2. Statistics

※Some of the accidents referred to in this digest are under investigation, and the figures may change.

Breakdown by the type of accident and work

The number of fatal and injury accidents related to on-board works (accidents which occurred while working on vessels) which occurred during the period of 2008 to June 2012, and which the Board conducted investigations for and made the investigation reports of public was 95 (95 vessels).

By the accident type, the number of fatal accidents was 38 (40.0% of the total), while the number of injury accidents was 57 (60.0%). (See Figure 1)

By the type of works when the accidents occurred, the number of accidents during mooring and anchoring was 31 (32.6%), stevedoring 23 (24.2%), working inside tanks and holds 13 (13.7%) and engine rooms 5 (5.3%), showing that work categories of mooring, anchoring, stevedoring and working inside tanks and holds accounted for almost 70% of the total. (See Figure 2)

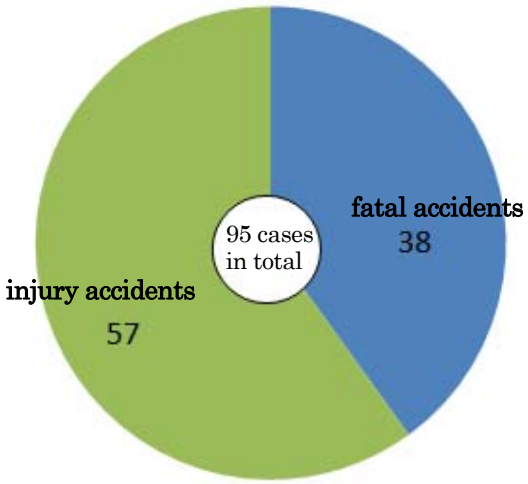

Figure 1: By the type of accidents

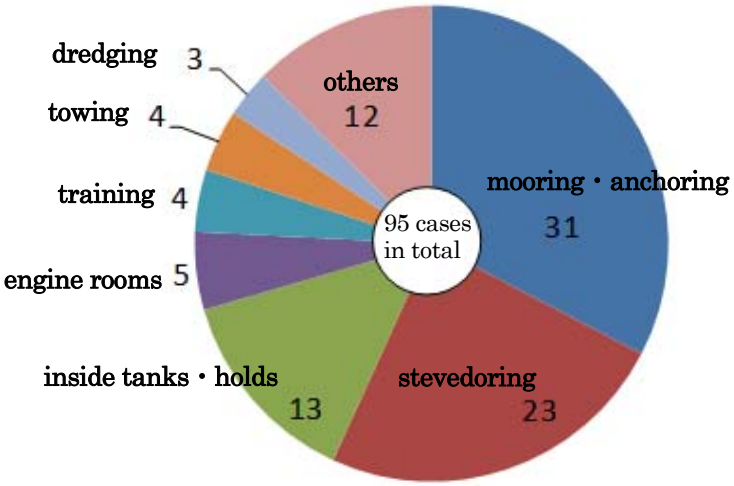

Figure 2: By the type of works

* Fatal accidents include accidents involving both the dead and injured

Breakdown of fatalities and the injured

The number of fatalities and the injured involved in 95 accidents was 116. The breakdown is, fatalities 41 (35.3%), the seriously injured 43 (37.1%) and the slightly injured 32 (27.6%). (See Figure 3)

By the occupational category, the number of crew was 84 (72.4%), while workers 30 (25.9%) and others 2 (1.7%), indicating that the number of accidents involving deaths and injuries of crew members was quite large. (See Figure 4)

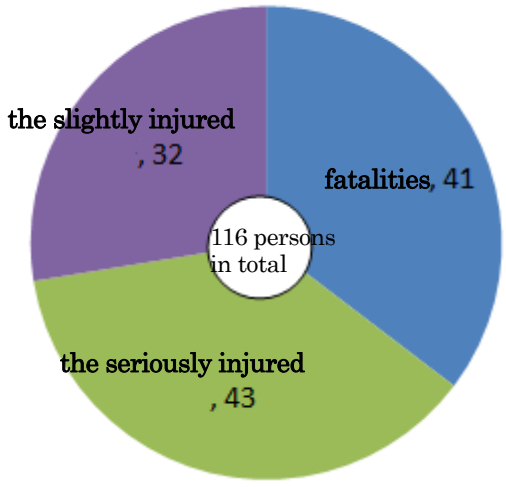

Figure 3: The number of fatalities and the injured

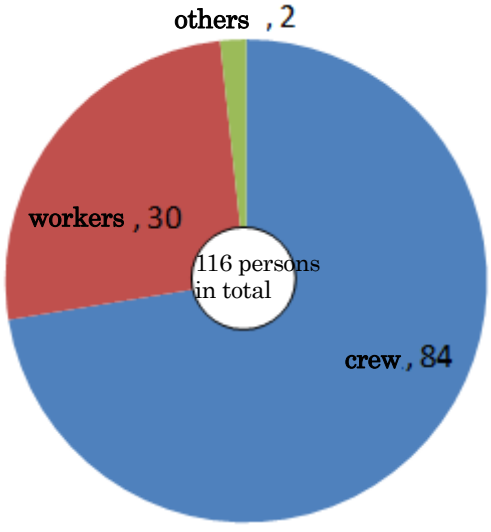

Figure 4: By the occupational category

By the type and tonnage of vessels

By the type of vessels, the number of cargo ships was 43 (45.3%), the largest among all, followed by passenger ships 13 (13.7%), oil tankers 12 (12.6%), barges 7 (7.4%) and tugboats 5 (5.3%). Cargo ships and oil tankers which are very likely to handle hazardous materials accounted for almost 60 % of the total. (See Figure 5)

By the tonnage, the number of vessels in the range of 100 to 200 tons was 18 (18.9%), 200 to 500 tons 17 (17.9%), 500 to 1,600 tons 14 (14.7%) and 1,600 to 3,000 tons 9 (9.5%), showing that vessels with a tonnage of 100 to 1,600 accounted for about 50% of the total. (See Figure 6)

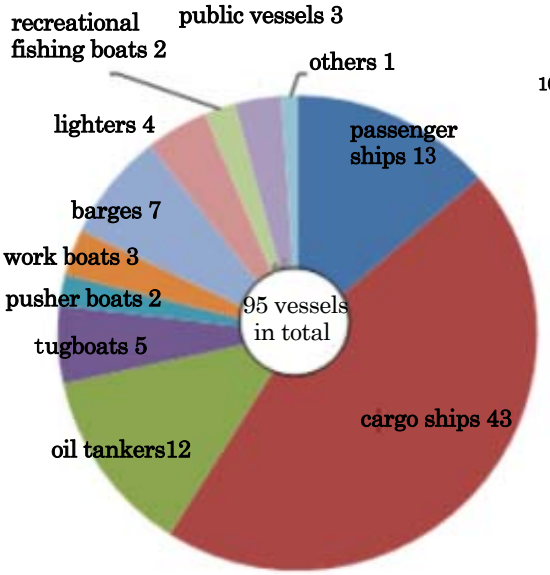

Figure 5: By the type of vessels

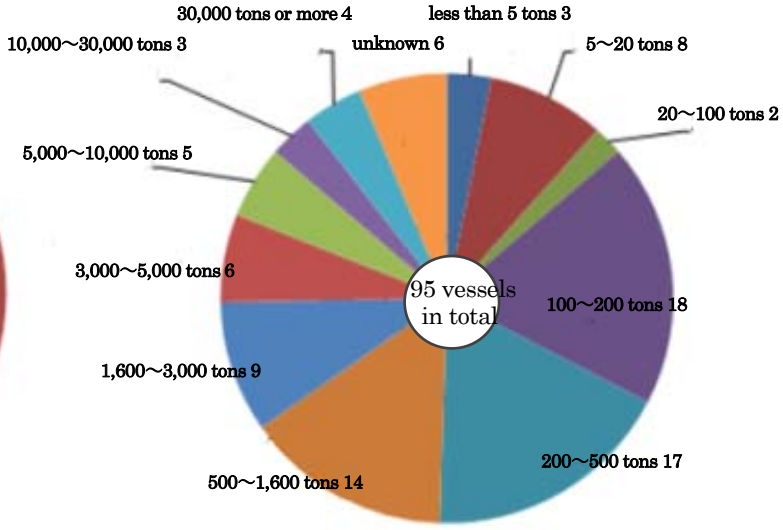

Figure 6: By the tonnage of vessels

By the registry of vessels

By the registry of vessels, the number of vessels registered in Japan was 79 (83.2%), Panama 6 (6.3%) and Hong Kong 4 (4.2%). (See Figure 7)

By the type of deaths and injuries

By the type of deaths and injuries, the number of contacts and heavy blows was 26 (27.4%), fall and man overboard 24 (25.3%), crush 23 (24.2%), caught in machinery 7 (7.4%), and anoxia and toxic gas inhalation 6 (6.3%), indicating that accidents caused by physical factors accounted for the great majority. (See Figure 8)

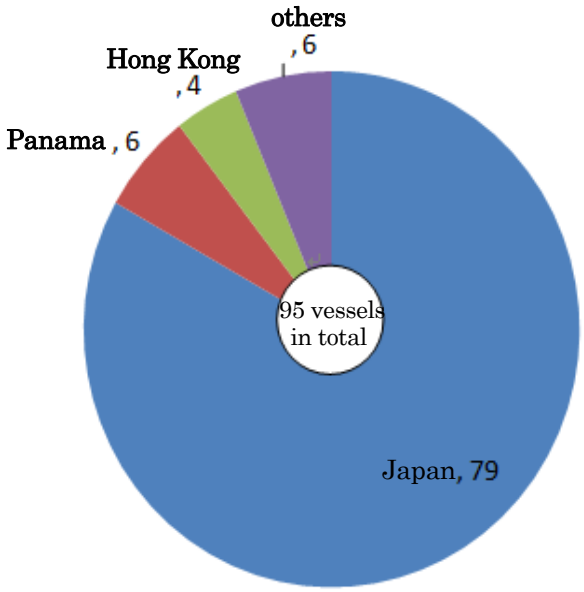

Figure 7: By the registry of vessels

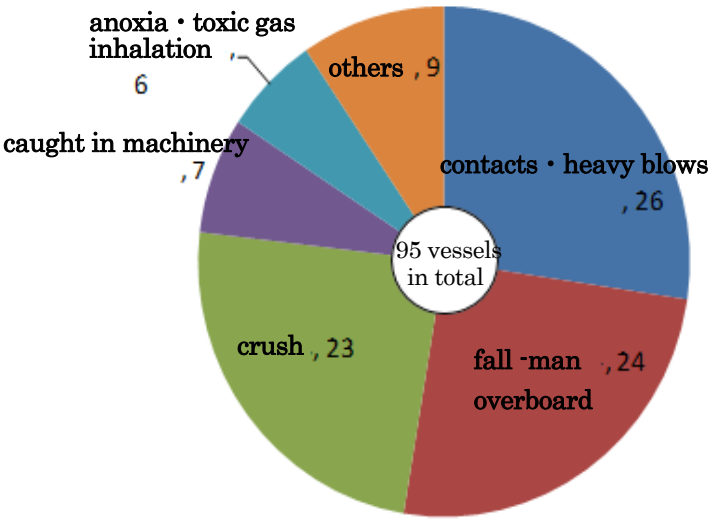

Figure 8: By the type of deaths and injures

The breakdown of work categories (By the type of deaths and injuries)

By comparing the figures for mooring and anchoring, stevedoring, and working in tanks and holds which accounted for almost 70% of all the accidents when classified by work categories, it becomes clear that the type of deaths and injuries which accounted for the most in each work category was contacts and heavy blows with 35.5% (11 cases) in the case of mooring and anchoring, fall and man overboard with 39.1% (9 cases) for stevedoring and anoxia and toxic gas inhalation with 46.1%(6 cases) for working in tanks and holds.

Also, accidents caused by crushed accounted for 25.8% (8 cases) in the case of mooring and anchoring, and 34.8% (8 cases) in the case of stevedoring, either of which showing a high occurrence ratio. (See Figure 9)

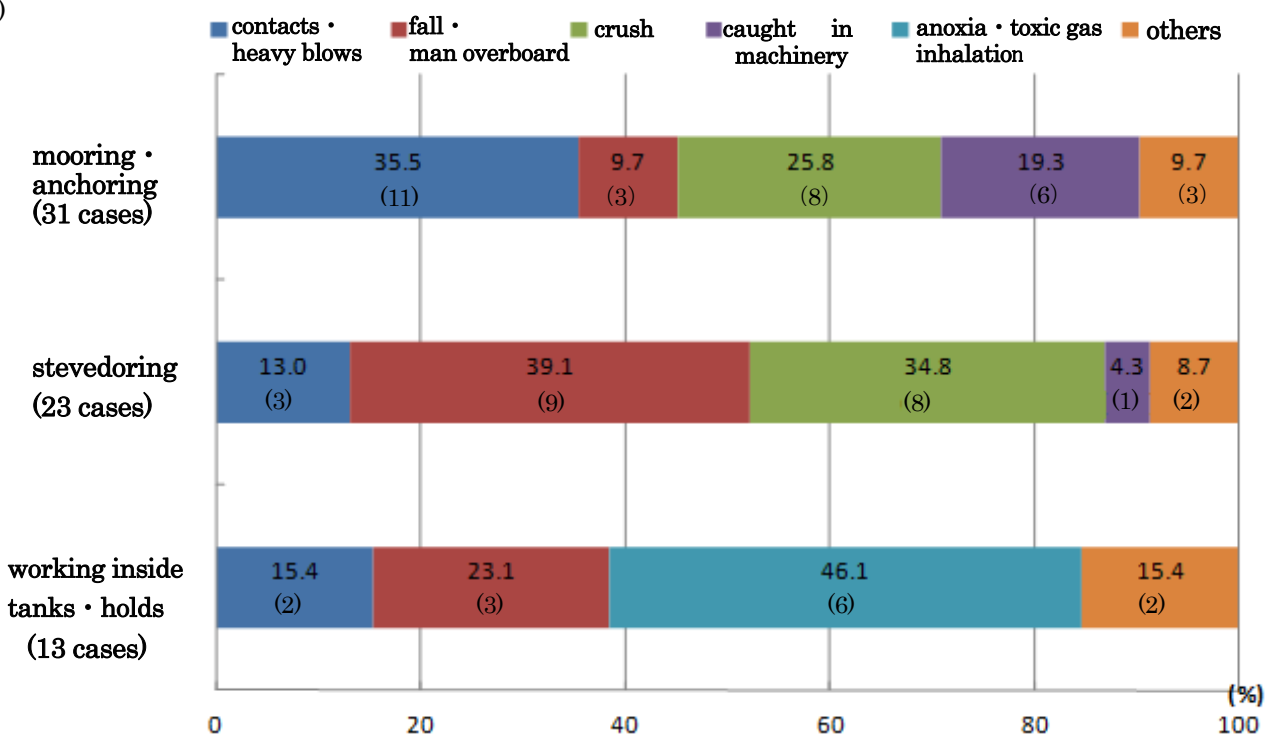

Figure 9: The breakdown of work categories (By the type of deaths and injuries)

The breakdown of work categories (By the number of fatalities and the injured)

The work category showing the largest number of fatalities and the injured was stevedoring with 35 in number, while mooring and anchoring with 31, and working in tanks and holds with 17.

In the category of working in tanks and holds, the number of fatalities accounted for as high as 82.3% (14 persons) of the total number of fatalities and the injures, which suggests the work involves a high risk of a severe accident. (See Figure 10)

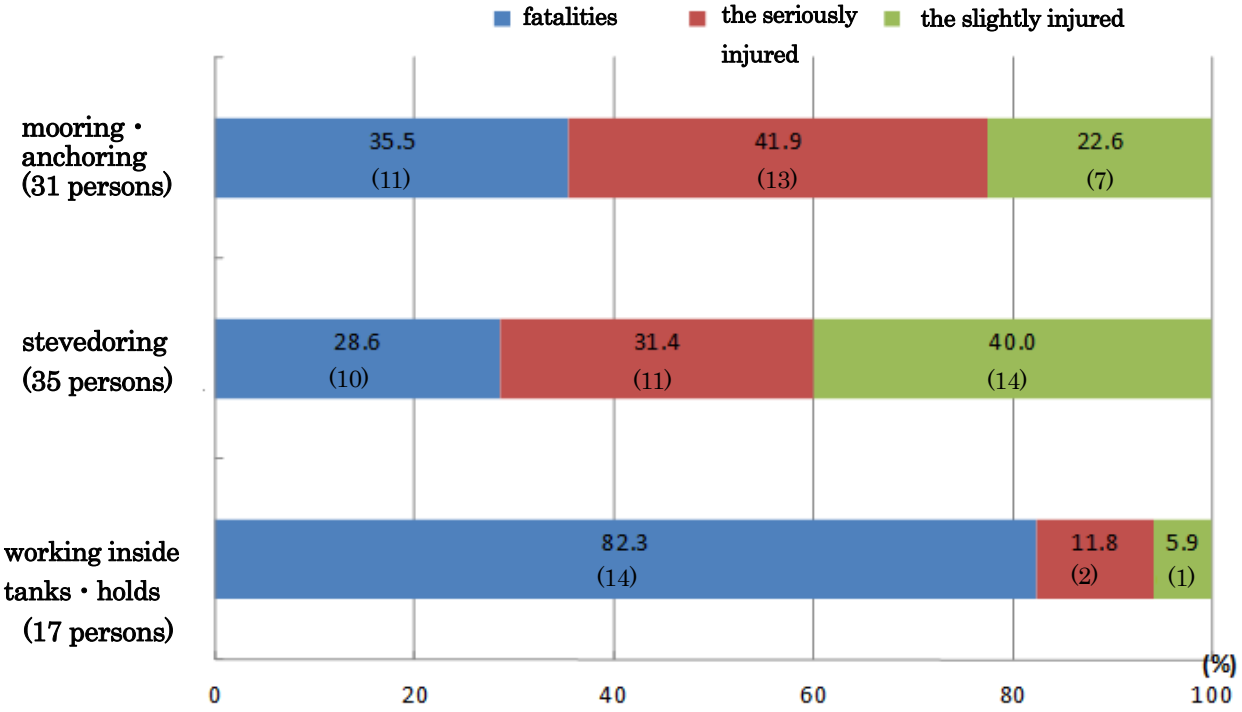

Figure10: The breakdown of work categories (By the type of deaths and injuries)

Examples of accident cases which were investigated by regional offices of the Board by type of accident and work are as follows.

Mooring・Anchoring

Contacts・Heavy Blows

・ While anchoring with spuds cast into the sea, a vessel listed to starboard, and it attempted to lift the spud on the starboard side. However, the lifting was unsuccessful with the hydraulic system only, and instead, a crane was put into operation to lift the spud from the sea, which was prohibited by the operational procedures. In the meantime an end of the wire hooked on the crane came off the crane, and the wire contacted an ordinary seaman on the left side of the head. He died of brain contusion and traumatic intracerebral bleeding.
(*) a "spud": an iron post to be stuck in the bottom of the sea for the purpose of stabilizing the vessel, which will also be used to move the vessel up and down with its gear wheel engaged with the gear wheel of the hydraulic appliance.

Caught in machinery

・While leaving shore, when an ordinary seaman was engaged in the operation of a winch to wind a mooring rope, and the rotation speed of the drum became fast because of his erroneous remote controlling. Then, he tried to stop the drum by trampling the rope, when his right foot came into an eye of the rope, and he was pulled by the rope and caught in the drum. He had his rib, pelvis and thigh bone fractured.

Stevedoring

Fall-Man overboard

・During stevedoring, an officer was about to start cleaning the floor of the cargo hold ,descending a rope ladder. As he had not inspected the rope ladder, when he weighed his whole body on a step of the rope ladder with both of his feet, these ropes which had decreased in strength were cut off both ends of the step, making him fall on the floor of the hold. He suffered an open fracture-dislocation of the left foot joint

Crush

・During stevedoring, the chief officer, positioned between the port side of a container and a guard pipe, completed a guiding operation for the container, when he got his chest pinched between the port side of the container loaded on the port side of his vessel and the guard pipe. He was crushed to death.

Working in tanks・holds

Anoxia・Toxic gas inhalation

・During discharging of tert-butyl alcohol, which is a liquid chemical substance, the chief officer entered the hold with a gas mask where the oxygen level became low because of the nitrogen gas which was injected as an inert gas, and he came to inhale the air with low oxygen concentration. In view of the fact that, upon noticing a drain plug was not installed inside the tank, the chief officer was in a hurry for the installation in the tank, and it is considered somewhat likely that the chief officer entered the tank because he forgot that nitrogen gas had been injected into the tank. The chief officer died from suffocation resulting from anoxia.

Fall-Man overboard

・ While engaged in decompressing a cargo tank, an ordinary seaman entered a hazard area and stood in front of the gas outlet, and he was blown off by the pressure of the gas being emitted and fell into the sea. It is considered somewhat likely that insufficient notification of the measures for keeping out of hazard areas contributed to his entering the hazard area and standing in front of the gas outlet. The ordinary seaman died from drowning.