

NOTICE OF THE SWEDISH MARITIME ADMINISTRATION

No. 1 2008

Summary of reported marine casualties, near-accidents and accidents to persons - Swedish merchant and fishing vessels

2007



Swedish Maritime Safety Inspectorate,
Maritime Casualty Investigation Division

Cover picture:
The Tow-boat BOHUS, SELR – engine failure/grounding/foundering March 16, 2007

Photo: Coast Guard

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Marine Casualties and Near-Accidents

Summary of Reported Marine Casualties and Near-Accidents

2007

Summary of marine casualties and near-accidents involving Swedish merchant and fishing vessels 2007

General

In this Notice of the Swedish Maritime Safety Inspectorate, the Inspectorate's Maritime Casualty Investigation Division presents statistics and commentaries on casualties reported to the Inspectorate during 2007, 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 date of data printout was 29 January 2008. Additional casualties and near-accidents may have been reported to the Swedish Maritime Safety Inspectorate's Maritime Casualty Investigation Division after the data printout.

The material is presented here as a summary report. The statistical summary can be found on the Administration's home page – 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.

"SjöOlycksSystemet" – SOS – The Sea Casualty System

The Maritime Casualty Investigation Division reports regularly to IMO¹ all *serious casualties, founderings* involving convention vessels and *spillages*. The division also reports casualties and spillages regularly to HELCOM². The report has been more extensive since 2004.

Near-accidents

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. 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, SWEREF Skärgårdsredarna and the sea trade-union organization, 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

¹ International Maritime Organization

² Helsinki Commission

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 code³ as regards 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 ship owners. 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 ship owners 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 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.

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*. All the sub-groups are account under the heading of “Distribution based upon causes”.

³ International Safety Management Code

Definition of cause of casualty categories (cont'd.)

Main groups	Examples of sub-groups
External factors	Currents, winds, tides etc., causing drifting or other manoeuvring difficulties
Vessel's construction and placement of equipment	Stability problems caused by the construction of the vessel
Technical fault of on board equipment	Technical fault of steering gear (including steering machinery)
Aspects of operation and design of equipment	Instruments/equipment improperly arranged
Aspects of cargo, securing of cargo and handling of cargo/bunker	Cargo inadequately or improperly secured
Aspects of communication, organization and operational practices	Navigation bridge procedures not appropriate from a safety aspect
Aspects of on board personnel	Miscalculations in navigating the vessel

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, Causes and factors, Recommendations, Damage.

The investigation reports are available (in Swedish) on our homepage – www.sjofartsverket.se – Sjöfartsinspektion – Olyckor & tillbud – Haverirapporter. Some of the reports are translated into English and will be found under www.sjofartsverket.se – Maritime Safety Inspection – Marine Casualties & Near-Accidents.

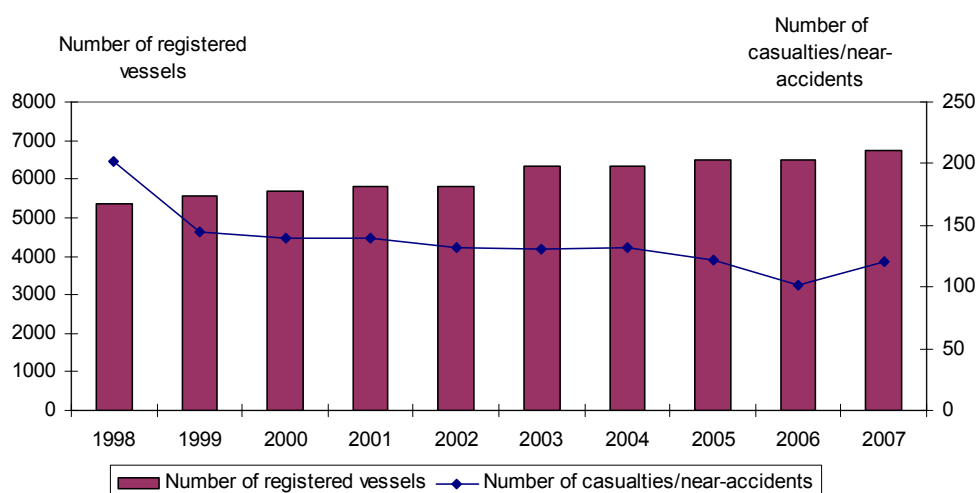
Publication of reports in 2007, Swedish registered vessels

Date	Name of vessel	Type of vessel	Type of event
2007-01-14	GEORGE	Working ship	Accident to person
2007-01-14	TRANS FREJ (foreign.vessel)	Dry Cargo	Grounding
2007-03-09	BALTIC BRIGHT/SILJA SERENADE	Ro-ro-vessel/ Ropax-vessel	Near Accident Collision with other vessel

Publication of reports in 2007, Swedish registered vessels (cont'd.)

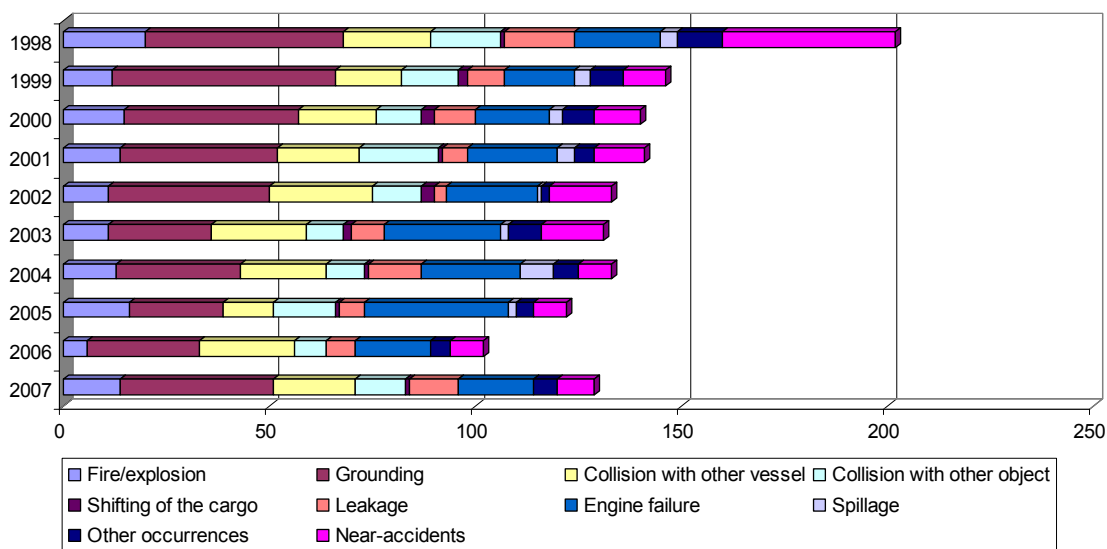
Date	Name of vessel	Type of vessel	Type of event
2007-03-16	BOHUS	Tow-boat	Engine failure/Grounding/Foundering
2007-04-26	SAN REMO (foreign.vessel)	Dry Cargo	Grounding
2007-07-02	GERDA	Working ship	Fire/explosion
2007-07-21	SAGA LEJON	Passenger	Engine failure
2007-08-18	GERDA GEFLE	Passenger	Grounding
2007-08-25	SKARVEN	Passenger	Grounding
2007-10-23	ÅLANDSFÄRJAN	Passenger	Grounding
2007-10-31	STENA SAGA	Ro-ro passenger	Accident to person
2007-11-08	TUNAFJORD	Fishing vessel	Grounding
2007-12-13	STENA JUTLANDICA	Ro-ro passenger	Accident to person

Number of reported marine casualties and near-accidents 1998–2007 in relation to number of registered vessels⁴

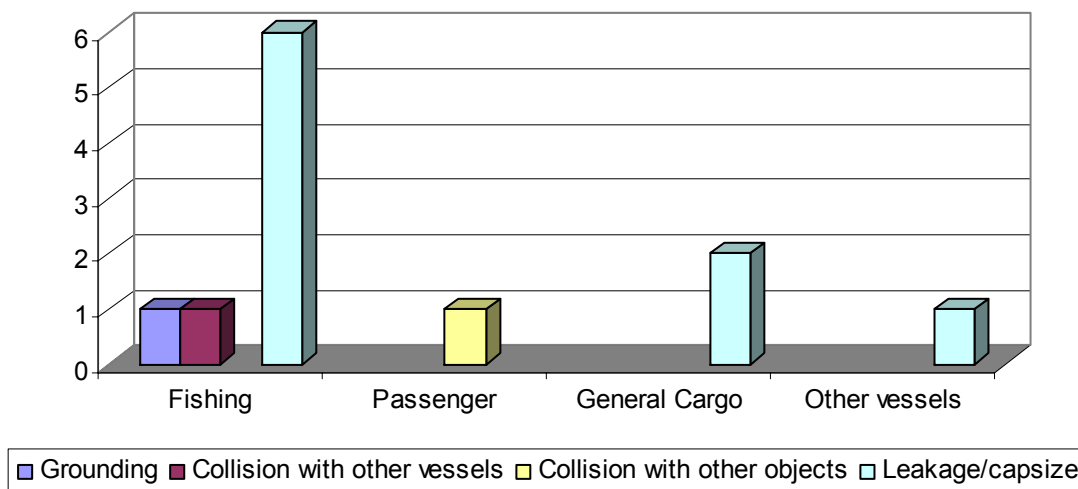


⁴ In 1998 the Maritime Casualty Investigation Division was notified of 25 near-accidents respectively which had occurred in connection with the Sound bridge construction work. The near-accidents were reportedly caused by the so-called shock waves from a high-speed craft passing the various workstations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

Number of reported accidents at sea and near-accidents 1998 – 2007, distribution by type of event



Number of persons who been killed related to accident at sea 1998 – 2007, distribution by type of event



Vessel running regularly (plies), no passenger has been killed related to accident at sea since 1992.

During 2005 another fisherman died when he fell over board. The boat was damaged due to grounding and finally sunk.

Number of reported marine casualties and near-accidents 1998-2007 by type of event

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

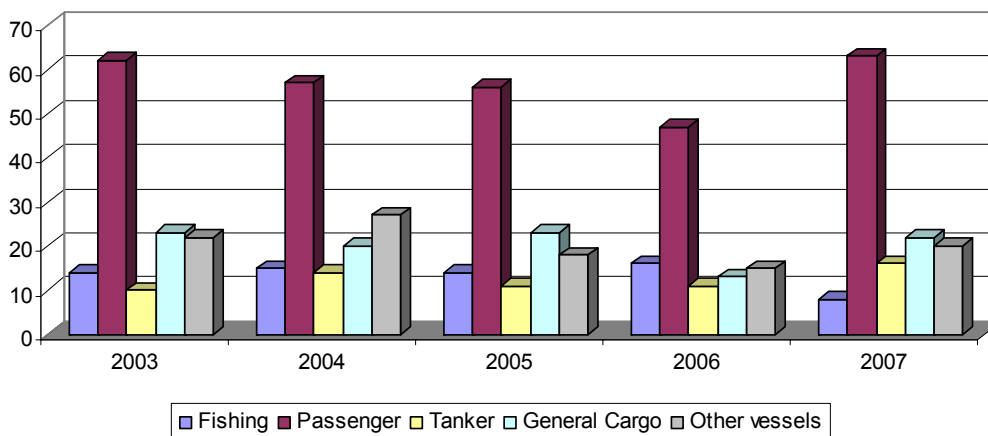
Accidents to persons and illness are reported under chapter heading **Accidents to persons**. Occurrences which cannot be categorised in any of the groups mentioned earlier are reported under **Other occurrences**.

Type of event	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Fire and/or explosion	20	12	15	14	11	11	13	16	6	14	132
Grounding	48	54	42	38	39	25	30	23	27	37	363
Collision with other object	17	14	11	19	12	9	9	15	8	12	126
Collision with other vessel	21	16	19	20	25	23	21	12	23	20	200
Shifting of the cargo	1	2	3	1	3	2	1	1	-	1	15
Leakage/capsize	17	9	10	6	3	8	13	6	7	12	91
Engine failure	21	17	18	22	22	28	24	35	18	18	223
Spillage	4	4	3	4	1	2	8	2	-	-	28
Other occurrences	11	8	8	5	2	8	6	4	5	6	63
Total	160	136	129	129	118	116	125	114	94	120	1241
Near-accidents ⁵	42 ⁶	10	11	12	15	15	8	8	8	9	138
Total incl. Near-accidents	202	146	140	141	133	131	133	122	102	129	1379

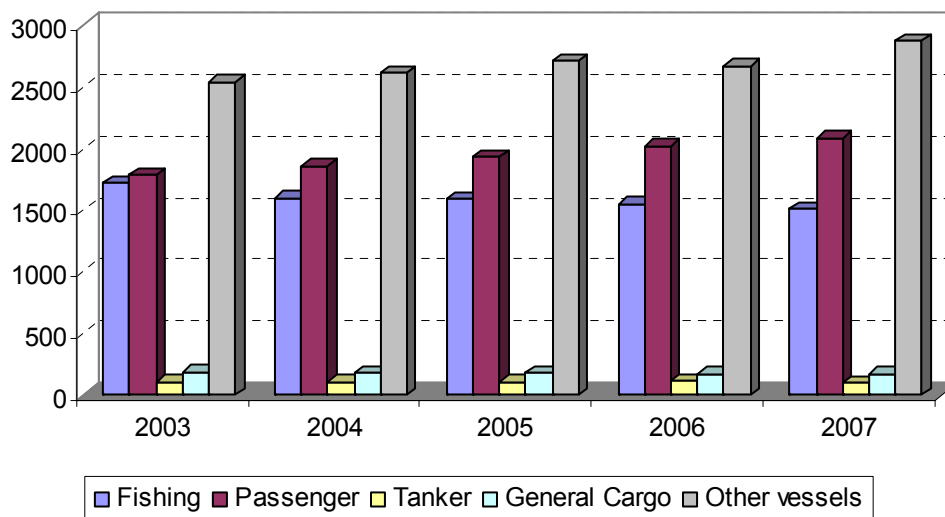
⁵ The near-accidents are reported internally by the vessel's/shipping company's ISM code (International Safety Management code). If reported only in the common system of the business, Insjö, they are not listed in this table.

⁶ In 1998 the Maritime Casualty Investigation Division was notified of 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.

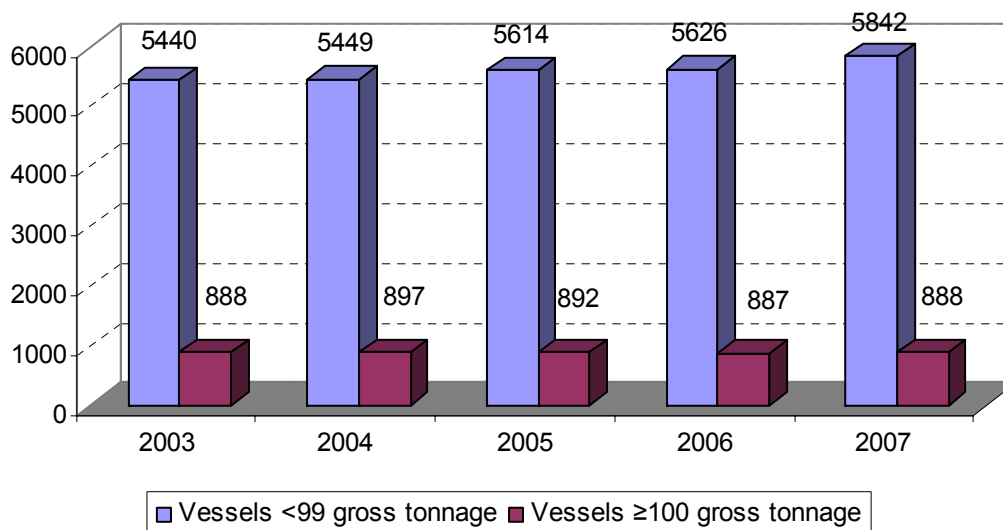
Number of casualties and near-accidents 2003 – 2007 by type of vessel



Number of vessels registered in Sweden 2003 – 2007 by type of vessel



Number of vessels registered in Sweden 2003 – 2007 by gross tonnage

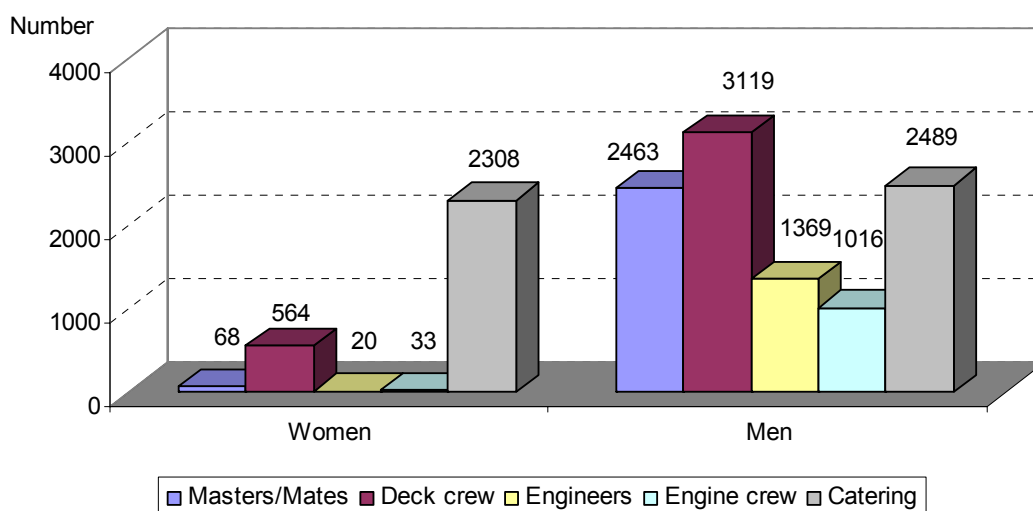


Number of active/signed-on seamen 2003 - 2007

Number/year	2003	2004	2005	2006	2007
Active seamen	13 337	13 450	13 268	13 391	13 449

Number of active/signed-on seamen 2007

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*.



Number of vessels registered in Sweden by type of vessel 2003 - 2007

Type of vessel	2003	2004	2005	2006	2007
Fishing ⁷	1 715	1 597	1 589	1 551	1 506
whereof >20 tons	280	281	274	270	257
Passenger ⁸	1 781	1 861	1 931	2 019	2 085
Tanker	104	102	102	105	94
General Cargo	186	176	173	169	169
Other vessels	2 542	2 610	2 711	2 669	2 876
Total	6 328	6 346	6 506	6 513	6 730

⁷ 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.

⁸ 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.

Number of vessels registered in Sweden 2007

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
Fishing	1 249	150	96	11	-	-	-	1 506
Passenger	1 393	428	204	18	6	6	30	2 085
Tanker	1	13	13	1	21	22	23	94
General Cargo	5	37	29	1	29	9	59	169
Other vessels	2 127	439	245	35	24	6	-	2 876
Total	4 775	1 067	587	66	80	43	112	6 730

Classification by type of vessel based upon 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 2007

129 marine casualties and near-accidents involving Swedish vessels were reported to the Swedish Maritime Safety Inspectorate in 2007. Out of these casualties **nine (9)** were foundered.

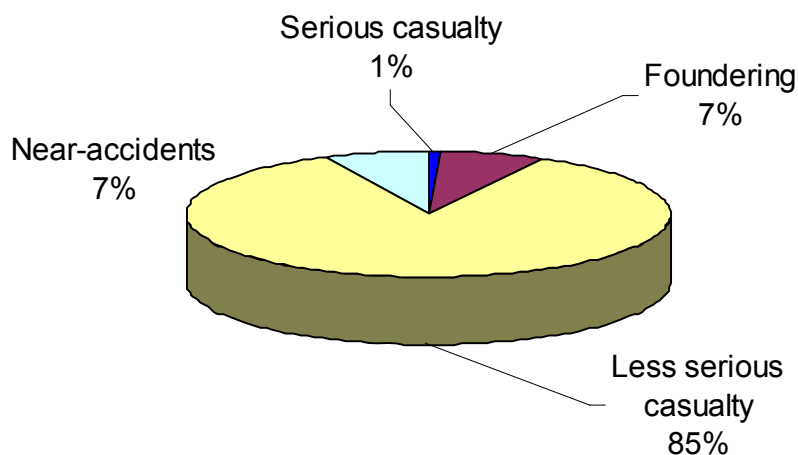
Type of event	Fishing	Passenger	Tanker	General Cargo	Other vessels ⁹	Total
Fire/explosion <i>total losses for each</i>	1	6 1	2	4	1 1	14
Grounding <i>total losses for each</i>	3 1	19	5	4	6	37
Collision with other object	-	8	1	3	-	12
Collision with other vessels	1	11	3	2	3	20
Shifting of the cargo	-	-	-	1	-	1
Leakage/capsize <i>total losses for each</i>	2 1	4	1	1	4 4	12
Engine failure <i>total losses for each</i>	1	9	2	3	3 1	18
Spillage	-	-	-	-	-	-
Other occurrences	-	4	-	1	1	6
Total	8	61	14	19	18	120
Near-accidents	-	2	2	3	2	9
Total incl. Near-accidents	8	63	16	22	20	129

⁹ Other vessels – see page 11, classification by type of vessel based upon description of the vessel

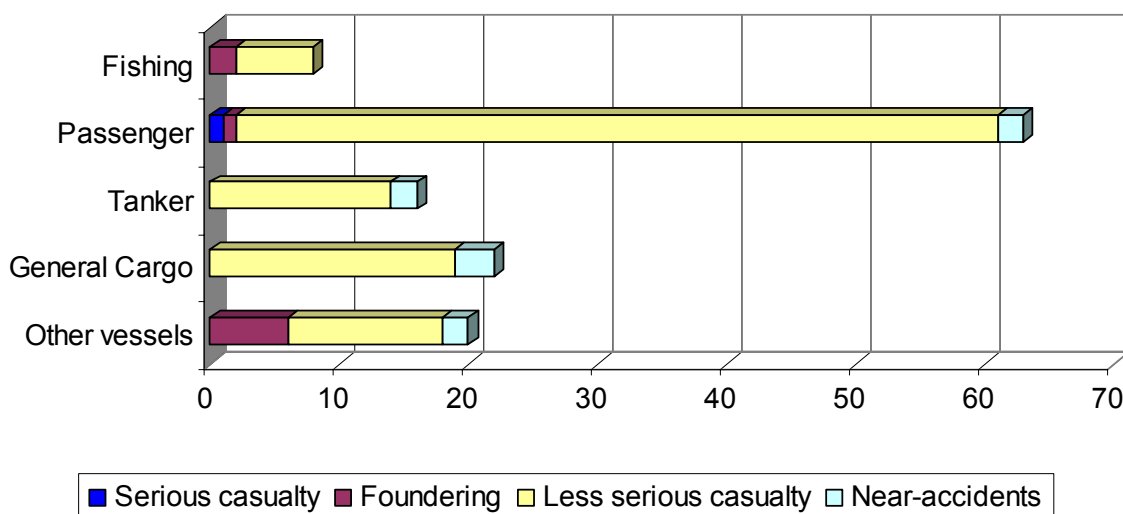
Marine casualties in 2007 by severity of events

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 (International Maritime Organization).

- Foundering* - total loss or constructive loss including possible personal injuries.
- 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

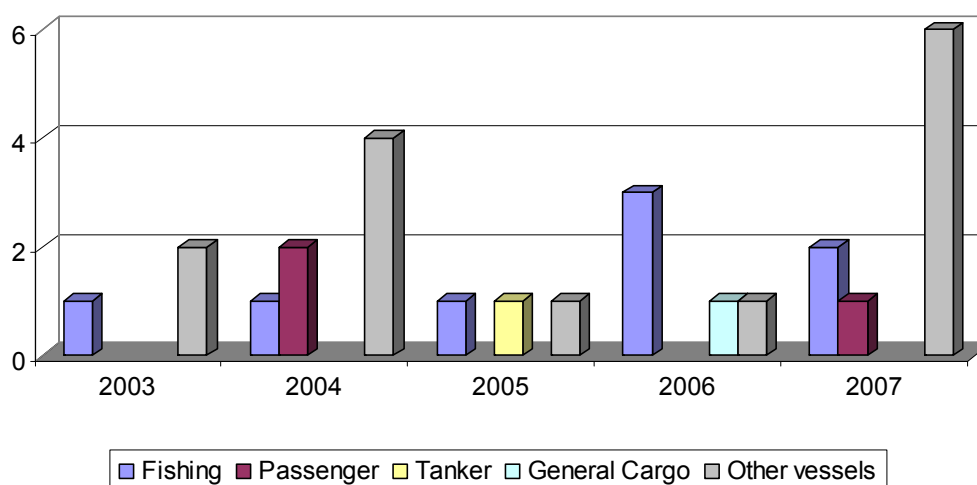


Narratives – foundered vessels 2007

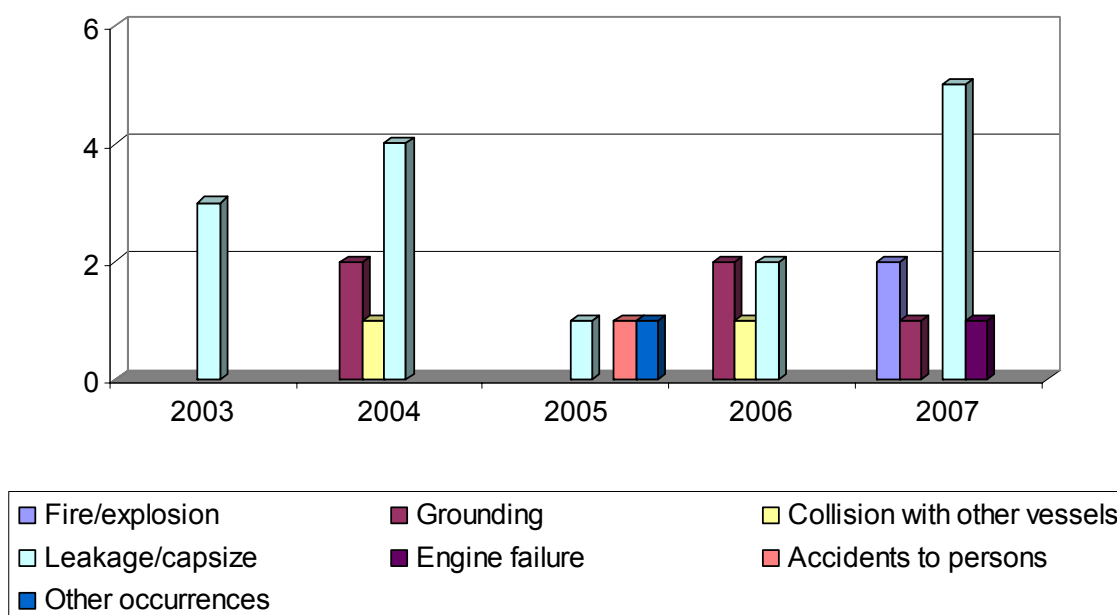
Foundering – meaning total loss of the ship or that the ship has been written off as a total loss (condemnation). In 2007 nine (9) foundering were reported; two fishing vessels, one passenger and six other vessels (one tow boat, three working boats, one pontoon and one dredging boat). Two crew members were injured in connection with the founderingings.

- A fishing vessel sank at the quay
- A fishing vessel ran aground; as the wind shifted the vessel came off the ground and then grounded again. The vessel was towed to the port, where she was condemned.
- A passenger liner caught fire. The vessel burnt out and sank despite huge efforts of the fire brigade.
- A tug got an engine breakdown, whereupon it ran aground and sank. The crew was saved by helicopter.
- A pontoon let in water, two containers shifted aboard whereupon the pontoon got a list.
- A working vessel keeled over when the vessel's crane, with hanging cargo, was turned to starboard.
- A dredger's pontoons let in water and the dredger got a list.
- A gas leak, caused by poor maintenance, resulted in an explosion. One man was seriously injured.
- A working vessel was pressed against a quay whereupon it sank due to water flowing in. One man aboard was injured.

Number of lost vessels in 2003 – 2007 by type of vessel



Number of lost vessels 2003 – 2007 by type of event



Narratives – foundered vessels

Fishing:

Date	Call sign/ number Name Construction Material Year built	Gross tonnage	Narrative
2007-06-27	SFB-2978 VINGALAND Wood 1954	11	The vessel sank when alongside. The bilge pump was connected to a 220 V socket ashore. The persistent rain probably disengaged the fuse and thus the leaking hull was filled with water. 57°10'N, 018°29'E
2007-11-08	SMHT TUNAFJORD Steel 1988	183	When steering towards the coastline the OOW fell asleep and the vessel ran aground. Due to high sea all salvation efforts had to be cancelled. As the wind shifted the vessel came off the ground but drifted aground again. The salvager managed to get the vessel off the ground. She was towed to Karlskrona, where she was condemned. 56°05'.11N, 015°30'.77E

Narratives – foundered vessel 2007 (cont'd.)

Passenger:

Date	Call sign/ number Name Construction Material Year built	Gross tonnage	Narrative
2007-04-28	SEUD SVEA VIKING Wood 1943	142	For unknown reason the vessel caught fire. The vessel burnt until it sank despite huge efforts from the fire brigade. At the time of the accident the vessel was laid up. 59°19'.58N 018°04'.55E

Other vessels:

Date	Call sign/ number Name Construction Material Year built	Gross tonnage	Narrative
2007-03-16	SELR BOHUS/ Tug and salvage vessel Steel 1974	357	In the open sea the main engine suddenly stopped, and then also the auxiliary engine. First the vessel drifted along the coastline and then towards it. Attempts were made to restart the main engine and also to drop the anchor but the vessel still drifted towards the shore. The crew was saved by a helicopter. The vessel was completely wrecked. The bunker oil escaped, but is not known to have caused any oil damage. The reason why the main engine stopped may have been that a rag used for cleaning a day tank had choked up the fuel pipe to the main engine when the vessel reached heavy sea. 58°07'.47N, 011°19'.04E
2007-04-20	- JACK II Pontoon Steel -	-	The pontoon was lifted up in work position off the coast of Klagshamn; it was calculated to manage the waves. However, the waves got too high and are likely to have caused the failure of the cotter pins. By now the pontoon was floating anchored by its legs. Then the two containers aboard probably shifted, which made the pontoon take in water and get a heavy list. 55°32'.32N 012°52'.65E

Narratives – foundered vessel 2007 (cont'd.)

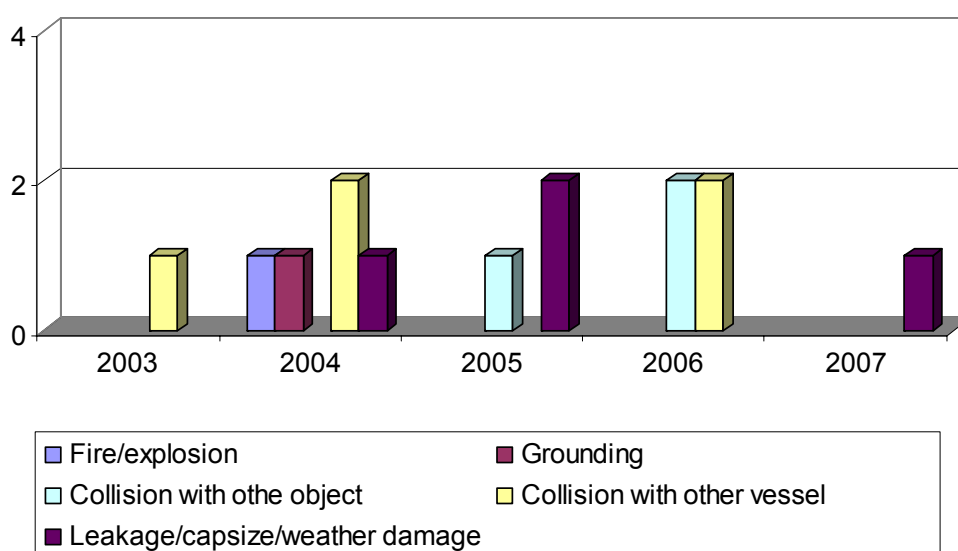
Other vessels:

Date	Call sign/ number Name Construction Material Year built	Gross tonnage	Narrative
2007-06-01	- KATERJOKK Working vessel Aluminium 1993	-	When the crane on board, with hanging cargo, was turned to starboard the vessel capsized and sank. The cargo weighed about one ton. The vessel was lifted two days after it capsized. 59°26'.5N, 018°18'E
2007-06-15	- MUDDERVERK P7 Dredger Steel 1995	-	The dredger's pontoons started to take in water which made the dredger get a list. Pumps were activated on board but the dredger capsized and sank. 60°39'N 017°24'E
2007-07-02	SFC-3972 GERDA Working vessel Plastic 1976	-	The main valve of the LPG bottle was probably not closed the last time the gas was used. Apart from that, poor maintenance is the probable reason for the gas leakage. The gas cumulated in the bottom and was lit by static electricity or by a spark from the refrigerator. One man was seriously injured. 58°41', 011°15'E
2007-08-22	- HAMNEN 5 Working vessel Steel 1979	8	The HAMNEN 5 was passing abaft a ferry that was moored alongside. As the ferry's thrusters were started the HAMNEN 5 was pressed against the quay by the whirling water and went down. The two men aboard managed to reach the quay. One crew member was injured. 56°02'.55N, 012°41'.33E

Serious casualties in 2007

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 2007 one (1) occurrence has been judged to be *serious casualties*. Serious accidents to persons, not caused by accident at sea, are reported under chapter heading **Accidents to persons**.

Serious casualties in 2003 – 2007, by type of event



Narratives – serious casualties

Passenger:

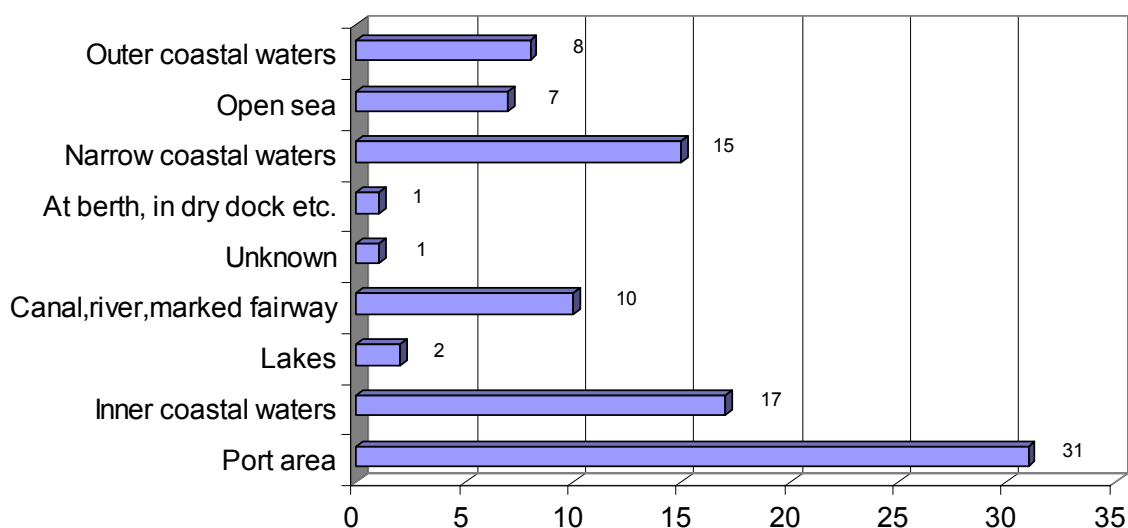
Date	Call sign/ number Name Construction material Year built	Gross tonnage	Narrative
2007-06-07	- SALT O SILL RIB ¹⁰ Plastic/rubber -	-	The master of the RIB made a turn to starboard towards the marina. The speed was about 20 knots when the RIB suddenly turned over to the port side. All the five persons aboard fell into the water. They managed to climb onto the upside-down bottom of the RIB and then into another chartered boat. The RIB was taken to the marina by a police boat which happened to be nearby. 57°40'.9N, 011°50'.4E

¹⁰ Rigid Inflatable Boat

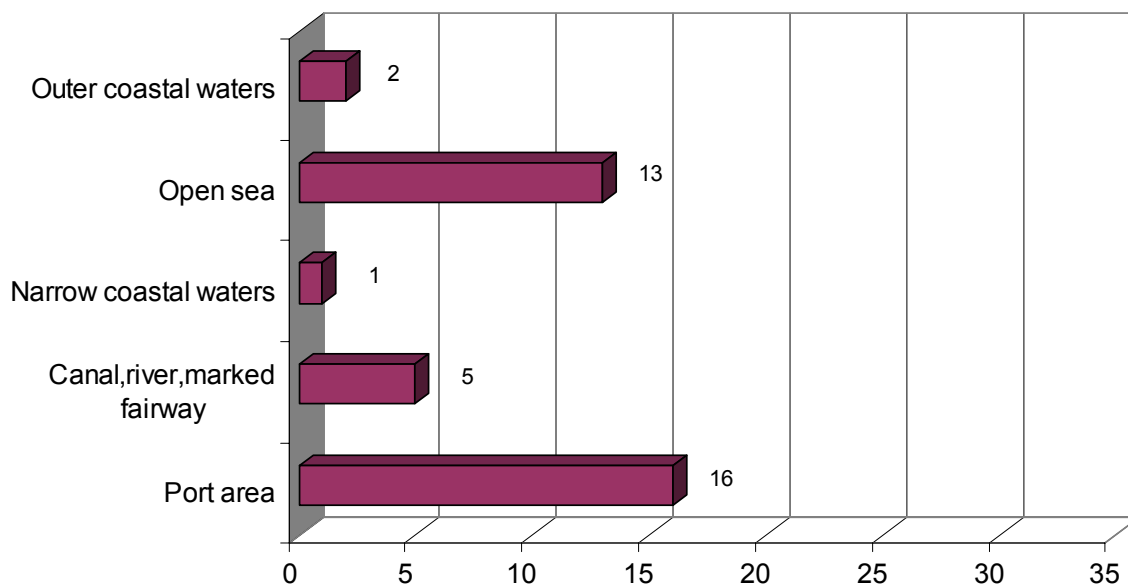
Marine casualties and near-accidents in 2007 by operating location

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

Swedish territorial waters



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	Engine failure	Spillage	Other occurrences	Near-accident	Total
Cargo											
Other/unknown cargo	1	2	2	-	-	1		-	-	1	7
Cars	2	-	-	1	-	-	-	-	1	-	4
Cars and passengers	3	4	2	1	-	-	1	-	2	-	13
Bulk (ore, coal, grain etc.)	2	1	-	-	-	-	-	-	-	-	3
Fish/fish products	-	2	-	1	-	-	1	-	-	-	4
Oil/oil products	1	3		3	-	1	2	-	-	1	11
Passengers	1	12	3	7	-	1	5	-	1	1	31
Dry cargo/mixed cargo/containers	-	1	-	1	1	3	1	-	-	1	8
Trailers/flat beds	-	3	2	1	-	1	3	-	-	2	12
Total with cargo	10	28	9	15	1	7	13	-	4	6	93
Ballast/empty	4	9	3	5	-	5	5	-	2	3	36
Total incl. ballast/empty	14	37	12	20	1	12	18	-	6	9	129

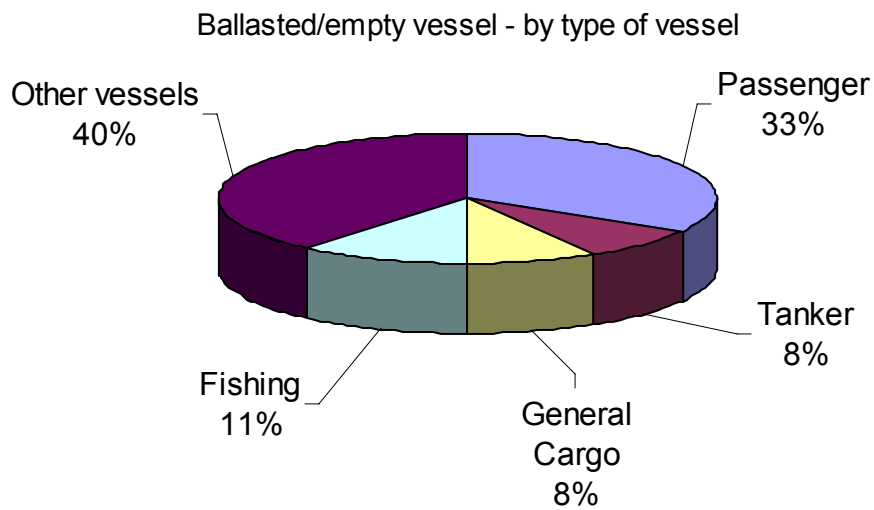
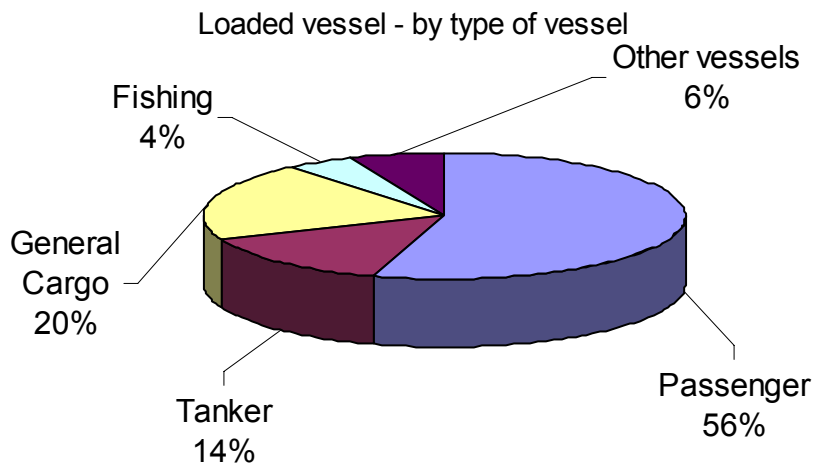
Casualties by type of event and vessel's gross tonnage and year built

Type of event	Grounding	Collision with other vessel	Collision with other object	Leakage/capsize/weather damage	Shifting of cargo	Fire/explosion	Engine failure	Spillage	Other occurrences	Near-accident	Total
Gross Size (gross tonnage):											
0 – 19	1	3	-	-	-	3	2	-	-	-	9
20 – 99	1	5	2	7	-	2	2	-	1	1	21
100 – 499	2	17	2	5	-	2	5	-	1	1	35
500 – 2999	2	3	1	3	1	-	2	-	1	2	15
3000 – 9999	1	4	5	1	-	-	-	-	1	1	13
10000 – 49999	5	5	2	2	-	1	3	-	1	3	22
50000 and over	2	-	-	1	-	-	4	-	1	-	8
Unknown	-	-	-	1	-	4	-	-	-	1	6
Total	14	37	12	20	1	12	18	-	6	9	129

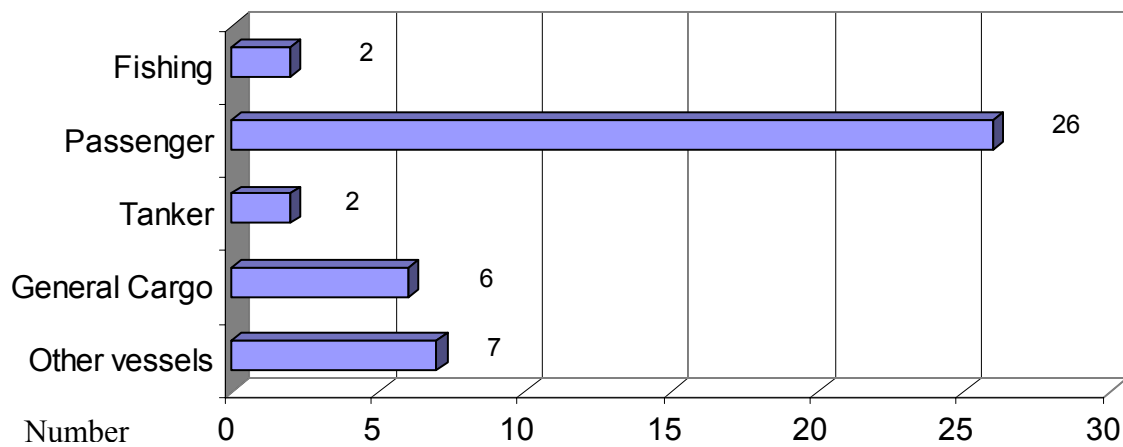
Year built:

To 1977 inclusive	5	10	5	8	-	4	7	-	3	1	43
1978-1982	1	6	3	3	1	2	3	-	-	-	19
1983-1987	1	6	-	4	-	1	1	-	2	0	15
1988-1992	1	3	1	-	-	-	1	-	-	1	7
1993-1997	1	3	1	2	-	2	1	-	-	2	12
1998-2002	2	1	1	2	-	1	4	-	-	1	12
2003-2007	3	8	1	1	-	-	1	-	1	2	17
Unknown	-	-	-	-	-	2	-	-	-	2	4
Total	14	37	12	20	1	12	18	-	6	9	129

Casualties by type of vessel and cargo/activity



Ships involved in casualties built to and including 1977 by type of vessel

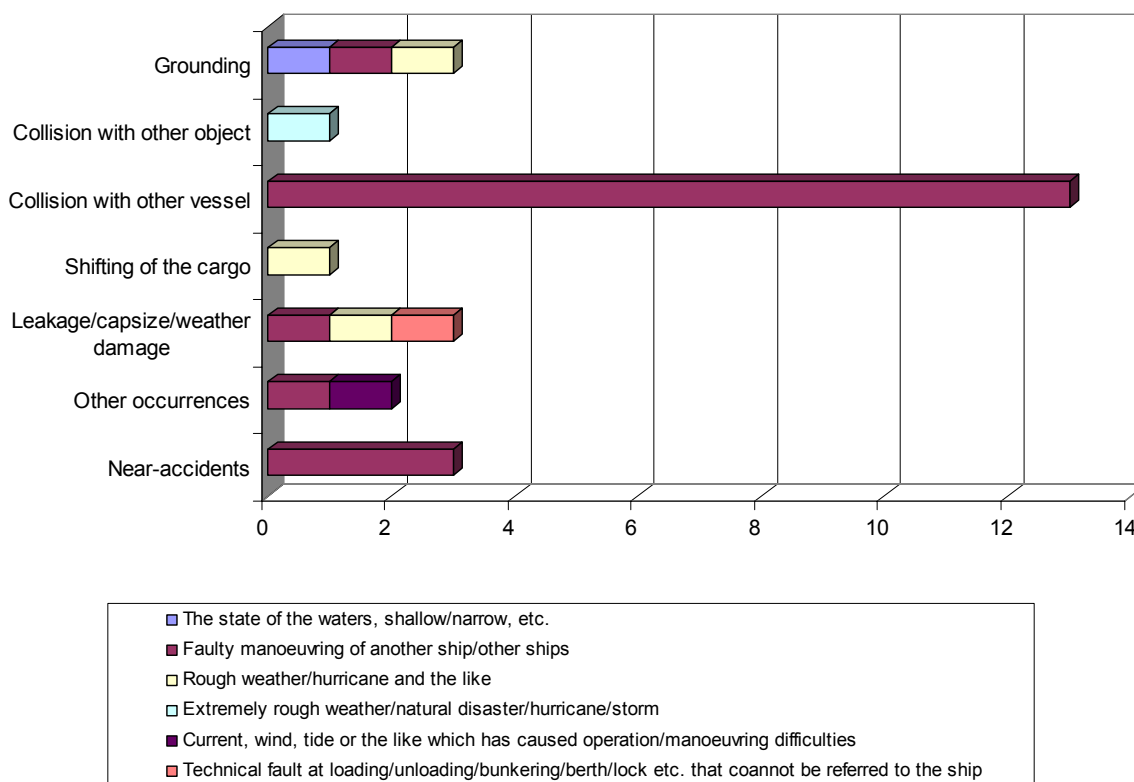


Distribution based upon causes

Based upon information obtained by the investigators a *main cause* for the accident is established if possible, and also possible *contributing causes*. The causes for the accidents are divided into seven (7) main groups with subgroups and *other known cause* and *unknown*. Here the reported accidents and near-accidents are accounted for divided into each main group and subgroups. The contributing causes are reported under each type of event.

Distribution of "External factors" based upon type of occurrence

Out of the total of 129 occurrences *External factors* were judged to be the cause for 23 accidents and three (3) near-accidents.



The term *External factor* is divided into subgroups as stated below:

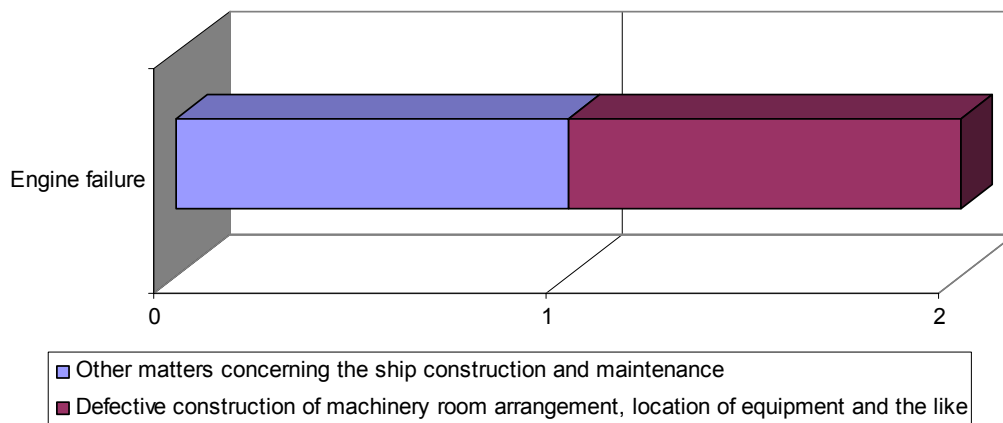
- Extremely rough weather/natural disaster/hurricane/storm
- Current, wind, tide or the like which has caused operation/manoeuvring difficulties
- Collision with floating object that could not be spotted or avoided in time
- Fault in navigation system outside the ship – e.g. lighthouses, buoys, lights, loran, GPS, satellites
- Faulty charts and/or nautical publications
- Technical fault in another ship (including tug boat, ice breaker, etc.)
- Faulty manoeuvring of another ship/other ships
- Technical fault at loading/unloading/bunkering/berth/lock etc. that cannot be referred to the ship
- Wrong handling at loading/unloading/bunkering/berth/lock etc. that cannot be referred to the ship
- "Blow-out" or other external matter on an oil rig
- Other circumstances outside the ship
- Ice conditions which have influenced the navigation/manoeuvring of the ship

Distribution of "External factors" based upon type of occurrence (cont'd.)

- The state of the waters, shallow/narrow, etc.
- Faulty information from the land organization
- Poor visibility
- Rough weather/hurricane and the like
- Other known cause

Distribution of the factor "Ship construction" based upon type of occurrence

Out of the total of 129 occurrences *Ship construction* were considered to be the main cause for two (2) accidents.

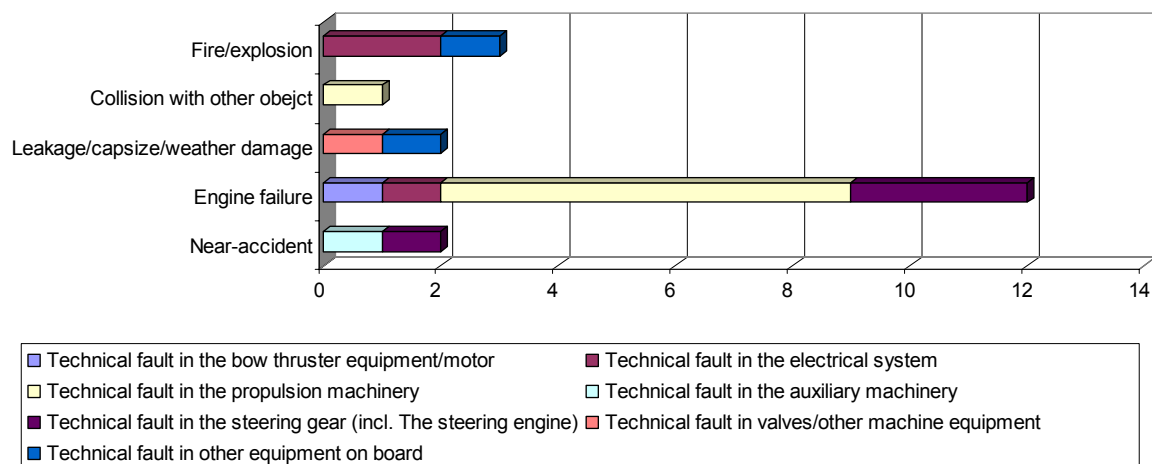


The term *Ship construction* is divided into the following subgroups:

- The ship construction was too weak
- The ship construction was impaired by welding work, rust, and the like
- Stability problems due to the ship construction
- Deficient manoeuvrability of the ship
- Defective construction of machinery room arrangement, location of equipment, and the like
- Inappropriate location/design of cargo holds, tanks, store-rooms
- Inappropriate location/design of other areas on board (except the bridge)
- Poor/difficult access/entrances for cleaning, maintenance, inspection
- Other matters concerning the ship construction and maintenance

Distribution of the factor "Technical fault in equipment" based upon type of occurrence

Out of the total of 129 occurrences *Technical fault in equipment* was considered to be the main cause for 18 accidents and two (2) near-accidents.

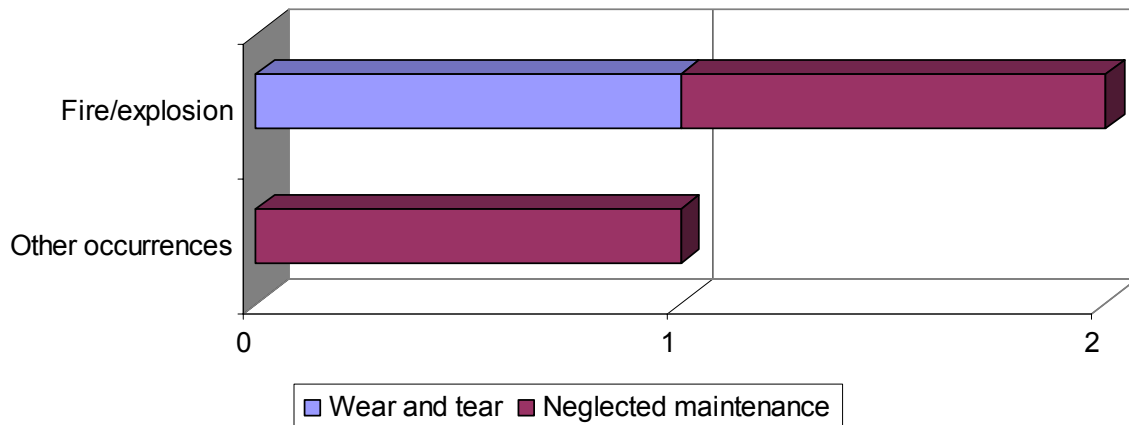


The term *Technical fault in equipment* is divided into the following subgroups:

- Technical fault in the navigation equipment
- Technical fault in the steering gear (incl. the steering engine)
- Technical fault in the propulsion machinery
- Technical fault in the auxiliary machinery
- Technical fault in the windlass/deck machinery (excl. equipment for loading and unloading)
- Technical fault in the equipment for surveillance, remote control and/or warning
- Technical fault in the equipment for loading and unloading
- Technical fault in the safety equipment incl. fire extinguishing equipment
- Technical fault in the drilling equipment
- Technical fault in other equipment on board
- Technical fault in the bow thruster equipment/motor
- Technical fault in valves/other machine equipment
- Technical fault in the electrical system
- Technical fault/wear and tear in wires or the like

Distribution of the factor "Handling/design of equipment" based upon type of occurrence

Out of the total of 129 occurrences *Handling/design of equipment* was considered to be the main cause for three (3) accidents.

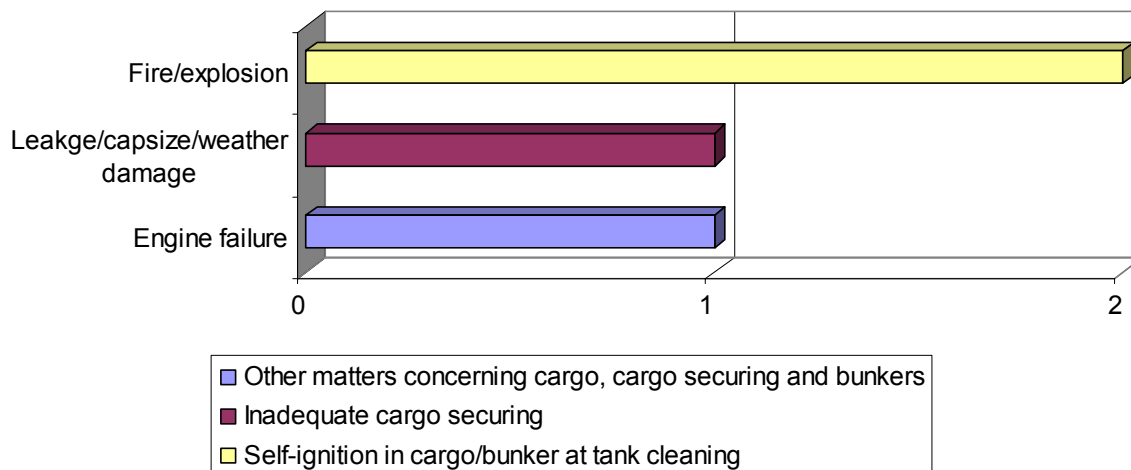


The term *Handling/design of equipment* is divided into the following subgroups

- Inadequate design of the bridge, lack of and/or misplacement of instruments
- Illogical/improper design of control devices/instruments, etc.
- Misplacement of instruments/equipment
- Out-of date instruments. Inferior equipment. Equipment/publication missing
- Other circumstances concerning use/design of equipment/machinery
- Neglected maintenance
- Wear and tear

Distribution of the factor "Cargo/Cargo securing" based upon type of occurrence

Out of the total of 129 occurrences *Cargo/Cargo securing* was considered to be the main cause for four (4) accidents.

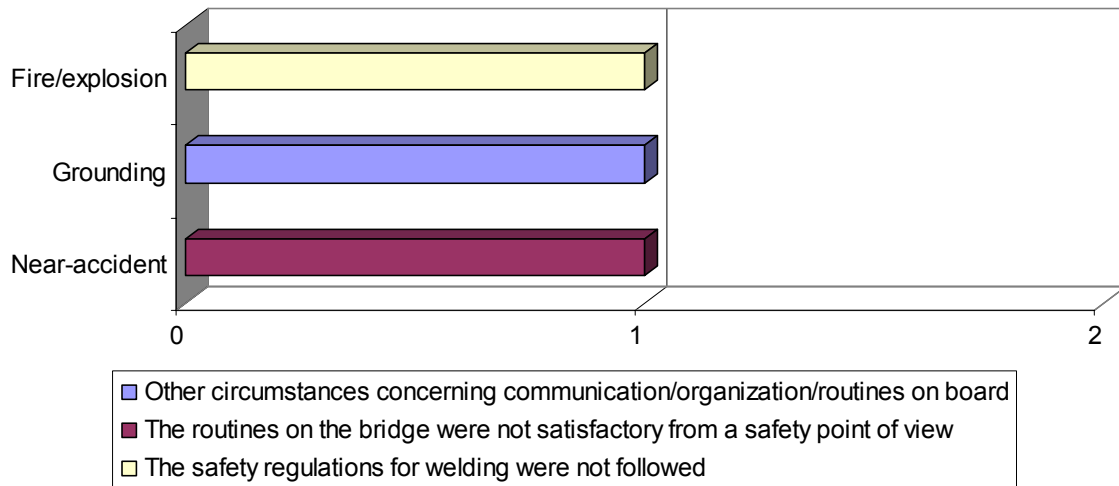


The term *Cargo/Cargo securing* is divided into the following subgroups:

- Self-ignition in cargo/bunker at tank cleaning
- Inert gas system or other fire/explosion safety equipment missing
- Inadequate stability. Misplaced cargo, ballast, etc.
- Inadequate cargo securing
- Leakage of cargo from barrels, containers, tanks, etc.
- Damage/crack in cargo pipe or bunker pipe
- Other matters concerning cargo, cargo securing and bunkers

Distribution of the factor "Communication/organization/routines" based upon type of occurrence

Out of the total of 129 occurrences *Communication/organisation/routine* was considered to be the main cause for two (2) accidents and one (1) near-accident.



The term *Communication/organization/routine* is divided into the following subgroups:

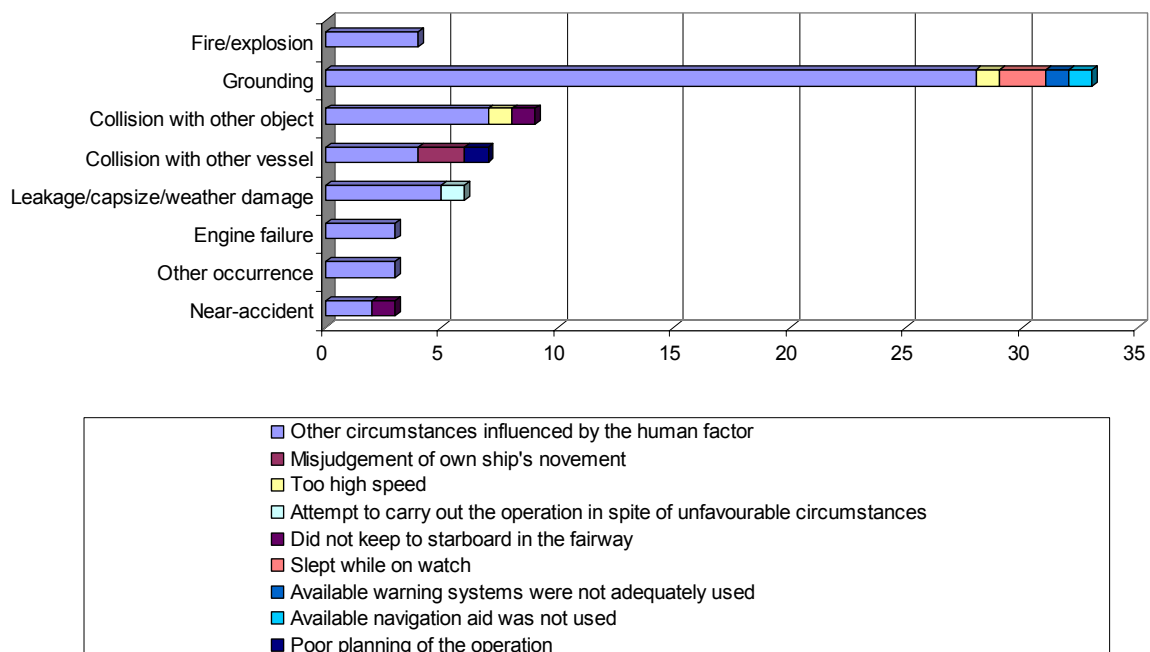
- Safety trainings were not performed at all, or not to a sufficient extent
- Safety trainings were performed, but not in a satisfactory way
- Routines for safety management were missing, or not sufficient
- Routines for safety management were known but not followed
- The safety regulations for welding were not followed
- Welding work caused an accident in spite of the fact that the safety regulations had been followed
- Regulations on testing of the life-saving equipment had not been followed
- Safety-/protective equipment was not used
- The general level of organization/routines/qualifications was inferior
- Incorrect routines for inspection and maintenance on board
- Stability unknown. Approved stability calculations missing
- Inadequate management. Personal antagonism, or the like.
- Too small manning. In general or at the accident, such as no helmsman/**no look-out**
- Orders or responsibilities unclear or misapprehended

Distribution of the factor "Communication/organization/routine" based upon type of occurrence (cont'd.)

- The routines on the bridge were not satisfactory from a safety point of view
- The routines on the bridge were satisfactory but not followed
- Charts and publications were not updated
- The co-operation between the ship and the land organization/tug boat/ice breaker/other parties involved was not satisfactory
- Other circumstances concerning communication/organization/routines on board
- Lack of safety representative
- Inactive safety representative
- Lack of safety committee
- Inactive safety committee
- Relations between ship and ship owner not satisfactory

Distribution of the factor "Human factor" based upon type of occurrence

Out of the total of 129 occurrences the *Human factor* was considered to be the main cause for 65 accidents and three (3) near-accidents. The figure below shows the distribution of the various *human factors* based upon type of occurrence.



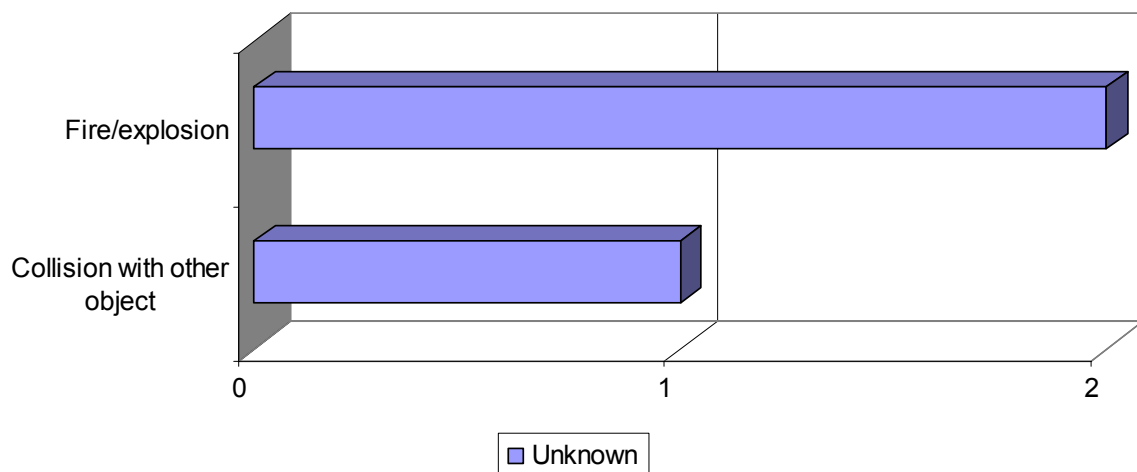
Distribution of the *human factors* based upon type of occurrence (cont'd.)

Circumstances concerning the individuals on board, i.e. the *human factor* are divided into 16 different subgroups, which more in detail describe the human factors

- Alcohol or other intoxicants
- Alternative navigation aid was not used
- Other circumstances influenced by the human factor
- Misjudgement of **other** ship's movement
- Misjudgement of **own** ship's movement
- Too high speed
- Attempt to carry out the operation in spite of unfavourable circumstances
- Did not keep to starboard in the fairway
- Position of own ship not good enough. "Dead reckoning" not noted in the chart
- Inadequate competence
- Inadequate competence for the task
- Slept while on watch
- Special circumstances (sickness, lack of sleep, too long working hours)
- Available warning systems were not adequately used
- Available navigation aid was not used
- Poor planning of the operation

Distribution of "Other known/unknown cause" based upon type of occurrence

The main cause for three (3) accidents is considered to be *Other known/unknown cause*



Fire/explosion

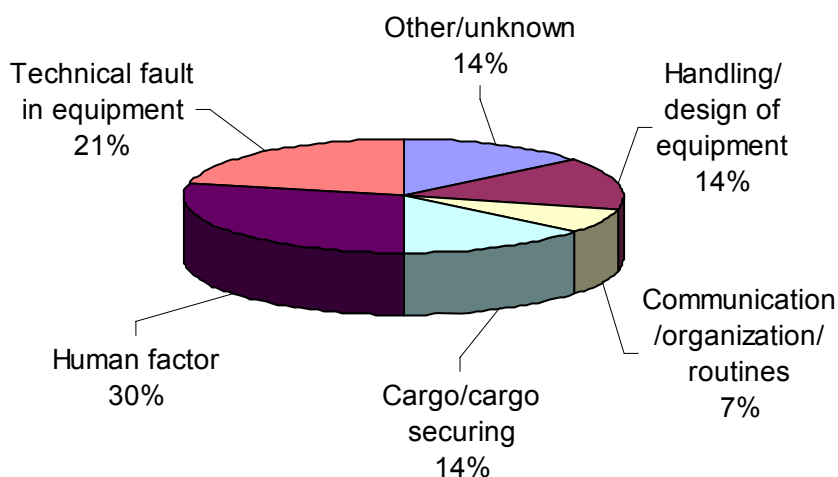
Two occurrences have been considered to be *foundering* and one person was injured; see Narrative – foundered vessels. The remaining occurrences have been considered to be *less serious casualties*. “Fire in engine room” has been the cause in five (5) of the accidents. One minor release of oil has been noted.

No Near-accident has been reported.

Fire/explosion by type of vessel

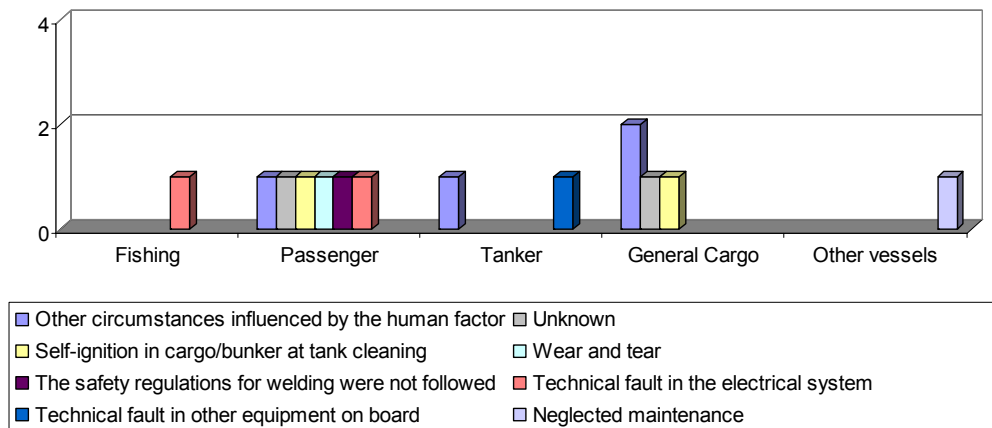
Fishing	Passenger	Tanker	General cargo	Other	Total
1	6	2	4	1	14

Primary cause – over-all distribution by main group



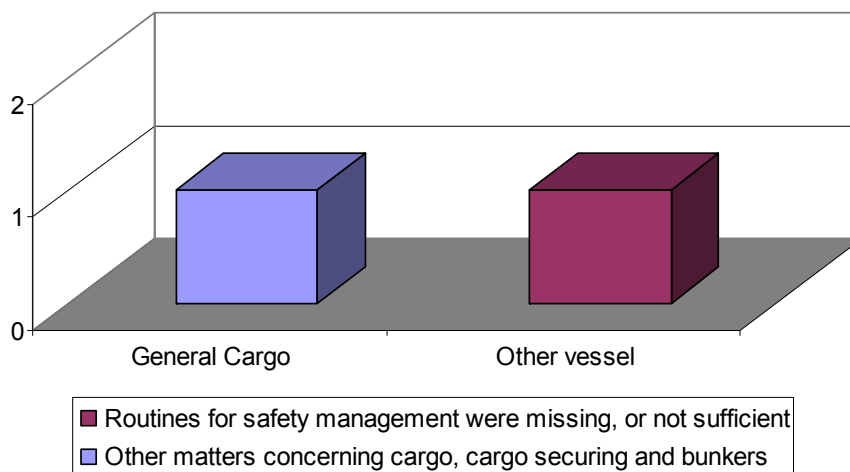
Fire/Explosion (cont'd.)

Primary cause by type of vessel



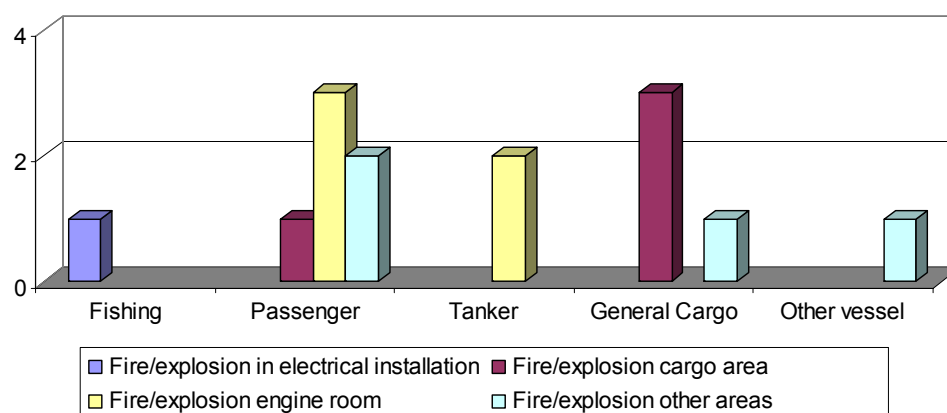
The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel.

Contributing cause by type of vessel



Fire/Explosion (cont'd.)

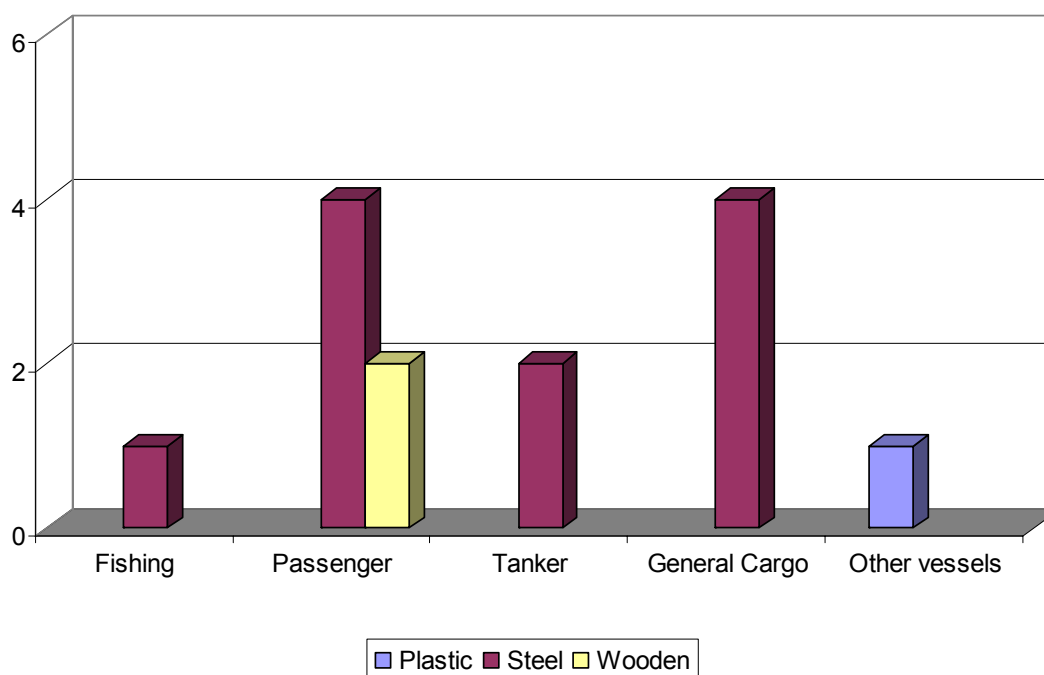
Place on board at the occurrence, by type of vessel



Operational mode of the vessel

Operational mode of the vessel	Fishing	Passenger	Tanker	General cargo	Other	Total
Moored to quay	1	2	1	3	1	8
At sea	-	2	1	1	-	4
Laid up	-	1	-	-	-	1
Port arrival	-	1	-	-	-	1
Total	1	6	2	4	1	14

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



Grounding

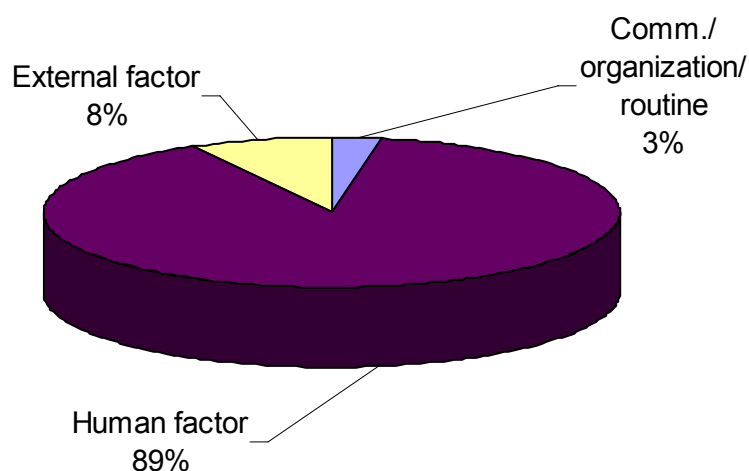
One occurrence has been considered to be *foundering*; see Narratives – foundered vessels. The remaining occurrences have been considered to be *less serious casualties*. No hazardous discharge is known to have occurred.

One (1) Near-accident was reported.

Distribution by type of vessel.

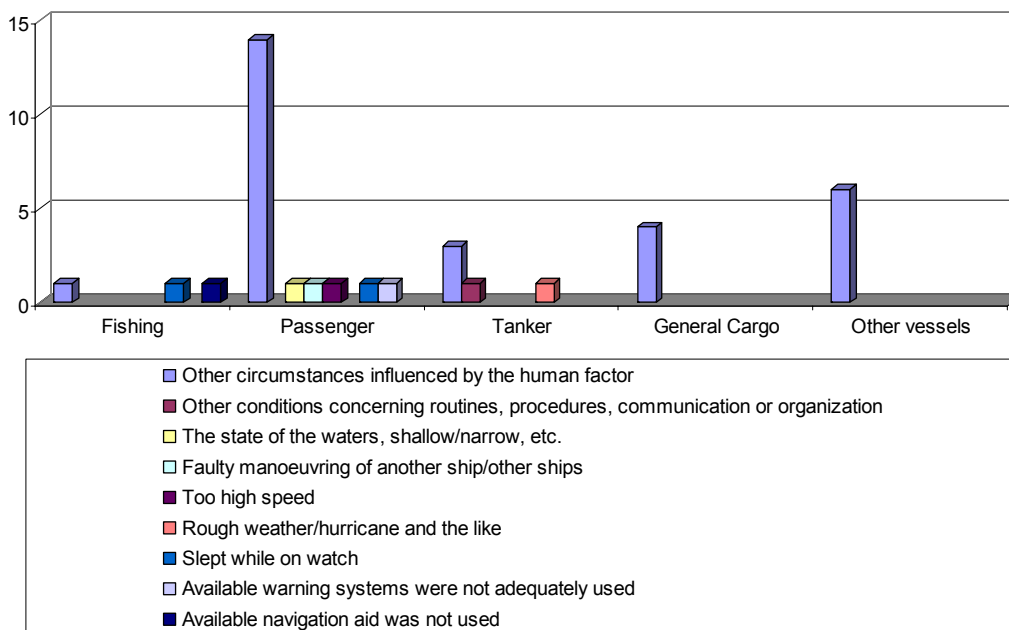
Fishing	Passenger	Tanker	General cargo	Other	Total
3	19	5	4	6	37

Primary cause – over-all distribution by type of main group



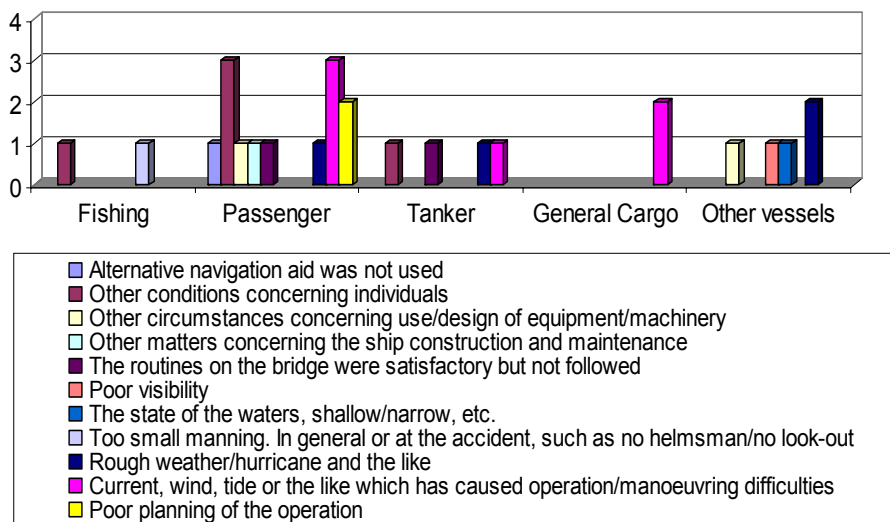
Grounding (cont'd.)

Primary cause by type of vessel



The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel.

Contributing cause by type of vessel



Grounding (cont'd.)

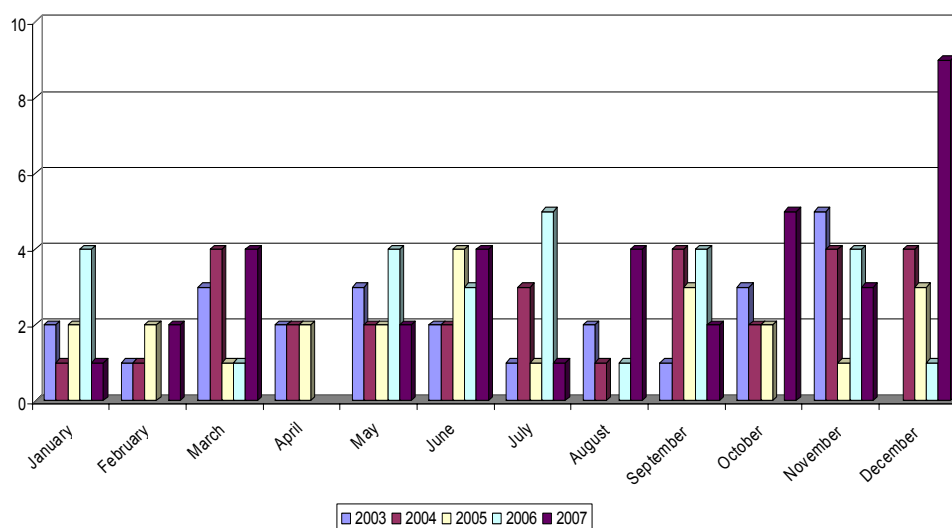
Consequences of damage to the hull

Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	2	12	4	3	5	26
Minor leakage	-	7	1	-	1	9
Major leakage	1	-	-	1	-	2
Total	3	19	5	4	6	37

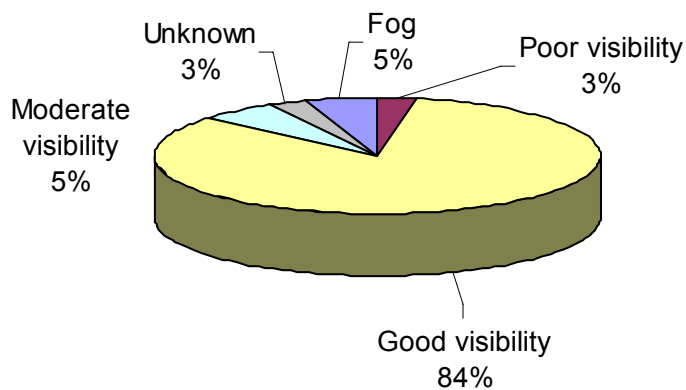
Pilot on board/not on board/pilot exemption cert. connected to the occurrence

Pilot	Fishing	Passenger	Tanker	General cargo	Other	Total
Not on board	3	16	2	2	5	28
On board	-	-	3	2	1	6
Unknown	-	1	-	-	-	1
Pilot exemption cert.	-	2	-	-	-	2
Total	3	19	5	4	6	37

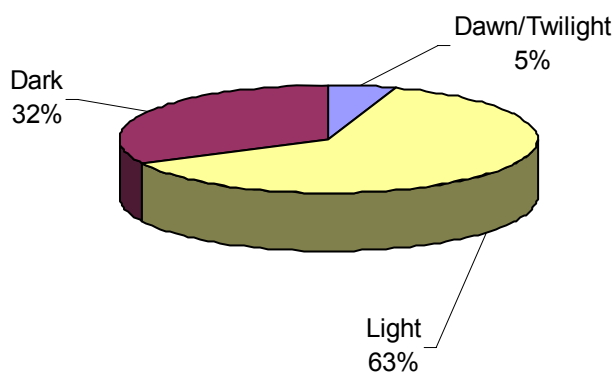
Number of groundings per month and year 2003 – 2007



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

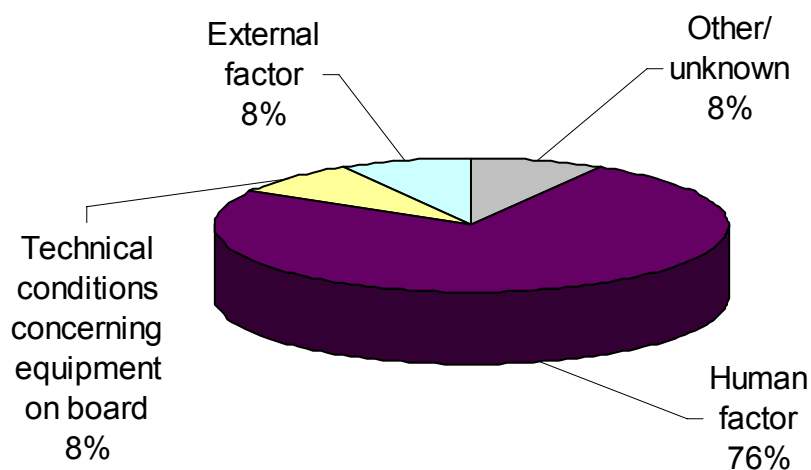
All the occurrences have been considered to be *less serious casualties*. No foundering and no hazardous discharge is known to have occurred.

One **near-accident** was reported.

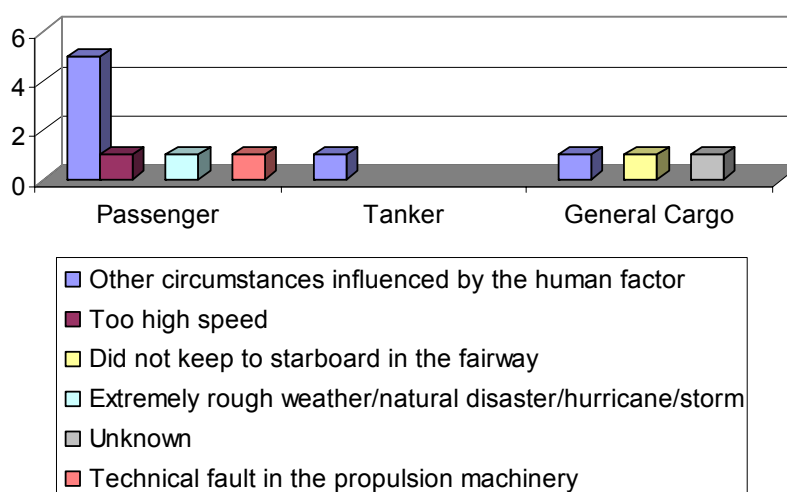
Collisions with other objects by type of vessel

Fishing	Passenger	Tanker	General cargo	Other	Total
-	8	1	3	-	12

Primary cause – over-all, distribution by type of main group



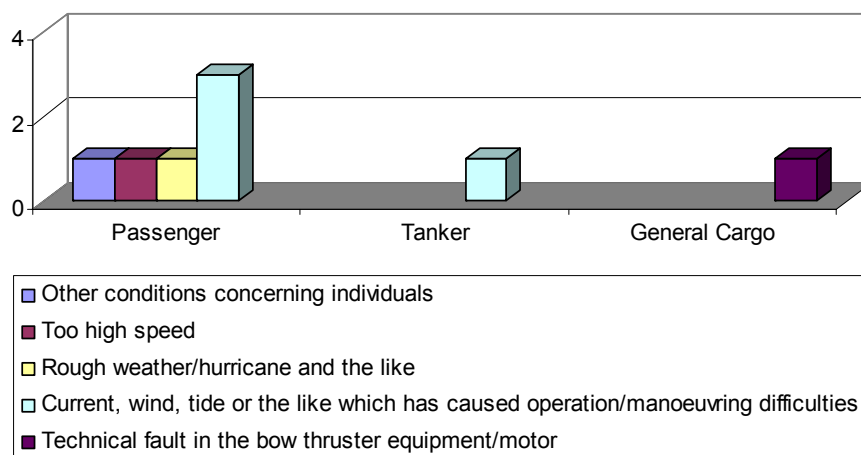
Primary cause by type of vessel



Collisions with other objects (cont'd.)

The diagram below shows, if applicable, causes contributing to the main cause, by type of vessel.

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	1	3	-	11
Major leakage	-	1	-	-	-	1
Total	-	8	1	3	-	12

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

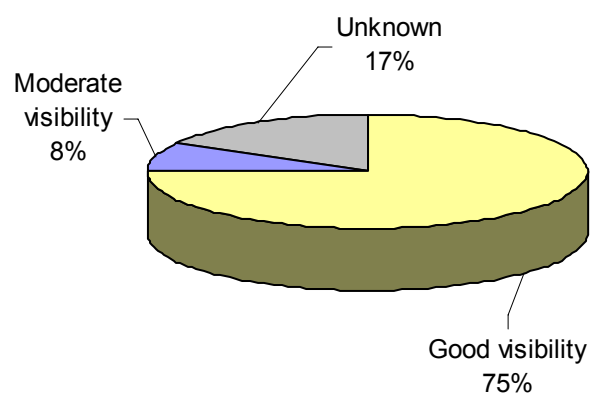
Pilot	Fishing	Passenger	Tanker	General cargo	Other	Total
Not on board	-	6	-	-	-	6
On board	-	-	1	2	-	3
Pilot exemption cert.	-	2	-	1	-	3
Total	-	8	1	3	-	12

Collisions with other objects (cont'd.)

Operational mode of the vessel

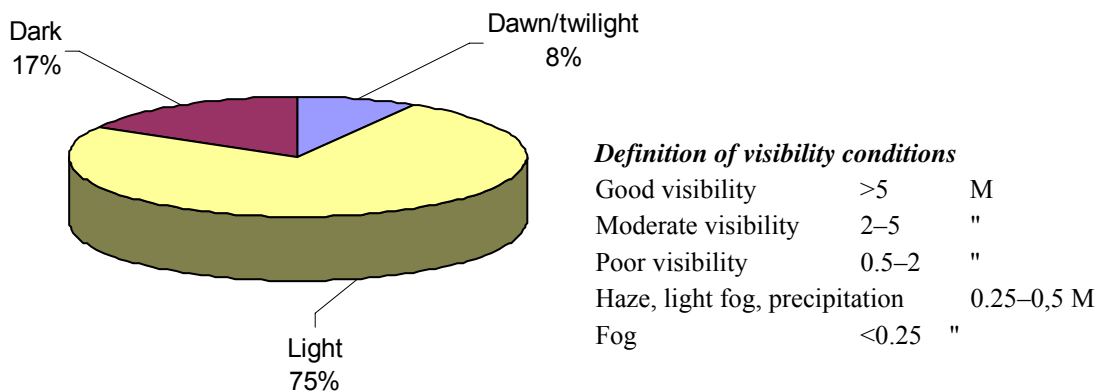
Operational mode of the vessel	Fishing	Passenger	Tanker	General cargo	Other	Total
Unknown	-	-	1	-	-	1
At sea	-	-	-	1	-	1
Laid up	-	1	-	-	-	1
Port arrival	-	7	-	1	-	8
Port departure	-	-	-	1	-	1
Total	-	8	1	3	-	12

Visibility conditions in %



Collisions with other objects (cont'd.)

Light conditions in %



Collisions with other vessels

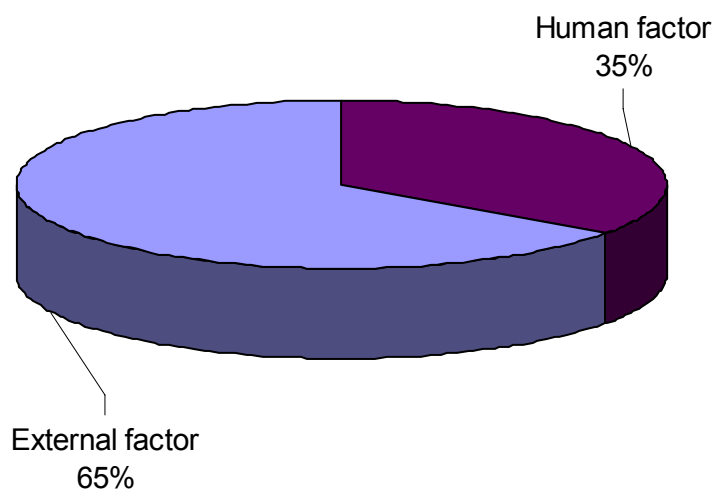
All occurrences have been considered to be *less serious casualties*. No hazardous discharge is known to have occurred.

Seven (7) **Near-accidents** were reported.

Collisions with other vessels by type of vessel

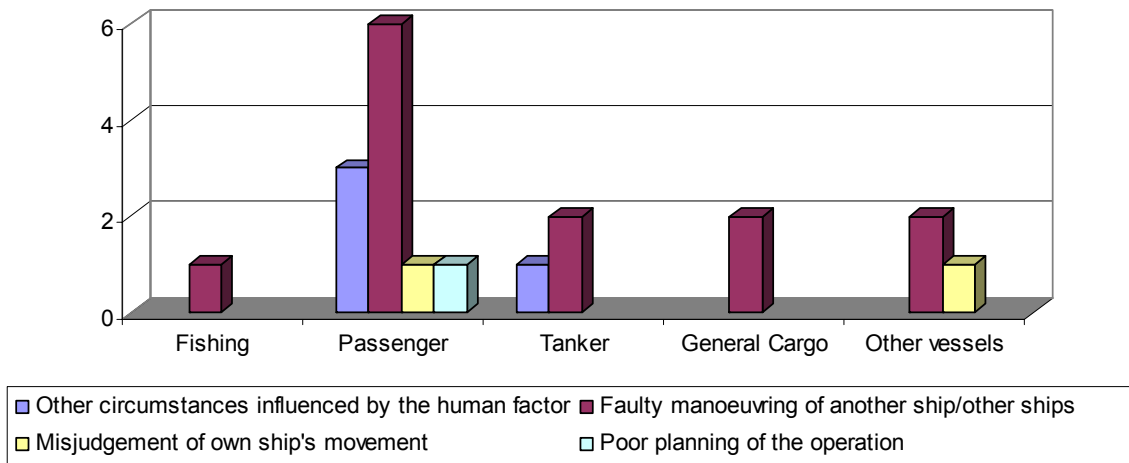
Fishing	Passenger	Tanker	General cargo	Other	Total
1	11	3	2	3	20

Primary cause – over-all, distribution by type of main group



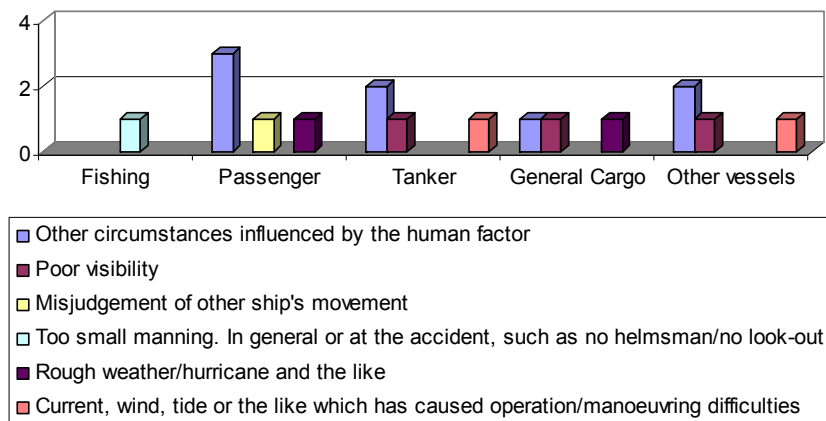
Collisions with other vessels (cont'd.)

Primary cause by type of vessel



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

Contributing cause by type of vessel

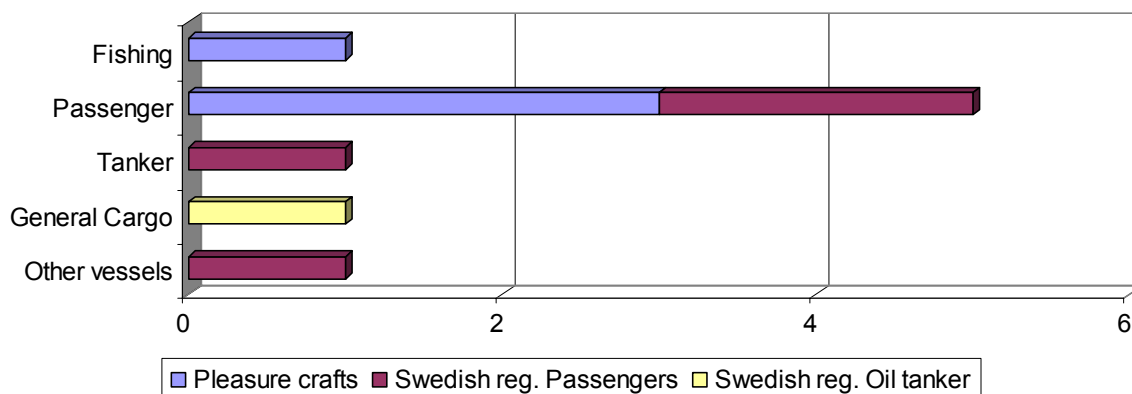


Collisions with other vessels (cont'd.)

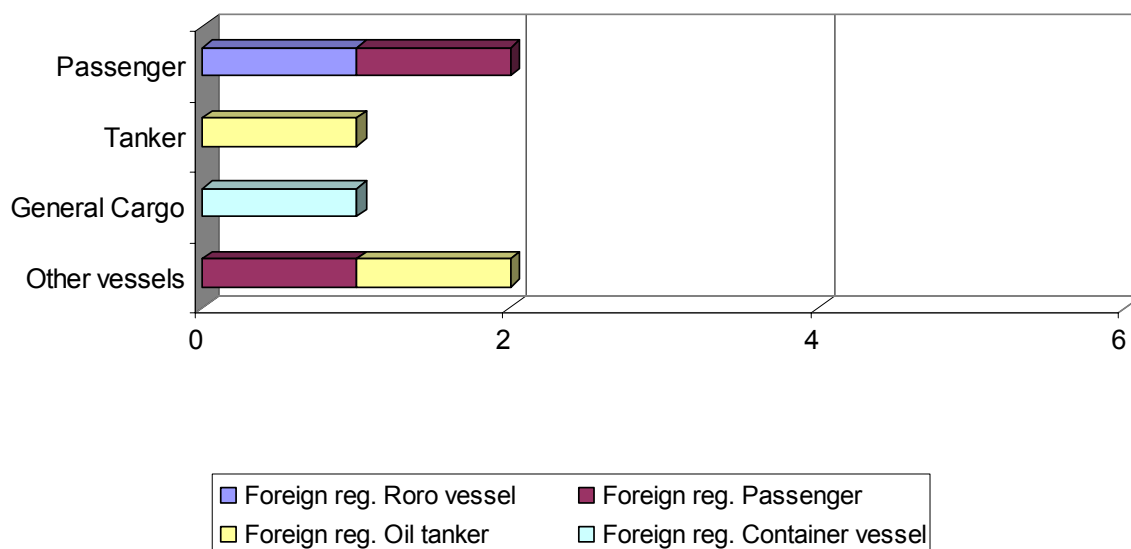
Distribution of the collisions between the vessels by nationality and type of vessel

During 2007 five (5) Swedish vessels collided with each other, four (4) collisions were between Swedish merchant- /fishing vessels and pleasure crafts. Six (6) Swedish merchant- /fishing vessels collided with foreign vessels.

Number of Swedish merchant ships and fishing boats that have collided with other Swedish merchant ships and fishing boats



Number of Swedish merchant ships and fishing boats that have collided with foreign merchant ships



Collisions with other vessels (cont'd.)

Consequences of damage to the hull

Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	1	11	3	2	2	19
Major leakage	-	-	-	-	1	1
Total	1	11	3	2	3	20

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

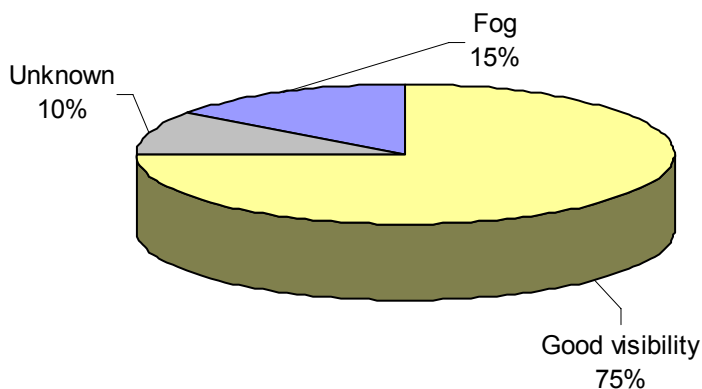
Pilot	Fishing	Passenger	Tanker	General cargo	Other	Total
Not on board	1	10	3	2	3	19
Pilot exemption cert.	-	1	-	-	-	1
Total	1	11	3	2	3	20

Operational mode of the vessel

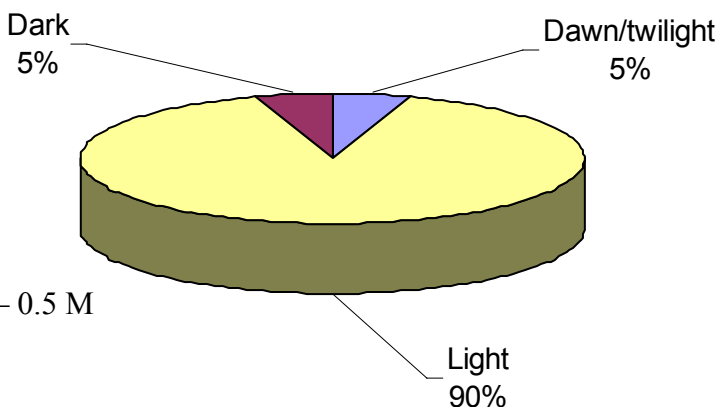
Operational mode of the vessel	Fishing	Passenger	Tanker	General cargo	Other	Total
Other	-	-	-	-	1	1
Fishing	1	-	-	-	-	1
Moored to quay	-	3	-	1	-	4
At sea	-	4	3	1	2	10
Port arrival	-	2	-	-	-	2
Port departure	-	2	-	-	-	2
Total	1	11	3	2	3	20

Collisions with other vessels (cont'd.)

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

The occurrence was considered to be *less serious casualties*. A big wave made the deck cargo displace, resulting in a strong list. No environmentally hazardous discharge is known to have taken place in this connection.

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

Damage due to leakage/capsize/weather

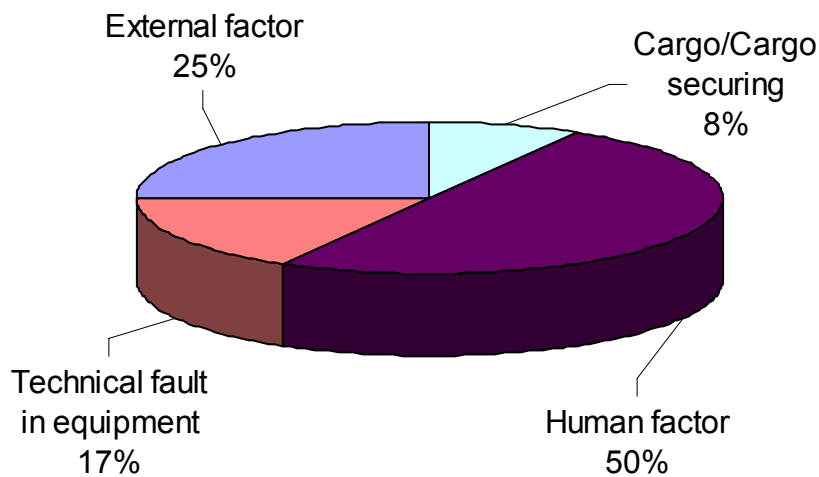
Five (5) occurrences were considered to be *a foundering*. One crew member was injured concerning one of the foundering, see Narratives – foundered vessels. One (1) occurrence was considered to be *serious casualty*, see Narratives – serious casualties. The remaining occurrences were considered to be *less serious casualties*. No hazardous discharge is known to have occurred.

No **Near-accident** was reported.

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

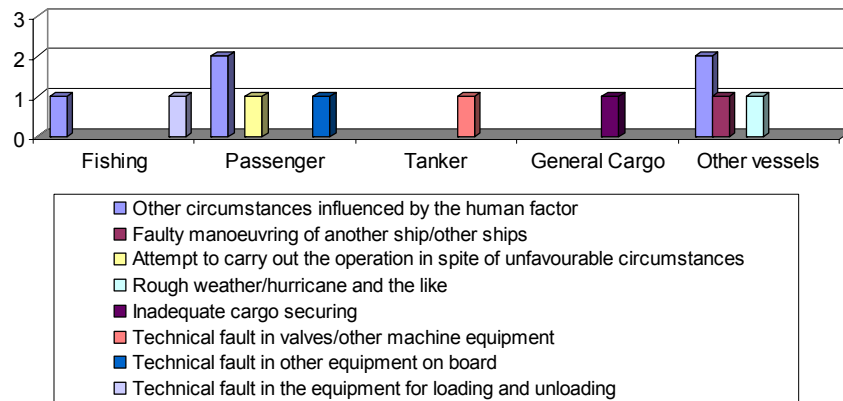
Fishing	Passenger	Tanker	General cargo	Other	Total
2	4	1	1	4	12

Primary cause over-all, distribution by type of main group



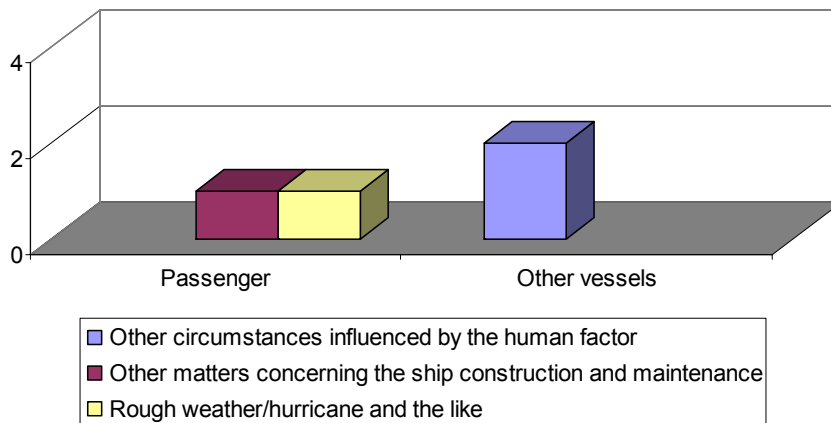
Damage due to leakage/capsize/weather (cont'd.)

Primary cause by type of vessel



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

Contributing cause by type of vessel



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

Consequences of damage to the hull

Damage to hull (water ingress)	Fishing	Passenger	Tanker	General cargo	Other	Total
No leakage	2	3	-	1	2	8
Minor leakage	-	1	1	-	-	2
Unknown	-	-	-	-	1	1
Major leakage					1	1
Total	2	4	1	1	4	12

Engine failure

One (1) occurrence has been considered to be *foundering*; see Narratives – foundered. The remaining occurrences have been considered to be *less serious casualties*. One minor hazardous discharge was reported.

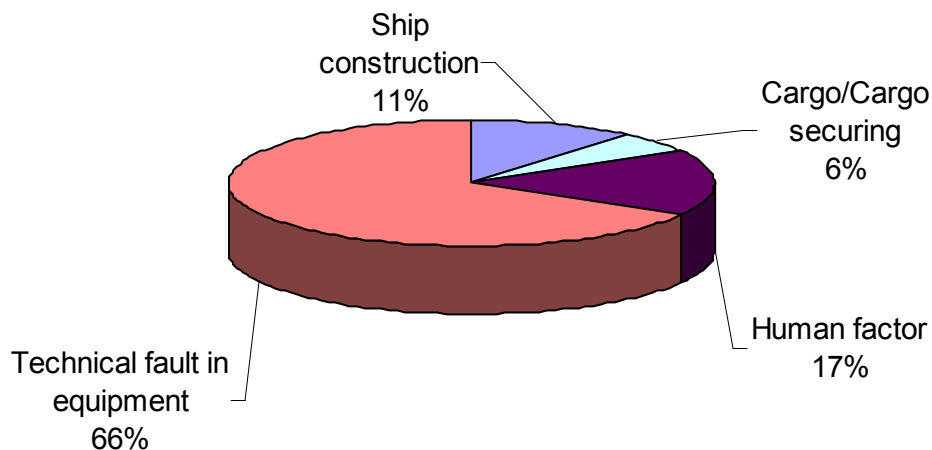
No **Near-Accident** was reported.

Engine failure by type of vessel

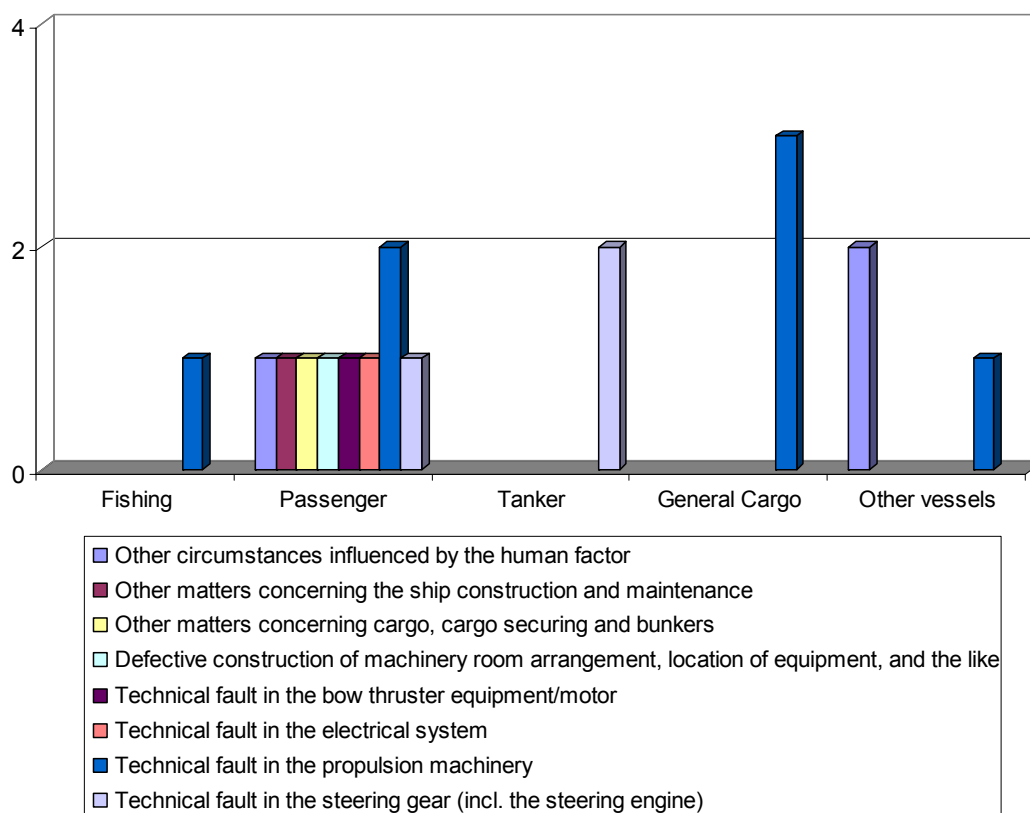
Fishing	Passenger	Tanker	General cargo	Other	Total
1	9	2	3	3	18

Engine failure (cont'd.)

Primary cause over-all, distribution by type of main group

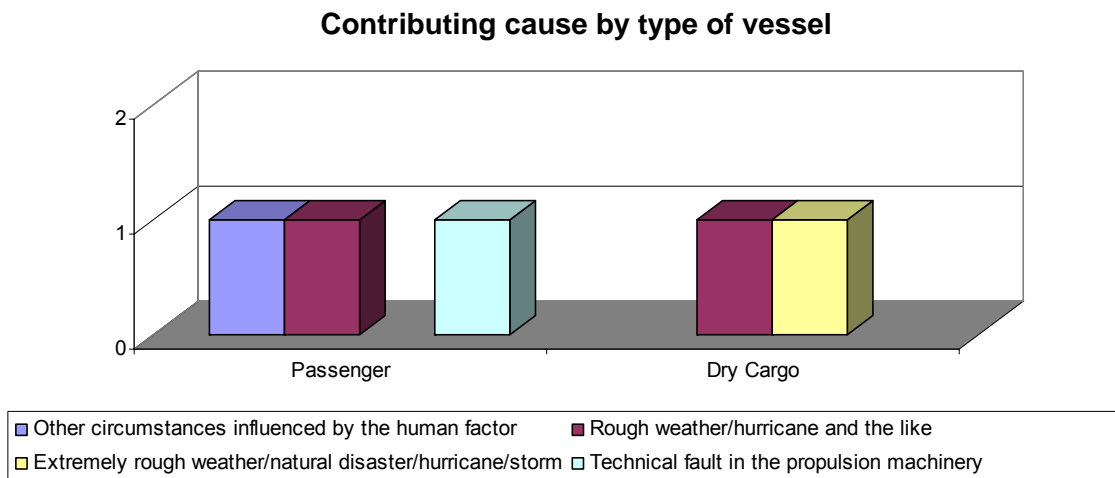


Primary cause by type of vessel



Engine failure (cont'd.)

The diagram below shows contributory causes to the collisions with other objects 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	9	2	3	2	17
Major leakage	-	-	-	-	1	1
Total	1	9	2	3	3	18

Spillage

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

No occurrences have been reported during 2007.

Other occurrences

All the occurrences have been considered to be *less serious casualties*.

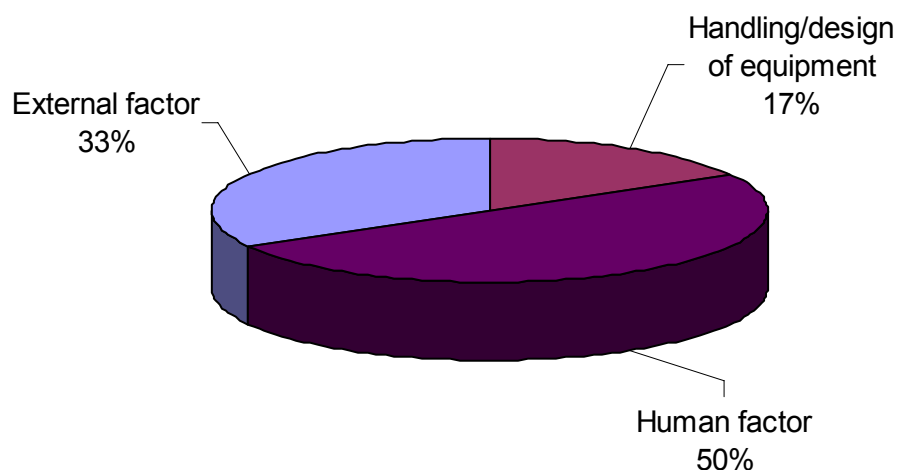
No **Near-Accident** was reported.

Narrative

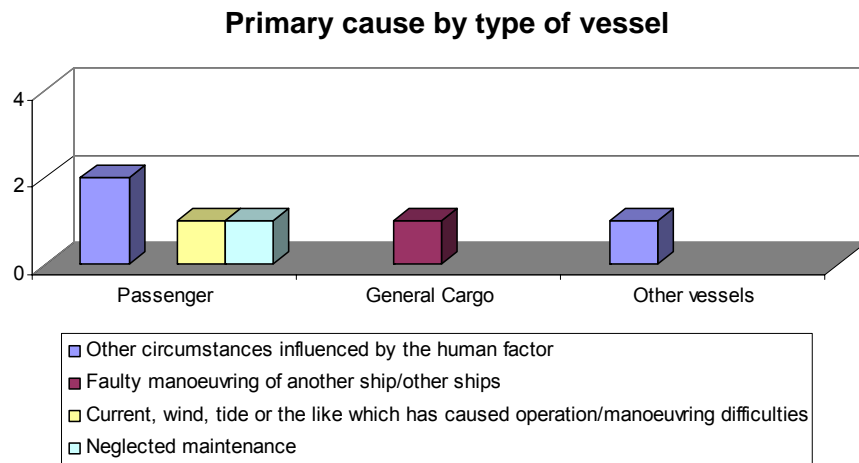
- An electric wire was entangled in the chain when the vessel weighed anchor. The crew managed to release the wire. It is not known if the cable was damaged.
- The bunker vessel was moored alongside at bunkering. Due to swell the hawser was tightened up, which caused the bollard and a bit of the rail to break.
- During the voyage a front suspension hook of a lifeboat came loose, whereupon it partly became hanging overboard. The lifeboat was secured until the vessel reached the port. The lifeboat was not properly lashed. At inspection it was also found that maintenance of turning blocks and tail rollers among other things was neglected.
- To turn the vessel around a tug was connected to the sunkenbit (pollard) forward to port side. The tug used such great engine power that the bollard broke. There was no damage to the hull.
- During the voyage the front gangway was damaged, which resulted in water on the foredeck. The vessel reached the port by its own engines.
- While loading the ferry slid out of its position. A passenger car got minor damage when passing the ramp. A hook was not attached to the ferry.
- *Other occurrences by type of vessel.*

Fishing	Passenger	Tanker	General cargo	Other	Total
-	4	-	1	1	6

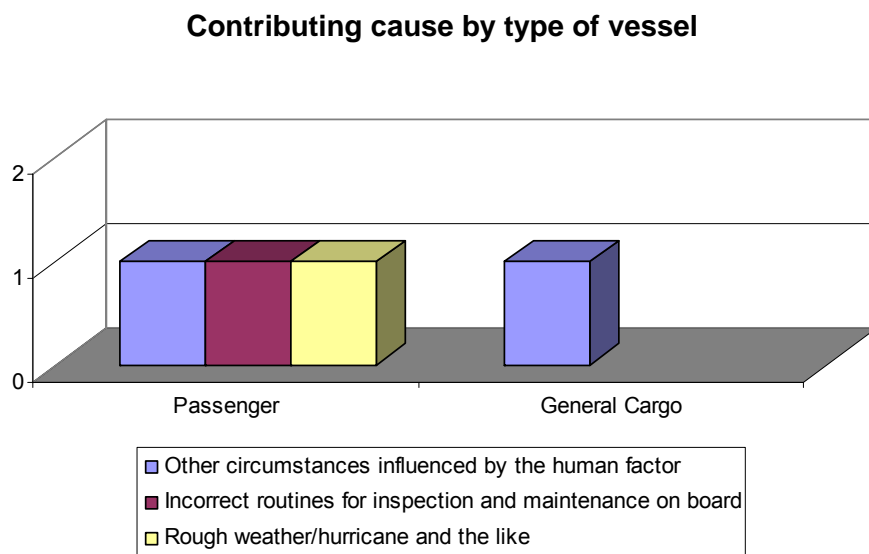
Primary cause over-all, distribution by type of main group



Other occurrences (cont'd.)



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



ACCIDENTS TO PERSONS

Summary of reported accidents to persons

2007

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 2007.

PERSONS EMPLOYED ON BOARD	Number
OCCUPATIONAL INJURIES (occupational accidents/work-related diseases, incl. off duty on board/off duty ashore) incl. deaths	398
occupational accidents, absence from work	190
<i>occupational accidents resulting in death</i>	2
work-related diseases	38
occupational accidents, without absence from work	161
Commuting accidents	9
ILLNESS/SUICIDE	2
DISAPPEARANCES	-
COMMERCIAL FISHERMEN	Number
OCCUPATIONAL INJURIES (occupational accidents/work-related diseases) incl. deaths	10
occupational accidents, absence from work	8
<i>occupational accidents resulting in death</i>	-
work-related diseases	1
occupational accidents, without absence from work	1
PASSENGERS	Number
ILLNESS/SUICIDE	7
DISAPPEARANCES	1
PHYSICAL INJURIES	2
<i>physical injuries resulting in death</i>	1
OTHER ON BOARD	Number
PHYSICAL INJURIES	1

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 19 June 2008.

Reporting and registration of occupational injuries (new system as from 2002)

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, and 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

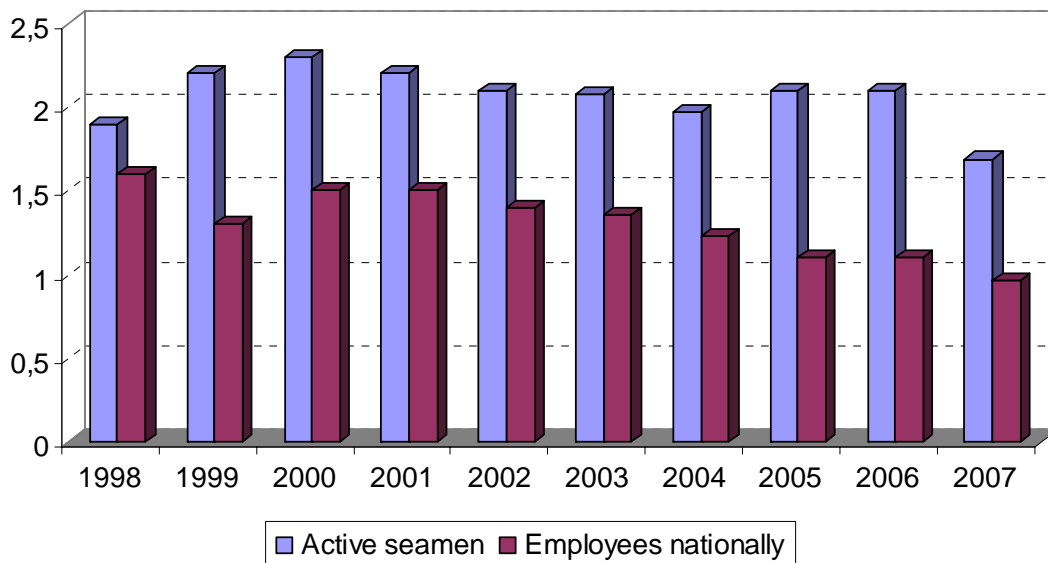
Total occupational injuries in relation to manning of merchant vessels, (occupational accidents occurring on-duty/off-duty and work-related diseases).

A total of **228** ship-duty occupational injuries were reported in 2007 (excluding commercial fishermen). Out of the total number of accidents, **190** were occupational accidents (on-duty/–/off-duty) and **38** 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 **161** and the commuting accidents were **9** for 2007. A further explanation can be found in the section "Scope and registration of the statistics".

The number of *active seamen* in 2007 was **13 449** (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.

Frequency of injuries 1998 - 2007

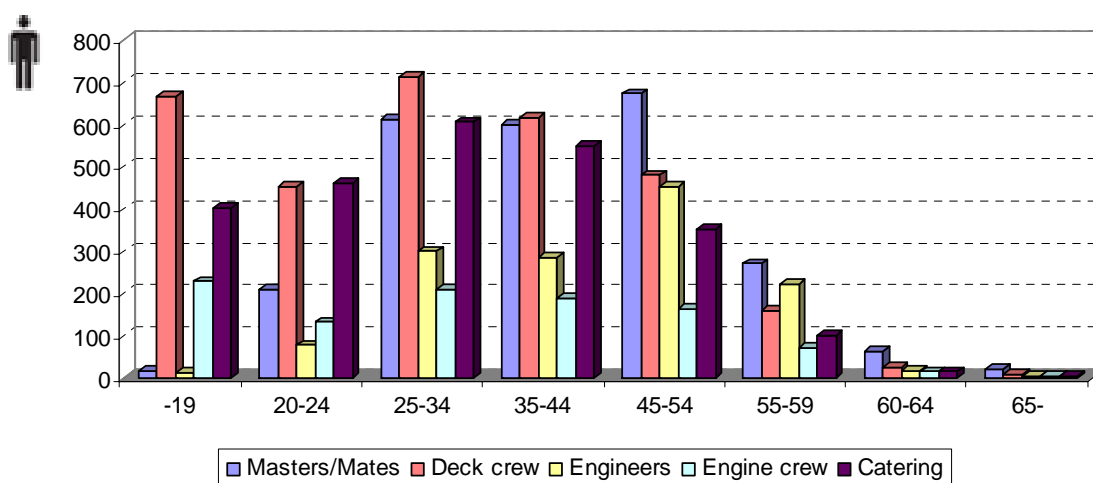
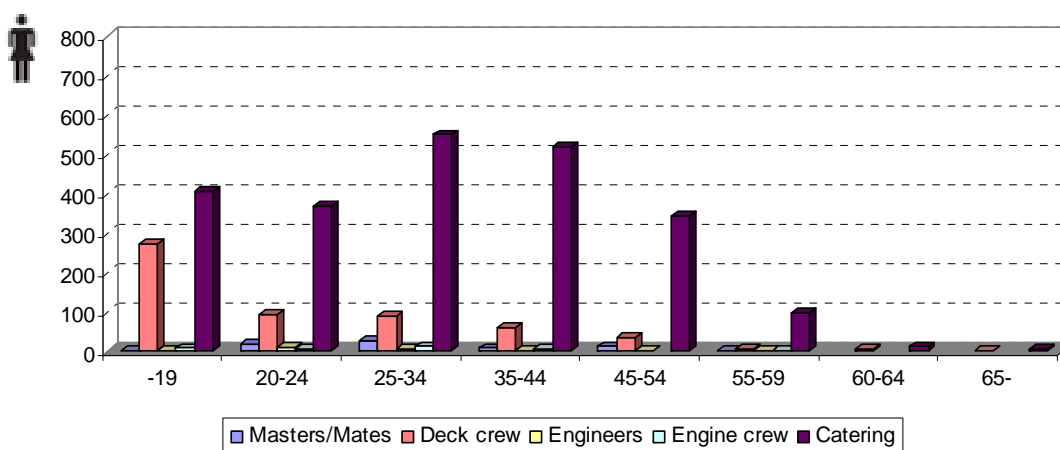
The frequency of injuries is defined as the number of occupational injuries/100 active seamen. The figure shows the number of occupational injuries/100 employees nationally. (Information taken from the SCB/Rams 2006.)



Number of active seamen by age and manning

Age	< 19	20	25	35	45	55	60	65 >	Total
		-24	-34	-44	-54	-59	-64		
Manning									
Masters/Mates	18	228	639	608	684	272	62	20	2531
Deck crew	940	545	802	675	515	167	29	10	3683
Engineers	13	87	305	286	454	223	16	5	1389
Engine crew	237	137	221	196	164	74	15	5	1049
Catering	810	830	1155	1068	697	199	27	11	4797
Total	2018	1827	3122	2833	2514	935	149	51	13449

Number of active seamen by age, manning and sex



Injuries by occupational accidents/work-related diseases and on-duty/off-duty in 2003 - 2007

Year	Total occupational accidents	<i>of which deaths</i>	Work-related diseases	Total	Occupational accidents without absence from work
2003	218	-	60	278	175
2004	200	-	66	266	162
2005	212	1	71	283	153
2006	235	4	44	279	128
2007	190	2	38	228	161
Total	1 055	7	279	1 334	779

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

Manning	Total occupational accidents	<i>of which deaths</i>	Work-related diseases	Occupational accidents without absence from work	Total
Masters	6	-	2	1	9
Mates	10	1	1	2	13
Deck crew	36	-	11	20	67
Engineers	9	-	5	5	19
Engine crew	24	-	3	10	37
Catering	105	1	16	123	244
Total	190	2	38	161	389

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	2
Mates	-	-	-	-
Deck crew	1	-	2	3
Engineers	-	-	-	-
Engine crew	1	-	-	1
Catering	72	1	13	85
Total	75	1	16	91



Manning	Total occupational accidents		Work-related diseases	Total
		<i>of which deaths</i>		
Masters	5	-	1	6
Mates	10	1	1	11
Deck crew	35	-	9	44
Engineers	9	-	5	14
Engine crew	23	-	3	26
Catering	33	-	3	36
Total	115	1	22	137

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.¹

Number of occupational accidents by manning and discrepancy

Manning Discrepancy	Masters	Mates	Deck crew	Engineers	Engine crew	Catering	Total
Electrical problems fire/explosion	-	-	-	-	-	-	-
Leakage	1	.	.	1	.	4	6
Collapse, fall, bursting in material	-	2	5	-	4	4	15
Lost control of machine	-	-	-	-	3	2	5
Lost control of vehicle, means of transport	1	1	4	-	1	13	20
Lost control of hand- held tool, utensil	-	1	1	-	4	10	16
Lost control of treated object	1	2	5	2	3	16	29
Fall of person	2	3	9	3	2	23	42
Movement of body with no physical overloading	-	1	3	2	-	8	14
Movement of body with physical overloading	1	-	7	1	7	14	30
Physical violence, attack, traumatic experience	-	-	1	-	-	8	9
Other unidentified	-	-	1	-	-	3	4
Total	6	10	36	9	24	105	190

¹ Occupational accidents as from 2002 are reported by deviation, see explanation under the heading “**Report and registration of occupational injuries (new system as from 2002)**”.

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
2007-01-14 - Moored to quay	SFHI Working vessel GEORGE Steel 490 1977	The GEORGE was moored due to weather. Contrary to what was agreed, the Master started all alone to change a leaking hydraulic piston on one of the propulsion units. He put the unit in upper position, crawled in under it and unfastened a hydraulic hose. When the pressure was lost the heavy unit fell down on him, and he died. The two pins for securing the unit were not used. The investigation showed that there were deficiencies in the shipping company's work environment management.
2007-03-08 20.45 Moored to quay	SLAZ Oli tanker NANNY Steel 6544 1993	The vessel was moored to quay in Donges, France. Three crew members went ashore to take a walk. One of the three, a female crew member (cook), was hit by a car. She was taken to hospital, seriously injured. She died from her injuries two days later.

Narratives – serious occupational accidents

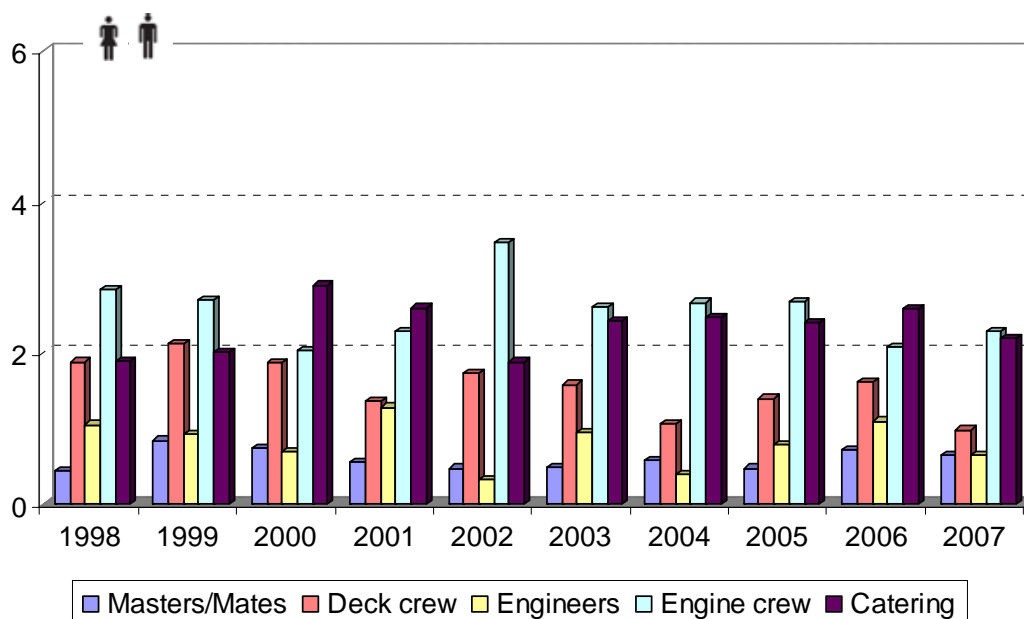
Date Local time Location and/or vessel's activity	Call sign/ number Vessel's name Construction material Gross tonnage Year built	Narrative
2007-03-02 - At arrival to port	SFHI Working vessel GEORGE Steel 490 1977	At mooring the mooring line was led through a shackle and was fastened aboard. A car carrier and two tugs in the port basin sucked the GEORGE from the quay. The mooring line snapped in two and hit a seaman's leg. He was seriously injured and was taken to hospital.

Narratives – serious occupational accidents (cont'd.)

Date Local time Location and/or vessel's activity	Call sign/ number Vessel's name Construction material Gross tonnage Year built	Narrative
2007-10-29 10.00 At anchor	SBGJ Chemical tanker TELLUS Steel 7 515 2006	At loading of a MOB-boat ² a seaman fell about 3 metres onto the deck below. His pelvis was injured.
2007-10-31 08.15 Moored to quay	SLVH Passenger vessel STENA SAGA Steel 33 750 1981	The overhead crane operator was to take a container ashore for provisioning. He was standing in the container's way with his back to the container when he by mistake pressed the control switch. The container moved horizontally and squeezed him between the rail and the bottom of the container. The warning signal was out of order. He was seriously injured.
2007-11-09 19.35 At arrival to port	SJAN General cargo VINGA Steel 1 097 1971	The vessel was to be pulled to quay by means of the aft capstan. An able seaman held the hawser while starting the capstan. He started it the wrong way. Before he could stop it he was pulled with the capstan. He was squeezed and got serious injuries.
2007-12-13 09.25 At sea	SEAN Passenger vessel STENA JUTLANDICA Steel 29 691 1996	An able seaman (AB) was masking the traffic lanes to be painted on a hoistable deck. The adjacent hoistable deck was not lowered and the area was not roped off. While applying the masking tape the AB backed along the lane and out over the edge of the hoistable deck. He fell 3,1 metres with his back first and hit the underlying steel deck. The AB was taken to hospital by helicopter.

² MOB boat (Man Over Board)

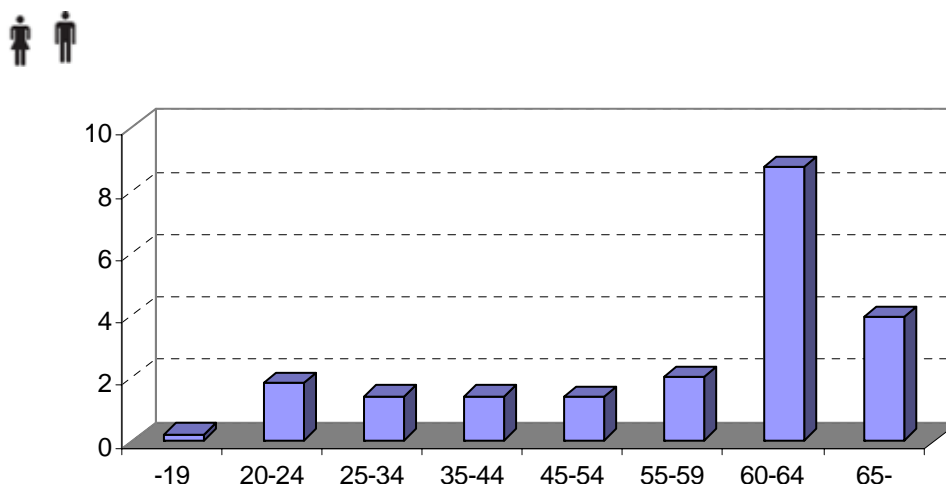
Frequency of injuries 1998 - 2007 number of occupational accidents/100 active seamen



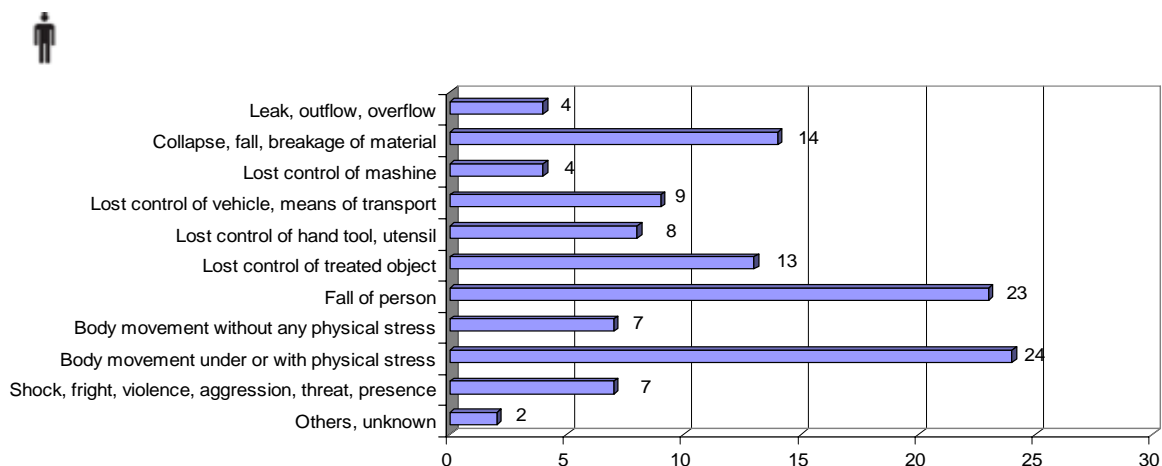
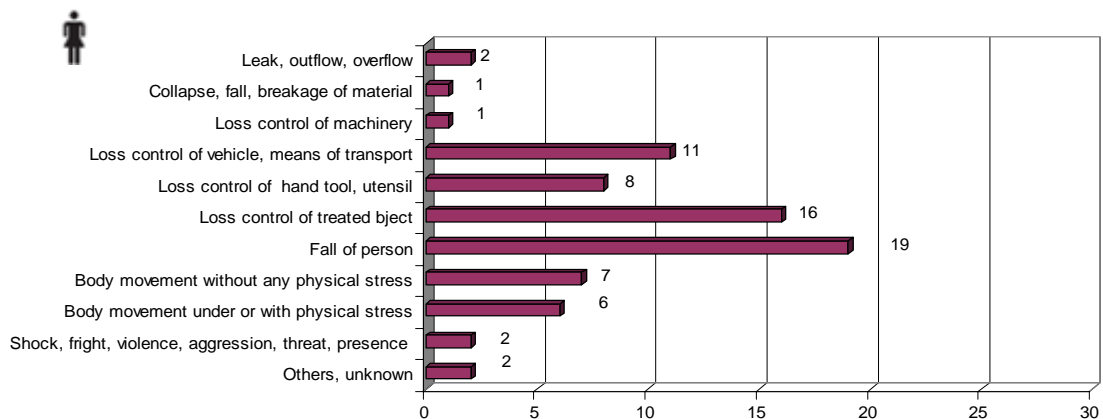
The number of active seamen and the number of occupational accidents by age 2007

Age	16-19	20-24	25-34	35-44	45-54	55-59	60-64	65-	Total
Number of active seamen	2 018	1 827	3 122	2 833	2 514	935	149	51	13 449
Number of occupational accidents	4	33	44	40	35	19	13	2	190

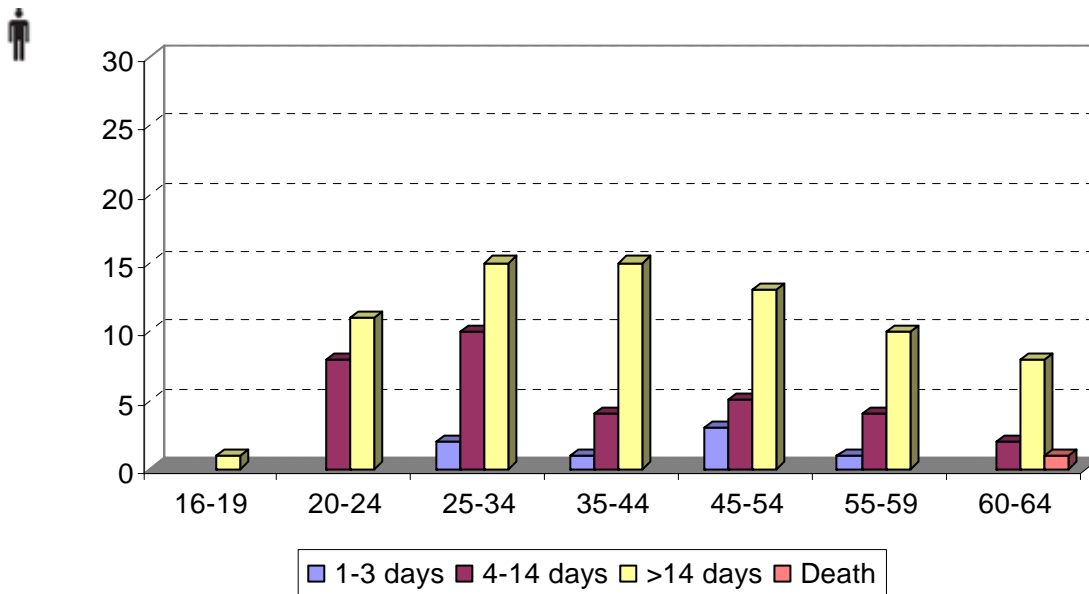
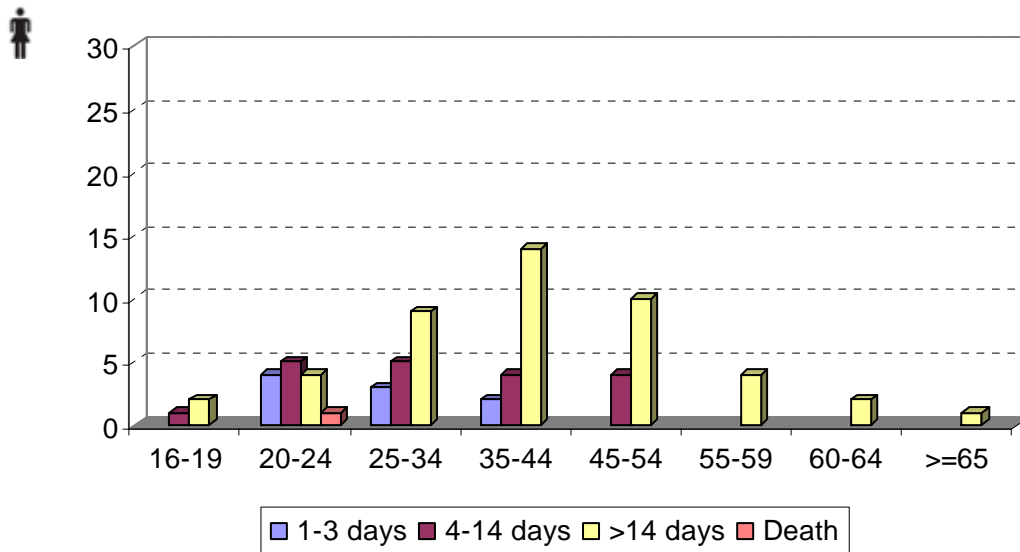
Number of occupational accidents/100 active seamen by age 2007



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	16-19	20 - 24	25 - 34	35 - 44	45 - 54	55-59	60 - 64	65 -	Total
Manning									
Masters	-	-	1	-	-	-	-	-	1
Mates	-	-	-	-	-	-	-	-	-
Deck crew	-	1	-	-	-	-	-	-	1
Engineers	-	-	-	-	-	-	-	-	-
Engine crew	-	-	1	-	-	-	-	-	1
Catering	3	13	15	20	14	4	2	1	72
Total	3	14	17	20	14	4	2	1	75



Age	16-19	20 - 24	25 - 34	35 - 44	45 - 54	55-59	60 - 64	65 -	Total
Manning									
Masters	-	1	-	-	1	1	2	-	5
Mates	-	1	1	6	-	1	1	-	10
Deck crew	-	4	5	6	10	5	4	1	35
Engineers	-	1	1	.	2	3	2	-	9
Engine crew	1	6	6	3	4	2	1	-	23
Catering	-	6	14	5	4	3	1	-	33
Total	1	19	27	20	21	15	11	1	115

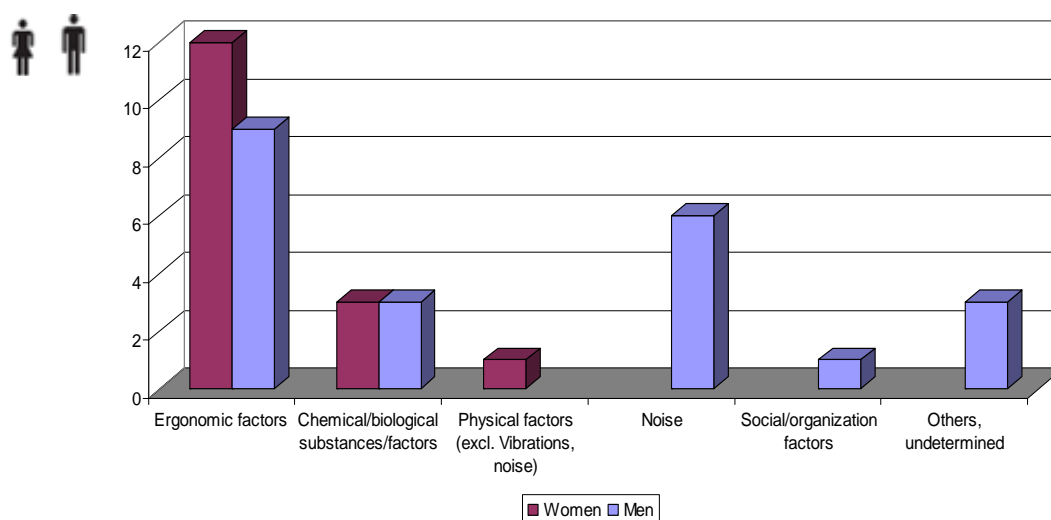
Work-related diseases

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.

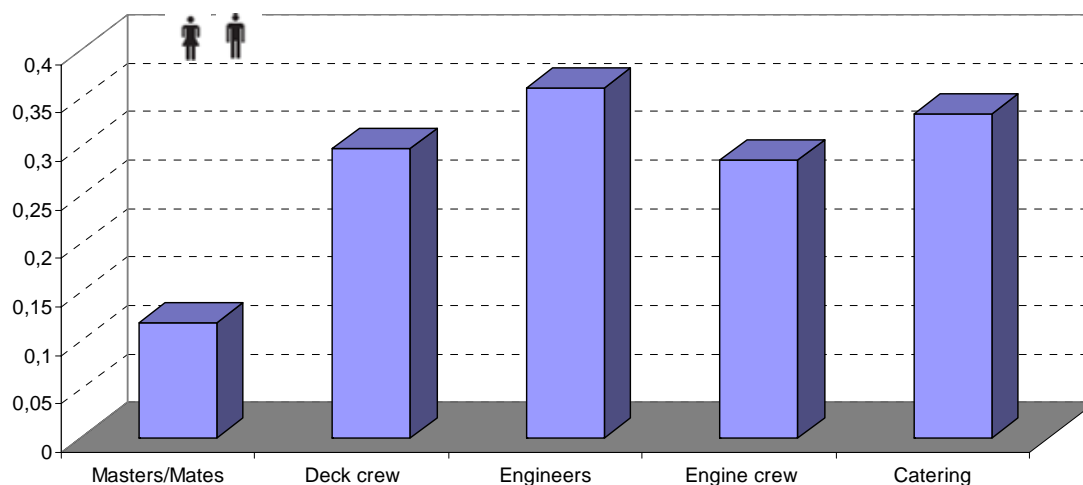
Number of work-related diseases for on-board personnel during 2003 - 2007

Year	2003	2004	2005	2006	2007
Cause					
Ergonomic factors	35	41	41	21	21
Chemical/biological substances/factors	8	4	9	5	6
Physical factors (excl. vibrations, noise)	-	-	1	-	1
Vibrations	1	-	2	-	-
Noise	11	10	13	9	6
Infection	-	1	1	-	-
Organization/social factors	3	8	3	5	1
Others, undetermined	2	2	1	4	3
Total	60	66	71	44	38

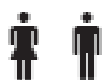
Work-related diseases by sex and cause 2007



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

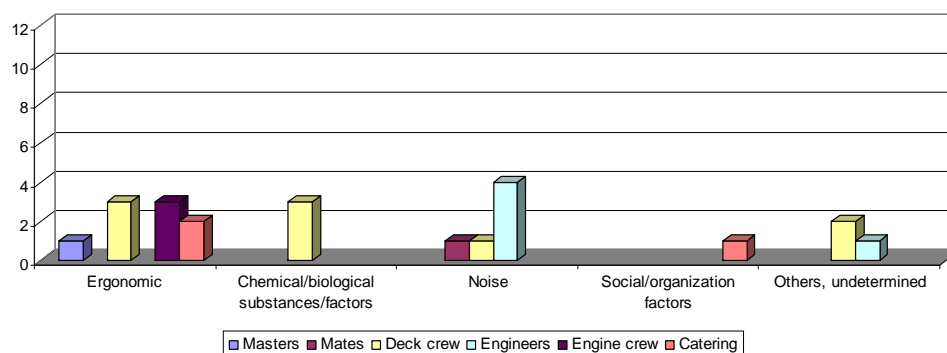
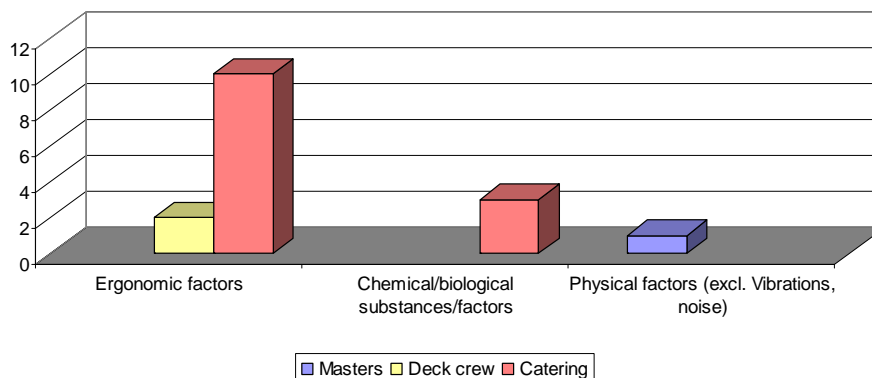


Work-related diseases by cause – manning



Cause	Ergonomic factors	Chemical /biological substance and factors	Physical factors (excl. Vibr., noise)	Vibrations	Noise	Infection	Organizational /social factors	Others undetermined	Total
Manning									
Masters	1	-	1	-	-	-	-	-	2
Mates	-	-	-	-	1	-	-	-	1
Deck crew	5	3	-	-	1	-	-	2	11
Engineers	-	-	-	-	4	-	-	1	5
Engine crew	3	-	-	-	-	-	-	-	3
Catering	12	3	-	-	-	-	1	-	16
Total	21	6	1	-	6	-	1	3	38

By cause – manning



Work-related diseases by manning, age and sex



Age Manning	16-19	20-24	25-34	35-44	45-54	55-59	60-64	>65	Total
Masters	-	2	2	3	5	-	-	-	12
Mates	-	1	1	1	.	-	-	-	3
Deck crew	-	-	-	-	1	-	-	-	1
Engineers	-	-	-	-	-	-	-	-	-
Engine crew	-	-	-	-	-	-	-	-	-
Catering	-	-	-	-	-	-	-	-	-
Total	-	3	3	4	6	-	-	-	16

Work-related diseases by manning, age and sex



Age	16-19	20-24	25-34	35-44	45-54	55-59	60-64	>65	Total
Manning									
Masters	-	4	-	2	3	-	4	-	9
Mates	1	1	-	-	1	1	1	-	3
Deck crew	-	-	-	-	-	-	-	-	-
Engineers	-	-	1	3	2	-	-	-	6
Engine crew	-	-	1	-	-	-	-	-	1
Catering	2	-	1	-	-	2	-	-	3
Total	3	5	3	5	6	3	5	-	22

Commercial fishermen

Number of occupational injuries (*occupational accidents and work-related diseases*) during 2003 – 2007.

Year	Occupational accidents of which deaths		Work-related diseases	Total
2003	8	2	7	15
2004	12	2	4	16
2005	8	1	3	11
2006	7	1	4	11
2007	8	-	1	9
Total	43	6	19	62

Commercial fishermen reported **eight (8)** occupational accidents in 2007 and **one (1)** work-related diseases.

Commercial fishermen (cont'd)

Eight (8) fishing vessels were completely lost during 2003 - 2007, four fishermen died in connection with three of these events. During 2005 another fisherman died when he fell over board.

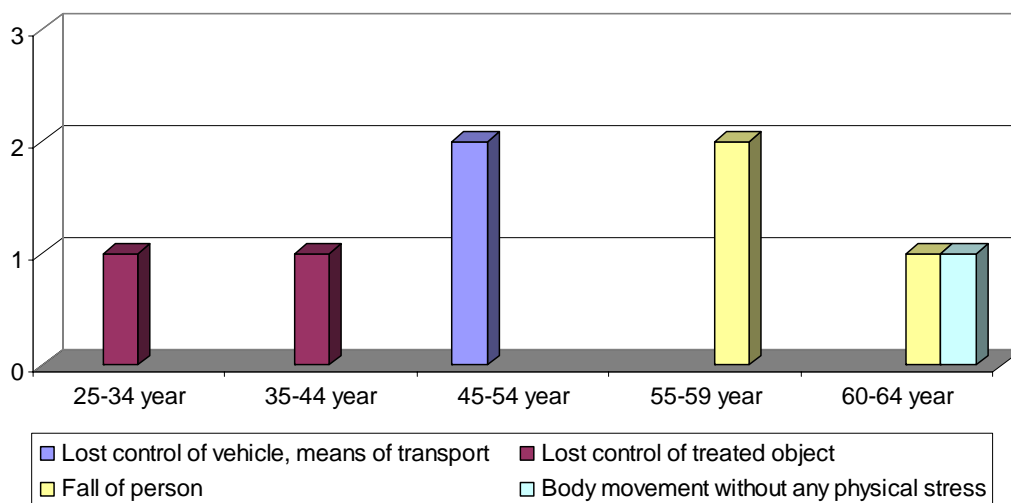
Number of vessels registered with fishing vessels licensed and number of fishermen

Information is taken from the National Board of Fisheries.

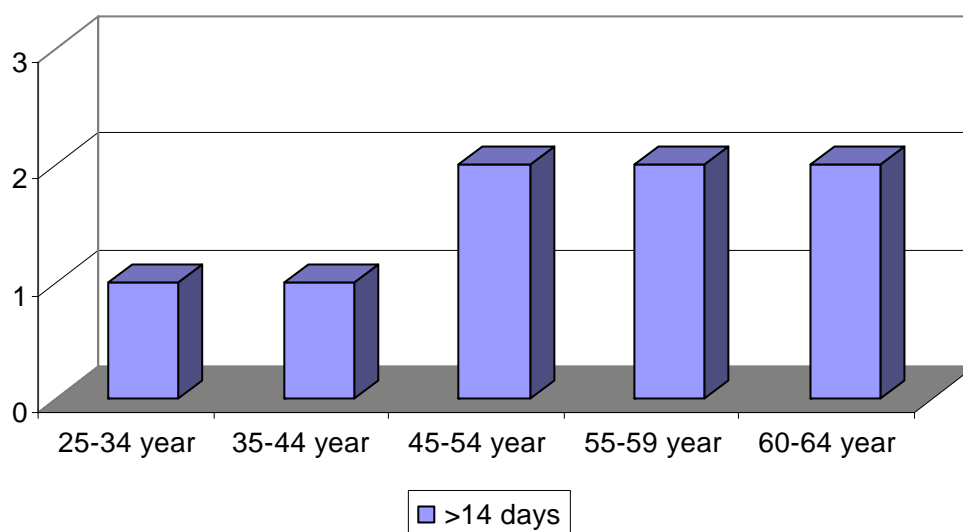
Size of vessel	- 12 m	12 - 24 m	24 m -
Number of fishing vessels	1 225	201	80

The total number of fishermen with fishing licensed by The National board of Fisheries was **1 865**.

Occupational accidents by deviation 2007



Occupational accidents by age and absence due to illness



Work-related diseases

Numbers of work-related diseases were reported in 2003 - 2007.



Year	2003	2004	2005	2006	2007
Cause					
Ergonomic factors	6	4	3	4	1
Chemical/biological substances/factors	-	-	-	-	-
Physical factors (excl. vibrations, noise)	-	-	-	-	-
Vibrations	-	-	-	-	-
Noise	-	-	-	-	-
Infection	-	-	-	-	-
Social/organization factors	-	-	-	-	-
Others, undetermined	1	-	-	-	-
Total	7	4	3	4	1

Work-related diseases by cause – age 2007



Age	16-19	20-24	25-34	35-44	45-54	55-59	60-64	>65	Total
Cause									
Ergonomic factors	-	-	-	-	-	1	-	-	1
Total	-	-	-	-	-	1	-	-	1

Passengers

By type of vessel

Type of vessel	Passenger	Tanker	General Cargo	Other	Total
Illness/suicide	7	-	-	-	7
Disappearance*)	1	-	-	-	1
Personal injuries <i>resulting in death</i>	2 1	-	-	-	2 1

* Suicide cannot be excluded in the case of disappearance

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
2007-06-28 19.08 At sea	SIAU BIRGER JARL Passenger vessel Steel 3 564 1953	A passenger was going down a staircase with rails on both sides. The staircase, which was rather narrow, was mounted longships. It ended in a space where there was a door on the right hand side and a bulkhead just below the staircase. After having passed 1/3 of the staircase the passenger suddenly fell. He hit his head and did probably break his neck.

Other on board

Typ of vessel	Passenger	Tanker	General Cargo	Other vessels	Total
Personal injuries	-	-	1	-	1