G. P. WILD (INTERNATIONAL) LIMITED

15 Gander Hill, Haywards Heath, West Sussex, England, RH16 1QU.
Telephone: +44 (0) 1444 413931 Fax: +44 (0) 1444 441952
E-mail: peterwi@gpwild.co.uk www.gpwild.com

Report on Operational Incidents 2009 to 2016

For CLIA Global

By G. P. Wild (International) Limited

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Executive Summary

Key Findings

- As the capacity of the cruise ship fleet has grown by 41.5% percent since 2009, the number of *significant* operational incidents has been on a decreasing trend:

    - Over the last eight years, significant operational incidents are on a downward trend with an average of 19.4 incidents a year, down from a seven-year average of 19.9 in 2015;

    - Averages of 21.1 minor operational incidents are reported each year, a figure which remains stable.

- The cases of cruise passenger fatalities from operational incidents are low compared to other common modes of transportation:

    - In 2013, when there is the most recent comparable data, the incidence of such passenger and crew fatalities on a cruise was one of the lowest with 0.15 per billion passenger miles compared to 0.09 among world airlines, 0.73 on US general aviation, 7.4 on U.S. highways and 8.8 on U.S. rail;

    - In 2016 the figure for cruise was 0.05 fatalities per billion passenger miles with an average of 0.15 over the eight-year period analysed.

    - In the eight years 2009 to 2016, man overboard incidents had been declining with an incidence of 0.000024 overboard reports per active lower berth (synonymous with a cabin's bed) in 2016. This is 37% of the figure recorded in 2009.

    - From 2009 to 2016, the number of passenger fatalities from man overboard incidents had fallen from 15 to 8.

Introduction

This report is written in response to Cruise Lines International Association's (CLIA) wish to evaluate the reliability of cruise ships from the perspective of analyzing the number and type of operational incidents (OI) during cruises, both at sea and in port.

GPW has for many years compiled an annual operational incident review, detailing significant cruise industry casualties identified from the public domain. Until 2016 this data has been published each year in GPW's "Cruise Industry Statistical Review". In addition to this in-house data, the following sources have been researched in the compilation of this current report for CLIA to include both significant and minor operational incidents over the last five years:

Daily Newspapers
Miami Herald;
New York Times;
USA Today;
NY Daily News;
Daily Telegraph.

Shipping Industry Newspapers
Lloyds List;
TradeWinds.

Trade Publications
International Cruise and Ferry Review;
Cruise Industry News;
Seaways (Nautical Institute);
Seatrade Cruise Review;
Safety at Sea International;
IMO News (quarterly);
USCG Proceedings (quarterly);
Cruise Line Annual Reports;
Flight International.

Official websites
US National Transportation Safety Board;
US Department of Transportation;
US Coast Guard Marine Casualty Records;
UK Marine Accident Investigation Branch;
UK Civil Aviation Authority;
International Civil Aviation Organisation
European Commission;
Eurostat;
British Admiralty;
Nautical Institute;
International Maritime Organisation.

Other websites
Seatradeinsider.com;
safetyatsea.net;
cruiseJunkie.com;
cruiselawnews.com;
maritimematters.com;
Google Alerts;
Internationalcruisevictims.com;
Ashcroft+associates.com;
Cruisecritic.com.

In all cases, incidents recorded have been cross checked against records searched in order to verify the congruence of the reports. A minimum of two reports of the same incident have been required for inclusion here.

The Nature of Operational Incidents

The following forms of operational incident are analyzed in this report.

- Fire;
- Technical breakdown such as engine failure;
- Stranding or grounding;
- Passenger missing overboard and not recovered;
- Storm or wave damage;
- Collision / allision; and
- Sinking.

For the purposes of this report the authors have adopted the following definitions when researching operational incidents.

A “significant operational incident” (OI) is defined as one in which

- The ship suffers more than 24 hours’ delay to the published itinerary, or
- Fatalities occur to either passengers or crew, or
- A serious injury occurs to either passengers or crew.

A “minor operational incident” is defined as one in which

- The ship is delayed for 24 hours or less against the published itinerary, or
- Minor injuries are suffered by either passengers or crew.

Significant Operational Incidents

The research defined above established that the following significant operational incidents or major non-conformities occurred worldwide in the oceangoing cruise industry during the years 2009 to 2016 inclusive.

ES Table 1: Summary of Significant Operational Incidents 2009 to 2016

Item	OI’s	Fatalities			Injuries
		Pax	Crew	Total	
Total 8 years	155	33	29	62	261
Yearly average	19.38	4	5	10	43
2009	21	0	0	0	3
2010	27	3	3	6	31
2011	15	1	3	4	11
2012	18	27	5	32	164
2013	21	0	8	8	8
2014	16	1	6	7	12
2015	21	1	1	2	25
2016	16	0	3	3	7
	Totals	Av. per year			
Total fires	26	3.3			
Total technical	60	7.5			
Total stranding or grounding	19	2.4			

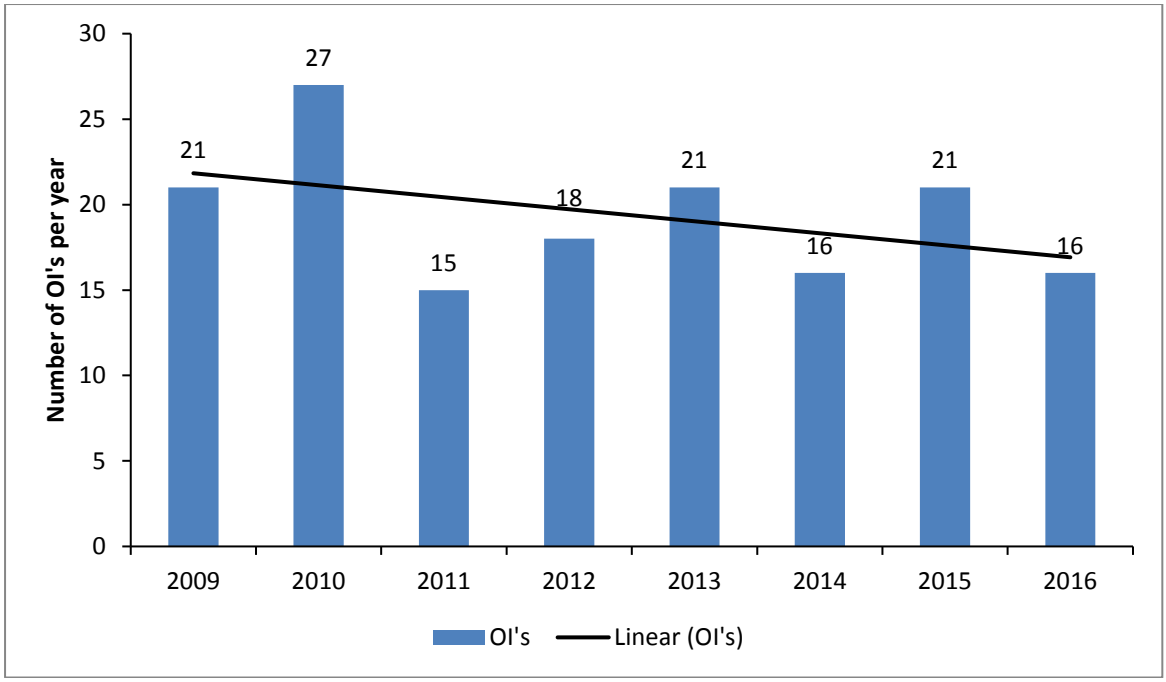
Item	OI's	Fatalities			Injuries
		Pax	Crew	Total	
Total storm or rogue wave	13	1.6			
Total collision or allision	14	1.8			
Total other incidents	23	2.9			
Grand total/ average	155	19.4			

Note: Totals may be different due to rounding.

Source: G. P. Wild (International) Limited

Evidently, during the period examined by this report, as illustrated in ES Figure 1, there was a downward underlying trend in significant operational incidents experienced by the cruise industry, although, as would be expected, the number of incidents fluctuated each year.

ES Figure 1: Underlying trend in Significant OI's 2009 to 2016



Source: G. P. Wild (International) Limited

Minor Operational Incidents

The research defined above established, as shown in ES Table 2, that the following minor operational incidents or non-conformities occurred worldwide in the oceangoing cruise industry during the years 2009 to 2016 inclusive.

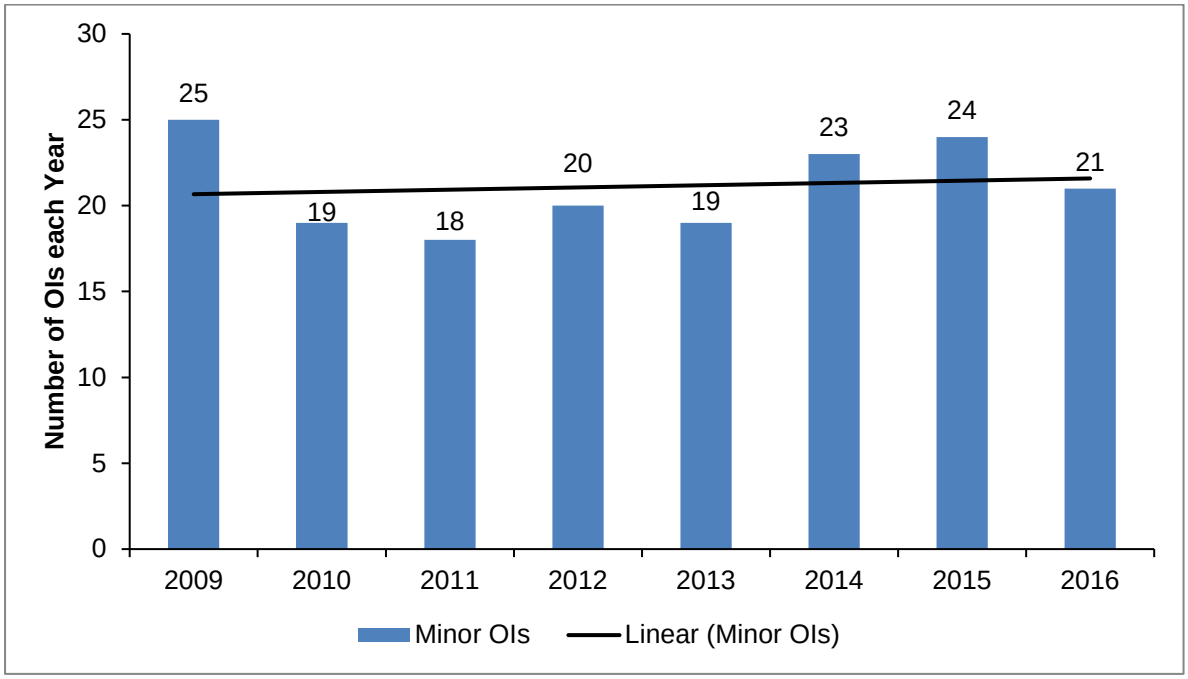
ES Table 2: Summary of Non-Conformities 2009 to 2016

Item	OI's	Injuries
Total 8 years	169	109
Yearly average	21.13	13.6
2009	25	0
2010	19	70
2011	18	12
2012	20	3
2013	19	0
2014	23	0
2015	24	24
2016	21	0
	Totals	Average per year
Total fires	21	2.63
Total technical	90	11.25
Total stranding or grounding	10	1.25
Total storm or rogue wave	16	2.00
Total collision or allision	18	2.25
Total other incidents	14	1.75
Grand total/ average	169	21.13

Source: G. P. Wild (International) Limited

During the same period examined by this report, as illustrated in ES Figure 2, the number of minor operational incidents which involved delay to the ship or minor injury to passengers or crew remained fairly constant at around 21. Again, as would be expected, the number of incidents fluctuated each year.

ES Figure 2: Underlying trend in Minor Operational Incidents 2009 to 2016



Source: G. P. Wild (International) Limited

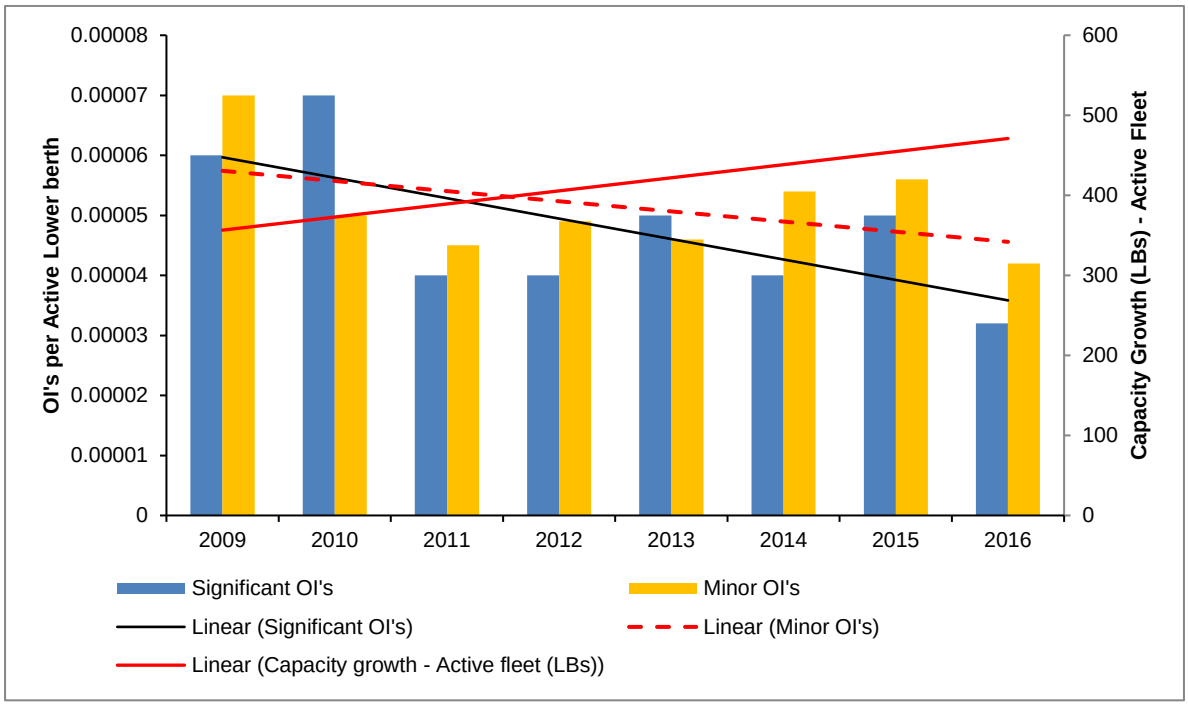
Trends in OI in relation to fleet size

During the period under consideration, from 2009 to 2016, the active lower berth capacity of the cruise fleet worldwide grew by 41.8%. Thus it is useful to examine the trends in incidents per lower berth deployed and compare them with the growth

in active lower berth capacity between 2009 and 2016. The results of this examination are depicted in ES Figure 3.

Evidently from ES Figure 3 when the expansion of the capacity of the cruise ship fleet is taken into account it is noteworthy that in relative terms the underlying trend in the occurrence of minor OI's is also falling in a similar pattern to major OI's.

ES Figure 3: Comparative development of Active Lower Berths (LBs) and OI's per Active LB



Source: G. P. Wild (International) Limited

Man-overboard Incidents

The research conducted under the above methodology and from the various sources defined has resulted in the following analysis of man overboard incidents involving both passengers and crew.

ES Table 3: Summary of man overboard incidents

Year	Active Lower Berths ('000s)	Total Overboard Incidents	Overboard Incidents per Active LB	Fatalities			Rescued
				Pax	Crew	Total	
2009	349,900	23	0.0000657	15	4	19	6
2010	378,600	22	0.0000581	10	6	16	6
2011	400,400	22	0.0000549	11	8	19	3
2012	410,300	17	0.0000414	7	6	13	5
2013	414,800	12	0.0000289	11	2	13	0
2014	428,700	18	0.0000420	9	6	15	3
2015	432,194	24	0.0000555	14	3	17	7
2016	495,181	12	0.0000242	8	3	11	1
Totals	3,310,075	150	0.0003709	85	38	123	31
8-year av.	413,759	18.8	0.0000530	10.625	4.8	15.4	3.9
% of rescues							25.2

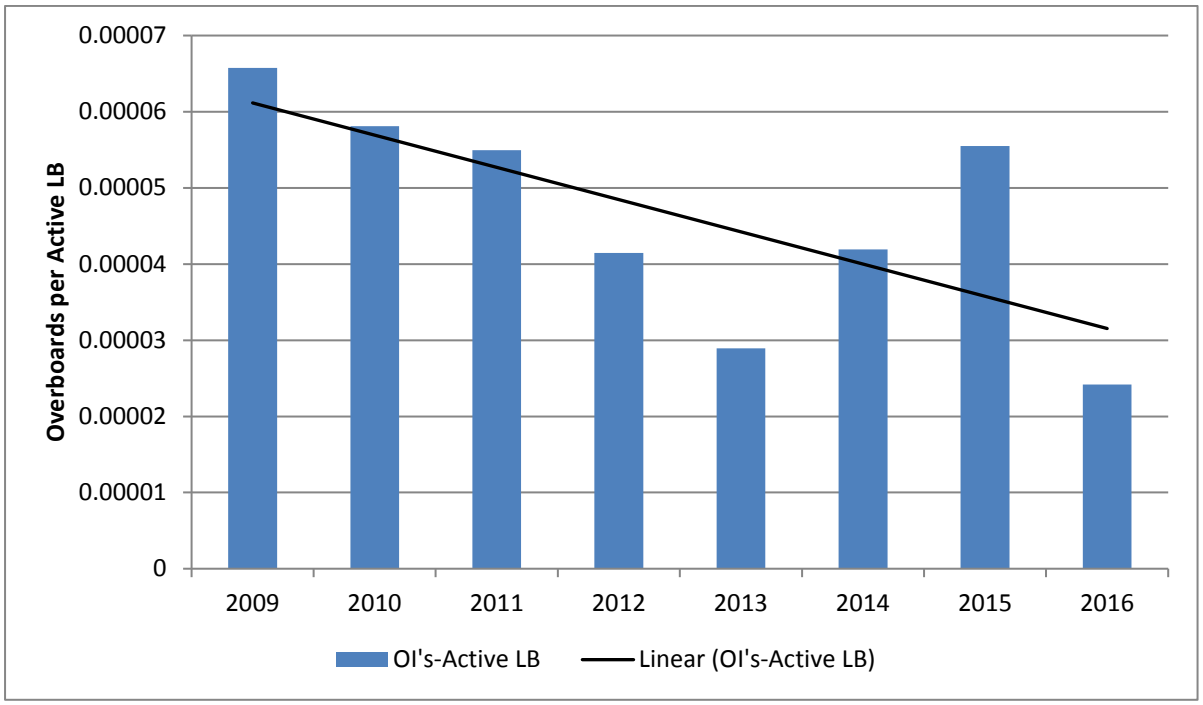
Note: Not all columns cross check due to more than one person being involved in some incidents

Source: G. P. Wild (International) Limited

A total of 150 incidents have been have been identified of which 31 (25.2%) were successfully rescued. The results of this research are summarized in ES Table 3.

The results of the search show that following a significant decline in both the number of incidents and the number of fatalities over the eight study years, albeit that there was an increase in passenger fatalities in 2015 but a significant fall in crew fatalities.

ES Figure 4: Trends in Overboard Incidents per Active Lower Berth 2009-16



Source: G. P. Wild (International) Limited

Nevertheless, when compared with the growth in capacity in the industry over the study years, man overboard incidents continue on a downward trend, as demonstrated in Figure ES 4.

Comparisons with the Airline Industry

The study analyzed the levels of fatality occurring in both the worldwide ocean going cruise industry and the worldwide scheduled airline industry over the subject years 2009 to 2016. The results obtained from the analysis are presented below in terms of fatalities per million passenger-days.

For the years 2009 and 2010 it has not been possible to separate the airline crew and passenger numbers.

It can be seen from study of the figures below that the cruise industry and the airline industry have very similar and very commendable safety records in this regard. Taking the four years when both passenger and crew figures can be separated for the airlines, the following synopsis of passenger only fatalities rates from operational incidents can be presented as shown in ES Table 5.

ES Table 4: Airlines v Cruise Lines – Passenger Fatalities per million passenger-days

Year	International Cruise Lines		World Airlines	
	Pax Fatalities	Per million pax-days	Pax Fatalities	Per million pax-days
2011	1	0.007	393	0.14
2012	27	0.187	364	0.12
2013	0	0.000	213	0.07
2014	1	0.007	595	0.18
2015	1	0.006	151	0.04
2016	0	0.000	251	0.07
Totals	30	0.21	1,967	0.62
Yearly av.	5	0.03	328	0.10

Source: G. P. Wild (International) Limited

It can be seen that in 2016, both industries recorded fatality numbers below the six-year average. There were no passenger fatalities due to operational incidents on cruise ships. The six-year average for the cruise lines is 30% of that recorded for airlines.

Combined passenger and crew operational fatalities over the six-year period are compared in ES Table 5. In this table it is assumed each flight represents a passenger day and that each cruise lasts 6.9 days, which is the worldwide average.

ES Table 5: Airlines v Cruise Lines – Passenger and Crew Fatalities per million passenger-days 2009 to 2016

Year	International Cruise Lines		World Airlines	
2009 to 2016	Total Fatalities pax and crew	Per million pax-days	Total Fatalities pax and crew	Per million pax-days
Totals	62	0.05	3,883	0.17

Source: G. P. Wild (International) Limited

Again both industries recorded a reduction in 2016 compared with the eight-year averages. Thus it can be seen that both the cruise lines and the airlines have equally commendable safety records in terms of passenger and crew operational fatalities, with the cruise lines again being 30% less than the airlines.

Comparisons with other US Transportation

The report then turns to other forms of transportation. The US Department of Transportation publishes detailed statistics on all forms of domestic US transport but the latest available comprehensive figures relate to 2013. These are summarized below in ES Table 6.

ES Table 6: US domestic transportation fatalities, 2013

Mode of Transport	Fatalities	Pax-miles (mill)	Pax-miles (bill)	Fatalities per billion pax-miles
Air	429	589,692	590	0.73
Highway total ①	32,028	4,306,717	4,307	7.44
Passenger car	11,977	2,882,221	2,882	4.16
Motor-cyclists	4,668	21,937	22	212.79
Trucks	9,155	275,018	275	33.29
Rail ②	342	38,946	39	8.78
Total	32,799	4,935,355	4,935	6.65

① Note that this includes pedestrians for which category passenger-miles are obviously unavailable.
② Excluding rail crossing accidents; 1.52% if these are included.

Source: G. P. Wild (International) Limited from US DoT data

It can thus be seen that in comparison with world airlines and international cruise lines, both of which have fatality figures of less than 0.05 passengers and crew per billion passenger miles, the record level of fatalities for US domestic transportation for all modes, is of a significantly greater order of magnitude.

Note that US domestic air figures include all forms of air transport. The majority of air transport passenger fatalities are in general aviation. No operational passenger fatalities were recorded on US domestic schedules airlines in each of the years 2011 to 2015.

ES Table 7 summarises the findings of the above research comparing US domestic travel with the international cruise and airline industries and also includes selected European transport statistics. The latest US domestic statistics available are for 2013 since from that date recording methodology changed. The cruise industry figures for 2012 include the loss of *Costa Concordia*. The 2014 airline figures include the loss of MH370 over the Indian Ocean but not MH17 over Ukraine, which the airline industry classes as an act of aggression.

ES Table 7: Summary of Fatality rates (passenger and crew) per billion passenger miles

Industry	2009	2010	2011	2012	2013	2014	2015	2016	2009 to 2016
Cruise Industry	0	0.13	0.08	0.61	0.15	0.13	0.03	0.05	0.15
World Airlines	0.31	0.31	0.18	0.14	0.09	0.19	0.03	0.04	0.17
US air travel all types			0.8		0.73				
US highways			7.6		7.44				
US passenger car			3.3		4.16				
US motor cyclists			231.1		212.79				
US trucks			37.1		33.29				
US rail			11.9		8.78				
European rail					2.37				

Source: G. P. Wild (International) Limited from various sources

In 2015 the airline figures do not include either the loss of the *Germanwings* flight over the Alps or the loss of the *Metrojet* flight over the Sinai Desert, both of which the airline industry regards as deliberate acts and hence not included in their accident statistics.

It can be concluded that over the eight-year period of the study, fatalities from operational incidents were roughly equal between cruise ships and airlines in terms of passenger distances travelled and the figures for both industries were near an all-time low in 2016. For cruise, the 2016 figure represents three fatalities.

1. Introduction

Cruise Lines International Association (CLIA) wishes to continue to evaluate the reliability of cruise ships from the perspective of analyzing the number and type of operational incidents (OI) during cruises, both at sea and in port. This report is the fourth such annual report, the first having covered the years 2009 to 2013 with subsequent reports up to 2013 and the 2014. It is contended that cruise ship reliability appears to be at an all-time high with fewer OI episodes both in terms of absolute numbers and as a percentage of sailings. CLIA has therefore re-commissioned G. P. Wild (International) Ltd (GPW) to undertake research aimed at establishing the relevant data. Using historical data, the research aims to quantify this perceived reduction in OI and provide a comparative analysis to OI with similar modes of transportation.

1.1 Sources of Data

GPW has for more than thirteen years compiled an annual casualty review, detailing significant cruise industry casualties identified from the public domain. Until 2015 this data was published each year in GPW's "Cruise Industry Statistical Review". In addition to this in-house data, the following sources have been researched in the compilation of this current report for CLIA:

Daily Newspapers
Miami Herald;
New York Times;
USA Today;
NY Daily News;
Daily Telegraph.

Shipping Industry Newspapers
Lloyds List;
TradeWinds.

Trade Publications
International Cruise and Ferry Review;
Cruise Industry News;
Seaways (Nautical Institute);
Seatrade Cruise Review;
Safety at Sea International;
IMO News (quarterly);
USCG Proceedings (quarterly);
Cruise Line Annual Reports;
Flight International.

Official websites
US National Transportation Safety Board;

US Department of Transportation;
UK Marine Accident Investigation Branch;
UK Civil Aviation Authority;
International Civil Aviation Organisation
European Commission;
Eurostat;
British Admiralty;
Nautical Institute;
International Maritime Organisation.

Other websites
Seatradeinsider.com;
safetyatsea.net;
cruiseJunkie.com;
cruiselawnews.com;
maritimematters.com;
Google Alerts;
Internationalcruisevictims.com;
Ashcroft+associates.com;
Cruisecritic.com.

1.2 The Research Methodology

In addition to in-house information and use of the various sources named above, the research contained in this report has been undertaken principally at the British Library in London and supplemented by information from the London Business Library. The British Library was requested to provide archive copies of various daily and industry newspapers and trade publications listed above for the years 2009 to 2014 inclusive. Certain of the publications were made available in hard copy and others in an electronically archived format.

Other trade publications such as Cruise Industry News, Seatrade Cruise Review and Flight International are received on subscription by GPW and hence these archived publications were studied at the offices of GPW.

Official websites and other websites were reviewed from the desktop and data gleaned from such searches was added to the significant quantity of data on the subject already held in the GPW in-house database.

2. Cruise Industry Operational Incidents

2.1 Definition of Operational Incidents

The following forms of operational incident will be analyzed in this report.

- Fire;
- Technical breakdown such as engine failure;
- Stranding or grounding;
- Passenger missing overboard and not recovered;
- Storm or wave damage;
- Collision / allision; and
- Sinking.

Under the terms of the International Maritime Organization's ISM Code (International Safety Management Code), operational incidents are referred to by the terms "non-conformities" and "major non-conformities". These are defined as follows:

- A "non-conformity" means an observed situation where the objective evidence indicates the non-fulfilment of the ISM code.
- A "major non-conformity" means an identifiable deviation which poses a serious threat to the safety of personnel or the ship or a serious risk to the environment that requires immediate corrective action.

Further study of the Code indicates that these official definitions may not be entirely suited to the circumstances of the cruise industry and in particular the objectives of this report. An operational incident in the cruise industry may inconvenience passengers whilst not necessarily falling under the strict terms of the ISM Code.

For the purposes of this report therefore the authors have adopted the following definitions when researching operational incidents.

A "significant operational incident" (OI) is defined as one in which

- The ship suffers more than 24-hours delay to the published itinerary, or
- Fatalities occur to either passengers or crew, or
- A serious injury occurs to either passengers or crew.

A "minor operational incident" is defined as one in which

- The ship is delayed for 24 hours or less against the published itinerary, or
- Minor injuries are suffered by either passengers or crew.

2.2 Significant Operational Incidents

The research defined above has established that the following significant operational incidents or major non-conformities occurred worldwide in the oceangoing cruise industry during the years 2009 to 2016 inclusive.

Table 2. 1: Summary of Significant Operational Incidents 2009 thru 2016

Item	OI's	Fatalities			Injuries
		Pax	Crew	Total	
Total 8 years	155	33	29	62	261
Yearly average	19.38	4	5	10	43
2009	21	0	0	0	3
2010	27	3	3	6	31
2011	15	1	3	4	11
2012	18	27	5	32	164
2013	21	0	8	8	8
2014	16	1	6	7	12
2015	21	1	1	2	25
2016	16	0	3	3	7
	Totals	Av. per year			
Total fires	26	3.3			
Total technical	60	7.5			
Total stranding or grounding	19	2.4			
Total storm or rogue wave	13	1.6			
Total collision or allision	14	1.8			
Total other incidents	23	2.9			
Grand total/ average	155	19.4			

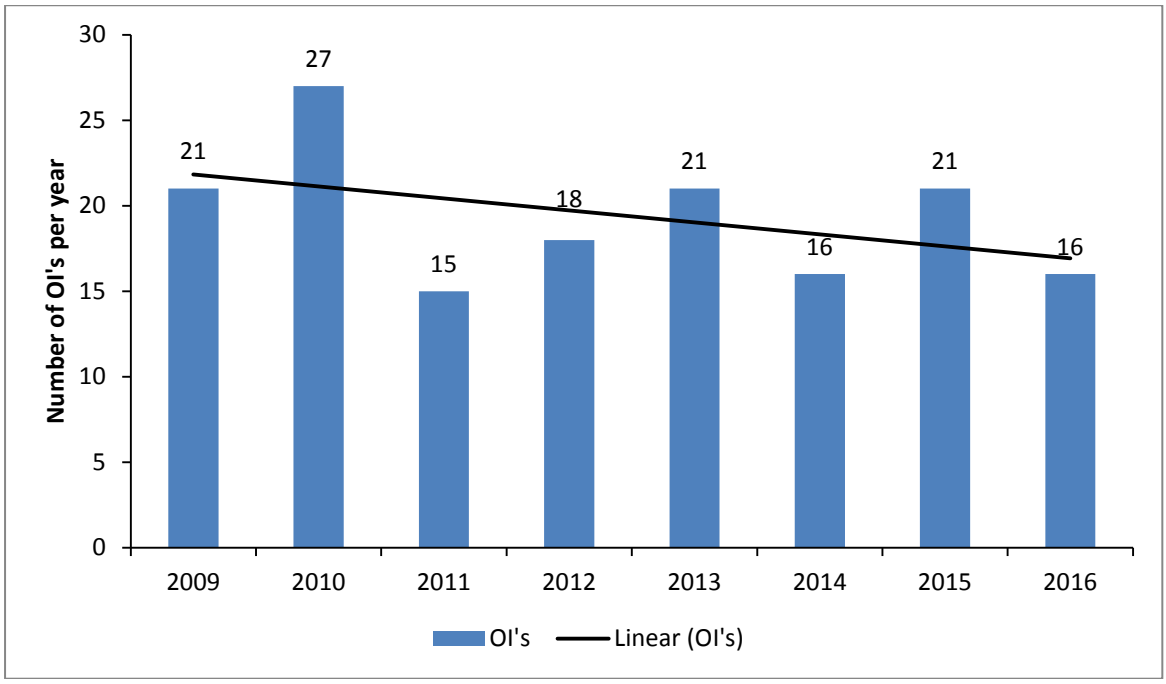
Note: Totals may be different due to rounding.

Source: G. P. Wild (International) Limited

Evidently, during the period examined by this report, as illustrated in Figure 2.1, there was a downward underlying trend in significant operational incidents experienced by the cruise industry, although, as would be expected, the number of incidents fluctuated each year and the range between 16 and 21 is apparently becoming established as the norm. Given the rapid expansion of the worldwide fleet in recent years, as demonstrated in Figure 2.2, this downward trend is particularly noteworthy.

Not since 2009 have there been so few fatalities or serious injuries as was the case in 2016.

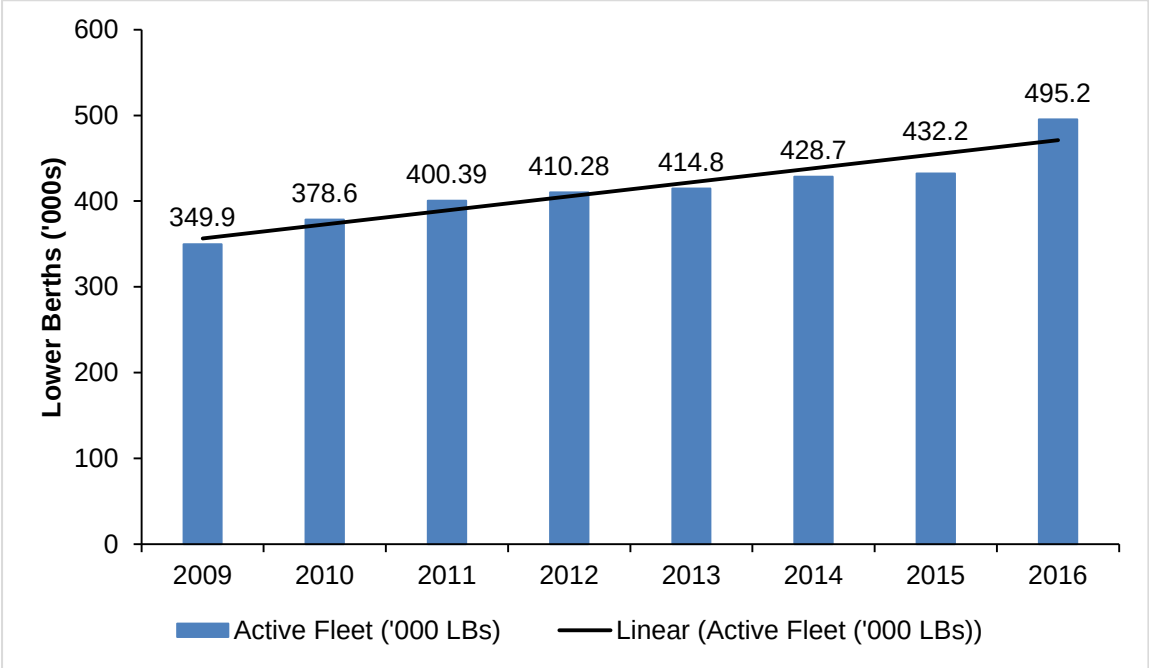
Figure 2. 1: Underlying trend in Significant OI's 2009 to 2016



Source: G. P. Wild (International) Limited

As shown in Figure 2.2, during the same period the capacity of the active fleet was growing from 349,900 to 495,181 lower berths, which represents an increase of 41.5%.

Figure 2. 2: Growth in Capacity of the Active Cruise Fleet 2009-2016 (LBs)



Source: G. P. Wild (International) Limited

More comprehensive details of individual significant operational incidents, by category, are presented in Appendix 1.

2.3 Minor Operational Incidents

The research defined above has established, as shown in Table 2.2, that the following minor operational incidents or non-conformities occurred worldwide in the oceangoing cruise industry during the years 2009 to 2016 inclusive.

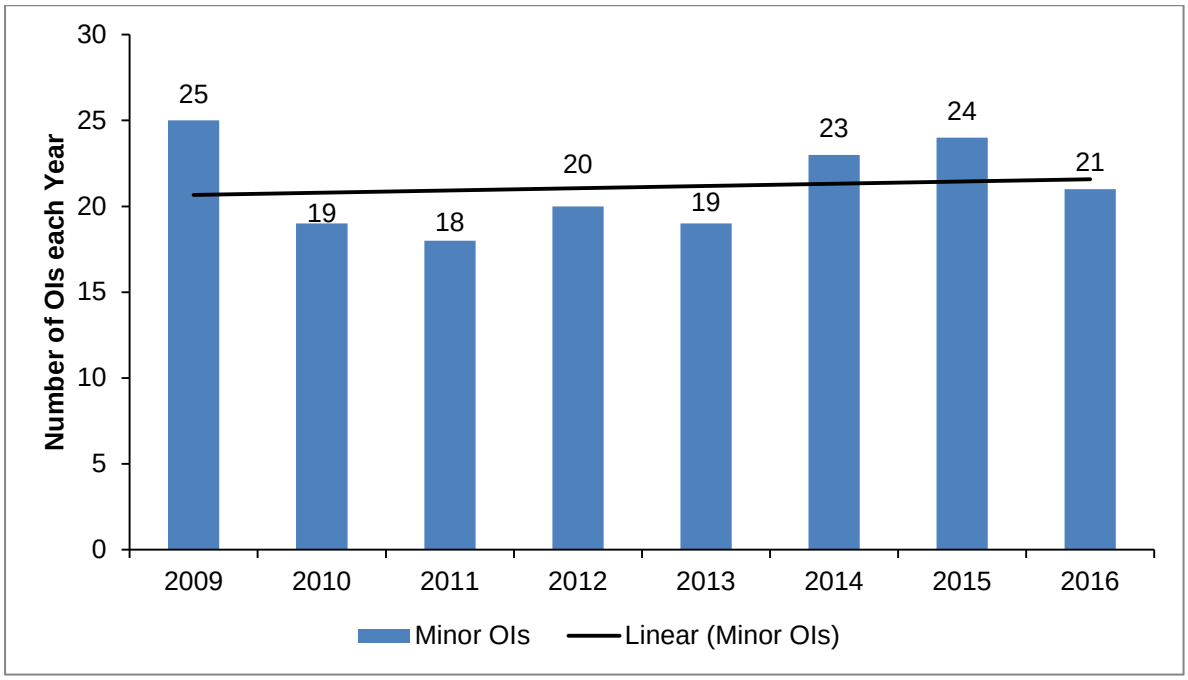
Table 2. 2: Summary of Non-Conformities 2009 to 2016

Item	OI's	Injuries
Total 8 years	169	109
Yearly average	21.13	13.6
2009	25	0
2010	19	70
2011	18	12
2012	20	3
2013	19	0
2014	23	0
2015	24	24
2016	21	0
	Totals	Average per year
Total fires	21	2.63
Total technical	90	11.25
Total stranding or grounding	10	1.25
Total storm or rogue wave	16	2.00
Total collision or allision	18	2.25
Total other incidents	14	1.75
Grand total/ average	169	21.13

Source: G. P. Wild (International) Limited

Whilst the number of minor incidents has fluctuated from year to year, they remain in the range of 18 to 25 per year as shown in Table 2.2 and as illustrated in Figure 2.3. The number of minor operational incidents which involved injury to passengers or crew has declined significantly, and in 2016 there were no such injuries.

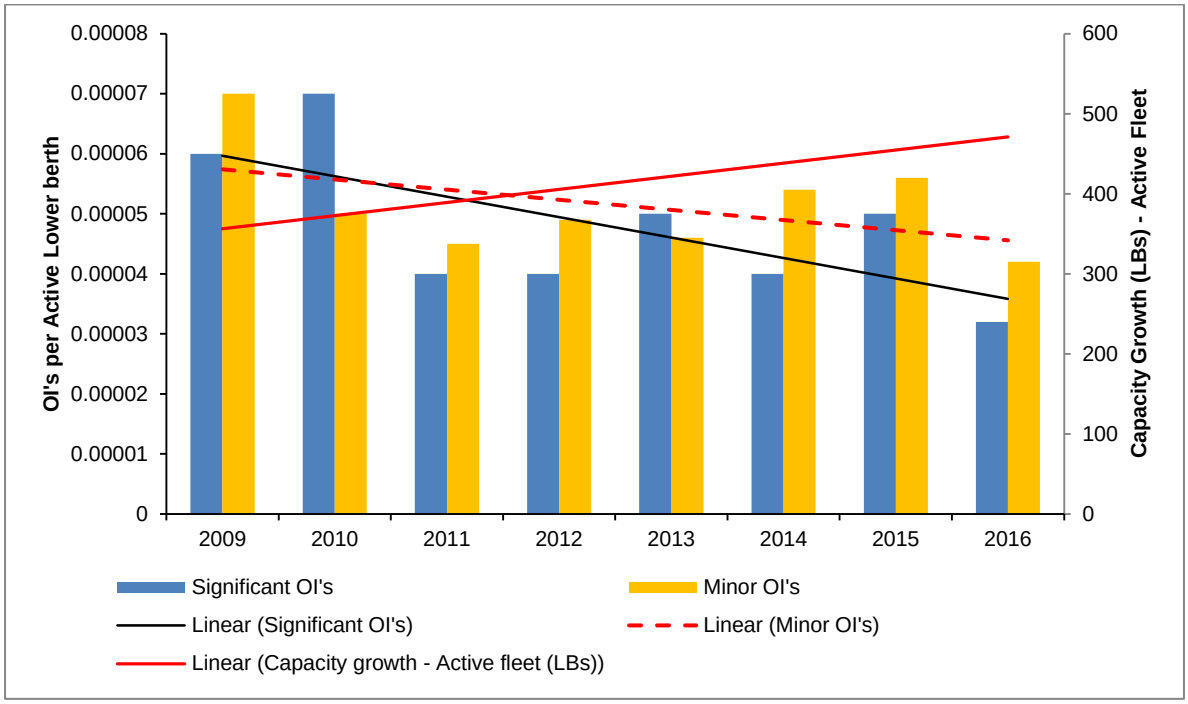
Figure 2. 3: Underlying trend in Minor Operational Incidents 2009 to 2016



Source: G. P. Wild (International) Limited

Details are minor operational incidents are provided in Appendix 2.

Figure 2. 4: Comparative development of Active Lower Berths (LBs) and OI's per Active LB



Source: G. P. Wild (International) Limited

As was shown in Figure 2.2 during the period under consideration, from 2009 to 2016, the active lower berth capacity of the cruise fleet worldwide grew by 41.5%. Thus it is useful to examine the trends in incidents per lower berth deployed and

compare them with the growth in active lower berth capacity between 2009 and 2016. The results of this examination are depicted in Figure 2.4.

Evidently from Figure 2.4 when the expansion of the capacity of the cruise ship fleet is taken into account it is noteworthy that in relative terms the underlying trend in the occurrence of major OI's is falling more rapidly than minor OI's although the difference does not appear to be significant.

A detailed list of minor operational incidents can be found in Appendix 2.

2.4 Man Overboard Incidents

The research conducted under the above methodology and from the various sources defined has resulted in the following analysis of man overboard (MOB) incidents involving both passengers and crew. It is noteworthy that in discussions with cruise line representatives they indicated that in every case where the cause of the MOB was established following a careful investigation it was found to be the result of an intentional or reckless act. There were some incidents, however in which it proved impossible to determine a motive. The results of this research are summarized in Table 2.3.

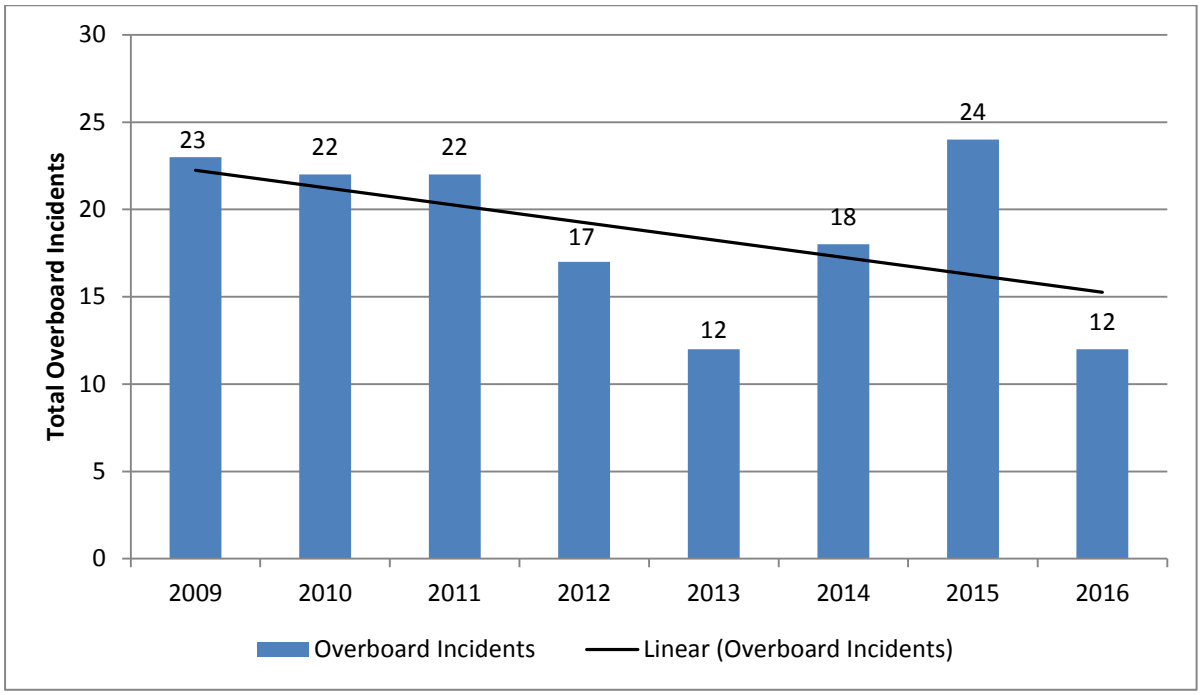
Table 2. 3: Summary of man overboard incidents

Year	Active Lower Berths ('000s)	Total Overboard Incidents	Overboard Incidents per Active LB	Fatalities			Rescued
				Pax	Crew	Total	
2009	349,900	23	0.0000657	15	4	19	6
2010	378,600	22	0.0000581	10	6	16	6
2011	400,400	22	0.0000549	11	8	19	3
2012	410,300	17	0.0000414	7	6	13	5
2013	414,800	12	0.0000289	11	2	13	0
2014	428,700	18	0.0000420	9	6	15	3
2015	432,194	24	0.0000555	14	3	17	7
2016	495,181	12	0.0000242	8	3	11	1
Totals	3,310,075	150	0.0003709	85	38	123	31
8-year av.	413,759	18.8	0.0000530	10.625	4.8	15.4	3.9
% of rescues							25.2

Source: G. P. Wild (International) Limited

As can be seen from Figure 2.5 the results of the search show that after a significant decline in both the number of incidents and the number of fatalities over the years from 2009 to 2013 and after a spike in 2015, the number of incidents and fatalities has dropped close to an all-time low in 2016. The number of incidents per active lower berth was at an all-time low.

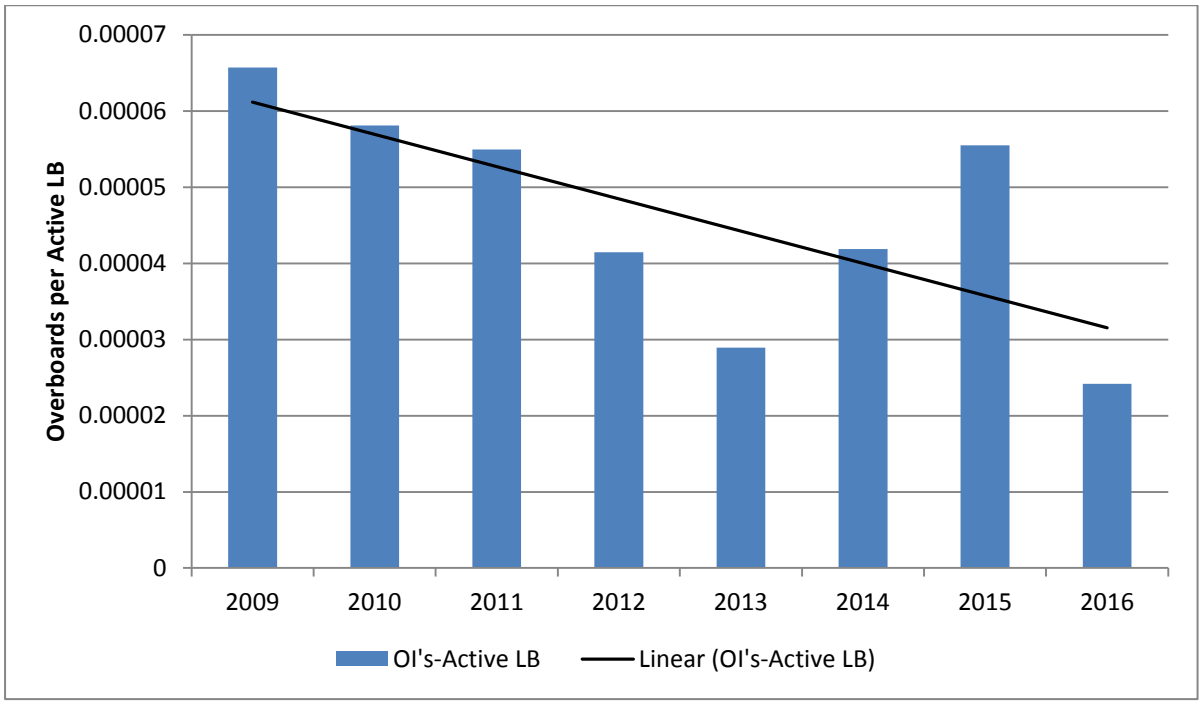
Figure 2. 5: Trend in Overboard Incidents on Cruise Ships 2009 to 2016



Source: G. P. Wild (International) Limited

Clearly during this period, the size of the cruise fleet continued to expand as the demand for cruises grew, as noted at the beginning of this section, and the implications of this changing fleet structure in terms of overboard incidents is examined in Figure 2.6. This shows that after a low of 12 incidents in 2013 overboard incidents increased over the subsequent two years to reach 24 in 2015. In 2016 it has returned to a historically low level and the underlying trend remains downward between 2009 and 2016. The number of fatalities recorded in 2016 was at an all-time low.

Figure 2. 6: Trends in Overboard Incidents per Active Lower Berth 2009-16



Source: G. P. Wild (International) Limited

3. Comparisons with Other Industries

3.1 International Airlines

The Consultants have analyzed the levels of fatality from operational incidents occurring in both the worldwide ocean going cruise industry and the worldwide scheduled airline industry over the subject years 2009 to 2016. The results obtained from the analysis are presented below in terms of fatalities per million passenger-days.

For the years 2009 and 2010 it has not been possible to separate the airline crew and passenger numbers.

It can be seen from study of the figures below that the cruise industry and the airline industry have very similar and very commendable safety records in this regard. Taking the five years when both passenger and crew figures can be separated for the airlines, the following synopsis of passenger only fatality rates from operational incidents can be presented as shown in Table 3.1. World airline fatalities suffered an unfortunate upturn in 2014 largely as a result of the loss of MH370 over the Indian Ocean. The loss of MH17 over Ukraine is not included in airline statistics, being considered an act of aggression rather than an accident.

Table 3. 1: Airlines v Cruise Lines – Passenger Fatalities per million passenger-days

Year	International Cruise Lines		World Airlines	
	Pax Fatalities	Per million pax-days	Pax Fatalities	Per million pax-days
2011	1	0.007	393	0.14
2012	27	0.187	364	0.12
2013	0	0.000	213	0.07
2014	1	0.007	595	0.18
2015	1	0.006	151	0.04
2016	0	0.000	251	0.07
Totals	30	0.21	1,967	0.62
Yearly av.	5	0.03	328	0.10

Source: G. P. Wild (International) Limited

In 2015, two significant incidents occurred in the airline industry, which are not included in Table 3.1 in accordance with the practices adopted by IATA in compiling these statistics. These are the deliberate loss of a *Germanwings* flight resulting from the actions of the co-pilot (150 fatalities) and what is believed to have been a terrorism act, the loss of a *Metrojet* flight over the Sinai Peninsula (224 fatalities). On this basis, the number of fatalities due to accidental events in 2015 was at an all-time low of 151.

The year 2016 (13 accidents, 306 fatalities) has seen a pick up from 2015's all-time low (9 accidents, 306 fatalities). However, if two of 2016's incidents prove to be deliberate in a similar manner to that as described above for 2015, then the official figures for 2016 will fall to 11 accidents and 239 fatalities.

Combined passenger and crew fatalities from operational incidents over the eight-year period are compared in Table 3.2.

Table 3. 2: Airlines v Cruise Lines – Passenger and Crew Fatalities per million passenger-days 2009 to 2016

Year	International Cruise Lines		World Airlines	
2009 to 2016	Total Fatalities pax and crew	Per million pax-days	Total Fatalities pax and crew	Per million pax-days
Totals	62	0.05	3,883	0.17

Source: G. P. Wild (International) Limited

Thus it can be seen that both the cruise lines and the airlines have equally commendable safety records in terms of passenger and crew operational fatalities. It should be noted that if the three deliberate acts not included in IATA's airline figures for 2014 and 2015 were to be included, then the number of airline fatalities in the above table would increase by 806 or 22%. Whilst the world airline total fatality numbers are far greater when compared statistically against cruise passenger fatality numbers the two industries have equally commendable safety records for the years in question when compared in terms of fatalities per million passenger-days. The figures are shown in more detail in Tables 3.3 to 3.6 below. A billion is defined as a thousand million.

Table 3. 3: Cruise Fatalities per million international passenger-journeys 2009-16

Year	Fatalities			No. of journeys (million)			Fatalities per million	
	Passengers	Crew	Total	Passengers	Crew ①	Total	Pax only	Total
2009	0	0	0	17.59	8.00	25.59	0.00	0.00
2010	3	3	6	19.07	8.67	27.74	0.16	0.22
2011	1	3	4	20.49	9.31	29.80	0.05	0.13
2012	27	5	32	20.9	9.50	30.40	1.29	1.05
2013	0	8	8	21.34	9.70	31.04	0.00	0.26
2014	1	6	7	22.03	10.01	32.04	0.05	0.22
2015	1	1	2	23.00	10.45	33.45	0.04	0.06
2016	0	3	3	24.20	11.00	35.2	0.00	0.09
Total	33	29	62	168.62	76.65	245.27	1.59	2.02
Average	4.13	3.63	7.75	21.08	9.58	30.66	0.20	0.25

① Ratio of 1: 2.2 assumed, based on GPW statistics of all ocean-going cruise ships in service.

Source: G. P. Wild (International) Limited from various sources

Table 3. 4: Aircraft Fatalities per million passenger-journeys (includes domestic and international routes) 2009-16

Year	Fatalities (excluding acts of violence)			Number of journeys (mill)			Fatalities per million	
	Passengers	Crew	Total	Passengers	Crew ①	Total	Pax only	Total ②
2009	-	-	749	2,250	56	2,306		0.32
2010	-	-	817	2,600	65	2,665		0.31
2011	393	121	514	2,800	70	2,870	0.14	0.18
2012	364	62	426	3,000	75	3,075	0.12	0.14
2013	*213*	68	281	3,100	78	3,178	0.07	0.09
2014	*595*	40	635	3,300	83	3,383	0.18	0.19
2015	151	25	176	3545	89	3634	0.04	0.05
2016	251	34	285	3768	94	3862	0.07	0.07
Total	1967	350	3883	24363	610	24973	0.62	1.35
Average	327.83	58.33	485.38	3045.38	76.25	3121.63	0.10	0.17

① Ratio of 1: 40 assumed based on *Flight International* statistics.

② Excluding crew on non-passenger flights during 2011-13.

Source: G. P. Wild (International) Limited from various sources

Another way of looking at these figures is to compare fatalities based on passenger miles travelled. These are presented in the following two tables.

Table 3. 5: Cruise Fatalities per billion international passenger-miles 2009-16

Year	Fatalities			Pax and crew n. miles (bill)			Fatalities per billion pnm	
	Passengers	Crew	Total	Passengers	Crew ①	Total	Pax only	Total
2009	0	0	0	30.34	13.79	44.13	0	0.00
2010	3	3	6	32.90	14.95	47.85	0.09	0.13
2011	1	3	4	35.35	16.07	51.42	0.03	0.08
2012	27	5	32	36.05	16.39	52.44	0.75	0.61
2013	0	8	8	36.81	16.73	53.54	0.00	0.15
2014	1	6	7	38.00	17.27	55.27	0.03	0.13
2015	1	1	2	39.56	17.98	57.54	0.03	0.03
2016	0	3	3	41.61	18.91	60.52	0.00	0.05
Total	33	29	62	290.62	132.10	422.72	0.92	1.17
Average	4.13	3.63	7.75	36.33	16.51	52.84	0.12	0.15

① Ratio of 1: 2.2 assumed.

Source: G. P. Wild (International) Limited from various sources

Basis: Assume an average of 250 miles per day per cruise and with average cruise of 6.9 days that is a distance per cruise passenger of 1,725 nautical miles.

Table 3. 6: Aircraft Fatalities per billion passenger-kilometres (includes domestic and international routes) 2009-16

Year	Fatalities			Pax km (bill)			Fatalities per billion km	
	Passengers	Crew	Total	Passengers	Crew ①	Total	Pax only	Total ②
2009	-	-	749	4,500	110	4,610	n.a	0.16
2010	-	-	817	4,900	120	5,020	n.a	0.16
2011	393	121	514	5,200	130	5,330	0.08	0.10
2012	364	62	426	5,500	140	5,640	0.07	0.08
2013	*213*	68	281	5,750	140	5,890	0.04	0.05
2014	*595*	40	635	6,089	150	6,239	0.10	0.10
2015	151	25	176	6,539	161	6,700	0.02	0.03
2016	251	34	285	6,951	171	7,122	0.04	0.04
Total	1,967	350	3,883	45,429	1,122	46,551	0.34	0.71
Average	327.83	58.33	485.38	5,679	140	5,819	0.06	0.09
Adj. to nm equivalent ③				2,882	71	2,953	0.11	0.17

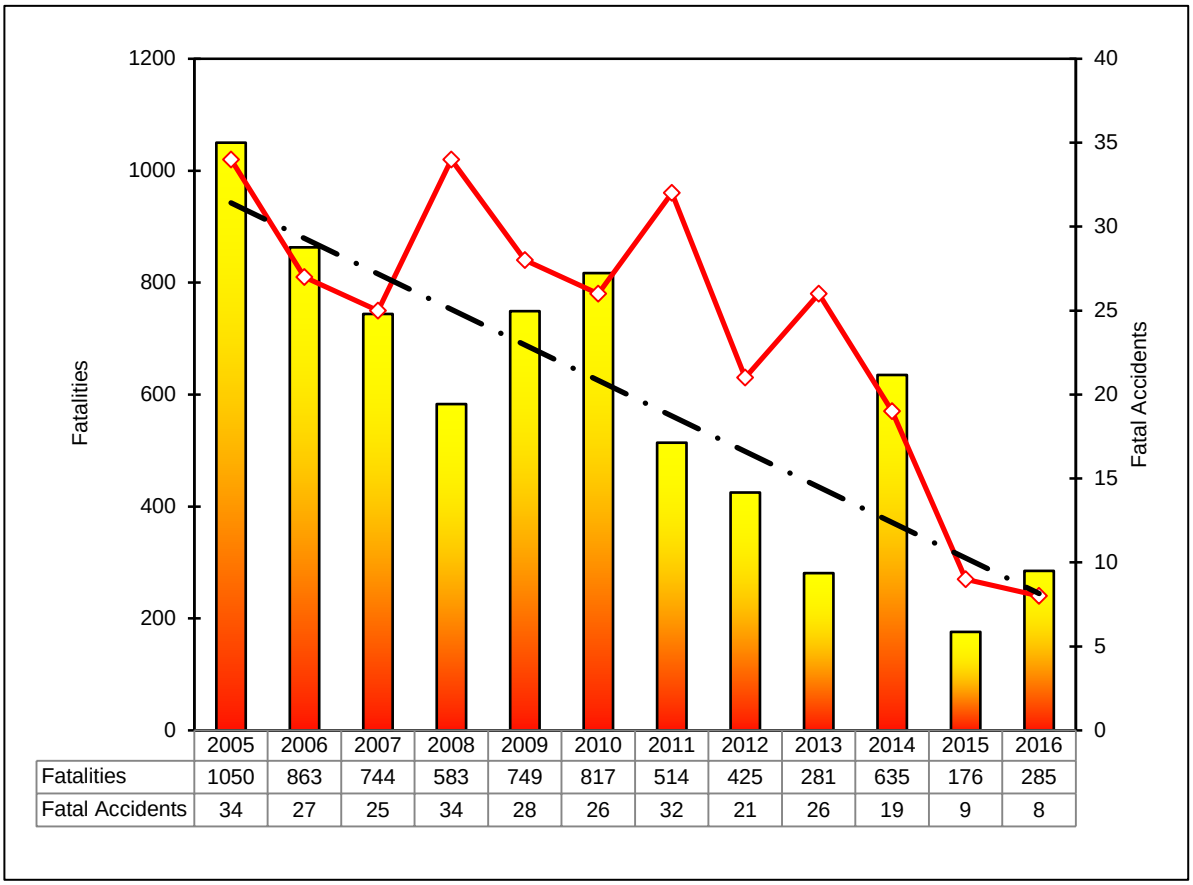
① Ratio of 1: 40 assumed.
② Excluding crew on non-passenger flights during 2011-13.
③ At 1.853 kilometres to one nautical mile.

Source: G. P. Wild (International) Limited from IATA and Flight International data

A review of various sources has indicated that the most comprehensive source for international aircraft safety statistics is the annual listing published in “Flight International”. These surveys cover “all fatal airline accidents that involve Western or Eastern built aircraft of all weights, sizes and engine types, in both passenger and non-passenger operations.”

Again a very similar outturn is found with 0.15 fatalities per billion passenger miles on cruises compared with 0.17 on airlines.

Figure 3. 1: Global Fatal Aviation Accidents 2005 to 2016



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fatalities	1050	863	744	583	749	817	514	425	281	635	176	285
Fatal Accidents	34	27	25	34	28	26	32	21	26	19	9	8

Source: Flight International/ Ascend data

Figure 3.1 indicates that the number of fatal accidents peaked at 34 in both 2005 and 2008, reducing to 21 in 2012 but climbing again to 26 in 2013, while the number of fatalities peaked at 1,050 in 2005, reducing to 425 in 2012 and again in 2013 to 281. The number of air accidents in 2014 was at an all-time low of 19 but unfortunately large aircraft were involved in certain incidents so passenger fatalities rose again to 635 (excluding MH17 which was classified as an act of aggression by the airline industry). In 2015 fatal accidents (again excluding the two involving criminal or terrorist activity referred to above) fell to nine with the number of fatalities dropping to 176. In 2016 these figures rose again following the all-time low year of the previous year.

A more detailed examination of the fatal accidents that occurred in 2011-13 is contained in Table 3.7, showing their distribution according to region of operation and between passenger and crew. It is notable that Europe and North America which together account for over 50% of the global passenger aviation market contributed less than 17% of passenger fatalities.

Table 3. 7: Analysis of Fatal Air Accidents 2011-13

Region	2011		2012		2013		Total 2011/13		
Fatalities	Pax only	Pax + Crew	Pax only	Pax + Crew	Pax only	Pax + Crew	Pax only	Pax + Crew	%
Africa	107	117	175	191	82	97	364	405	33.7
America, C/S	52	63	2	3	26	29	80	95	7.9
America, N	10	18	1	2	19	22	30	42	3.5
Asia	116	149	186	203	17	23	319	375	31.1
Europe	80	97	0	0	49	55	129	152	12.6
Oceania	28	28	0	0	3	3	31	31	2.6
Other ①	0	42	0	27	0	35	0	104	8.6
Total	393	514	364	426	196	264	953	1204	100.0

① All fatalities on non-passenger operations.

Source: G. P. Wild (International) Limited from FI data

The above data was not published in a comparable form for 2014 or 2015 but can be presented as shown Table 3.8.

Table 3. 8: Analysis of Fatal Air Accidents 2014 and 2015

Region	Passenger and Crew fatalities					
	2014		2015		2016	
	Number	%	Number	%	Number	%
Africa	13	2.0	43	24.4	1	0.3
Asia Pacific	401	62.6	67	38.1	12	4.2
CIS	13	2.0	6	3.5	62	21.8
Europe	116	18.1	0	0.0	0	0.0
Latin & Central America	0	0.0	5	2.8	71	24.9
Middle Est & N. Africa	48	7.5	0	0.0	66	23.2
N. America	2	0.3	12	6.8	3	1.0
North Asia	48	7.5	43	24.4	70	24.6
Totals	641	100.0	176	100.0	285	100.0

Source: IATA and Flight International

When all the above data are compared with figures issued by IATA and ICAO in respect of passenger kilometres and passenger journeys the following observations can be made:

- In 2011, 2012, 2013, 2014, 2015 and 2016 global passenger numbers were estimated at 2.8, 3.0, 3.1, 3.3, 3.5 and 3.8 billion respectively. Therefore, the fatality rate for passengers only was 0.14 per million passenger journeys, falling to 0.12 in 2012 and 0.085 in 2013. In 2014 it rose again to 0.18 but fell back to 0.04 in 2015 not taking account of the incidents in the Alps and over Sinai. In 2016 it was 0.07.

- Data on passenger-kilometres trends vary, according to the degree of comprehension involved. The best estimate seems to be 5,200 for 2011 and we have adjusted other data according to the indications of revenue passenger growth published by IATA. On this basis fatality rates were 0.09 per billion passenger-kilometres in 2011, 0.07 per billion in 2012, 0.04 billion in 2013, 0.10 in 2014, 0.02 in 2015 and 0.04 in 2016.

- The year 2016 was again a very good year for airline safety. There were only eight fatal accidents in which 285 people died compared with nineteen events and 671 deaths in 2014 and nine events and 176 deaths in 2015. The figure of nineteen in 2014 was already an all-time low.

- In their 2015 accident report, *Flightglobal's Ascend Consultancy* comments that "if the improvements in air safety since 2010 are maintained throughout the current decade, it will equate to some 4,400 fewer passenger and crew fatalities than during the decade 2000 to 2009."

- In their report on 2016, they have further commented that "a zero fatal accident total looks achievable without any major advances in technology."

3.2 US Domestic Transportation[1]

Turning now to other forms of transport, the US Department of Transportation publishes detailed statistics on all forms of domestic US transport but the latest available comprehensive figures relate to 2013. The available data for more recent years is in a different, less detailed format. There appears to have been a significant change in the way the data is compiled since the formation of certain new organizations, making direct year on year comparisons difficult. These are summarized below in Table 3.9.

Table 3. 9: US domestic transportation fatalities 2013

Mode of Transport	Fatalities	Pax-miles (mill)	Pax-miles (bill)	Fatalities per billion pax-miles
Air	429	589,692	590	0.73
Highway total ①	32,028	4,306,717	4,307	7.44
Passenger car	11,977	2,882,221	2,882	4.16
Motor-cyclists	4,668	21,937	22	212.79
Trucks	9,155	275,018	275	33.29
Rail ②	345	38,946	39	8.78
Total	32,799	4,935,355	4,935	6.65

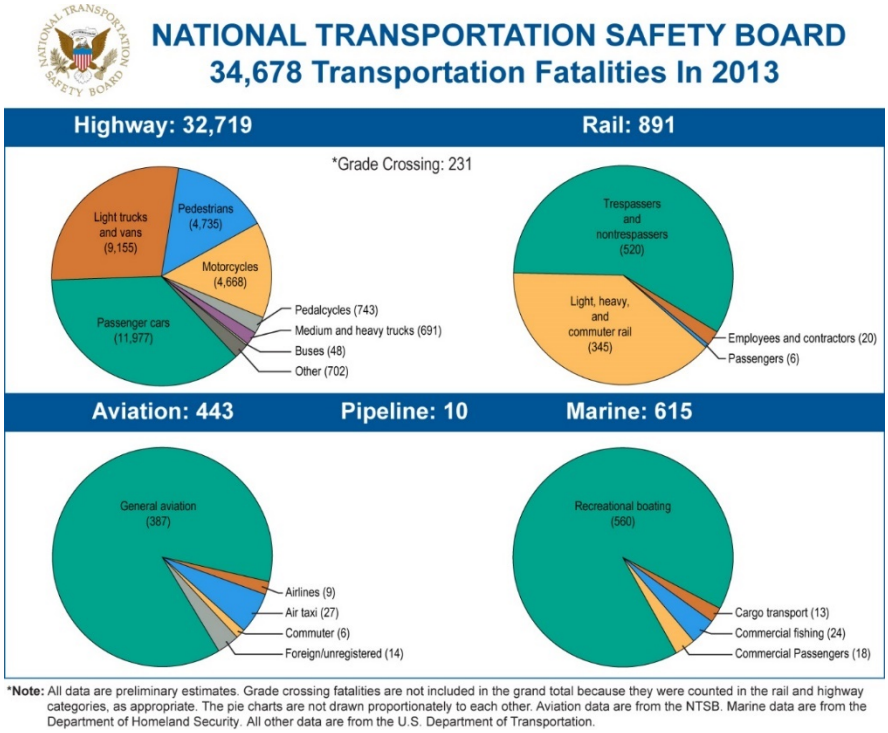
① Note that this includes pedestrians for which category passenger-miles are obviously unavailable.
② Excluding rail crossing accidents; 1.52% if these are included.
Source: G. P. Wild (International) Limited from US DoT data

It can thus be seen that in comparison with world airlines and international cruise lines, both of which had fatality figures of the order 0.19 passengers per billion passenger miles for 2015, the record level of fatalities for US domestic transport for all modes, is of a significantly greater order of magnitude. In 2013 official figures from DoT indicated that total transportation fatalities in the US amounted to 33,538 over four main sectors namely, highway (32,028), rail and transit (464), aviation (429) and marine (617).

Note that US domestic air includes all forms of air transport. The majority of air transport passenger fatalities are in general aviation as shown in Figure 3.2. No passenger fatalities were recorded on US domestic scheduled airlines in each of the years 2011, 2012, 2013, 2014 or 2015. Three fatalities occurred on a regional flight in Alaska in 2016.

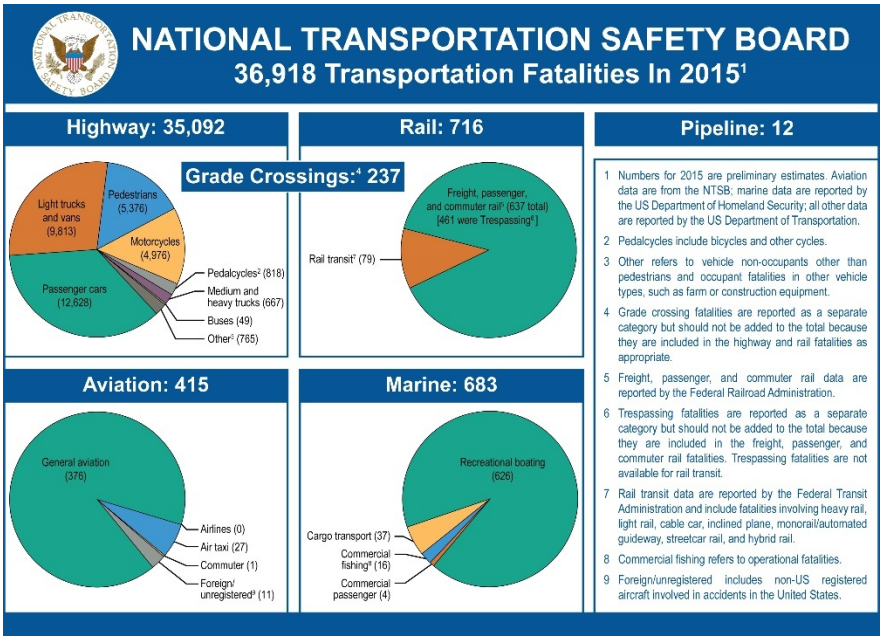
[1] Only the US publishes data on domestic transportation fatalities at such level of detail as to be able to be compared with the cruise industry in this way.

Figure 3. 2: US Domestic Transportation Fatalities 2013



The comparable figres for 2015 are shown in Figure 3.3. From 2013 to 2015, a two year period there was a rise of 6.4% in domestic transportation fatalities. Highway fatalities rose by 7.2% and marine by 6.2% whilst both rail (-19.7%) and avaiation (-6.4%) both fell.

Figure 3. 3: US Domestic Transportation Fatalities 2015



3.3 Waterborne Crew Statistics

In respect of waterborne crew casualties specifically again further information concerning fatalities on inland waterways and coastal voyages is provided by the USCG in its Quarterly Bulletin.

Crew Fatality Counts include all deaths and missing crew members on towing vessels or barges. Deaths due to natural causes, deaths of external parties, shipyard or shore-side workers are excluded from this measure. Overall, the number of fatalities in 2012 was at a record low. The average number of fatalities per year, from 2000 through 2012 is 10. Of the 6 fatalities in 2012, 2 were the result of falling overboard (one from barge and one from a zodiac – Good Samaritan). Two were the result of asphyxiation (one overcome after entering a cargo tank and the other drowned as a result of vessel flooding and sinking). One person was crushed between objects (barges) and another died as a result of burns incurred by an engine room fire.

Whilst it is not possible to make direct comparison between the cruise industry and the inland waterway industry in terms of fatalities and mileage travelled, it can be seen from the above and from the cruise data in Table 3.3 that:

- Cruise industry average crew fatalities 2009 to 2015 was 3.7;
- US inland and coastal waterways average crew fatalities 2000 to 2012 were five times higher at 10.0

3.4 Summary of Comparisons

Table 3.10 summarises the findings of the above research comparing US domestic travel with the international cruise and airline industries and also includes selected European transport statistics. The latest US domestic statistics available are for 2013, since which the methodology has changed. The statistics are now based on vehicle miles rather than passenger miles. The cruise industry figures for 2012 include the loss of *Costa Concordia*.

Table 3. 10: Summary of Fatality rates (passenger and crew) per billion passenger miles

Industry	2009	2010	2011	2012	2013	2014	2015	2016	2009 to 2016
Cruise Industry	0	0.13	0.08	0.61	0.15	0.13	0.03	0.05	0.15
World Airlines	0.31	0.31	0.18	0.14	0.09	0.19	0.03	0.04	0.17
US air travel all types			0.8		0.73				
US highways			7.6		7.44				
US passenger car			3.3		4.16				
US motor cyclists			231.1		212.79				
US trucks			37.1		33.29				
US rail			11.9		8.78				
European rail					2.37				

Source: G. P. Wild (International) Limited from various sources

It can be concluded that over the eight-year period of the study, fatalities from operational incidents were roughly equal between cruise ships and airlines in terms of passenger distances travelled and the figures for both industries were at or near an all-time low in 2015 and 2016.

In an article dated February 15th 2017, Forbes magazine offers the following assessment of fatalities on US roads. The article also illustrates the difficulty of comparing such statistics given the different methodologies used to measure the data.

Quote:

New preliminary 2016 data shared Wednesday from the *National Safety Council* estimates that as many as 40,000 people died in motor vehicles crashes last year, a 6% rise from 2015. If those numbers bear out, it would be a 14% increase in deaths since 2014, the biggest two-year jump in more than five decades.

It also means that 2016 may have been the deadliest year on U.S. roads since 2007, the NSC says.

Crashes result in the very real cost of human life. But there are also millions more who are seriously injured—an estimated 4.6 million in 2016 according to NSC—and a financial cost to society as well. NSC estimates the cost of motor-vehicle deaths, injuries, and property damage in 2016 was $432 billion, a 12% increase from the previous year. Those costs include losses in wages and productivity, medical expenses, property damage, employer costs and administrative expenses, the *NSC* say.

In October, the *National Highway Traffic Safety Administration* released traffic fatality statistics for the first half of 2016 that were equally abysmal. NHTSA reported, at the time, that there were 17,775 deaths on the road in the first half of the year, up 10.4% from the same period in 2015.

While it should be noted that *NHTSA* and *NSC* both paint a grim picture, the two entities calculate traffic death rates differently. *NSC* uses data from the National Center for Health Statistics, an arm of the *CDC*. It counts both traffic and non-traffic deaths that occur within a year of the accident, while *NHTSA* counts only traffic deaths that occur within 30 days. NSC's data also counts crashes on both public and private roadways such as parking lots and driveways.

Unquote.

Appendix 1: Significant Operational Incidents 2009 to 2016[2]

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
2009						
Fires						
2.2009	Loss of electrical power following fire in genie room; next cruise cancelled	1	0	0	0	0
4.2009	Engine room fire off Gibraltar	1	0	0	0	0
6.2009	Engine room fire during East Med cruise; next cruise cancelled	1	0	0	0	0
8.2009	Fire in port in Stockholm caused by crew welding; ship evacuated; smoke inhalation by 2 crew	1	0	0	0	2
Total Fires		4	0	0	0	2
Technical						
3.2009	Mechanical in Indian Ocean	1	0	0	0	0
3.2009	14-day Cruise cancelled due need to dry-dock for propeller shaft bearing problem	1	0	0	0	0
3.2009	Mechanical round world voyage	1	0	0	0	0
4.2009	Damage to Azipod from fishing nets	1	0	0	0	0
11.2009	One-week cruise cancelled due late dry-docking; ned to fabricate engine part	1	0	0	0	0
11.2009	Mechanical/power problems in Caribbean	1	0	0	0	0
12.2009	Three days' delay to subsequent cruise due to dry-docking running late	1	0	0	0	0
Total Technical		7	0	0	0	0
Stranding or Grounding						
1.2009	Propeller damage following collision with unknown object; some ports omitted	1	0	0	0	0
1.2009	Grounded off Trondheim; propeller damage	1	0	0	0	0
2.2009	Stranding in Antarctic	1	0	0	0	0
11.2009	Stranding in ice in Antarctic	1	0	0	0	0
12.2009	Grounding during Fiji cruise in strong winds	1	0	0	0	0
Total stranding or grounding		5	0	0	0	0
Storm or rogue wave damage						
10.2009	Storm damage off Spanish Med coast	1	0	0	0	0
10.2009	Severe listing in storm off US east coast; internal damage	1	0	0	0	1
Total stranding or rogue wave damage		2	0	0	0	1
Collision or allision						
12.2009	Collision with pier Porta Vallarta; cruise delayed	1	0	0	0	0
Total collision or allision		1	0	0	0	0
Other incidents						
3.2009	Gangway collapsed at Palma injuring one pax who fell into dock	1	0	0	0	0
10.2009	Severe listing approaching La Corunna; ship on wrong course entering channel; internal damage	1	0	0	0	0
Total other incidents		2	0	0	0	
Totals 2009		21	0	0	0	3
2010						
Fires						
5.2010	Fire in port in Norway	1	0	0	0	0
11.2010	Engine room fire, ship without power. Co2 firefighting system malfunctioned	1	0	0	0	0
12.2010	Fire disabled air conditioning and domestic	1	0	0	0	0

[2] Defined as more than 24-hour delay or with injuries or fatalities.

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
	services in Rio; cruise cancelled					
Total fires		3	0	0	0	0
Technical						
2.2010	Two cruises cancelled due need to dry-dock for propulsion repairs	1	0	0	0	0
3.2010	Crewmen burned by steam due boiler problem	1	0	0	0	3
4.2010	World cruise significantly curtailed by engine failure	1	0	0	0	0
4.2010	Power failure during Med cruise; ship dry-docked	1	0	0	0	0
4.2010	Engine problems; cancellation of cruise	1	0	0	0	0
8.2010	Power problems; 2 ports dropped; itinerary changes	1	0	0	0	0
8.2010	Engine trouble during Atlantic Isles cruise; replaced by sister ship	1	0	0	0	0
9.2010	Power failure disrupts pax services; cruise aborted	1	0	0	0	0
10.2010	Two cruises cancelled due propulsion pod malfunction; ship dry-docked Genoa	1	0	0	0	0
10.2010	Rudder problems; cruise cancelled; ship to be dry-docked in Mediterranean	1	0	0	0	0
10.2010	Propulsion motor problems cause cancellation of cruise	1	0	0	0	0
Total Technical		11	0	0	0	3
Stranding or Grounding						
8.2010	Ran aground on uncharted rock in Arctic; cruise cancelled	1	0	0	0	0
Total stranding or grounding		1	0	0	0	0
Storm or rogue wave damage						
3.2010	Heavy weather in Med smashed forward lounge windows	1	2	0	2	14
9.2010	Storm damage off Scotland	1	0	0	0	0
12.2010	Extreme weather during Antarctic cruise; returned to port	1	0	0	0	0
12.2010	Heavy weather in Med	1	0	0	0	2
Total storm or rogue wave damage		4	2	0	2	16
Collision or Allision						
2.2010	Collision with dock in Red Sea flooded crew cabin	1	0	3	3	4
3.2010	Collision with cargo ship in Philippines; some damage to fore part	1	0	0	0	0
10.2010	Collision en route Japan to China; 20m gash in hull, 3 injured	1	0	0	0	3
undated	Collided with cargo ship in Yangzi River	1	0	0	0	3
Total collision or allision		4	0	3	3	10
Other incidents						
5.2010	Ship detained by MCA in Belfast for multiple defects; pax left ship	1	0	0	0	0
6.2010	Detained by MCA in Portsmouth for various defects including submersion of load line	1	0	0	0	0
7.2010	Crewman trapped by fire door during drill; serious injuries, cruise delayed	1	0	0	0	1
7.2010	Shore gangway (Genoa Port Authority) collapsed during embarkation; 1 fatality, 1 injury	1	1	0	1	1
Total other incidents		4	1	0	1	2
Total 2010		27	3	3	6	31
2011						
Fires						
4.2011	Generator fire, loss of power, pax evacuated from ship	1	0	0	0	0
12.2011	Generator room fire	1	0	0	0	0

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
Total fires		2	0	0	0	0
Technical						
5.2011	Mechanical/switchboard problem in Baltic; ship adrift; cruise cancelled	1	0	0	0	0
7.2011	Propeller problems in Seattle; on day delay	1	0	0	0	0
9.2011	Mechanical/engine explosion in Antarctic	1	0	2	2	9
12.2011	Mechanical failure, loss of propulsion and wave damage in Drake Passage	1	0	0	0	0
Total technical		4	0	2	2	9
Stranding or grounding						
2.2011	Grounding on rock in Antarctica: remainder of cruise season cancelled	1	0	0	0	0
10.2011	Stranding on rocks Patmos	1	0	0	0	0
Total stranding or grounding		2	0	0	0	0
Storm or rogue wave damage						
10.2011	Extreme weather in North Atlantic; small fire on gas turbine generator reported	1	0	0	0	0
11.2011	Hull cracking; ship listed	1	0	0	0	0
Total storm or rogue wave damage		2	0	0	0	0
Collision or Allision						
5.2011	Struck by bunkering barge in St Petersburg; damage to lifeboats	1	0	0	0	0
11.2011	Struck container crane while leaving Cadiz; damage to balconies	1	0	0	0	0
Total collision or allision		2	0	0	0	0
Other incidents						
1.2011	Accident during lifeboat maintenance in NZ	1	0	1	1	0
1.2011	Accident involving oxygen tank during boat drill; 2 crewmen injured	1	0	0	0	2
4.2011	Pax died after being dropped into sea during medevac	1	1	0	1	0
Total other incidents		3	1	1	2	2
Total 2011		15	1	3	4	11
2012						
Fires						
2.2012	Generator room fire; ship disabled	1	0	0	0	0
4.2012	Fire resulting in power loss and injuries to crew; ship off Borneo coast	1	0	0	0	5
4.2012	Destroyed by fire in Seattle	1	0	0	0	0
Total fires		3	0	0	0	5
Technical						
3.2012	Propulsion motor problems; cancellation of 2 cruises	1	0	0	0	0
4.2012	Total power failure in Antarctica	1	0	0	0	0
4.2012	Mechanical; 2 cruises cancelled including "maiden Voyage"	1	0	0	0	0
6.2012	Engine problems; emergency repairs in Holyhead; cruise curtailed	1	0	0	0	0
10.2012	Cruise cancelled due propulsion motor problem; ship early to dry-dock	1	0	0	0	0
11.2012	Main engine problems; cruise curtailed in Madeira	1	0	0	0	0
12.2012	Failure of heating system lead to curtailment of cruise in Oslo	1	0	0	0	0
Total technical		7	0	0	0	0
Stranding or grounding						
1.2012	Capsize/stranding	1	27	5	32	159

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
1.2012	Grounded at Port Lucaya, Bahamas; minimal damage, pulled clear by tugs; continued voyage	1	0	0	0	0
10.2012	Propeller damage found during routine dry-dock; following cruise cancelled for repair time	1	0	0	0	0
Total stranding or grounding		3	27	5	32	159
Storm or rogue wave damage						
2.2012	Internal damage caused by storm with 10/11 m waves	1	0	0	0	0
10.2012	Storm damage in Bay of Biscay; significant damage; some cracking repairs necessary	1	0	0	0	0
Total storm or rogue wave damage		2	0	0	0	0
Collision or allision						
3.2012	Collision with container ship off Vietnam in fog	1	0	0	0	0
9.2012	Collided in Bermuda after Star broke moorings	1	0	0	0	0
12.2012	Struck quay berthing at Marseilles; significant hull damage	1	0	0	0	0
Total collision or allision		3	0	0	0	0
Total 2012		18	27	5	32	164
2013						
Fires/explosion						
2.2013	Engine room fire/loss of power	1	0	0	0	0
5.2013	Fire on mooring deck when near Bahamas	1	0	0	0	0
11.2013	Fire in smokestack resulted in ship being sent to repair yard in Genoa	1	0	0	0	0
12.2013	Explosion whilst tank cleaning off South America	1	0	0	0	3
Total fires/explosion		4	0	0	0	3
Technical						
1.2013	World cruise reduced to circle of South Atlantic due engine problems	1	0	0	0	0
3.2013	Electrical problems caused power outages and cancellation of following cruise	1	0	0	0	0
4.2013	Sewage back up affecting 400 cabins	1	0	0	0	0
6.2013	Crew member seriously burned in steam leak accident	1	0	0	0	1
6.2013	Generator failure causes curtailment of cruise in Ireland	1	0	0	0	0
8.2013	Switchboard faults cause cruise cancellation of Australian cruise	1	0	0	0	0
8.2013	Propulsion motor faults cause cancellation of 4 cruises	1	0	0	0	0
10.2013	Problems with stabilisers after dry-dock; cruise cancelled	1	0	0	0	0
Total technical		8	0	0	0	1
Stranding or grounding						
3.2013	Aground of Troll fjord, Norway	1	0	0	0	0
3.2013	Aground off Scotland; one tank holed	1	0	0	0	0
5.2013	Aground off Oban, Scotland	1	0	0	0	0
Total stranding or grounding		3	0	0	0	0
Storm or rogue wave						
1.2013	Heavy weather in of Ushuaia	1	0	0	0	4
Total storm or rogue wave		1	0	0	0	4
Other incident						
1.2013	Crew member killed falling into engine room ventilation duct while undertaking repairs	1	0	1	1	0
2.2013	Lifeboat fell into water after fall wire broke during a drill	1	0	5	5	0

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
3.2013	Sailor hit by mooring rope/fell into Katakolon harbour	1	0	1	1	0
3.2013	Ship detained by UK authorities for deficiencies; cruise cancelled	1	0	0	0	0
10.2013	Crew member killed in cherry picker accident in New Orleans	1	0	1	1	0
Total other incidents		5	0	8	8	0
Total 2013		21	0	8	8	8
2014						
Fires/explosion						
5.2014	Electrical fire caused loss of power. Ship anchored in calm conditions for repairs.	1	0	0	0	
12.2014	Engine room fire	1	0	3	3	
Total fires/explosion		2	0	3	3	0
Technical						
2.2014	Propeller shaft problems. Returned to Southampton 3 days early for repairs	1	0	0	0	0
3.2014	Ship delayed in dry-dock for propeller repairs. Following cruise started 3 days late	1	0	0	0	0
4.2014	Propeller seal leakage. 3-day stop in Barcelona for repairs	1	0	0	0	0
5.2014	Main engine fault caused curtailment of cruise and cancellation of following cruise.	1	0	0	0	0
5.2014	Undisclosed electrical fault. Cruise cancelled	1	0	0	0	0
7.2014	Engine problems/ cancellation of cruise	1	0	0	0	0
9.2014	Two cruises cancelled. Ship dry-docked for mechanical repairs.	1	0	0	0	0
9.2014	Propeller and shafting problems. Three cruises cancelled.	1	0	0	0	0
12.2014	Engine failure. Following cruise cancelled	1	0	0	0	0
Total technical		9	0	0	0	0
Stranding or grounding						
10.2014	Struck unidentified object leaving Freeport. Pax evacuated	1	0	0	0	0
Total stranding or grounding		1	0	0	0	0
Storm or rogue wave						
2.2014	Ship hit by freak wave which stove in forward lounge windows	1	1	0	1	12
Total storm or rogue wave		1	1	0	1	12
Other incident						
2.2014	Propeller damage from cable. Cruise curtailed, following cruise cancelled. Ship dry-docked in Korea	1	0	0	0	0
4.2014	Two mooring men drowned when their boat capsized by wash from ship when undocking St Kitts	1	0	2	2	0
10.2014	Rescue boat fall wire broke. Boat fell to water with two crewmen aboard. One seaman killed, other injured.	1	0	1	1	0
Total other incidents		3	0	3	3	0
Total 2014		16	1	6	7	12
2015						
Fires/explosion						
25.01	Engine room fire/cruise curtailed in Tenerife	1	0	0	0	0

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
22.07	Crew member received first degree burns in machinery space fire/pax mustered	1	0	0	0	1
8.09	Engine room fire whilst alongside/ship remained in St Thomas for 3 days	1	0	0	0	0
18.11	Major engine room fire/all pax evacuated by helicopter and rescue craft off Falkland Islands/ship out of service for repairs	1	0	0	0	0
2.12	Loss of power after switchboard fire/cruise cancelled	1	0	0	0	0
Total fires/explosion		5	0	0	0	1
Technical						
24.01	Electrical faults resulting from water leak/36-hour delay	1	0	0	0	0
1.02	PA system failure/cruise cancelled	1	0	0	0	0
25.02	Mechanical problems/ship in port in Virgin Islands for 3 days	1	0	0	0	0
12.04	Azipod problems/trans canal cruise cancelled	1	0	0	0	0
26.04	Cruise cancelled due emergency dry-docking for oil leak	1	0	0	0	0
7.05	Two days' delay due technical problems on Norwegian Fjords cruise	1	0	0	0	0
1.08	Mechanical problems delay ship in Tallinn/cruise cancelled	1	0	0	0	0
Total technical		7	0	0	0	0
Stranding or grounding						
6.02	Grounding/ship taken from service for repairs	1	0	0	0	0
11.05	Grounded in western Scotland/out of service for repairs 3 months	1	0	0	0	0
22.11	Ice damage in South Shetlands. Next cruise cancelled	1	0	0	0	0
24.12	Ran aground whilst anchoring at Isla da Coiba, Panama. Ship dry-docked for repairs	1	0	0	0	0
Total stranding or grounding		4	0	0	0	0
Storm or rogue wave						
Total storm or rogue wave		0	0	0	0	0
Collision or allision						
18.06	Allision with lock in St Lawrence Seaway/out of service 26 days for repair	1	0	0	0	22
27.06	In collision with tanker in Dardanelles. Pax disembarked at Gallipoli.	1	0	0	0	0
Total collision or allision		2	0	0	0	22
Other incident						
1.04	Passenger fell into sea and received fatal head injury whilst boarding a tender at Sihanoukville	1	1	0	1	
28.07	Two crew seriously injured by failure of rescue boat lowering mechanism while under maintenance in Hilo, Hawaii	1	0	0	0	2
29.12	Electrician killed in elevator repair incident	1	0	1	1	
Total other incidents		3	1	1	2	2
Total 2015		21	1	1	2	25
2016						
Fires/explosion						
1.07.16	Generator room fire. Passengers flown home. Next cruise cancelled.	1	0	0	0	0
1.09.16	Engine room fire. Passengers evacuated by ferry. Next cruise cancelled.	1	0	0	0	0
21.10.16	Engine room fire. Two days delay.	1	0	0	0	0
					0	
					0	

Date	Occurrence	OI's	Fatalities			Injuries
			Pax	Crew	Total	
Total fires/explosion		3	0	0	0	0
Technical						
3.06.16	Engine failure. Ship towed into port. Five days delay to schedule.	1	0	0	0	0
16.08.16	Stranded in Bora Bora by mechanical failure. Four days delay.	1	0	0	0	0
28.09.16	Rudder failure. Ship towed back to port.	1	0	0	0	0
31.10.16	Propulsion problems cause cancellation of two cruises.	1	0	0	0	0
11.12.16	Propulsion problems cause repeated delays to Singapore itineraries.	1	0	0	0	0
27.12.16	Prolusion problems in Antarctica. Ship under tow then long term repair period.	1	0	0	0	0
30.12.16	Returned to port in Barcelona with engine problems. Next cruise cancelled.	1	0	0	0	0
Total technical		7	0	0	0	0
Stranding or grounding						
					0	
					0	
					0	
					0	
Total stranding or grounding		0	0	0	0	0
Storm or rogue wave						
6.02.16	Storm damage in Atlantic. Port Azipod clutched burned out. Following cruise cancelled	1	0	0	0	0
Total storm or rogue wave		1	0	0	0	0
Collision or allision						
3.06.16	Allision with berth on arrival Ketchikan in strong winds. Two-days delay.	1	0	0	0	0
14.10.16	Struck breakwater in Nice. Underwater damage.	1	0	0	0	0
Total collision or allision		2	0	0	0	0
Other incident						
15.03.16	Crew member seriously injured in maintenance accident in fan duct	1	0	0	0	1
4.08.16	Lifeboat lowering accident.	1	0	2	2	2
12.09.16	Lifeboat lowering accident.	1	0	1	1	4
					0	
Total other incidents		3	0	3	3	7
Total 2016		16	0	3	3	7
Total 2009 to 2016		155	33	29	62	261

Source: G. P. Wild (International) Limited

Appendix 2: Details of Minor Operational Incidents 2009 to 2016[3]

Date	Occurrence	OI's	Injuries
2009			
Fires			
undated	Fire believed to have been started in dirty laundry bags; extinguished by crew	1	0
3.2009	Flash fire in crew galley tilt pan; extinguished by fixed firefighting equipment	1	0
3.2009	Turbocharger seal failure causes fire alarm; smoke only	1	0
5.2009	Fire in battery room put out with portable extinguishers	1	0
6.2009	Fire in pax cabin caused by cigarette embers; extinguished by sprinklers	1	0
Total fires		5	0
Technical faults			
undated	Propulsion and emergency generator faults; minor itinerary changes	1	0
1.2009	Various faults and delays	1	0
1.2009	Loss of propulsion due electrical fault; emergency generators started, power restored	1	0
2.2009	Various propulsion problems and itinerary changes	1	0
undated	Oil leak from Azipod	1	0
2.2009	Schedule disruption in Indian Ocean due technical faults	1	0
7.2009	Loss of power in Alaska; 2 similar incidents; electrical component replaced	1	0
undated	Power loss	1	0
11.2009	Blackout; power restored in 45 minutes; ship in Caribbean	1	0
10.2009	Engine problems; port missed out	1	0
12.2009	Propulsion pod problems; minor delays	1	0
Total technical		11	0
Stranding or grounding			
5.2009	Grounding approaching Copenhagen; delay to next cruise 1 day	1	0
12.2009	Disputed incident; ship reported to have damaged propeller near Ushuaia	1	0
Total stranding or grounding		2	0
Storm or rogue wave damage			
3.2009	Water inundation into crew areas from outside door in heavy weather in Antarctic	1	0
7.2009	Breaks mooring lines during force 10 gale in Zeebrugge; tugs deployed; 4-hour delay	1	0
9.2009	Failed thruster and storm damage in Atlantic	1	0
Total storm or rogue wave damage		3	0
Collision or allision			
10.2009	Collision caused by high winds in Cozumel; minor damage; no delays	1	0
10.2009	Collision with pier berthing at New York; bow damage and minor delay	1	0
Total collision or allision		2	0
Other incidents			
5.2009	Ship took violent list during St Lawrence Seaway transit	1	0
7.2009	Detained by USCG with small hole in hull	1	0
Total other incidents		2	0
Total 2009		25	0
2010			
Fires		0	0
Technical			
undated	Propulsion problems; minor itinerary changes	1	0
undated	Seven-hour delay due technical problem	1	0
1.2010	Various faults and minor delays	1	0
undated	Port cancellations due mechanical fault	1	0
undated	Power failure approaching Brisbane; near miss with bridge	1	0
undated	Mediterranean cruise itinerary disrupted by engine problems	1	0
undated	Propulsion problems during world cruise; loss of power off Aden	1	0

[3] Defined as 24-hour delay or less, no serious injuries or fatalities.

Date	Occurrence	OI's	Injuries
undated	Propeller shaft problem; seven-hour delay on inaugural voyage	1	0
4.2010	Ship listed heavily due steering malfunction	1	0
6.2010	Delays on Alaska cruise due technical faults	1	0
undated	Minor itinerary changes to Baltic cruise due hydraulic motor fault	1	0
undated	Four-hour delay due steering control fault in Dubrovnik	1	0
undated	Ten hours late on Melbourne Cup cruise due technical fault	1	0
Total technical		13	0
Collision or allision			
3.2010	Struck quayside in La Palma in high winds	1	0
Total collision or allision		1	0
Other incidents			
2.2010	Ship took severe list; reason disputed	1	0
4.2010	Ship took heavy list avoiding semi submerged object; 60 pax minor injuries	1	60
5.2010	Detained in Southampton by MCA; ship overloaded, defects in stability calculations	1	0
7.2010	Ship took severe list explained as "whale avoidance". Pax thrown from seats	1	10
8.2010	Minor ice damage off Greenland; itinerary modified	1	0
Total other incidents		5	70
Total 2010		19	70
2011			
Fires			
6.2011	Explosion in fuel tank on quayside in Gibraltar (not on ship); minor injuries to 12 pax	1	12
undated	Small fire on generator	1	0
undated	Small fire in incinerator room; quickly extinguished	1	0
Total fires		3	12
Technical			
1.2011	Propulsion problems; minor itinerary change	1	0
undated	Stopped twice during transatlantic crossing; no reason reported	1	0
6.2011	Propulsion problems during world cruise; continued on 3 engines	1	0
undated	Propulsion problem caused switch of itinerary due speed restriction	1	0
9.2011	Four-hour delay sailing Southampton due technical fault	1	0
undated	Minor itinerary change due thruster problem	1	0
undated	Six-hour delay due mechanical problem; itinerary change	1	0
12.2011	90-minute power outage	1	0
Total technical		8	0
Collision or allision			
3.2011	Collided with pier on departure Buenos Aires; 10-hour delay for repairs	1	0
6.2011	Struck quay in Kristiansand; minor damage	1	0
7.2011	Minor collision in Key West	1	0
12.2011	Ship collided with crane on adjacent container ship while leaving BA; minor itinerary change	1	0
Total collision or allision		4	0
Storm or rogue wave			
3.2011	Blown from moorings by gust of wind; no serious damage	1	0
Total storm or rogue wave		1	0
Other incidents			
undated	Ice damage in Alaskan Fiord	1	0
9.2011	Ship detained by MCA in Southampton for lifeboat fault	1	0
Total other incidents		2	0
Total 2011		18	12
2012			
Fires			
Total fires		0	0
Technical			
undated	Mechanical problems caused revised itinerary	1	0
undated	Propulsion problems; delay and itinerary change	1	0
undated	Several brief power outages crossing Indian Ocean	1	0
3.2012	Three-hour delay sailing Honolulu due mechanical fault	1	0

Date	Occurrence	OI's	Injuries
undated	Two-hour power outage	1	0
10.2012	Electrical outage delayed arrival New York	1	0
undated	Unscheduled stop in San Diego for repairs	1	0
10.2012	Propulsion malfunction resulted in loss of one port from Itinerary	1	0
10.2012	Loss of electrical power	1	0
11.2012	Propulsion problems result in cancellation of call in Tenerife	1	0
12.2012	Loss of electrical power for 2 hours between Sydney & Hong Kong	1	0
12.2012	Technical problem with gas turbine engine causes minor itinerary changes	1	0
Total technical		12	0
Collision or allision			
5.2012	Collided with fish farm under tow in BC. Farm broken apart, retrieved by tug	1	0
8.2012	Collided with pier in Londonderry; substantial damage to pier	1	0
11.2012	Ran over navigation buoy in high winds entering Yalta; buoy sank	1	0
Total collision or allision		3	0
Stranding or grounding			
8.2012	Grounding in Detroit River; freed after 5 hours	1	0
Total stranding or grounding		1	0
Storm or rogue wave			
10.2012	Heavy weather damage crossing Bay of Biscay	1	0
10.2012	Minor damage and window cracking from proximity to hurricane Sandy	1	0
Total storm or rogue wave		2	0
Other incidents			
undated	Error (or burst pipe) filling swimming pool caused flooding of cabins and delay sailing	1	0
7.2012	Crew error in mixing chemicals in engine room, three crew treated for minor injury	1	3
Total other incidents		2	3
Total 2012		20	3
2013			
Fires			
6.2013	Brief fire off Italian Coast	1	0
11.2013	Fire in electrical substation; pax mustered; fire extinguished by crew	1	0
Total fires		2	0
Technical			
1.2013	Schedule change due propulsion problem	1	0
1.2013	Thruster problem cause itinerary change	1	0
2.2013	Propulsion problems; 6 hours late into final port	1	0
3.2013	Change of transatlantic itinerary due propulsion problem	1	0
3.2013	Schedule change due propulsion problem	1	0
4.2013	Brief power outages on Bahamas cruise	1	0
4.2013	Stoppage in South China Sea with "propulsion problem"; minor itinerary change	1	0
4.2013	6-hour delay into Shanghai due propulsion problem	1	0
6.3013	2-hour delay in Nova Scotia due propulsion motor fault	1	0
undated	Schedule change due propulsion problem	1	0
12.2013	Generator breakdown resulting in itinerary change from Caribbean to Med	1	0
Total technical		11	0
Stranding or grounding			
1.2013	Stuck in ice in Antarctic; HMS Protector broke ship free	1	0
Total stranding or grounding		1	0
Storm or rogue wave			
5.2013	Heavy weather damage in 50 knot winds	1	0
12.2013	Hull damage during severe storm when moored in Madeira	1	0
Total storm or rogue wave		2	0
Collision or allision			
1.2013	Itinerary change due fishing net damage to shaft seal; one port dropped	1	0
4.2013	Towed into Shanghai after fishing nets tangled in propeller	1	0
11.2013	Contact with pier in Piraeus; some hull damage	1	0
Total collision or allision		3	0

Date	Occurrence	OI's	Injuries
Other incidents			
Total other incidents		0	0
Total 2013		19	0
2014			
Fires			
1.2014	Minor power loss caused smoke from incinerator. Disagreement in reports as to length of outage (8 - 60 mins)	1	0
5.2014	Incinerator room fire. Smoke in accommodation.	1	0
7.2014	Boiler room fire shortly after departure Seattle. Ship returned to port resulting in short delay and one port dropped.	1	0
12.2014	Engine room fire	1	0
12.2014	Fire in uptake area	1	0
Total fires		5	0
Technical			
1.2014	20-minute power loss reported at sea	1	0
2.2014	Steering problems off Cape Horn. Ship hove to.	1	0
2.2014	90-minute power loss while alongside Key West. Emergency lighting activated.	1	0
3.2014	Propulsion pod oil leak caused reduced speed and changes to itinerary	1	0
4.2014	Transformer in propulsion system faulty. Port dropped on three consecutive cruises.	1	0
4.2014	Propulsion problem reduced operating speed. Cruises modified.	1	0
6.2014	Loss of power leaving Le Havre. Emergency generator activated and tugs assisted.	1	0
7.2014	Technical fault causing reduced speed operation and itinerary changes.	1	0
7.2014	Delayed in Civitavecchia due unspecified technical fault	1	0
8.2014	Engine problems departing Seattle	1	0
8.2014	Propulsion problems, departure NY delayed	1	0
12.2014	Blackout. Ship adrift off Marseilles	1	0
Total technical		12	0
Stranding or grounding			
Total stranding or grounding		0	0
Storm or rogue wave			
9.2014	Damaged arriving Civitavecchia in 50 knot winds. Delayed for repairs and missed next port.	1	0
9.2014	Engine failure in heavy seas. 90 mph winds reported	1	0
10.2014	Three ports missed in Tasmania and NZ due heavy weather.	1	0
10.2014	Heavy weather on Northern Lights cruise causes 24-hour delay in docking on cruise return	1	0
Total storm or rogue wave		4	0
Collision or allision			
2.2014	Oil tanker collided with berthed ship. Lifeboat damaged and minor steel repairs caused some delay to schedule	1	0
Total collision or allision		1	0
Other incidents			
2.2014	Small leak in hull. Ship diverted for repairs in Falmouth, UK.	1	0
Total other incidents		1	0
Total 2014		23	0
2015			
Fires			
19.04	Small fire lead to ship returning to port in Miami/Key West call cancelled	1	0
22.10	Engine room fire, one port aborted. 1 pax and 19 crew treated for smoke inhalation	1	20
5.11	Engine room fire. Pax mustered	1	0
23.11	Failure of propulsion circuit breaker and minor fire results in reduction in propulsion/one port (Hilo) missed	1	0

Date	Occurrence	OI's	Injuries
13.12	Minor engine room fire causes loss of one propulsion pod/delayed for repairs in Lisbon	1	0
Total fires		5	20
Technical			
24.03	Two ports cancelled on six port trans canal cruise due technical problems	1	0
22.04	Four port calls cancelled due thruster technical problems	1	0
30.04	Mechanical problems caused cancellation of call in Jamaica	1	0
5.05	Ship operating on one engine/port call missed	1	0
6.07	Propulsion problems resulted in ship returning to port in New Jersey and 12-hour delay	1	0
5.08	Blackout delays departure by 6 hours	1	0
13.10	Propulsion problems approaching Sydney	1	0
17.10	Azipod problems caused cancellation of Miami call on return transatlantic voyage	1	0
1.12	Minor power outages	1	0
4.12	Extended unplanned maintenance period in Singapore	1	0
16.12	Power outage	1	0
Total technical		11	0
Stranding or grounding			
8.03	Minor grounding when avoiding sailing boat whilst departing Miami	1	0
19.05	Grounding whilst departing Bermuda as a result of propulsion malfunction/refloated and inspected before departing for Boston	1	0
4.07	Stranding in Boston Harbour/subsequent call at Bar Harbor cancelled	1	0
28.10	Grounded on sandbar approaching Bermuda	1	0
Total stranding or grounding		4	0
Storm or rogue wave			
7.03	Significant storm damage on passage to Marseilles. Ship diverted to Savona and pax bussed to Marseilles	1	0
21.04	Storm damage off Sydney/2 pax injured by flying glass	1	2
27.11	Heavy weather damage to cabin port hole	1	2
Total storm or rogue wave		3	4
Collision or allision			
27.07	Collision with coast guard cutter in misty conditions. Ship delayed for damage inspection	1	0
Total collision or allision		1	0
Other incidents			
Total other incidents		0	0
Total 2015		24	24
2016			
Fires			
23.12	Fire in uptake area	1	0
Total fires		1	0
Technical			
4.02	Mechanical faults causing reduced speed and missed ports	1	0
22.02	Itinerary changes due propulsion problems	1	0
1.04	Propulsion problems lead to dropped ports	1	0
4.04	Propulsion problems result in slow speeds and dropped ports	1	0
22.04	Generator problems result in slow speeds and dropped ports	1	0
20.05	Bow thruster problems result in missed ports	1	0
29.05	Ship returned to port in Miami following loss of power	1	0
27.06	Engine problems result in dropped ports	1	0
25.07	Power loss leaving Malta. Tugs called to return to berth	1	0
3.08	Loss of power in Irish Sea	1	0
11.08	Technical faults lead to late departure from Malta	1	0
14.11	Propulsion problems causing itinerary changes	1	0
Total technical		12	0
Stranding or grounding			
25.07	Grounding in Stavanger	1	0

Date	Occurrence	OI's	Injuries
21.10	Runs aground entering Portimao	1	0
Total stranding or grounding		2	0
Storm or rogue wave			
25.04	Ship hit by large wave breaking five cabin windows/internal damage/ship delayed for repairs	1	0
Total storm or rogue wave		1	0
Collision or allision			
8.05	Struck passenger gangway as berthing at Baltimore	1	0
4.06	Allision with pier in Ketchikan	1	0
6.08	Collision with cross-river ferry when leaving Tilbury	1	0
Total collision or allision		3	0
Other incidents			
21.07	Lifeboat stuck in falls during drill. Crane needed to secure. Delay to departure	1	0
4.12	Damage to tender platform results in return to port for repairs	1	0
Total other incidents		2	0
Total 2016		21	0
Total 20009 to 2016		169	109