

**International Association of Classification Societies  
(IACS)**

**FSA of Bulk Carriers  
Fore-end Watertight Integrity**

**Annex 6  
Casualty Lists**

### Examples of identified serious casualties, including total losses, from the LMIS casualty database in the period from 1978 to 1998.

*Note:* In the following tables, *Italic characters* in the column “Description” show supplementary description from some data source other than LMIS casualty database.

**Table 1 Examples of identified or speculated cases involving cargo hold flooding due to structural failure excluding stranding, collision, etc. (Speculated cases are indicated in ID adding asterisk like 3\*)**

| ID | NAME            | CL1 | DWT    | Date of event | Description   | Note                                   | Total loss indicator | Number of fatalities | Age of ship at casualty | Number of Cargo Hold |
|----|-----------------|-----|--------|---------------|---|--|----------------------|----------------------|-------------------------|----------------------|
| 2  | SALVIA          | KR  | 153256 | 19910209      | Sustained crack in shell plating and No.1 hold flooded in lat.26 20N, long.155 12E, on 9/2/91; subsequently sank in lat.24 15N, long.154 33E, on 10/2/91. All 28 crew members rescued.  | No.1 hold flooded<br>Ore loaded        | 1                    | 0                    | 21                      | 12                   |
| 3* | MINERAL DIAMOND | NV  | 141028 | 19910411      | Sailed from Dampier, W.A., on 11/4/91 for Ymuiden, last reported in lat.30 21S, long.87 48E, on 17/4/91 in heavy weather due to cyclone 'Fifi' and not since heard of. <i>'In the absence of any other plausible explanation,' concluded the investigators of the mineral diamond, 'It seems most likely that a major structural failure of her hull, which resulted in her breaking in two, is the cause of her sinking.'</i> [Lloyd's List, 15 Oct.,1991] | Broke in two<br>Ore loaded             | 1                    | 26                   | 9                       | 9                    |
| 5  | IOLCOS VICTORY  | NK  | 132597 | 19960914      | Foundered 107 miles S. of Cape St. Francis in lat.35 57S, Long.24 38E, on 14/9/96 after holds flooded in heavy weather. 20 rescued, 5 dead. Nos.1,2 and 3 holds flooded.  | No.1,2&3 holds flooded<br>Ore loaded   | 1                    | 5                    | 16                      | 9                    |
| 6* | APOLLO SEA      | LR  | 131305 | 19940620      | Foundered 40 miles N.W. of Cape Town on 20/6/94 in heavy weather. The emergency position indicating radio beacon, two dinghies, lifejackets, lifebelts and the binnacle of the compass were washed ashore at Cape Town. 36 missing.   | Detail unknown<br>Ore loaded           | 1                    | 36                   | 21                      | 9                    |
| 9  | KAMARI          | NV  | 127283 | 19940225      | Sustained heavy weather damage whilst on voyage from Boca Grande terminal, Ven., to Beilun and taken to Punta del Este 25/2/94. Subsequently towed to a position 75 miles S.E. of Rio Grande where sank on 6/6/94. Estimated 150 tons of steel required renewal. Leakage in Nos.1,2,3 & 8 holds. Reported sections of frames missing. Internal structural problems involved frames and brackets. Frames detached from shell plate.                          | No.1,2,3&8 holds flooded<br>Ore loaded | 1                    | 0                    | 21                      | 9                    |

**Table 2 Examples of identified cases involving other compartment flooding due to structural failure excluding stranding, collision, etc.**

| ID  | NAME             | CL1 | DWT    | Date of event | Description   | Note   | Total loss indicator | Number of fatalities | Age of ship at casualty | Number of Cargo Hold |
|-----|------------------|-----|--------|---------------|---|--|----------------------|----------------------|-------------------------|----------------------|
| O4  | KARADENI Z S     | BV  | 115280 | 19920330      | Engine room flooded in lat.36 14N, long.12 36W, on 30/3/92 in heavy swell and abandoned by crew; subsequently broke in two and both parts sank in lat.35 57N, long.11 40W, on 1/4/92.   | E/R flooded<br>Ore loaded                    | 1                    | 0                    | 23                      | 9                    |
| O29 | CHIAN MARINER    | BV  | 35224  | 19980411      | Took water in engine room in lat.17 18S, long.08 54E, on 10/4/98. Abandoned by crew. Developed list and drifted. Foundered 160 miles off the coast of Angola, in lat.16 58 34S, long.09 06 30E, 11/4/98. All 25 crew rescued. Vessel sank in 4,000 metres of water.   | E/R flooded<br>Manganese ore loaded          | 1                    | 0                    | 24                      | ?                    |
| O35 | CORAZON          | AB  | 28757  | 19900731      | Took water in lat.40 32N, long.62 47W, on 31/7/90 during hurricane 'Bertha'. Subsequently foundered 340 mls off Cape Cod on 2/8/90 in heavy seas. Part of the bow torn away and the keel broken amidships, causing it to buckle in the middle.  | FPT flooded<br>Broke in two<br>Cement loaded | 1                    | 6                    | 18                      | 7                    |
| O41 | JAG SHANTI       | LR  | 27071  | 19940528      | Engine room flooded 100 n.mls off new Mangalore on 28/5/94 after sprang leak. Towed and anchored 25 miles off New Mangalore. Subsequently sank 4/6/94 whilst in tow. Crew rescued. Salvage tugs pumped out water from engine room.  | E/R flooded<br>Pellets loaded                | 1                    | 0                    | 22                      | 7                    |
| O44 | STAR CARRIER     | KR  | 25110  | 19870622      | Engine room flooded in lat.30 55N, long.133 10E, on 22/6/87 and vessel abandoned by crew; subsequently listed and sank in lat.31 28 03N, long.132 05 07E, on 25/6/87 in heavy seas. All 24 crew members rescued.  | E/R flooded<br>Scrap iron loaded             | 1                    | 0                    | 20                      | 6                    |
| O52 | IMAN             | LR  | 27398  | 19960720      | Engine room flooded 39 n miles W. of Taiwan on 20/7/96. Towed to Xiamen and broken up. All crew rescued.  | E/R flooded<br>Cement clinker loaded         | 1                    | 0                    | 24                      | ?                    |
| O53 | CAPTAIN VENIAMIS | NV  | 25575  | 19920125      | Beached off Ui Do in lat. 34 35 30N., long. 125 52 00E., on 25/1/92 after sprang leak in heavy weather. Refloated with tug assistance 1/2/92. Subsequently towed to Yantai and thence to Qinhuangdao. Sold for breaking up. Forepeak tank and deep tank flooded to sea level, and Nos. 1 & 2 double bottom tanks and port side sludge tank in engine room full. | FPT & DT flooded<br>Calcium Nitrate loaded   | 1                    | 0                    | 25                      | 7                    |

**Table 3 Examples of identified cases involving water ingress due to failure of hatch cover or coamings**

| ID  | NAME            | CL1 | DWT   | Date of event | Description   | NOTE  | Total loss indicator | Number of fatalities | Age of ship at casualty | Number of Cargo Hold |
|-----|-----------------|-----|-------|---------------|---|---|----------------------|----------------------|-------------------------|----------------------|
| H4  | NAGOS           | ?   | 74543 | 19930526      | Took water in holds and sank approximately 70 miles of Port Elizabeth, in lat.35 15S, long.24 01E, on 26/5/93 in heavy weather. 16 crew members rescued and 17 missing.<br><i>Sank...after a hold flooded when a hatch cover was washed away [Lloyd's List, 28 May, 1993]</i>   | Hatch cover washed away<br>Probably No.1 hold flooded<br>Coal loaded  | 1                    | 17                   | 24                      | 8                    |
| H8  | CHANDRA GUPTA   | LR  | 37685 | 19780105      | Reported foundered 1000 mls N.W. of Hawaii Islands in approx. lat.37.00N, long.105.20W, on 5.1.78 in heavy weather. Abandoned in sinking condition during very heavy weather, one pontoon of hatch cover of No.1 hold lost overboard. Presumably sank and 69 persons reported missing.  | Pontoon hatch cover washed away<br>No.1 hold flooded<br>Sank<br>Wheat loaded  | 1                    | 69                   | 15                      | ?                    |
| H9  | MARINA DI EQUA  | LR  | 32818 | 19811229      | Sprang leak in No.1 hold and sank off N.W. Spain in lat.45 41N, long.09 54W, on 29/12/81 in heavy weather. No.1 hold reported open and shipping water. Report received 1355gmt.   | Hatch cover opened<br>No.1 hold flooded<br>Sank<br>Steel loaded   | 1                    | 30                   | 9                       | ?                    |
| H10 | MEZADA          | LR  | 31554 | 19810307      | Foundered about 76 miles east of Bermuda in lat.31 58N, long.62 55W, on 8/3/81 after taking water and flooding in No.1 hold in heavy weather on 7/3/81. 12 crew dead and 12 missing. Vessel lost a hatch to No.1 hold on 7/3/81 in heavy weather, which consequently flooded.   | Hatch cover washed away<br>No.1 hold flooded<br>Sank<br>Potash loaded   | 1                    | 24                   | 21                      | ?                    |
| H18 | CHRISTINA KI    | LR  | 26510 | 19940203      | Foundered 240 miles S.W. of Cork in lat.48 48 03N, long.13 37 28W, on 3/2/94 after taking water in heavy weather. 27 crew missing. Hatches over No.1 hold were reported open due to heavy weather.  | Hatch cover had been open<br>No.1 hold flooded<br>Sank<br>Scrap metal loaded  | 1                    | 27                   | 21                      | 5                    |
| H19 | MARINE ELECTRIC | AB  | 25985 | 19830212      | Reported took water through forward hatches, capsized and sank during heavy weather 30 miles off Chincoteague Island Virginia, on 12/2/83. Crew at USCG enquiry alleged hatch covers to have been rusted, warped & with improper gaskets & lacked wedges to force panels together. Owners however maintain anchor swung free & holed the hull. Crew abandoned ship as bow went under. Vsl capsized & sank 90 mins later. 24 bodies recovered, 9 missing. 3 survivors taken to hospital. | Hatch cover had been non-tight due to poor maintenance<br>FPT holed due to anchor hit<br>No.1 hold & FPT flooded<br>Sank<br>Coal loaded | 1                    | 33                   | 39                      | 6                    |

**Table 4 Examples of identified cases involving fore end flooding**

| ID  | NAME               | CL1 | DWT    | Date of event | Description   | NOTE   | Total loss indicator | Number of fatalities | Age of ship at casualty | Number of Cargo Hold |
|-----|--------------------|-----|--------|---------------|---|--|----------------------|----------------------|-------------------------|----------------------|
| F2  | DERBYS HIRE        | LR  | 169044 | 19800909      | Last reported at 0930 gmt on the same day during a typhoon. Parts of a wreck have been located approximately 71 km N.N.E. of the last reported position of the ship. An extensive search by the research ship 'Shin Kai Maru' in June, 1994 followed by a further expedition in July, 1996 confirmed sections of the wreck as belonging to the 'Derbyshire'. Further visits to the wreck site have reportedly taken place. A UK/EC assessors report into the loss of Vsl was published 12/3/98. | Fore end part incl. fore peak tank flooded<br>No.1 hold progressively flooded<br>Sank (by UK/EC assessor's report)<br>Ore loaded | 1                    | 44                   | 4                       | 9                    |
| F15 | ARTEMIS            | BV  | 30190  | 19801227      | sank in lat. 31 00n., long. 144 00e., on 28/12/80. after flooding in forepeak and no 1 hold on 27/12/80 in heavy weather. 23 crew rescued by japanese patrol boat before vessel sank.   |  | 1                    | 0                    | 7.00                    |                      |
| F16 | CAPTAIN VENIAMI S  | NV  | 25575  | 19920125      | beached off ui do in lat. 34 35 30n., long. 125 52 00e., on 25/1/92 after sprang leak in heavy weather. refloated with tug assistance 1/2/92. subsequently towed to yantai and thence to qinhuangdao. sold for breaking up. forepeak tank and deep tank flooded to sea level, and nos. 1 & 2 double bottom tanks and port side sludge tank in engine room full.   |  | 1                    | 0                    | 25.00                   |                      |
| F3  | MINERAL LUXEMBOURG | LR  | 75203  | 19820216      | Sustained heavy weather damage whilst on voyage from Narvik to Antwerp between 16-19.2.82. Repairing at Antwerp. Took water in forepeak. 3 electric motors water dam. And Electricals in way dam. Sundry deck fittings torn/destroyed. Main engine exhaust collector dam. By explosion.   | Closing device for bos'n store damaged<br>Bos'n store flooded<br>Unknown cargo   | 0                    | 0                    | 5                       | 7                    |
| F4  | MARATHA MARINER    | LR  | 65085  | 19830920      | Sustained flooded forepeak space and consequent water damage to 3 electric motors and a starter in Pacific Ocean between 20-23/9/83. Continued on to Japan where repairs effected. Damage reported extensive.   | Closing device for bos'n store damaged<br>Bos'n store flooded<br>Grain loaded  | 0                    | 0                    | 7                       | 6                    |

**Table 5 Examples of excluded cases from the evaluation, e.g. cargo shift, valve/piping failure, accident whilst loading/discharging/ballasting, etc.**

| ID | NAME         | CL1 | DWT   | Date of event | Description  | Note  | Total loss indicator | Number of fatalities | Age of ship at casualty | Number of Cargo Hold |
|----|--------------|-----|-------|---------------|--|---|----------------------|----------------------|-------------------------|----------------------|
| E1 | ESMERALD A I | LR  | 36800 | 19911010      | Sustained damage to Nos.1 and 5 holds after containers shifted in heavy weather while on voyage from Hong Kong to Long Beach, Ca., 10-17/10/91. Surveyed at Arica 4/11/91; subsequently arrived Hong Kong 20/1/92. Sailed 14/2/92. No.1 hold flooded.  | Cargo shifted<br>No.1 hold flooded<br>Containers loaded   | 0                    | 0                    | 7                       | 5                    |
| E2 | MEGA TAURUS  | NK  | 30413 | 19881216      | Sailed from Hinatuan for Hachinohe, Aomori pref., on 13/12/88. Last reported in difficulties in lat.18 55N, long.130 14E, on 16/12/88 in rough seas and not since heard of.  | Cargo shifted<br>Capsized<br>Nickel ore loaded            | 1                    | 20                   | 8                       | 5                    |
| E3 | ARTEMIS      | BV  | 30190 | 19801227      | Sank in lat.31 00N, long.144 00E, on 28/12/80. After flooding in forepeak and No.1 hold on 27/12/80 in heavy weather 23 crew rescued by Japanese patrol boat before vessel sank.   | Cargo shifted<br>FPT & No.1 hold flooded<br>Timber loaded | 1                    | 0                    | 7                       | ?                    |
| E4 | OCEAN ORCHID | NK  | 26369 | 19960220      | Took water in lat.52 01N, long.148 48W, on 20/2/96 after cargo shifted in heavy weather. Vessel proceeded to Dutch Harbor, Ak., where arrived 23/2/96. Repairs effected. Sailed 5/3/96 for Japan.  | Cargo shifted<br>No.5 hold flooded<br>Logs loaded         | 0                    | 0                    | 5                       | ?                    |
| E5 | CAPE ANTIBES | LR  | 24090 | 19850815      | Sustained heavy weather damage whilst on voyage from Durban to Punta Arenas on 15/8/85; subsequently arrived Valparaiso 7/9/85, where some sea worthiness repairs effected. Sailed 9/9/85 for Antofagasta. Part of the containers stowed on deck broke their lashing elements and nine containers fell into the sea, causing damage to side rails, port side E strake plating holed between frames 83 and 84 by containers in water and No.4 hold flooded up to 60 cm. | Cargo shifted<br>No.4 hold flooded<br>Container loaded    | 0                    | 0                    | 13                      | 5                    |
| E6 | GARZA STAR   | NK  | 23757 | 19850423      | Took water, cargo shifted and vessel listed 40 degrees to (s) 690 miles W. of Vancouver Island in lat.50 27N, long.137 06N, at 0500hrs., 23/4/85 in heavy weather. Towed to Seattle where temporary repairs effected. Later trading. Crew rescued. Deck cargo of logs lost. Accommodation flooded.   | Cargo shifted<br>Accom. flooded<br>Logs loaded            | 0                    | 0                    | 8                       | 4                    |

**Table 5 Example of fatal casualties due to water ingress caused by collision, contact, etc.**

| ID | NAME            | CL1 | DWT    | Date of event | Description   | Note   | Total loss indicator | Number of fatalities | Age of ship at casualty | Number of Cargo Hold |
|----|-----------------|-----|--------|---------------|---|--|----------------------|----------------------|-------------------------|----------------------|
| C1 | MINERAL DAMPIER | NV  | 170698 | 19950622      | Sank after collision with m bulk carrier 'HANJIN MADRAS' approximately 160 miles s. of Cheju inland in lat. 30 32n., long. 126 15e., on 22/6/95 in fog. 2 crew dead and 25 missing.   | Unknown hold flooded<br>Sank<br>Iron ore loaded            | 1                    | 27                   | 9                       | 9                    |
| C2 | ICL VIKRAMAN    | IR  | 55881  | 19970926      | Broke in two and sank after collision with OBO MV 'MOUNT I' off port Dickson, in lat. 02 18n., long. 101 51e., on 26/9/97 in poor visibility. 5 crew rescued, 2 dead, 27 missing. Vessel sank in 19 metres of water.  | Unknown hold flooded<br>Broke in two<br>Steel coils loaded | 1                    | 29                   | 18                      | ?                    |
| C3 | FIDELITY        | LR  | 28124  | 1984/5/18     | Struck by missiles and sank off Bushire in lat. 28 28 30n., long. 50 45 00e., on 18/5/84. Three crew missing.   | Unknown hold flooded<br>Steel loaded                       | 1                    | 3                    | 17                      | 6                    |
| C4 | YOU XIU         | NK  | 26802  | 19950104      | Struck breakwater shoal and sank in Constantza Roads in lat. 44 07n., long. 28 42e., on 4/1/95 after engine trouble in heavy weather. Six crew dead and 21 missing.   | Unknown hold flooded<br>Empty                              | 1                    | 27                   | 3                       | 5                    |
| C5 | ANNA SPIRATOU   | LR  | 26098  | 19960615      | Sank after collision with MBC 'POLYDEFKIS P.' off Pusan in lat. 34 39 90n., long. 128 55 03e., on 15/6/96 in dense fog. Vessel sank in 90 metres. 26 missing.   | Unknown hold flooded<br>Steel billets loaded               | 1                    | 26                   | 18                      | ?                    |
| C6 | PARIS           | BV  | 25957  | 19950104      | Struck breakwater and sank in Constantza Roads in lat. 44 07 33n., long. 28 42 01e., on 4/1/95 after not being able to heave anchors in heavy weather. 3 crew dead and 24 missing.  | Unknown hold flooded<br>Empty                              | 1                    | 27                   | 23                      | 5                    |
| C7 | OCEAN ACE       | LR  | 24740  | 19810821      | Damaged by collision with MV 'SALIX' in approximately lat. 35 20n., long. 129 28e., on 21/8/81. Taken in tow but subsequently sank in lat. 35 27 55n., long. 129 25 45e., on 23/8/81 in 30 metres of water. Damaged iwo (p)engine room. E.R. & No.5 hold flooded. 1 crew missing. | No.5 hold & E/R flooded<br>Steel products loaded           | 1                    | 1                    | 4                       | ?                    |
| C8 | STAR K.         | NV  | 22639  | 19780719      | Damaged by collision with by m container vessel 'TAIWAN PHOENIX' s. of Kodiak, ak., in lat. 47 34n., long. 154 39w., 19/7/78 in fog. Towed to Portland, or.; subsequently sank 300 miles w. of wake island 25/3/80 whilst in tow.   | Unknown hold flooded<br>Ballast                            | 1                    | 2                    | 17                      | ?                    |

**REFERENCES;**

**ClassNK (1992): Nippon Kaiji Kyokai, Study report on bulk carriers loss, 1992.**

**Japan (1981): MOT of Japan , Technical study report relating to the accident on “ONOMICHI MARU” (in Japanese), 1981.**