

SUB-COMMITTEE ON CARRIAGE OF  
CARGOES AND CONTAINERS  
6th session  
Agenda item 5

CCC 6/INF.7  
10 June 2019  
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## **AMENDMENTS TO THE IMSBC CODE AND SUPPLEMENTS**

### **Analysis on accidents 1999-2018 in relation to solid bulk cargoes**

**Submitted by United Kingdom and IBTA**

#### **SUMMARY**

*Executive summary:* This document presents the data analysis used as a basis to recommend proposed amendments to the IMSBC Code and Revised recommendations for entering enclosed spaces aboard ships (resolution A.1050(27)). Reference is made in document CCC 6/5/6.

*Strategic direction,  
if applicable:* Other work

*Output:* OW 9

*Action to be taken:* Paragraph 5

*Related documents:* CCC 6/5/4 and CCC 6/5/6

#### **Introduction**

1 This document contains the corresponding data in relation to document CCC 6/5/6, "Analysis of bulk carrier-related fatalities 1999-2018" (United Kingdom et al.). The data analysis has been carried out by Vistrato Limited.

2 In connection with cargo hold atmosphere gas monitoring, paragraph 9.4 of document CCC 6/5/4 (United Kingdom) also references the same accident statistic dataset as evidence that a lot more can be done in the monitoring and control side of transport of solid bulk cargoes during actual transport. Evidence shows that the majority of accidents follows a loaded voyage (when the hold space atmosphere has had time to deteriorate) when unloading the cargo, and is not only limited to ships' personnel.

3 There are indications that most deaths occur in the vicinity of point of entry or very close to it and, despite the recommendations in resolution A.1050(27), many people continue to die. Put simply, a more systematic method for addressing the hazards is needed (and perhaps even, "enclosed space entry" needs to be the "fifth" basic STCW requirement).

4 In order to reduce the translation and resource burdens, this accident analysis data has been reproduced as an information document.

**Action requested of the Sub-Committee**

5 The Sub-Committee is invited to note the information provided in the introduction and annex to this document when considering documents CCC 6/5/4 (United Kingdom) and CCC 6/5/6 (United Kingdom et al.)

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## **CCC 6/INF./7 - ATTACHMENT 1**

### **Analysis of Accidents 1999-2018 Related to Solid Bulk Cargoes.**

#### **Introduction**

The marine casualty and incident data presented here is for information purposes only. This data is extracted from a range of sources including flag and port state accident investigation reports and IMO, MARS, MAIF, P&I Club and media reports of accidents worldwide for which investigation reports have yet to be completed or published, as listed below. It is not intended to be a full and complete list of such accidents and it is likely that the actual number of such accidents is greater than what is listed here.

#### **Findings**

The research identified at least 106 reported accidents between 1999 and December 2018 in which at least 140 people, including 90 seafarers and 50 shore workers, lost their lives due to asphyxiation, toxic gas poisoning, explosion or fire on ships carrying solid bulk cargoes.

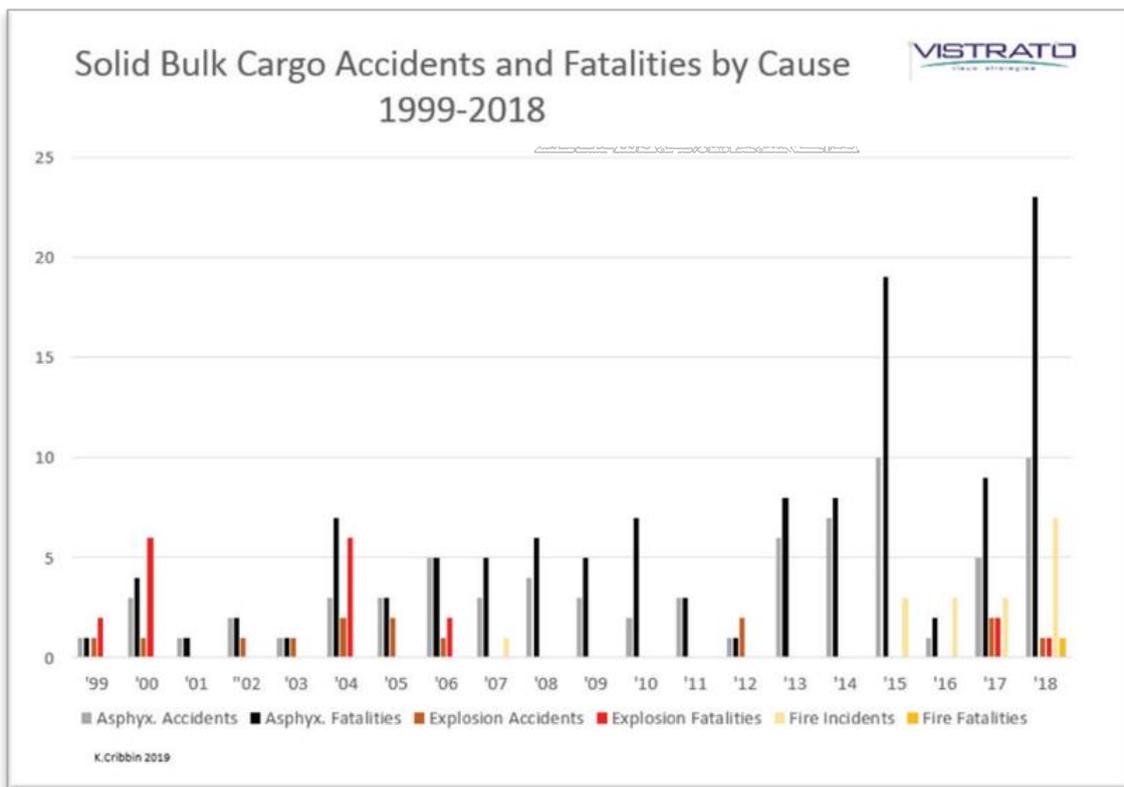
Of at least 118 people who died due to asphyxiation, 86 died on hold access ladders or in hold access trunks. Another 27 died in cargo holds and five in adjacent spaces. A further 19 people died in cargo related explosions and one died by fire. Two were struck by falling cargo. Some 64 of these accidents happened on ships in port while 30 happened on ships at sea. Of the accidents in ports, 47 happened during unloading operations, resulting in 79 fatalities while another three happened during loading operations, with three fatalities. A significant number of the accidents resulted in multiple fatalities, some involving both ship and shore workers.

The research indicates that a disproportionate number of general cargo ships, particularly coastal bulker type vessels, were involved in these accidents. General cargo ships carrying solid bulk cargoes were involved in 32 accidents resulting in 45 fatalities or some 32% of the total number of accidents and fatalities in which the ship type is identifiable. Accidents on Handysize bulkers resulted in 24 fatalities, with 19 fatalities on Handymaxes, eight fatalities on Handymax general cargo ships (forest product carriers), 10 on Panamaxs, two on post- Panamaxs and three on Capesize bulk carriers.

The cargoes involved were all covered by the IMSBC Code, apart from accidents involving oxygen depletion in holds containing grain and also timber that may have been packaged. The two most dangerous cargoes are wood products-general (43 fatalities) and coal (34 fatalities).

For the purpose of this review all accidents that involve timber have been included as wood products – general, including timber that may have been packaged. Timber in packaged form is as liable to cause oxygen depletion and an increase in carbon dioxide in the cargo space and adjacent spaces as the same timber when handled in bulk. However, it is not covered under the IMSBC Code's individual schedule for wood products-general, is not covered by the IMDG Code and is shipped in open stow in general cargo ships and bulk carriers.

In terms of the atmospheric conditions in the cargo holds that gave rise to these accidents, almost all the cargoes involved in asphyxiation accidents were listed in their individual schedules in the IMSBC Code as likely to cause oxygen depletion due to the emission of carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO) or both. All the cargoes involved in explosions list hydrogen gas emissions as a hazard, with some also listing methane emissions.



*Accidents involving Solid Bulk Cargoes / © 2019 Kevin Cribbin, Vistrato Limited.*

On the basis of these reports, 2018 has been the worst year on record for solid bulk cargo related accidents and fatalities.

If this continuing loss of life is to be avoided, then more systematic, standardised, hazard identification and risk assessment procedures need to be put in place and implemented by every ship and every port facility involved in shipping of solid bulk cargo.

**Action**

IBTA is submitting a paper to IMO proposing a number of amendments to the IMSBC CODE and IMO A/1050(27) (Revised recommendations for entering enclosed spaces aboard ships) in relation to the safe handling of solid bulk cargoes which would make it mandatory for a systematic, standardized, risk assessment to be carried out whenever the loading, carriage and unloading of solid bulk cargoes is proposed or planned on any ship.

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## ACCIDENT PATTERN ANALYSIS

**106 accidents identified involving solid bulk cargoes on board ships between 1999–2018:**

<b>HOW MANY FATALITIES?</b>	<b>140</b>	<input type="checkbox"/> Total Fatalities			
<b>WHAT WAS CAUSE OF DEATH?</b>	<b>118</b>	<input type="checkbox"/> Numerous injuries, including brain injury, to ship and shore personnel			
	<b>19</b>	<input type="checkbox"/> Deaths due asphyxiation and/or carbon monoxide poisoning			
	<b>1</b>	<input type="checkbox"/> Deaths due cargo related explosions			
	<b>2</b>	<input type="checkbox"/> Death due cargo related fire			
<b>WHAT TYPE OF ACCIDENTS?</b>	<b>73</b>	<input type="checkbox"/> Deaths due struck by falling cargo			
	<b>14</b>	<input type="checkbox"/> Enclosed space (asphyxiation /carbon monoxide poisoning) / Two Falling Cargo			
	<b>17</b>	<input type="checkbox"/> Explosions			
<b>WHO DIED?</b>	<b>50</b>	<input type="checkbox"/> Fires (including three incidents of thermal decomposition)			
	<b>90</b>	<input type="checkbox"/> Shore workers - 47 (asphyxiation) / 1 (fire) / 2 (struck by)			
<b>WHERE DID ASPHYXIATION ACCIDENTS OCCUR?</b>	<b>57</b>	<input type="checkbox"/> Seafarers – 71 (asphyxiation) / 19 (explosion)			
	<b>12</b>	<input type="checkbox"/> Asphyxiation accidents in hold access trunks and ladders	<input type="checkbox"/> 86 Fatalities		
	<b>4</b>	<input type="checkbox"/> Asphyxiation accidents in cargo holds	<input type="checkbox"/> 27		
<b>WHERE DID EXPLOSION/FIRE ACCIDENTS OCCUR?</b>	<b>11</b>	<input type="checkbox"/> Asphyxiation accidents in adjacent spaces	<input type="checkbox"/> 5		
	<b>1</b>	<input type="checkbox"/> Explosions in cargo holds	<input type="checkbox"/> 9 Fatalities		
	<b>3</b>	<input type="checkbox"/> Explosion on deck	<input type="checkbox"/> 6		
	<b>17</b>	<input type="checkbox"/> Explosion in adjacent spaces	<input type="checkbox"/> 4		
<b>WHERE WAS SHIP WHEN ACCIDENT OCCURRED?</b>	<b>30</b>	<input type="checkbox"/> Fires in cargo holds (including hold access ladder)	<input type="checkbox"/> 1		
	<b>64</b>	<input type="checkbox"/> At Sea	<input type="checkbox"/> 39 Fatalities		
	<b>12</b>	<input type="checkbox"/> In Port	<input type="checkbox"/> 85		
<b>WHAT WERE THEY DOING?</b> <i>(Of 50 Identified)</i>	<b>3</b>	<input type="checkbox"/> Not Available	<input type="checkbox"/> 16		
	<b>47</b>	<input type="checkbox"/> Loading operations	<input type="checkbox"/> 3 Fatalities		
	<b>56</b>	<input type="checkbox"/> Unloading operations	<input type="checkbox"/> 79		
<b>WHAT CARGOES WERE THEY HANDLING?</b>			<input type="checkbox"/> 58		
	<b>Cargoes</b>		<b>Accidents</b>	<b>Fatalities</b>	
	1. Wood Products–Gen (inc. packaged timber)	<input type="checkbox"/>	<b>22</b>	<input type="checkbox"/> 43	
	2. Coal	<input type="checkbox"/>	<b>31</b>	<input type="checkbox"/> 34	
	3. Wood Pellets	<input type="checkbox"/>	<b>7</b>	<input type="checkbox"/> 6	
	4. Wood Chips	<input type="checkbox"/>	<b>3</b>	<input type="checkbox"/> 4	
	5. Palm Kernel & Nut Shells	<input type="checkbox"/>	<b>1 &amp; 1</b>	<input type="checkbox"/> 5 & 0	
	6. Grain	<input type="checkbox"/>	<b>3</b>	<input type="checkbox"/> 7	
	7. Seed Cake	<input type="checkbox"/>	<b>1</b>	<input type="checkbox"/> 1	
	8. Grain Screening Pellets (animal feed)	<input type="checkbox"/>	<b>1</b>	<input type="checkbox"/> 0	
	9. Ferrous Metal Borings UN2793	<input type="checkbox"/>	<b>4</b>	<input type="checkbox"/> 5	
	9. Scrap Metal	<input type="checkbox"/>	<b>5</b>	<input type="checkbox"/> 1	
	10. DRI	<input type="checkbox"/>	<b>4</b>	<input type="checkbox"/> 8	
	11. Petcoke	<input type="checkbox"/>	<b>3</b>	<input type="checkbox"/> 3	
	12. Copper Concentrate	<input type="checkbox"/>	<b>4</b>	<input type="checkbox"/> 5	
	13. Zinc Concentrate (inc. zinc skimmings)	<input type="checkbox"/>	<b>5</b>	<input type="checkbox"/> 10	
	14. A.N Based Fertiliser	<input type="checkbox"/>	<b>3</b>	<input type="checkbox"/> 0	
15. Incinerator Bottom Ash (U-IBA)	<input type="checkbox"/>	<b>1</b>	<input type="checkbox"/> 0		
16. Alumimium Resmelting By-Products	<input type="checkbox"/>	<b>2</b>	<input type="checkbox"/> 0		
17. Not available	<input type="checkbox"/>	<b>5 (106)</b>	<input type="checkbox"/> 8 (140)		
<b>WHAT GASSES CAN THESE CARGOES EMIT?</b>	<input type="checkbox"/> Carbon Monoxide, Carbon Dioxide, Methane, Hydrogen (IMSBC Code - Individual Schedules)				
<b>WHAT TYPE OF SHIPS WERE INVOLVED?</b> <i>(Of 89 identified)</i>	<b>SHIP TYPES</b>		<b>Accidents</b>	<b>Fatalities</b>	
				<b>Crew</b>	<b>Shore</b>
	1. General cargo/Multi-purpose (GC)		<b>32</b>	<b>39</b>	<b>6</b>
	2. Handysize bulk carriers (20-40,000t dwt) (HS)		<b>14</b>	<b>10</b>	<b>14</b>
	3. Handymax bulk carriers (40-65,000t dwt) (HM)		<b>19</b>	<b>14</b>	<b>4</b>
	4. Handymax GC (forest product carriers) (GC-FPC)		<b>6</b>	<b>5</b>	<b>3</b>
	5. Panamax bulk carriers (Panamax)		<b>12</b>	<b>8</b>	<b>2</b>
	6. Post-Panamax bulk carrier(Post-Panamax)		<b>3</b>	<b>0</b>	<b>2</b>
	7. Capesize bulk carrier(Capesize)		<b>3</b>	<b>0</b>	<b>3</b>
8. Not available		<b>17</b>	<b>14</b>	<b>16</b>	

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### Enclosed Space Accidents Involving Solid Bulk Cargoes 1999 – 2018

YEAR	AT SEA / PORT	SHIP (FLAG)	Ship Type	DEAD	CAUSE	LOCATION	CARGO	CLASS/ GROUP
1. 1999	At Sea	MAIF No.8 (Bahamas)	GC	1 Crew	Asphyxia	Hold Access	Ferrous Metal Brgs.	B
2. 2000	Derry/ Londonderry	Diamond Bulker (Philippines)	HS	2 Shore	Asphyxia	Hold Access	Coal	B
3. 2000	At Sea	Baltyiskiy-107 (Russia)	GC	1 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
4. 2000	At Sea	MAIIF No.20	GC	1 Crew	Asphyxia	Hold Access	Coal	B
5. 2001	N/A	MAIF No.29 (Liberia)	N/A	1 Crew	Asphyxia	Hold Access	Coal	B
6. 2002	Dar Es Salaam Tanzania	MAIF No.40	Panamax	1 Crew	Asphyxia	Hold Access	Grain	Grain
7. 2002	Rotterdam	Weaver Arrow (H.K)	HM-GCFPC	1 Shore	Asphyxia	Hold Access	Wood Pellets	B
8. 2003	N/A	MAIF No.48 (HongKong)	N/A	1 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
9. 2004	In Port	MAIIF No.52 (Finland)	GC	2 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
10. 2004	N/A	MAIF No.54 (Vanuatu)	N/A	1 Crew	Asphyxia	Hold Access	N/A	N/A
11. 2004	N/A	MARS 200404	N/A	4 Shore	Asphyxia	Hold	Wood Prods-Gen	B
12. 2005	Grovon Sweden	Eken (Sweden)	GC	1 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
13. 2005	Rotterdam	N/A	Capesize	1 Shore	Struck by cargo	Hold	Coal	B
14. 2005	Port Everglade USA	Saga Voyager (Hong Kong)	HM-GC-FPC	1 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
15. 2006	N/A	MAIF No.67 (RMI)	N/A	1 Crew	Asphyxia	Hold Access	Coal	B
16. 2006	N/A	MAIF No.70 (RMI)	N/A	1 Crew	Asphyxia	Hold Access	Coal	B
17. 2006	Skelleftham Sweden	Noren (Sweden)	GC	1 Crew	Asphyxia	Hold Access	Wood Chips	B
18. 2006	Helsingorg Sweden	Saga Spray (Hong Kong)	HM-GC-FPC	1 Crew	Asphyxia	Hold Access	Wood Chips	B
19. 2006	Kobe, Japan	Austyn Oldendorff	Panamax	1 crew	Asphyxia	Hold Access	Copper Conc.	B
20. 2007	N/A	MAIF No.84 (RMI)	N/A	1 Crew	Asphyxia	Hold Access	Pet Coke	B
21. 2007	Timra Sweden	Fembria (Isle of Man)	GC	2 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
22. 2007	Bornholm Denmark	Amirante (St. Vin. & G.)	GC	2 Crew	Asphyxia	Hold Access	Wood Pellets	B
23. 2008	Bilbao Spain	MAIF No. 96 (Liberia)	Capesize	1 Shore	Asphyxia	Hold Access	N/A	N/A
24. 2008	N/A	MAIF No. 99 (Norway)	N/A	2 Crew	Asphyxia	Hold Access	N/A	N/A
25. 2008	At Sea (UK)	Sava Lake (Latvia)	GC	2 Crew	Asphyxia	Adj. Space Forecastle	Ferrous Metal Brgs.	B

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YEAR	PORT	SHIP (FLAG)	Ship Type	DEAD	CAUSE	LOCATION	CARGO	CLASS/GROUP
26. 2008	Mobile USA	Celerina (Switzerland)	Panamax	1 Shore	Asphyxia	Hold Access	Coal	B
27. 2008	Hantong China	Star Ismene (Norway NIS)	HM-GC-FPC	0	Asphyxia	Hold Access	Copper Conc.	B
28. 2009	N/A	MARS 200954	N/A	1 Crew	Asphyxia	Hold Access	Copper Conc.	B
29. 2009	Saganoseki Japan	Singapore Grace (Hong Kong)	HS	3 Shore	Asphyxia	Hold Access	Copper Conc.	B
30. 2009	At Sea	Vigoro (Gibraltar)	GC	1 Crew	Asphyxia	Hold Access	Ferrous Metal Brgs.	B
31. N/A	In Port	Bulk Carrier 1 Practice/UK P&I	N/A	5 Shore	Asphyxia	Hold Access	Maize	Grain
32. 2010	Port Marsden N.Z.	TPC Wellington (Panama)	HM	2 Crew Loading	Asphyxia	Hold Access	Wood Prods-Gen	B
33. 2011	Kotka Finland	Andante (Gibraltar)	GC	1 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
34. 2011	At Sea	Delia (A&G)	GC	1 Crew	Asphyxia	Adj. Space Forecastle	Ferrous Metal Brgs.	B
35. 2011	Aliaga Turkey	Karoline Malta	GC	1 Crew	Asphyxia	Hold Access	Steel Scrap	C
36. 2012	Immingham UK	Excalibur UK	Panamax	1 Shore	Struck By	Hold	Coal	B
37. 2013	At Sea (Israel)	Sa. Vanguard (Hong Kong)	Panamax	1 Crew	Asphyxia	Hold Access	Coal	B
38. 2013	In Port	MARS 201459	Panamax	1 Crew	Asphyxia	Hold Access	Coal	B
39. 2013	In Port	N/A (Shipowners Club)	GC	2 Crew	Asphyxia	Hold Ladder	Wood Prods-Gen	B
40. 2013	In Port China	Pacific Endeavor Hong Kong	HM	1 Crew	Asphyxia	Adj. Space Cofferdam	Coal	B
41. 2013	In Port S.America	N/A TT Club	N/A	1 Shore	Asphyxia	Hold Access	Wood Pellets	B
42. 2013	Magdalla India	Chang Chun 11 Panama	HM	2 Crew	Asphyxia	Hold	N/A	
43. 2014	At Sea (Denmark)	Lady Irina (Netherlands)	GC	1 Crew	Asphyxia	Adj. Space Forecastle	Wood Pellets	B
44. 2014	At Sea North Sea	Hudsonborg (Netherlands)	GC	1 Crew	Asphyxia	Hold Access	Zinc Conc.	B
45. 2014	Gibraltar	Sea Lady (RMI)	HM	1 Crew	Asphyxia	Hold Access	Coal	B
46. 2014	Ferrol Spain	Hanjin Sines (Panama)	Capesize	1 Shore	Asphyxia	Hold Access	Coal	B
47. 2014	Vitoria Brazil	UBC Tokyo (Cyprus)	HS	1 Crew	Asphyxia	Hold Access	Pet Coke	B
48. 2014	Montoir France	Stara Planina (Malta)	HM	1 Crew	Asphyxia	Hold Access	Seed Cake	B
49. 2014	At Sea	MV Tuo Fu 3 (Hong Kong)	Panamax	2 Crew	Asphyxia	Hold	Coal	B
50. 2015	Kobe Japan	Triton Swan (Panama)	HM	1 Shore	Asphyxia	Hold Access	Grain	Grain
51. 2015	At Sea	Sally Ann C (Isle of Man)	GC	3 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B

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YEAR	PORT	SHIP (Flag)	SHIP TYPE	DEAD	CAUSE	LOCATION	CARGO	CLASS/ GROUP
52. 2015	Hanstholm Denmark	<i>Corina</i> (Poland)	GC	1 Crew	Asphyxia	Hold Access	Wood Pellets	B
53. 2015	Antwerp	<i>Saga Frontier</i> (Hong Kong)	HM-GC-FPC	3 Shore	Asphyxia	Hold Access	Coal	B
54. 2015	Goole UK	<i>Suntis</i> (Germany)	GC	3 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
55. 2015	Drepano Greece	<i>Kosmas V</i> (Panama)	HM	1 Crew	Asphyxia	Hold Access	Coal	B
56. 2015	Mylaki Greece	<i>Lambay</i> (Liberia)	Panamax	1 Crew	Asphyxia	Hold Access	Pet Coke	B
57. 2015	Fancheng China	<i>Ionic</i> (Greece)	HM	1 Crew 1 Shore	Asphyxia	Hold Access	Zinc Conc.	B
58. 2015	At Sea	<i>Askoe</i> (Ant & Ber)	GC	1 Crew	Asphyxia	Hold Access	Wood Prods-Gen	B
59. 2015	At Sea	<i>Hiram</i> Panama	HS	3 crew	Asphyxia	Hold	N/A	N/A
60. 2016	Humen China	<i>Pekin</i> (Hong Kong)	HM	2 Shore	Asphyxia	Hold Access	Wood Prods-Gen	B
61. 2017	Sohar Oman	N/A	N/A	3 Shore	Asphyxia	Hold Access	Wood Prods-Gen	B
62. 2017	In Port	N/A (UK P&I)	N/A	1 Crew	Asphyxia	Hold Access	Coal	B
63. 2017	Chittagong Bangladesh	<i>Latika Naree</i> (Thailand)	HS	2 Shore	Asphyxia	Hold Access	Wood Prods-Gen	B
64. 2017	In Port	IMO Reports	HM	1 Crew	Asphyxia	Hold Access	Coal	B
65. 2017	At Sea	IMO Reports	Panamax	2 Crew	Asphyxia	Hold Access	Coal	B
66. 2018	Kalimantan Indonesia	<i>Sumiei</i> (Indonesia)	GC	5 Shore	Asphyxia	Hold	Palm Kernel	B or C
67. 2018	Oxelosund Sweden	<i>Declan Duff</i> (Panama)	Post-Panamax	1 Shore	Asphyxia	Hold Access	Coal	B
68. 2018	Gujarat India	<i>Feng HuiHai</i> (Hong Kong)	HM	2 Crew	Asphyxia	Hold Access	Coal	B
69. 2018	Napier New Zealand	<i>Nord Yilan</i> (Panama)	HS	Nil	Asphyxia	Hold	Wood Prods-Gen	B
70. 2018	Wismar Germany	<i>Kati</i> (Malta)	GC	1 Shore	Asphyxia	Hold	Wood Prods-Gen	B
71. 2018	Portocel Brazil	<i>Sepetiba Bay</i> (Liberia)	HS	3 Shore	Asphyxia	Hold	Wood Prods-Gen	B
72. 2018	Quy Nhon Vietnam	<i>Uni Fortune</i> (Panama)	HM GC (FPC)	2 Shore	Asphyxia	Hold	Wood Chips	B
73. 2018	Salalah Oman	N/A	N/A	4 Shore	Asphyxia	Hold	Wood Prods-Gen	B
74. 2018	At Sea	<i>Apollo Kita</i> (Panama)	GC	3 Crew	Asphyxia	Hold	Wood Prods-Gen	B
75. 2018	Montevideo Uruguay	<i>American Bulker</i> (Panama)	HS	2 crew	Asphyxia	Hold	Wood Prods-Gen	B
<b>Total Fatalities due Asphyxiation or CO Poisoning 1999- Dec 2018</b>			<b>Crew 71</b>	<b>Shore 47</b>		<b>118 People</b>		

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## Fires /Explosions Involving Solid Bulk Cargoes 1999 – December 2018

YEAR	PORT	SHIP (FLAG)	SHIP TYPE	DEAD	CAUSE	LOCATION	CARGO	GROUP
76. 1999	At Sea	Karteria (Malta)	HS	2 Crew	Explosion	Holds	DRI	B
77. 2000	At Sea	Thor Emile (Denmark)	GC	6 crew	Explosion	Deck	Zinc Skimmings	B
78. 2002	At Sea	N/A (IMO Reports)	N/A	Nil	Explosion	Holds	Alum. S By-Prods	
79. 2003	At Sea	Adamandas (Cyprus)	HS	Nil	Explosion	Holds	DRI	B
80. 2004	At Sea	YTHAN (RMI)	HS	6 Crew	Explosion	Holds	DRI	B
81. 2004	At Sea	N/A (IMO Report)	N/A	Nil	Explosion	Holds	Alum. S By-Prods	B
82. 2005	At Sea	Fortune (Turkey)	GC	Nil	Explosion	Hold	Zinc Conc	B
83. 2005	Stettin Poland	Thalassa (Nordgard)	GC	Nil	Explosion	Hold	Zinc Skimmings	B
84. 2006	N/A	Bulk Carrier 2 Practice /UK P&I	N/A	2 Crew	Explosion	Adj. Space Masthouse	Coal	B
85. 2007	AtSea (Spain)	Osterdijk (Ant. & Bar.)	GC	-	Thermal Decomp.	Cargo Holds	A.N based Fertiliser	C
86. 2012	At Sea	Sea Moon Hong Kong	HM	Nil	Explosion	Hold	Coal	B
87. 2012	Tianjin China	Jin YangGuan (Panama)	GC	Nil	Explosion	Hold	DRI	B
88. 2015	At Sea Germany	Purple Beach (Malta)	HS	-	Thermal Decomp.	Holds	A.Nbased Fertiliser	C
89. 2015	AtSea (Japan)	Soya Maru (Belize)	GC	-	Fire	Holds	Scrap Metal	C
90. 2015	In Port UK	Belo Horizonte (Liberia)	Panamax		Fire	Holds	Coal	B
91. 2016	Venice Italy	Star Maria (RMI)	Panamax	-	Fire	Holds	Coal	B
92. 2016	Gydia Poland	Olga Topic (Liberia)	HM	-	Fire	Holds	Nut Shells	Not Listed
93. 2016	Liverpool UK	V Due (Malta)	HS	-	Fire	Hold	Wd.Pellets (No Adds.)	B
94. 2017	South Shields UK	<i>Flevoborg (Netherlands)</i>	GC	-	Fire	Holds	Wood Pellets	B
95. 2017	At Sea (Canary Isl.)	<i>Cheshire (UK)</i>	HM	-	Thermal Decomp.	Holds	A.Nbased Fertiliser	C
96. 2017	Iskenderun Turkey	<i>Global Laguna (Panama)</i>	HM	-	Fire	Holds	Scrap Metal	C
97. 2017	At Sea (Azores)	<i>Tamar (RMI)</i>	HM	2 Crew	Explosion	Adj. Space Forecastle	Coal	B
98. 2017	Plymouth UK	<i>Nortrader (Ant.&amp; Barbuda)</i>	GC	-	Explosion	Adj.Space Forecastle	Inc. Ash (U-IBA)	Not Listed
99. 2018	At Sea	Mumtaz Amca (Liberia)	GC	1 Crew	Explosion	Hold	Coal	B
100. 2018	At Sea	Dionysus (Liberia)	HM	-	Fire	Hold	Animal Feed	C
101. 2018	Civitavecchia Italy	Golden Eclipse (HK)	Panamax	-	Fire	Hold	Coal	B

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## Fires /Explosions Involving Solid Bulk Cargoes 1999 – December 2018

YEAR	PORT	SHIP (FLAG)	SHIP TYPE	DEAD	CAUSE	LOCATION	CARGO	GROUP
102. 2018	Port Kelang Malaysia	A Navigation (Malta)	Post-Panamax	1 Shore	Fire	Hold Access	Coal	B
103. 2018	Southampton UK	Sirina (Malta)	HM	-	Fire	Hold	Scrap Metal	C
104. 2018	Torres Sardinia	NBA Van Gogh (Panama)	Post-Panamax	-	Fire	Hold	Coal	B
105. 2018	Dordrecht Netherlands	Kouyou (Panama)	HM	-	Fire	Hold	Scrap Metal	C
106. 2018	Auckland NZ	Liangchow (Hong Kong)	HS		Fire	Hold	Coal	B
<b>Total Fatalities due Explosions 1999- Dec 2018</b>				<b>Crew: 19</b>	<b>Shore: 0</b>			
<b>Total Fatalities due Fires 1999- Dec 2018</b>				<b>Crew: 0</b>	<b>Shore: 1</b>			

### Reported Accidents 2018

1. 25.02.18	Kalimantan Indonesia	Sumiei (Indonesia)	GC	5 Shore	Asphyxia	Hold	Palm Kernel	B or C
2. 16.03.18	Oxelosund Sweden	Declan Duff (Panama)	Post-Panamax	1 Shore	Asphyxia	Hold Access	Coal	B
3. 22.04.18	Gujarat India	Feng HuiHai (Hong Kong)	HM	2 Crew	Asphyxia	Hold Access	Coal	B
4. 30.04.18	Napier New Zealand	Nord Yilan (Panama)	HS	Nil	Asphyxia (CO)	Hold	Wood Prods-Gen	B
5. 16.07.18	Wismar Germany	Kati (Malta)	GC	1 Shore	Asphyxia	Hold	Wood Prods-Gen	B
6. 25.07.18	Portocel Brazil	Sepetiba Bay (Liberia)	HS	3 Shore	Asphyxia	Hold	Wood Prods-Gen	B
7. 16.09.18	Quy Nhon Vietnam	Uni Fortune (Panama)	HM (FPC)	2 Shore	Asphyxia	Hold	Wood Chips	B
8. 06.10.18	Salalah Oman	N/A	N/A	4 Shore	Asphyxia	Hold	Wood Prods-Gen	B
9. 09.11.18	At Sea	Apollo Kita (Panama)	GC	3 Crew	Asphyxia	Hold	Wood Prods-Gen	B
10. 13.11.18	Montvideo Uruguay	American Bulker (Panama)	HS	2 shore	Asphyxia	Hold	Wood Prods-Gen	B
11. 28.02.18	At Sea	Mumtaz Amca (Liberia)	GC	1 Crew	Explosion		Coal	B
12. 01.03.13	At Sea	Dionysus (Liberia)	HM	-	Fire	Hold	Animal Feed	C
13. 29.03.18	Civitavecchia Italy	Golden Eclipse (Hong Kong)	Panamax	-	Fire	Hold	Coal	B
14. 01.04.18	Port Kelang Malaysia	A Navigation (Malta)	Post-Panamax	1 Shore	Fire	Hold Access	Coal	B
15. 25.05.18	Southampton UK	Sirina (Malta)	HM	-	Fire	Hold	Ferrous Metal Brgs.	B
16. 05.06.18	Torres Sardinia	NBA Van Gogh (Panama)	Post-Panamax	-	Fire	Hold	Coal	B
17. 29.03.18	Dordrecht Netherlands	Kouyou (Panama)	HM	-	Fire	Hold	Scrap Metal	C
18. 16.10.18	Auckland NZ.	Liangchow (Hong Kong)	HS	-	Fire	Hold	Coal	B
<b>Total Fatalities Jan- Dec 2018 : Crew 6/Shore 19</b>				<b>25</b>				

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