port departure	-	1	-	-	-	1
<b>Total</b>	<b>-</b>	<b>8</b>	<b>-</b>	<b>4</b>	<b>3</b>	<b>15</b>



Collisions with other objects (cont.)

**Light conditions in %**



**Definition of visibility conditions**

Good visibility	>5	M	Haze, light fog, precipitation	0.25–0,5 M
Moderate visibility	2–5	"	Fog	<0.25 "
Poor visibility	0.5–2	"		

**Collisions with other vessels**

All occurrences have been considered to be *less serious casualties*. No foundering and no hazardous discharge is known to have occurred.

**Near-accidents** were i.a. caused by *misjudgement of speed and distance*.

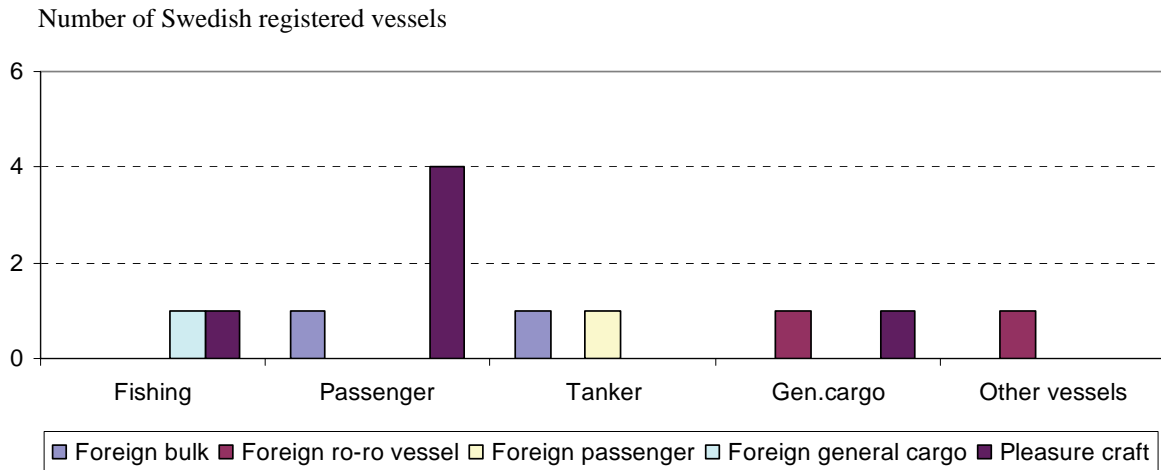
*Collisions with other vessels by type of vessel*

Fishing	Passenger	Tanker	General cargo	Other	Total
2	5	2	2	1	12
Near-accident					
2	-	2	1	2	7

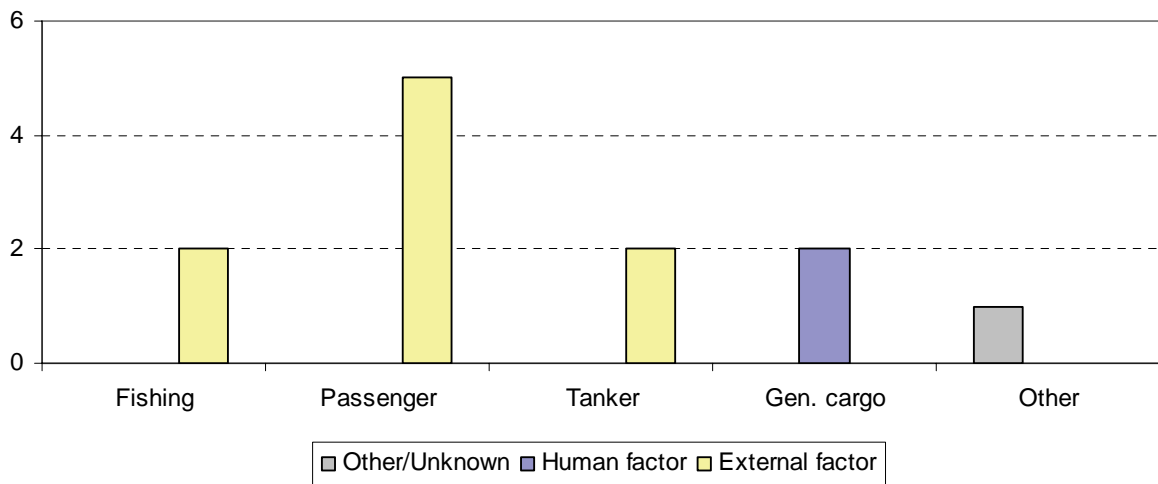
Collisions with other vessels (cont.)

During 2005 six Swedish merchant and fishing vessels collided with foreign vessels and six Swedish merchant and fishing vessels collided with pleasure crafts.

**Distribution of the collisions between the vessels by type of vessel**

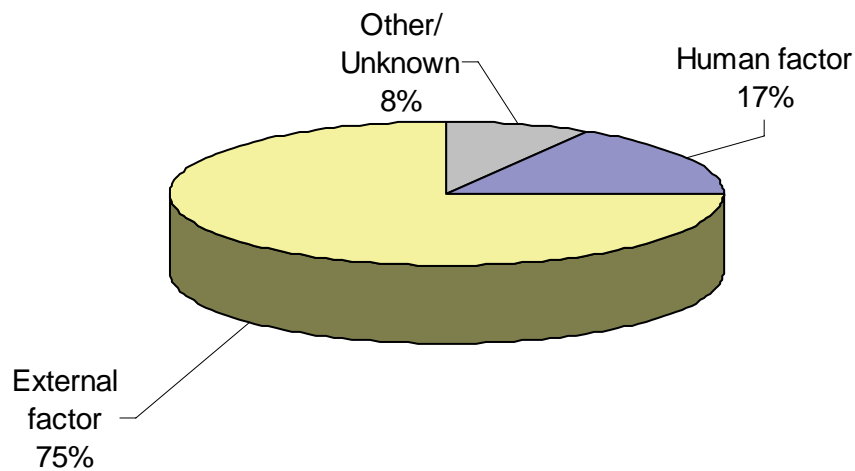


**Primary cause by type of vessel**



Collisions with other vessels (cont.)

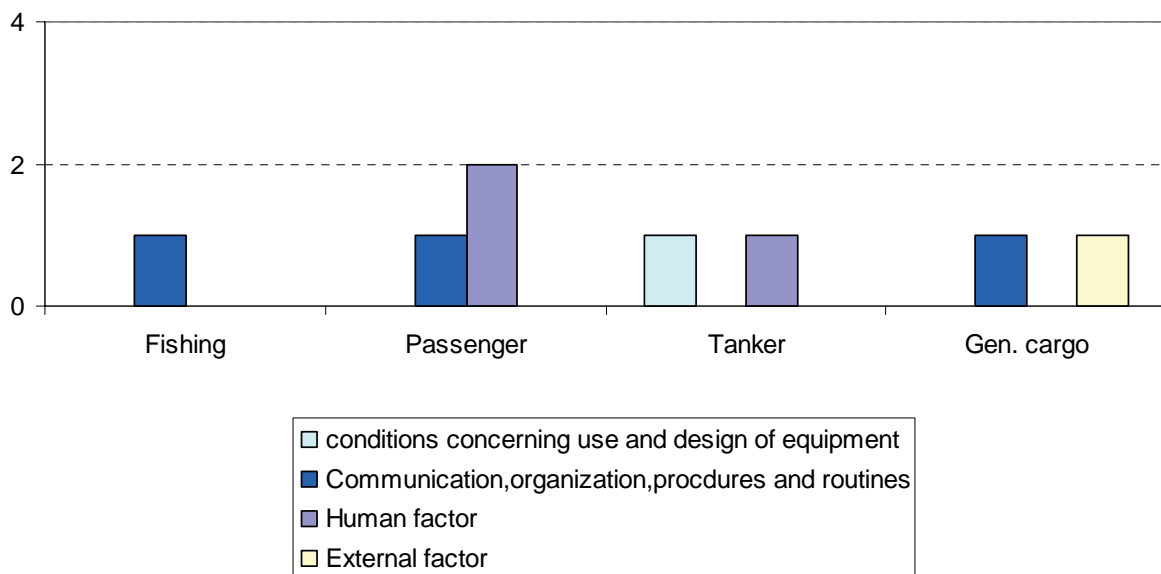
**Primary cause – over-all distribution**



The diagram below shows contributory causes to collisions with other objects by type of vessel: *Insufficient real competence*

*Safety routines in connection with navigation/manoeuvring known, but not followed.  
Undermanning, generally or for the task, e.g. no helmsman/look-out.  
Other conditions concerning routines, procedures, communication or organization.*

**Contributing cause by type of vessel**



Collisions with other vessels (cont.)

**Consequences of damage to the hull**

<b>Damage to hull (water ingress)</b>	<b>Fishing</b>	<b>Passenger</b>	<b>Tanker</b>	<b>General cargo</b>	<b>Other</b>	<b>Total</b>
No leakage	1	5	2	2	1	11
Minor leakage	1	-	-	-	-	1
<b>Total</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>12</b>

**Information whether pilot was on board/not on board/pilot exemption certificate**

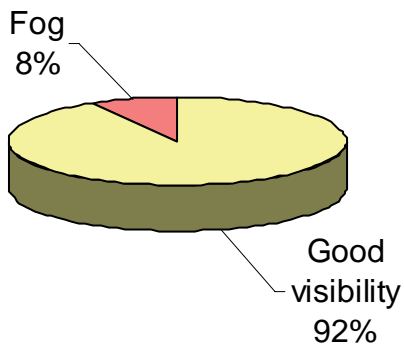
<b>Pilot</b>	<b>Fishing</b>	<b>Passenger</b>	<b>Tanker</b>	<b>General cargo</b>	<b>Other</b>	<b>Total</b>
Not on board	2	5	2	1	1	11
Pilot exemption cert.	-	-	-	1	-	1
<b>Total</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>12</b>

**Operational mode of the vessel**

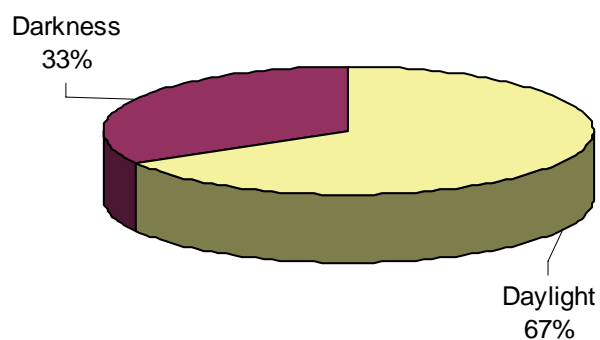
<b>Operational mode of the vessel</b>	<b>Fishing</b>	<b>Passenger</b>	<b>Tanker</b>	<b>General cargo</b>	<b>Other</b>	<b>Total</b>
Fishing	2	-	-	-	-	2
At anchor	-	-	1	-	-	1
At sea	-	4	1	1	1	7
Port arrival	-	-	-	1	-	1
Port departure	-	1	-	-	-	1
<b>Total</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>12</b>

Collisions with other vessels (cont.)

**Visibility conditions in %**



**Light conditions in %**



***Definition of visibility conditions***

Good visibility	> 5	M
Moderate visibility	2 – 5	M
Poor visibility	0.5 – 2	"
Haze, light fog, precipitation	0.25 – 0.5	M
Fog	< 0.25	"

### Shifting of the cargo<sup>13</sup>

The event was considered to be a *less serious casualty*. As far as can be determined there was no hazardous discharge.

Contributory causes to the collisions with other objects by type of vessel:

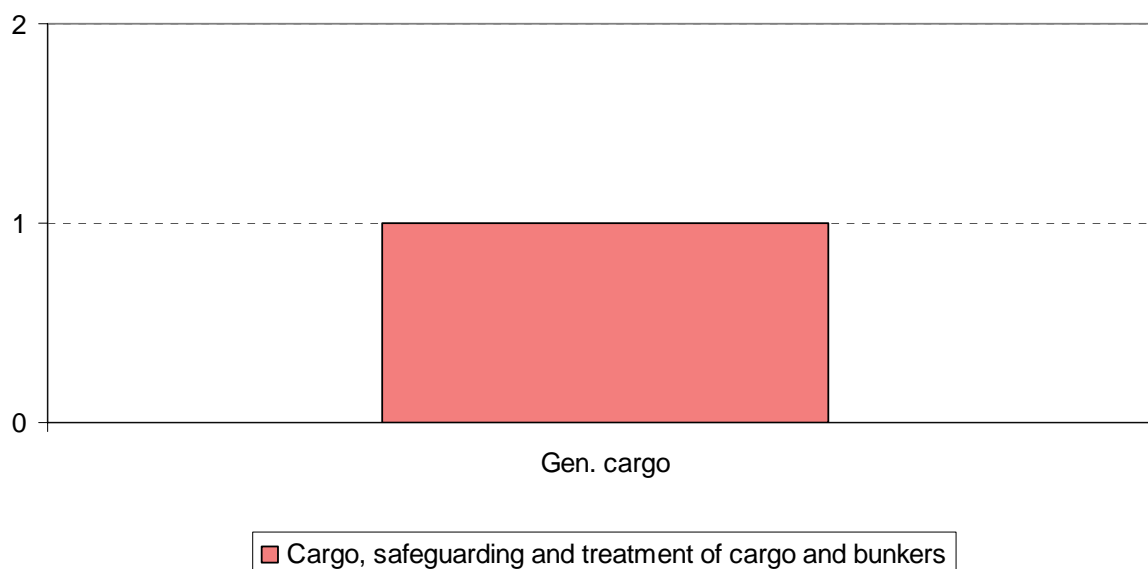
*Bad weather.*

*Other conditions concerning individuals.*

*Shifting of the cargo by type of vessel*

Fishing	Passenger	Tanker	General cargo	Other	Total
-	-	-	1	-	1

### Primary cause by type of vessel



<sup>13</sup> Starting in 1998 "Shifting of the cargo" has been reported under a separate heading. The accidents have previously been included in the group "Leakage/Capsize/Weather damage".

### Damage due to leakage/capsize/weather

One occurrence was considered to be a *foundering*. At towing the towline was tightened so that the towing work-ship tilted and went down; see Narratives – foundered vessels, page 15.

Two of the six occurrences were considered to be *serious casualties*, see Narratives – serious casualties, page 16.

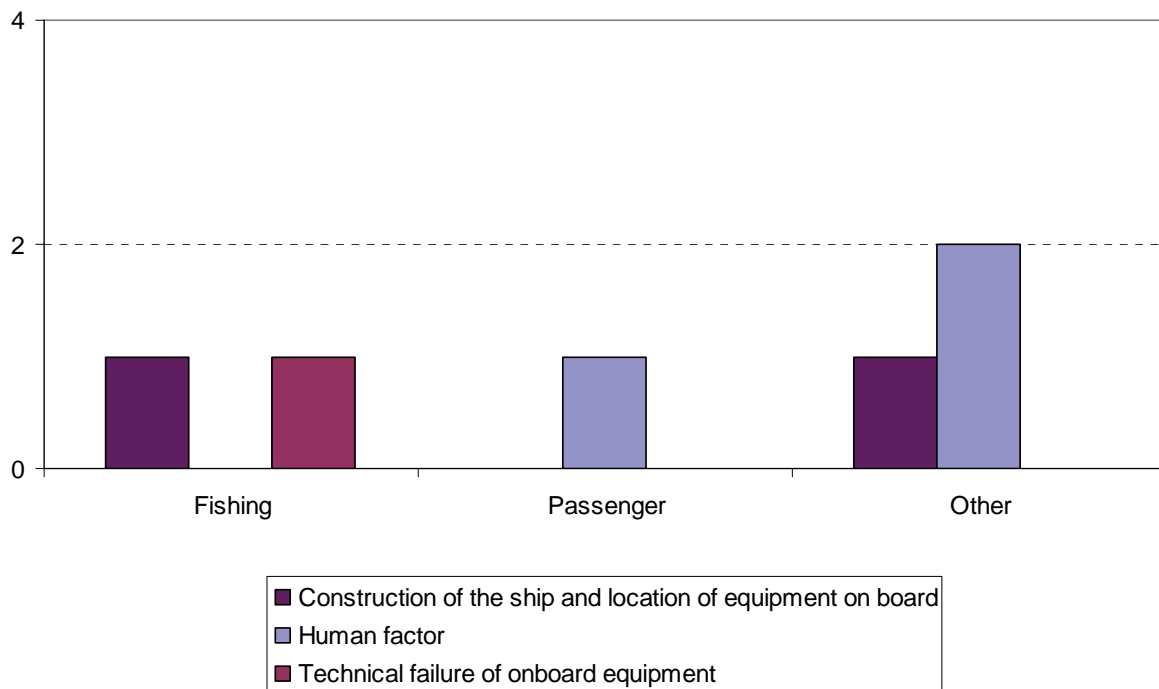
The remaining occurrences were considered to be *less serious casualties*.

No hazardous discharge is known to have occurred.

Damage due to leakage/capsize/weather by type of vessel

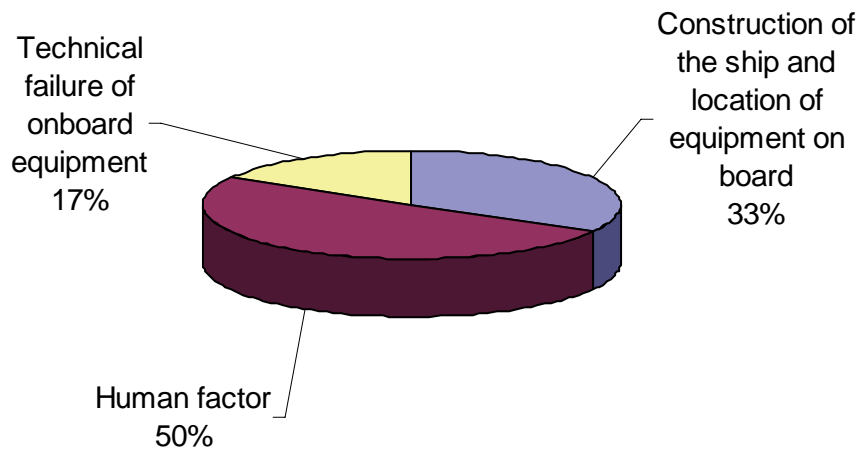
Fishing	Passenger	Tanker	General cargo	Other	Total
2	1	-	3	3	6
<i>Total losses for each</i>					
-	-	-	-	1	1

### Primary cause by type of vessel



Damage due to leakage/capsize/weather (cont.)

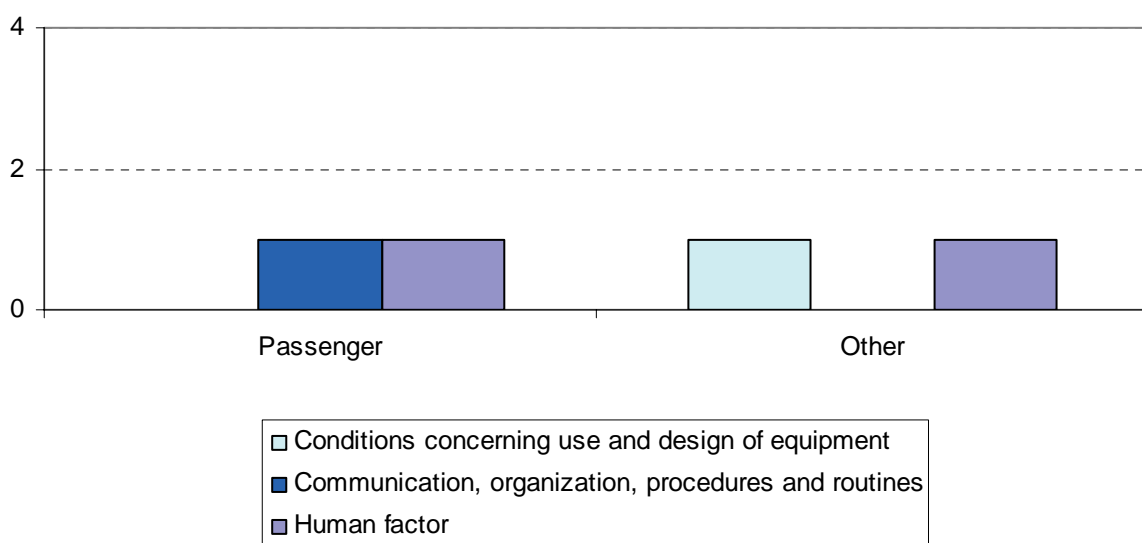
**Primary cause – over-all distribution**



The diagram below shows contributory causes to the collisions with other objects by type of vessel:

- Did not use protective equipment.*
- Insufficient formal competence for the task.*
- Maintenance neglected.*

**Contributing cause by type of vessel**



Damage due to leakage/capsize/weather (cont.)

### Consequences of damage to the hull

Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	1	-	-	-	1	2
Minor leakage	1	-	-	-	-	1
Major leakage	-	-	-	-	2	2
Unknown	-	1	-	-	-	1
<b>Total</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>6</b>

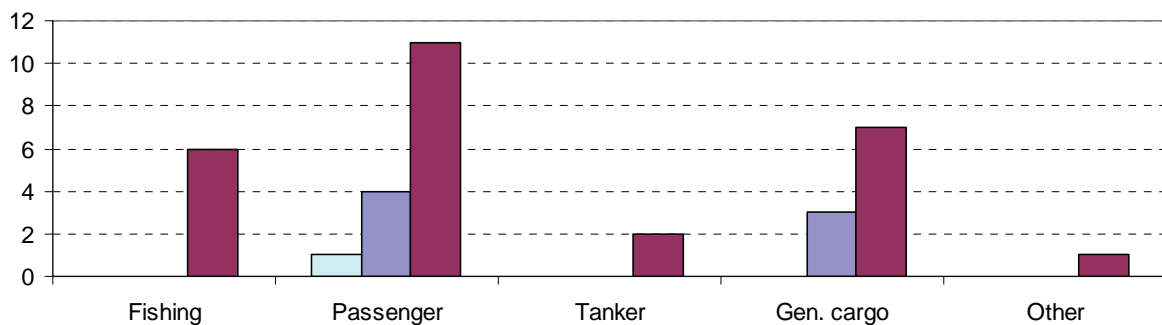
### Engine failure

All occurrences have been considered to be *less serious casualties*. No hazardous discharge is known to have occurred.

*Engine failure by type of vessel*

Fishing	Passenger	Tanker	General cargo	Other	Total
6	16	2	10	1	35

### Primary cause by type of vessel



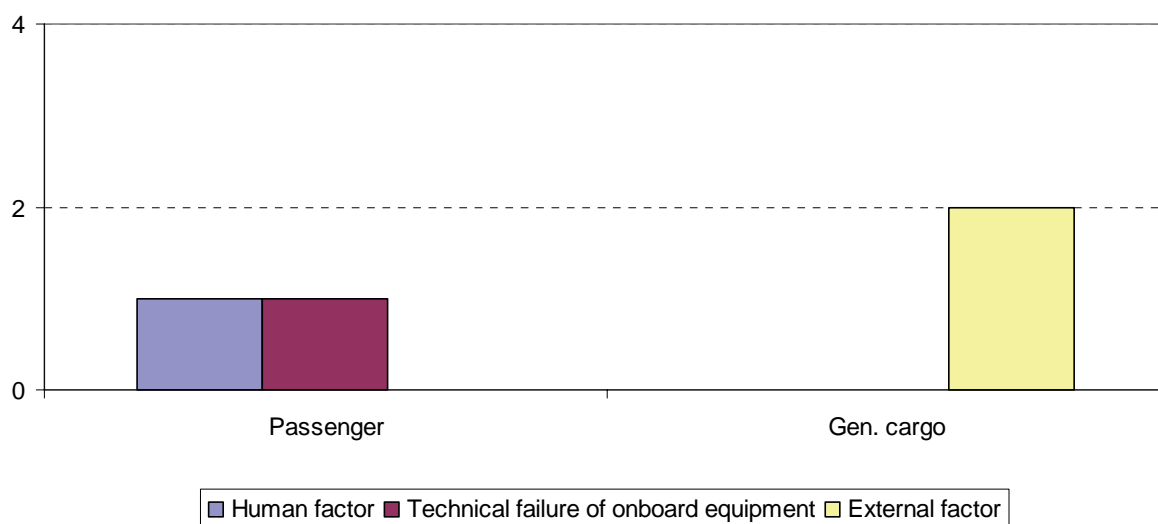
□ conditions concerning use and design of equipment    ■ Human factor    ■ Technical failure of onboard equipment

Engine failure (cont.)

The diagram below shows contributory causes to the collisions with other objects by type of vessel:

- Insufficient formal competence for the task.*
- Technical failure in propulsion systems.*
- Bad weather/storm.*
- Ice conditions influencing navigation/manoeuvring.*

**Contributing cause by type of vessel**



**Consequences of damage to the hull**

Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	6	15	2	9	1	33
Minor leakage	-	1	-	-	-	1
Unknown	-	-	-	1	-	1
<b>Total</b>	<b>6</b>	<b>16</b>	<b>2</b>	<b>10</b>	<b>1</b>	<b>35</b>

## Spillage

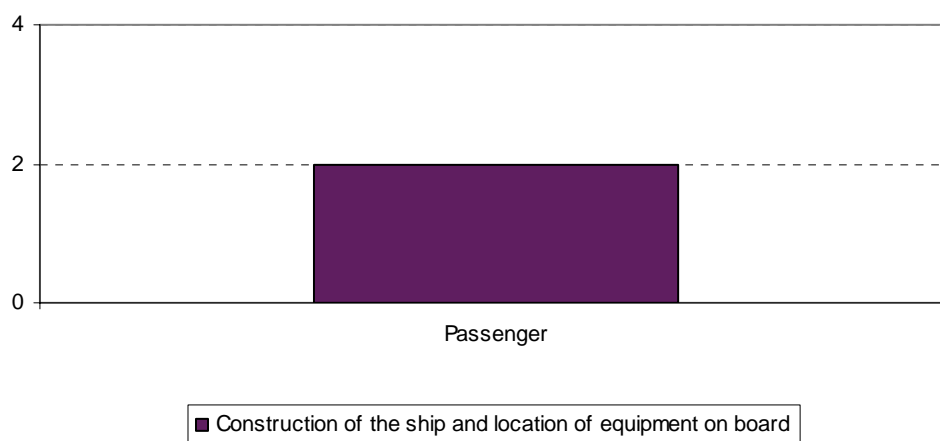
The occurrences have been considered to be *less serious casualties*.

- At departure signs of oil were spotted on the water, so the ship returned to port. An examination showed that heavy oil had been leaking from a corroded hole at a weld. **Spillage about 80 litres.**
- The ship was equipped with automatic high level drainage of the keel. Gas oil was leaking. **Spillage about 10 litres.**

Spillage by type of vessel

Fishing	Passenger	Tanker	General cargo	Other	Total
-	2	-	-	-	2

Primary cause by type of vessel



## Other occurrences

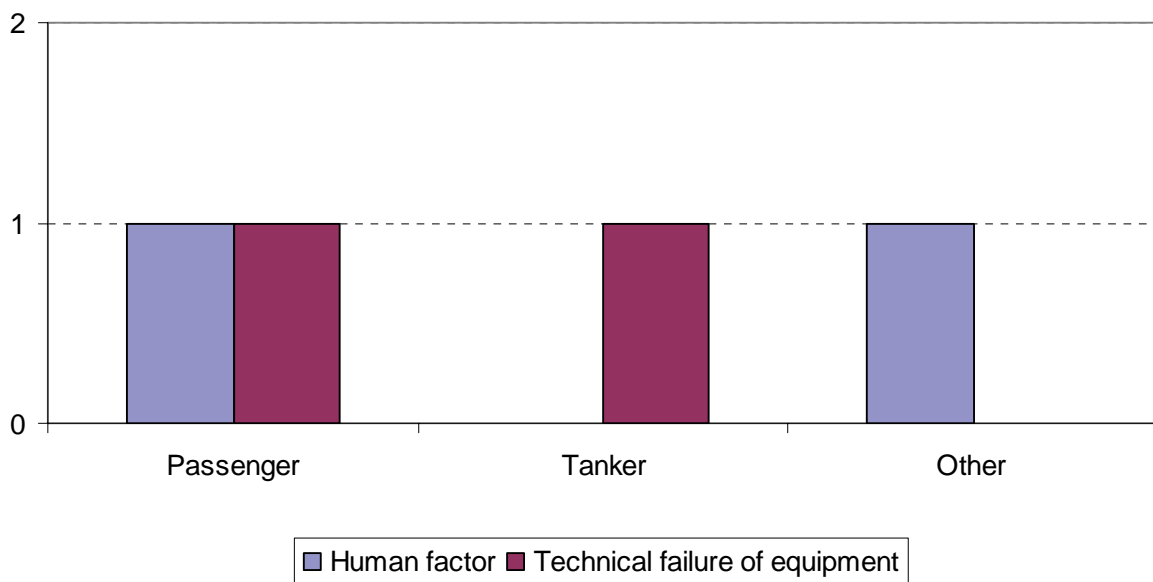
One occurrence has been considered to be a *foundering*. The tank deck split between tanks No. 1 and 2 to port. The damage was so great that the ship was condemned, see Narrative – foundered vessels, page 15. At the occurrence about 500 litres of heavy oil leaked out. The remaining occurrences have been considered to be *less serious casualties*.

Other occurrences (cont.)

Other occurrences by type of vessel.

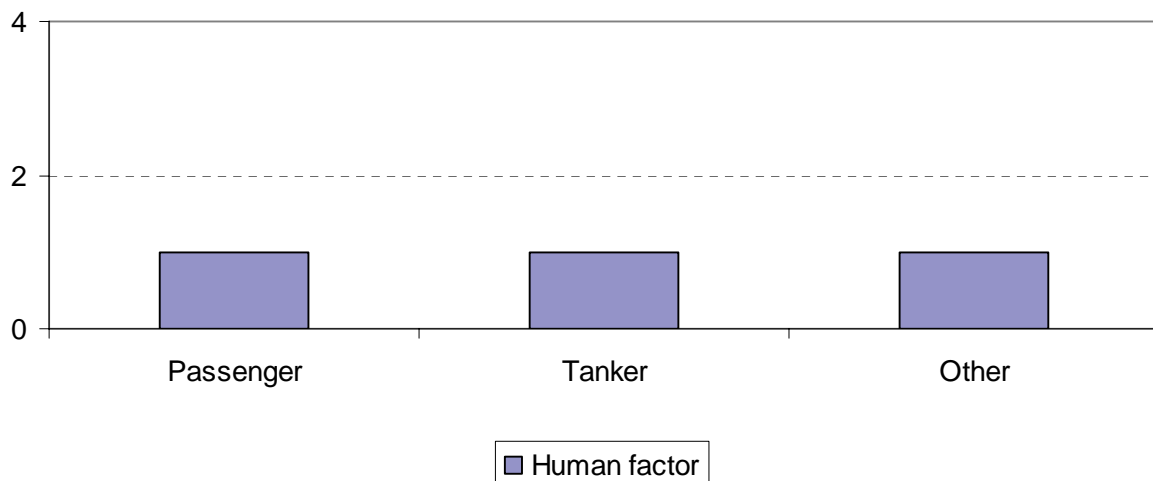
Fishing	Passenger	Tanker	General cargo	Other	Total
-	2	1	-	1	4
<i>Total loss for each</i>					
-	-	1	-	-	1

Primary cause by type of vessel



The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel. Contributory causes are i.a.: *Other conditions concerning individuals.*

Contributing cause by type of vessel



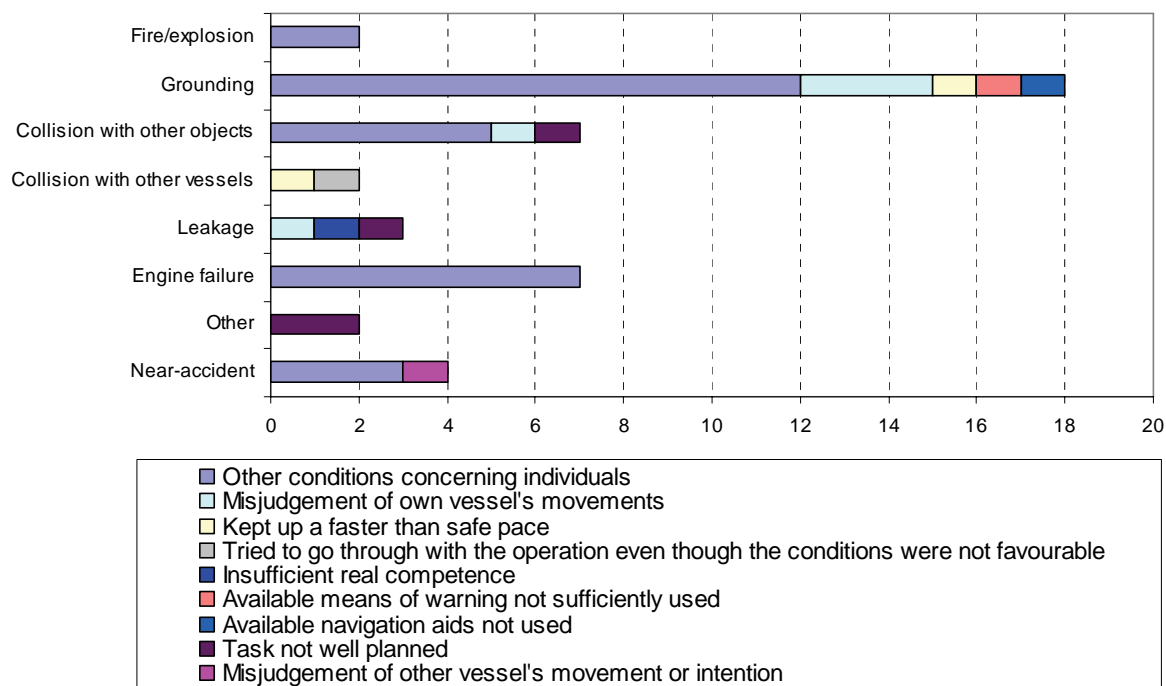
Other occurrences (cont.)

### **Narrative**

- The ship had been on a trial trip and was going to moor in Gothenburg. A mooring line boat that was engaged as a towboat was connected in the stern. When the towline was tightened the towboat tilted and went down. One of the crew members went down with it but managed to get out of the wheelhouse and up to the surface. Both crew members were taken to hospital. **Note:** The occurrence with the mooring line boat is registered in the section Leakage/Capsizing/Weather damage.
- A turning block of a ramp hoisting wire had come loose at the welding point, which made the ramp slant. After the occurrence all deck sections and ramps were examined and test-loaded.
- The ship was transferring oil from another ship when the tank deck split between tank Nos. 1 and 2 to port. The accident was caused by the fact that an ullage metre showed the wrong level, which made the pumping continue with unreduced speed. The ship was condemned. Spillage about 500 litres of heavy oil.
- A water pipe on a water inlet that was being set up was hit by a trolling boat in spite of the fact that the activity had been announced. The boat was on its way to participate in a fishing contest.

### Human factor in relation to type of occurrence

The human factor was considered to be the main cause for 41 accidents and 4 near-accidents. Dispersion of the various human factors in relation to type of occurrence and main cause.



**Circumstances of individuals on board – "the human factor" is divided into 16 subgroups, describing the human factors more in detail.**

- Alcohol or other intoxicant
- Alternative navigation systems not used
- Other circumstances influenced by the human factor
- Misjudgement of **other** vessel's movement or intention
- Misjudgement of **own** vessel's movements
- Too high speed
- Tried to carry out the operation although the conditions were not favourable
- Did not keep to starboard in the fairway
- Not adequate observation of own position/not plotted on charts
- Insufficient real competence
- Insufficient formal competence for the task
- Fell asleep on watch
- Special conditions (illness, insufficient amount of sleep, too long working time etc.)
- Available means of warning not sufficiently used
- Available navigation aids not used
- Task not well planned

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# **ACCIDENTS TO PERSONS**

## **Summary of reported accidents to persons**

**2005**

## Accidents to persons

This section of the summary shows reported occupational injuries including those resulting in the loss of life of on-board personnel in merchant and fishing vessels and accidents to passengers and other persons on board vessels in 2005.

<b>PERSONS EMPLOYED ON BOARD</b>	<b>Number</b>
OCCUPATIONAL INJURIES (occupational accidents/work-related diseases, incl. off duty on board/off duty ashore) incl. deaths	283
occupational accidents	212
<i>occupational accidents resulting in death</i>	1
work-related diseases	71
ILLNESS/SUICIDE	-
DISAPPEARANCES	-

<b>COMMERCIAL FISHERMEN</b>	<b>Number</b>
OCCUPATIONAL INJURIES (occupational accidents/work-related diseases) incl. deaths	11
occupational accidents	8
<i>occupational accidents resulting in death</i>	1
work-related diseases	3

<b>PASSENGERS</b>	<b>Number</b>
<i>ILLNESS/SUICIDE</i>	8
DISAPPEARANCES	-
PHYSICAL INJURIES	-
<i>physical injuries resulting in death</i>	-

### **Occupational injuries while on ship-duty**

In this section, the Swedish Maritime Safety Inspectorate's Maritime Casualty Investigation Division presents statistics on occupational injuries sustained by persons while on ship-duty in 2005 in Swedish merchant and fishing vessels. Occupational injuries sustained by commercial fishermen are reported under a separate heading.

The statistical source material is taken from InformationsSystemet om Arbetsskador ISA – (The Occupational Injury Information System) which is handled by the Swedish Work Environment Authority. The data was extracted on 26 May, 2006.

### **New system as from 2002 for reporting and registration of occupational injuries**

As from the year 2002 occupational injuries are reported and registered in a new manner. New definitions and variables are practiced. In addition a new form for reporting occupational injuries is used, which in part holds other information or changed type of information. Hereunder the most important changes are described, which influence the statistics as from 2002 and its comparability with previous statistics.

#### **Report on occupational injury**

The basic material for coding is the information given in the report on occupational injury. In the form for reporting a disability occurred during official service is stated i.a. information on the injured person, employer, work situation, scope of damage and course of events at the occurrence. In 2001 a new and revised form for report on occupational injuries was introduced. The new form is designed for improved registration of today's working environment factors and risks on the working site. It is also adapted to facilitate mechanical interpretation of the information.

#### **Variables**

At introduction of the new registration system also some new variables and classifications have also been introduced. These are in most cases based on recommendations from EU's statistical office EUROSTAT. Below is a short description of the most important variables used in the present publication.

#### ***Deviation***

As from 2002 the deviation, which has caused an accident, is coded. The coding of the variable Deviation is based upon a classification, which is developed and recommended by EU's statistical office EUROSTAT. The variable Occurrence, which has earlier been used when reporting occupational accidents, is not coded after 2001.

A deviation describes what has diverged from normal in a course of events. It may also be a deviation from the normal way of carrying out a task, where this deviation is a contributory cause to the accident. **Deviation** and **occurrence** (which were coded up till 2001) partly describe different things. If for example a person should fall from a ladder due to a material defect, this was generally regarded as a deviation. In the old classification, however, this type of misfortune would be considered a downfall accident.

#### **Scope and registration of the statistics**

The new registration system, which was introduced in 2002, is adapted to the new occupational injury report and the new EU classifications. All occupational injuries among gainfully

employed are included, which means that within the group *fishermen* also self-employed people and family members working in the business are included.

Occupational injuries mean accidents and sicknesses, which are the result of injurious influence at work. In ship work more or less all accidents, which have occurred during off-duty hours on board or in connection with certain organized recreational activities ashore, are considered as occupational injuries. This is due to the special working conditions of seafarers. The statistics comprise:

- reported occupational injuries causing minimum one day on the sick-list
- reported occupational sickness regardless of days on the sick-list
- As regards reported occupational injuries with no days on the sick-list (so called zero injuries) in addition to the exemptions mentioned above, only the total number is accounted for.

### **Collection of data**

The basic information for the statistics is the **REPORT on occupational injury**. New registration routines are applied from April 1, 2002. As from that date all reports received are scanned. This means that photographs are taken of reports on occupational injuries and that certain information in the report is automatically registered, e.g. social security number and date of injury. Later on a manual review is made and corrections, if needed, are made in the automatically generated data. Furthermore a supplementary codification of certain information in the report is made. Occupational diseases will in the future be registered in the year that the report was scanned and not, as earlier, at the time when the occupational injury was reported by the employer. In practice this is not likely to have any great influence from the accounting point of view, since it will make a difference only for reports made just before the turn of the year. However, the occupational injuries will in the future, as in the past, be accounted for by date of injury. The employer/shipping company shall ensure that the occupational injuries are reported to the National Social Insurance Office.

Information on the number of signed-on crew on a certain day can be obtained from the Seamen's Register.

### **Using specific data**

The present information system has been developed both for official statistical use and to make it possible to process the data according to the needs for other users. Each piece of information, which has been recorded from the notification form, can be used to select the group of injuries that interests the user. The selected injuries can then be listed with all or portions of the registered information regarding curves or tables, according to different combinations of variables. For example, a specific shipping company can obtain information regarding occupational injuries on its vessels. Someone working with the construction of, or regulations for, ladders can find material about accidents involving ladders. Specially processed data on injuries related to ship-duty can be ordered from the Swedish Work Environment Authority.

When providing material and tables, consideration must always be given to the fact that the work injury notifications are protected by the Official Secrets Act.

### Persons employed on board

Total occupational injuries in relation to manning of merchant vessels, (occupational accidents occurring on-duty/off-duty and work-related diseases).

A total of **283** ship-duty occupational injuries were reported in 2005 (excluding commercial fishermen). Out of the total number of accidents, **212** were occupational accidents (on-duty/–/off-duty) and **71** were work-related diseases. The number of reported occupational accidents without absence from work, so called zero injuries, which have not been included in the statistical summary, was **153** for 2005 (**162** for 2004). A further explanation can be found in the section "Scope and registration of the statistics".

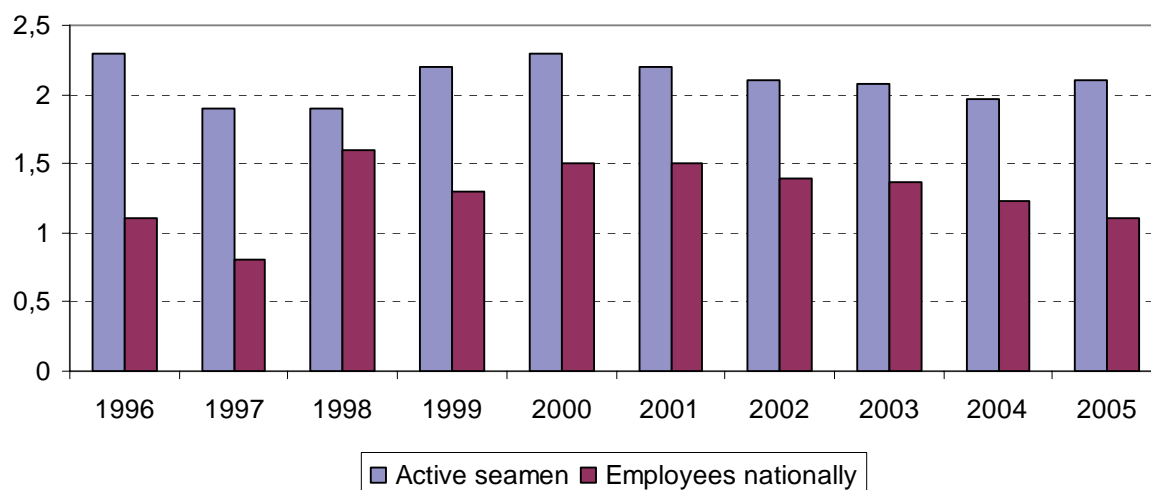
The number of *active seamen* in 2005 was **13 268** (in 2004 it was **13 450**) (the information is taken from the *Seamen's Register*). By *active seaman* it is meant that the person has worked in that capacity for at least 3 of the preceding 18 consecutive months.

*Signed-on crew* on merchant and special purpose vessels having a gross tonnage of 300 and over (the information taken from the Seamen's Register)

Masters	Mates	Deck crew	Engineers	Engine crew	Catering	Total
368	656	1 319	765	596	3 211	6 915

### Frequency of injuries 1996 - 2005

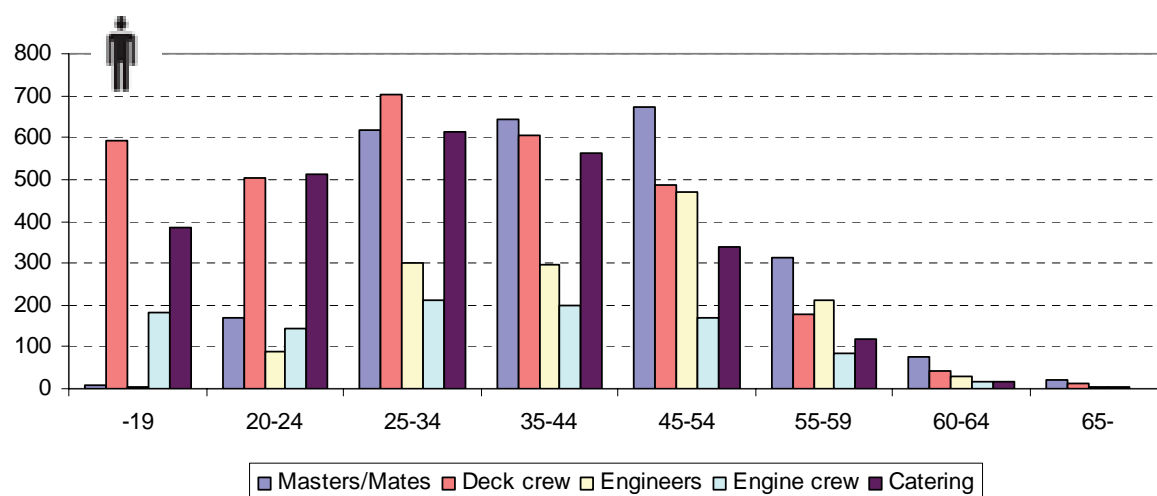
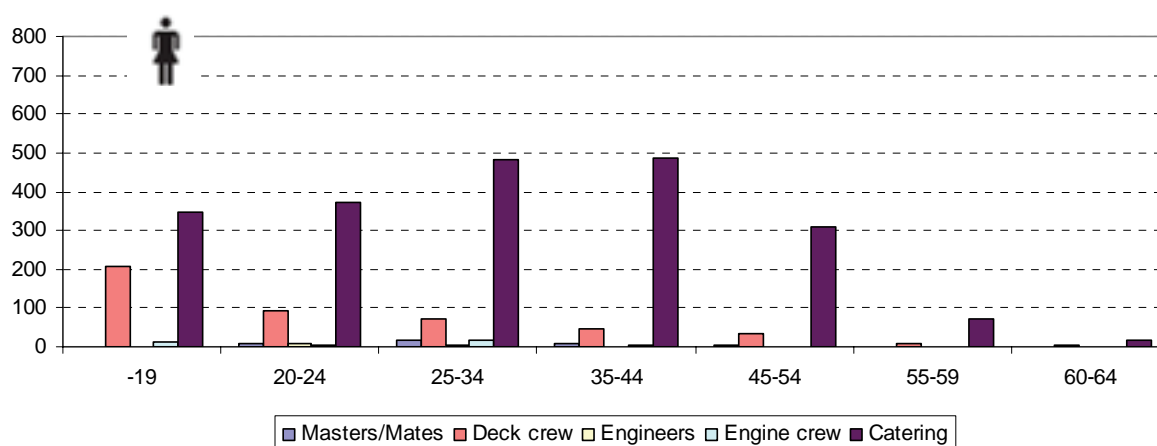
The frequency of injuries is defined as the number of occupational injuries/100 active seamen. The figure shows the number of occupational injuries/100 employees nationally. (Information taken from the SCB/Rams 2004)



### Number of active seamen by age and manning

Age	< 19	20 -24	25 -34	35 -44	45 -54	55 -59	60 -64	65 >	Total
<b>Manning</b>									
Masters/Mates	8	180	635	653	677	315	75	23	2 566
Deck crew	800	597	775	653	522	188	47	13	3 595
Engineers	7	98	306	299	470	213	30	4	1 427
Engine crew	193	148	229	204	171	84	16	3	1 048
Catering	731	888	1 096	1 046	645	191	34	1	4 632
<b>Total</b>	<b>1 739</b>	<b>1 911</b>	<b>3 041</b>	<b>2 855</b>	<b>2 485</b>	<b>991</b>	<b>202</b>	<b>44</b>	<b>13 268</b>

### Number of active seamen by age, manning and sex



**Injuries by occupational accidents/work-related diseases and on-duty/off-duty in 2001 - 2005**

Year	Total occupational accidents		Work-related diseases	Total	Occupational accidents without absence from work
		<i>of which deaths</i>			
2001	202	-	80	282	205
2002	207	2	85	292	203
2003	218	-	60	278	175
2004	200	-	66	266	162
2005	212	1	71	283	153
<b>Total</b>	<b>1 039</b>	<b>3</b>	<b>362</b>	<b>1 401</b>	<b>898</b>

**Injuries by sex and occupational accidents/work-related diseases and on-duty/off-duty in 2005**

Manning	Total occupational accidents		Work-related diseases	Total
		<i>of which deaths</i>		
Masters	3	-	2	5
Mates	9	-	6	15
Deck crew	50	1	8	58
Engineers	11	-	10	21
Engine crew	28	-	7	35
Catering	111	-	38	149
<b>Total</b>	<b>212</b>	<b>1</b>	<b>71</b>	<b>283</b>

**Injuries by occupational accidents/work-related diseases and on-duty/off-duty**



Manning	Total occupational accidents		Work-related diseases	Total
		<i>of which deaths</i>		
Masters	1	-	-	1
Mates	-	-	1	1
Deck crew	2	-	1	3
Engineers	-	-	-	-
Engine crew	-	-	-	-
Catering	55	-	19	74
<b>Total</b>	<b>58</b>	<b>-</b>	<b>21</b>	<b>79</b>



Manning	Total occupational accidents		Work-related diseases	Total
		<i>of which deaths</i>		
Masters	2	-	2	4
Mates	9	-	5	14
Deck crew	48	1	7	55
Engineers	11	-	10	21
Engine crew	28	-	7	35
Catering	56	-	19	75
<b>Total</b>	<b>154</b>	<b>1</b>	<b>50</b>	<b>204</b>

## Occupational accidents

Here the registered occupational accidents during ship work (*during working hours and off-duty hours on board/ashore*) for seagoing personnel are accounted for.<sup>1</sup>

### Number of occupational accidents by manning and discrepancy

<b>Manning Discrepancy</b>	<b>Masters</b>	<b>Mates</b>	<b>Deck crew</b>	<b>Engineers</b>	<b>Engine crew</b>	<b>Catering</b>	<b>Total</b>
Electrical problems fire/explosion	-	-	-	-	-	-	-
Leakage, outflow	-	-	1	-	1	10	12
Collapse, fall, bursting inmaterial	-	-	4	-	2	8	14
Lost control of machine	-	1	1	1	2	1	6
Lost control of vehicle, means of transport	-	-	7	-	2	9	18
Lost control of hand- held tool, utensil	-	-	-	1	3	9	13
Lost control of treated object	1	1	8	1	5	20	36
Fall of person	2	4	10	3	5	23	47
Movement of body with no physical overloading	-	1	3	1	1	7	13
Movement of body with physical overloading	-	2	13	2	5	16	38
Physical violence, attack, traumatic experience	-	-	1	2	1	5	9
Other unidentified	-	-	2	-	1	3	6
<b>Total</b>	<b>3</b>	<b>9</b>	<b>50</b>	<b>11</b>	<b>28</b>	<b>111</b>	<b>212</b>

<sup>1</sup> Occupational accidents as from 2002 are reported by deviation, see explanation under the heading “New system in 2002 for report and registration of occupational accidents”.

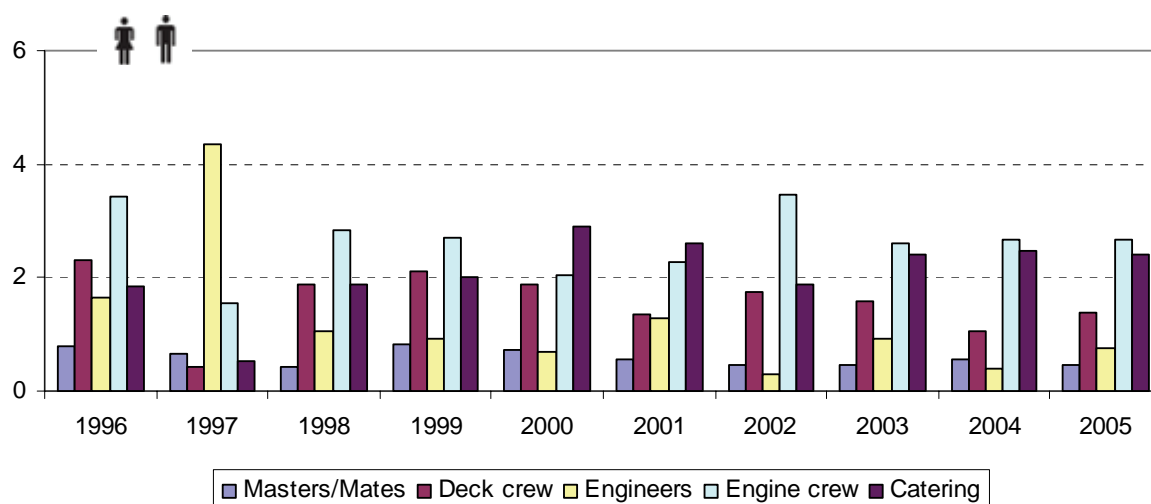
### Narrative of occupational accident resulting in death

Date Local time Location and/or vessel's activity	Call sign/number Vessel's name Construction material Gross tonnage Year built	Narrative
19 August 2005 16.40 Moored at quayside	SBJI EKEN Steel 2 556 2003	An AB went down alone in a trunk connected to a cargo hold. The AB was later found lifeless in the trunk. Attempts at resuscitation were fruitless. He had been in the shaft about 5-8 min. Cause of death was probably inhalation of carbon dioxide or some other gas in an environment deficient in oxygen.

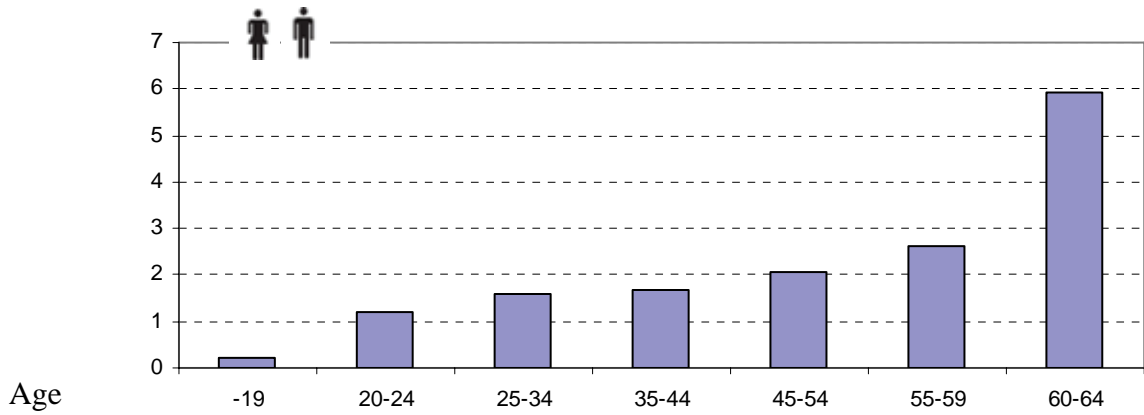
### The number of active seamen and the number of occupational accidents by age

Age	- 19	20-24	25-34	35-44	45-54	55-59	60-64	65 -	Total
Number of active seamen	1 739	1 911	3 041	2 855	2 485	991	202	44	13 268
Number of occupational accidents	4	23	48	48	51	26	12	-	212

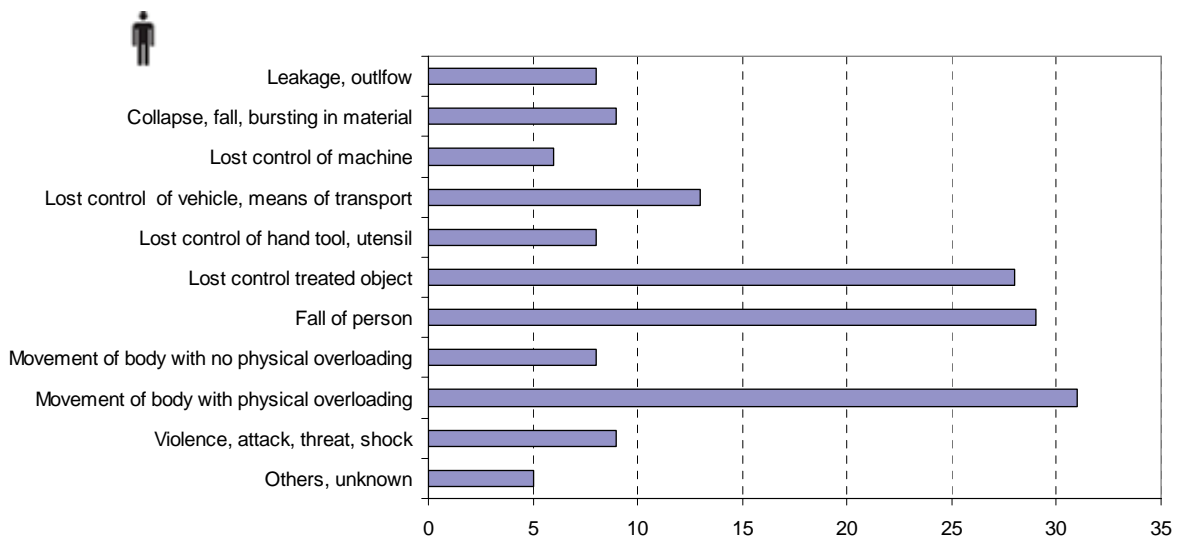
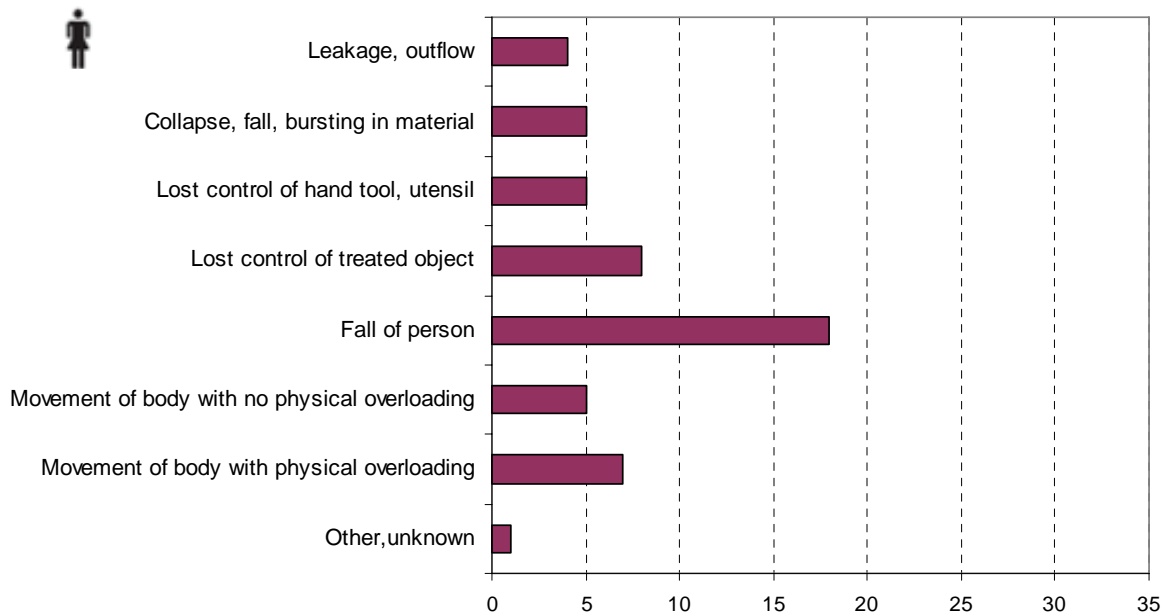
### Frequency of injuries 1996 – 2005, number of occupational accidents/100 active seamen



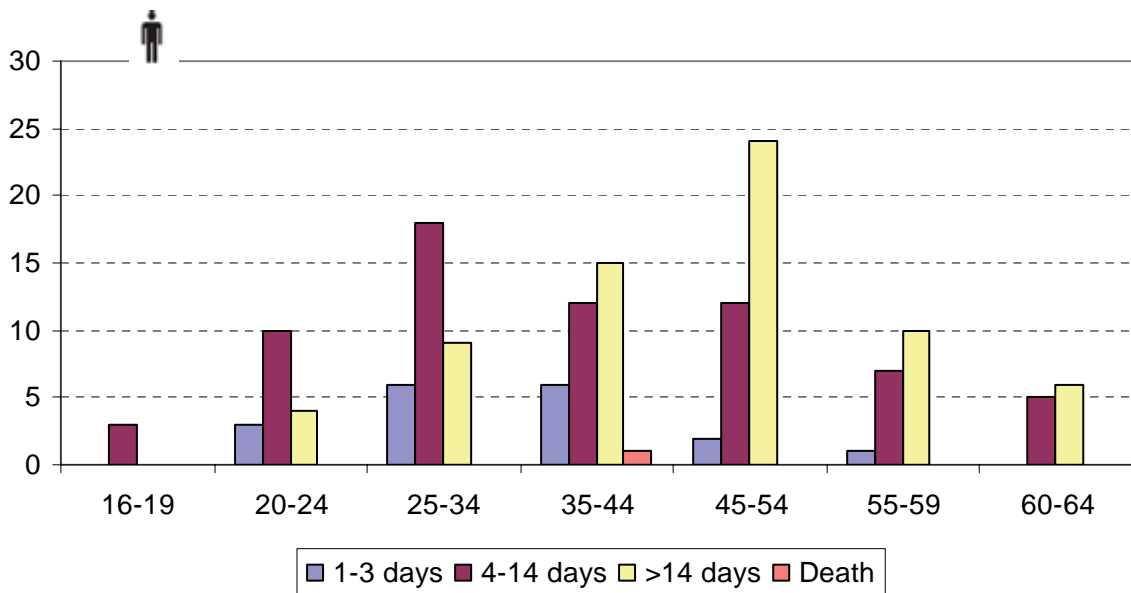
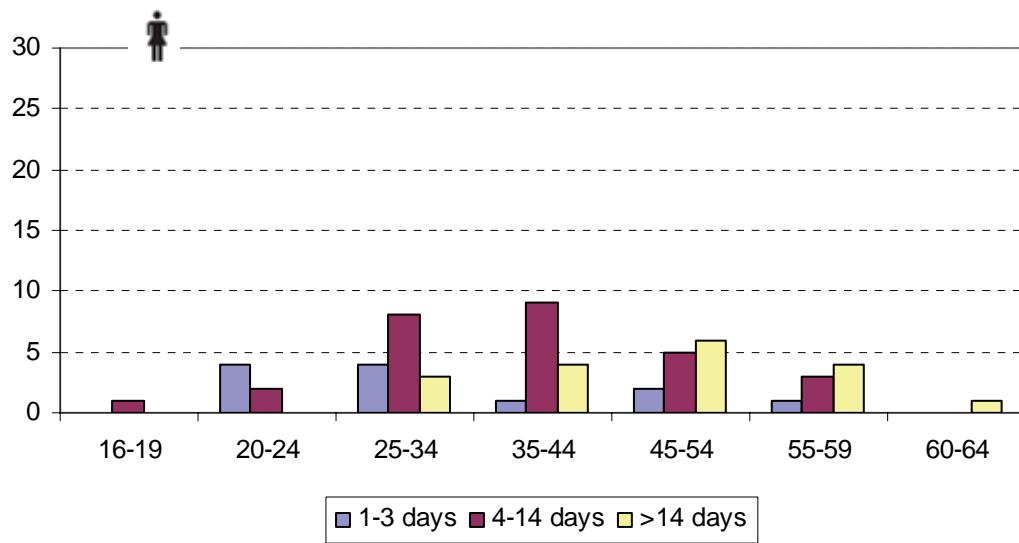
**Number of occupational accidents/100 active seamen 2005 by age**



**Occupational accidents by deviation and sex**



**Reported occupational injuries shown by age group, sex and estimated absence**



### Occupational accidents by age, manning and sex



Age	- 19	20 - 24	25 - 34	35 - 44	45 - 54	55- 59	60 - 64	65 -	Total
<b>Manning</b>									
Masters	-	-	1	-	-	-	-	-	1
Mates	-	-	-	-	-	-	-	-	-
Deck crew	-	-	1	1	-	-	-	-	2
Engineers	-	-	-	-	-	-	-	-	-
Engine crew	-	-	-	-	-	-	-	-	-
Catering	1	6	13	13	13	8	1	-	55
<b>Total</b>	<b>1</b>	<b>6</b>	<b>15</b>	<b>14</b>	<b>13</b>	<b>8</b>	<b>1</b>	<b>-</b>	<b>58</b>



Age	- 19	20 - 24	25 - 34	35 - 44	45 - 54	55- 59	60 - 64	65 -	Total
<b>Manning</b>									
Masters	-	-	-	-	-	2	-	-	2
Mates	-	-	1	2	2	4	-	-	9
Deck crew	2	8	8	10	10	5	5	-	48
Engineers	-	-	2	5	2	1	1	-	11
Engine crew	-	4	3	5	9	4	3	-	28
Catering	1	5	19	12	15	2	2	-	56
<b>Total</b>	<b>3</b>	<b>17</b>	<b>33</b>	<b>34</b>	<b>38</b>	<b>18</b>	<b>11</b>	<b>-</b>	<b>154</b>

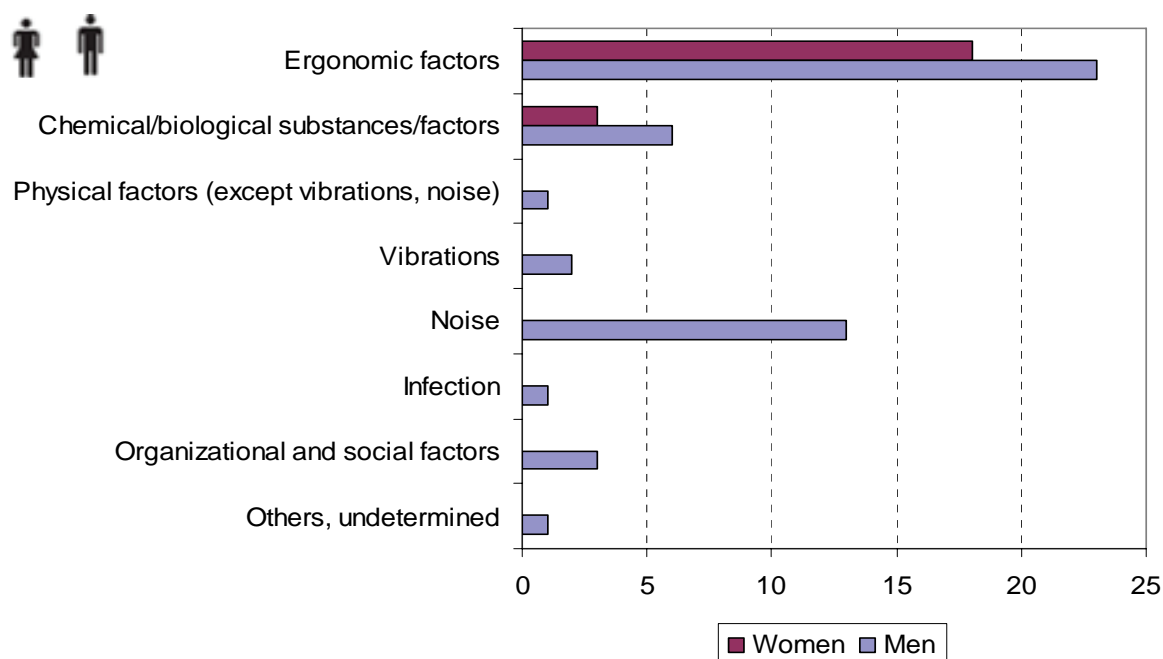
### Work-related diseases

As work-related disease is considered pain resulting from some kind of exposure in work, which reveals itself after a shorter or longer period of time, even after several years. These diseases may be physical as well as mental; they represent about 25 % of all work-related diseases reported in the year 2005.

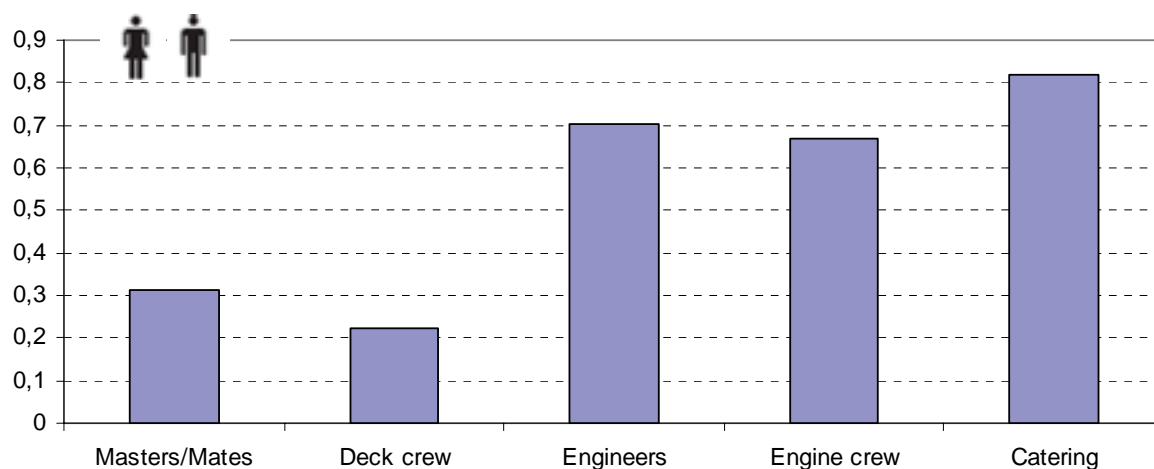
#### Number of work-related diseases for on-board personnel during 2001 - 2005

Year	2001	2002	2003	2004	2005
<b>Cause</b>					
Ergonomic factors	48	59	35	41	41
Chemical/biological substances/factors	13	7	8	4	9
Physical factors (excl. vibrations, noise)	-	-	-	-	1
Vibrations	-	-	1	-	2
Noise	10	10	11	10	13
Infection	-	-	-	1	1
Organization/social factors	4	8	3	8	3
Others, undetermined	5	1	2	2	1
<b>Total</b>	<b>80</b>	<b>85</b>	<b>60</b>	<b>66</b>	<b>71</b>

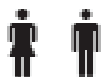
#### Work-related diseases by sex and cause



### Frequency of injuries – number of work-related diseases/100 active seamen

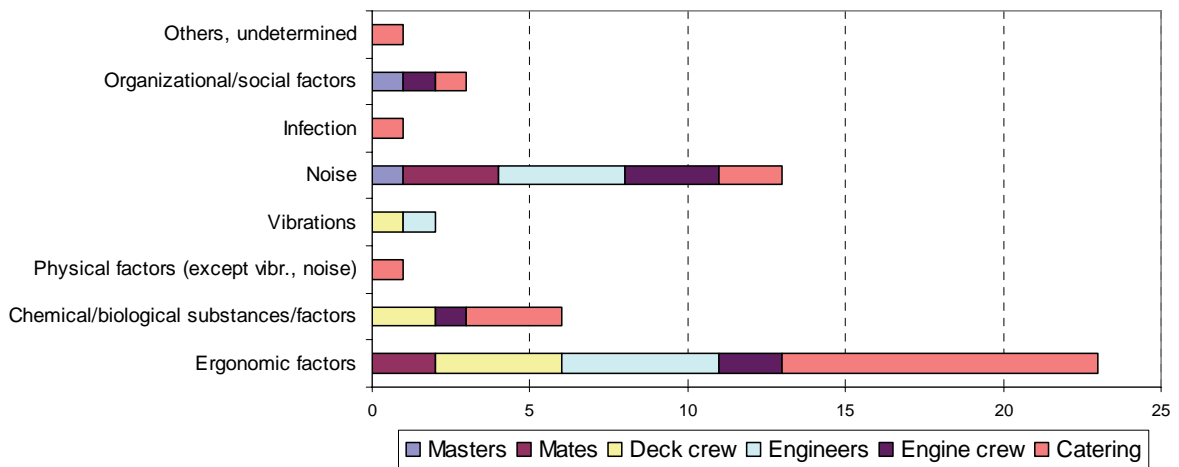
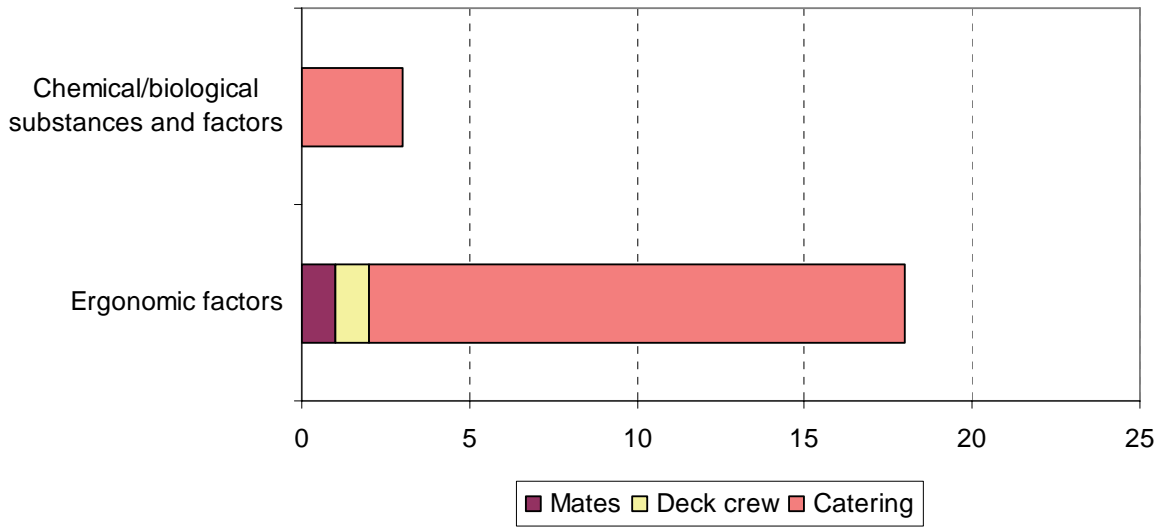


### Work-related diseases by manning – cause



Manning	Masters	Mates	Deck crew	Engineers	Engine crew	Catering	Total
<b>Cause</b>							
Ergonomic factors	-	3	5	5	2	26	41
Chemical/biological substances and factors	-	-	2	-	1	6	9
Physical factors (excl. vibr., noise)	-	-	-	-	-	1	1
Vibrations	-	-	1	1	-	-	2
Noise	1	3	-	4	3	2	13
Infection	-	-	-	-	-	1	1
Organizational or social factors	1	-	-	-	1	1	3
Others, undetermined	-	-	-	-	-	1	1
<b>Total</b>	<b>2</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>38</b>	<b>71</b>

By cause – manning



**Work-related diseases by manning, age and sex**



Age	-19	20-24	25-34	35-44	45-54	55-59	60-64	>65	Total
<b>Manning</b>									
Masters	-	-	-	-	-	-	-	-	-
Mates	-	-	-	1	-	-	-	-	1
Deck crew	-	-	1	-	-	-	-	-	1
Engineers	-	-	-	-	-	-	-	-	-
Engine crew	-	-	-	-	-	-	-	-	-
Catering	-	1	1	2	10	1	4	-	19
<b>Total</b>	-	<b>1</b>	<b>2</b>	<b>3</b>	<b>10</b>	<b>1</b>	<b>4</b>	-	<b>21</b>



Age	-19	20-24	25-34	35-44	45-54	55-59	60-64	>65	Total
<b>Manning</b>									
Masters	-	-	-	-	-	1	1	-	2
Mates	-	-	1	1	2	1	-	-	5
Deck crew	-	-	-	3	2	-	1	1	7
Engineers	-	-	-	1	1	5	3	-	10
Engine crew	-	-	1	-	2	1	2	1	7
Catering	-	1	2	4	9	1	1	1	19
<b>Total</b>	-	<b>1</b>	<b>4</b>	<b>9</b>	<b>16</b>	<b>9</b>	<b>8</b>	<b>3</b>	<b>50</b>

### Commercial fishermen

Number of occupational injuries (*occupational accidents and work-related diseases*) during 2001 - 2005

Year	Occupational accidents		Work-related diseases	Total
		of which deaths		
2001	16	2	3	19
2002	14	1	3	17
2003	8	2	7	15
2004	12	2	4	16
2005	8	1	3	11
<b>Total</b>	<b>58</b>	<b>8</b>	<b>20</b>	<b>78</b>

Commercial fishermen reported **8** occupational accidents in 2005 and **3** work-related diseases. The diagrams below show the accidents by kind of event. One fisherman died; narrative of occupational accident resulting in death will be found on next page.

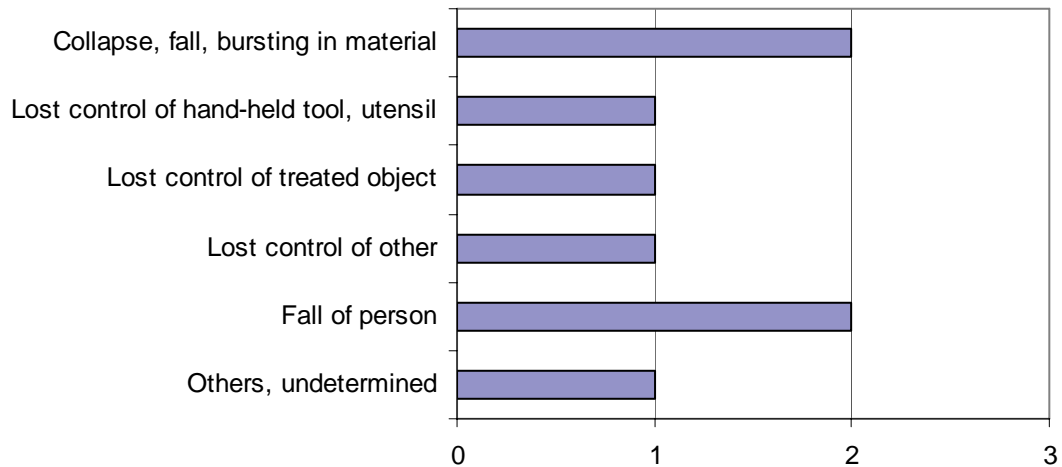
Five fishing vessels were completely lost during 2001 - 2005, four fishermen died in connection with three of these events.

### Number of vessels registered with fishing vessels licensed and number of fishermen 2005

Information is taken from the National Board of Fisheries.

Size of vessel	- 12 m	12 - 24 m	24 m -
Number of fishing vessels	1 289	218	82
Number of fishermen	1 029	546	485

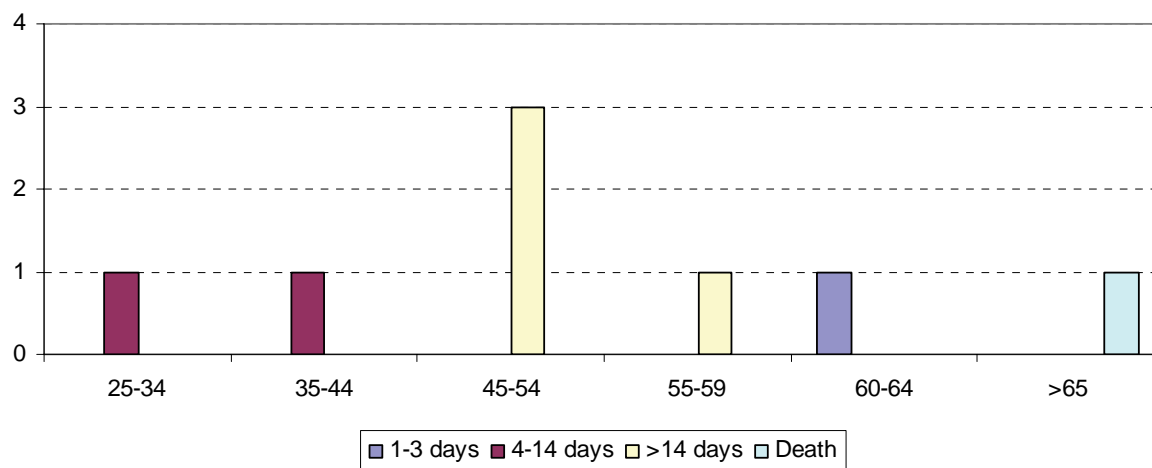
### Occupational accidents by deviation



### Narrative of occupational accident resulting in death

Date Local time Location and/or vessel's activity	Call sign/number Vessel's name Construction material Gross tonnage Year built	Narrative
11 October 2005 14.00 Handling of fishing gear	SFB-5998 MIDWAY Plastic - 1977	A lobster fisherman had fallen overboard and drowned; the body was found. The boat went adrift, was damaged due to grounding and finally sunk.

### Occupational accidents by age and absence due to illness



### Work-related diseases

Numbers of work-related diseases were reported in 2001 – 2005.



Year	2001	2002	2003	2004	2005
<b>Cause</b>					
Ergonomic factors	2	3	6	4	3
Chemical/biological substances/factors	-	-	-	-	-
Physical factors (excl. vibrations, noise)	-	-	-	-	-
Vibrations	-	-	-	-	-
Noise	1	-	-	-	-
Infection	-	-	-	-	-
Organization/social factors	-	-	-	-	-
Others, undetermined	-	-	1	-	-
<b>Total</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>4</b>	<b>3</b>

### Work-related diseases by cause – age



Age	-19	20-24	25-34	35-44	45-54	55-59	60-64	>65	Total
<b>Cause</b>									
Ergonomic factors	-	-	-	-	-	2	1	-	3
Chemical/biological substances/ factors	-	-	-	-	-	-	-	-	-
Physical factors (excl. vibr., noise)	-	-	-	-	-	-	-	-	-
Vibrations	-	-	-	-	-	-	-	-	-
Noise	-	-	-	-	-	-	-	-	-
Infection	-	-	-	-	-	-	-	-	-
Organizational or social factors	-	-	-	-	-	-	-	-	-
Others, undetermined	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	<b>2</b>	<b>1</b>	-	<b>3</b>

### Passengers

*By type of vessel*

Type of vessel	Passenger	Tanker	Gen. cargo	Other	Total
<b>Illness/suicide</b>	8	-	-	-	8
<b>Disappearance*)</b>	-	-	-	-	-
<b>Personal injuries</b>	-	-	-	-	-

\* Suicide cannot be excluded in the case of disappearance