



OIL TANKER SPILL STATISTICS 2010

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BACKGROUND

ITOPF maintains a database of oil spills from tankers, combined carriers and barges. This contains information on ACCIDENTAL spillages since 1970, except those resulting from acts of war.

The data held includes the type of oil spilt, the spill amount, the cause and location of the incident and the vessel involved. For historical reasons, spills are generally categorised by size, <7 tonnes, 7-700 tonnes and >700 tonnes (<50 bbls, 50-5,000 bbls, >5,000 bbls), although the actual amount spilt is also recorded. Information is now held on nearly 10,000 incidents, the vast majority of which (81%) fall into the smallest category i.e. <7 tonnes.

Information is gathered from both published sources, such as the shipping press and other specialist publications, and also from vessel owners and their insurers. Unsurprisingly, information from published sources generally relates to large spills, often resulting from collisions, groundings, structural damage, fires and explosions, whereas the majority of individual reports relate to small operational spillages. Complete reporting of this latter type of spill is clearly difficult to achieve.

It should be noted that the figures for the amount of oil spilt in an incident include all oil lost to the environment, including that which burnt or remained in a sunken vessel. There is considerable annual variation in both the incidence of oil spills and the amounts of oil lost. Whilst we strive to maintain precise records for all spill information, we cannot guarantee the information taken from shipping press and other sources is complete or accurate. Consequently, the figures in the following tables, and any averages derived from them should be viewed with an element of caution.

NUMBERS AND AMOUNTS SPILT

NUMBER OF OIL SPILLS

Following the publication of the previous statistical analysis for 2009, notification was received of an incident involving the sinking of a tanker off Vietnam in 2009 containing more than 700 tonnes of oil. As a consequence, we have revised the figure for 2009 accordingly.

The incidence of large spills is relatively low and detailed statistical analysis is rarely possible, consequently emphasis is placed on identifying trends. Thus, it is apparent from Table 1 that the number of large spills (>700 tonnes) has decreased significantly during the last 41 years during which records have been kept. The average number of major spills for the previous decade (2000-2009) is just over three, approximately eight times less than for the 1970s. Looking at this downward trend from another perspective, 55% of the large spills recorded occurred in the 1970s, and this percentage has decreased each decade to 7% in the 2000s (Figure 1).

A decline can also be observed with medium sized spills (7-700 tonnes) in Table 1. Here, the average number of spills in the 2000s was close to 15, whereas in the 1990s the average number of spills was almost double this number.

For 2010, four large spills were recorded. Whilst this is an increase on the figures for 2008 and 2009, this represents a minor deviation from the average of 3.3 spills per year in the 2000s as a whole (Figure 2 and Table 1). Four medium spills were also recorded in 2010, representing the lowest annual figure recorded for this category. The total of all spills over 7 tonnes for 2010 shows no change against 2009 and is a significant reduction compared to the average for the previous decade.

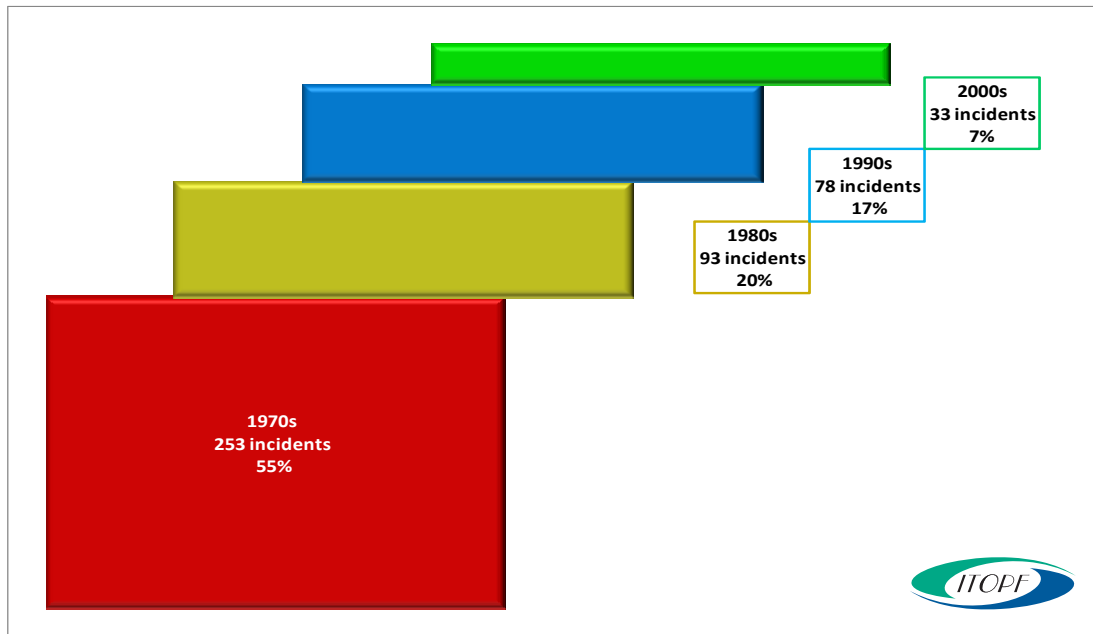


Figure 1: Major spills as a percentage of those recorded from 1970 to 2010 per decade

Year	7-700 Tonnes	>700 Tonnes
1970	7	29
1971	18	14
1972	48	27
1973	28	32
1974	89	28
1975	97	22
1976	67	27
1977	68	17
1978	59	22
1979	60	35
1970s Total	541	253
Average for decade	54.1	25.3

Year	7-700 Tonnes	>700 Tonnes
1990	50	14
1991	30	7
1992	31	10
1993	31	11
1994	26	9
1995	20	3
1996	20	3
1997	28	10
1998	26	5
1999	20	6
1990s Total	282	78
Average for decade	28.2	7.8

Year	7-700 Tonnes	>700 Tonnes
1980	52	13
1981	54	7
1982	45	4
1983	52	13
1984	26	8
1985	32	8
1986	28	7
1987	27	10
1988	11	10
1989	33	13
1980s Total	360	93
Average for decade	36	9.3

Year	7-700 Tonnes	>700 Tonnes
2000	21	4
2001	18	3
2002	13	3
2003	16	4
2004	17	5
2005	22	3
2006	13	5
2007	13	4
2008	9	1
2009	7	1
2000s Total	149	33
Average for decade	14.9	3.3

Table 1: Annual number of oil spills (>7 tonnes)

Year	7-700 Tonnes	>700 Tonnes
2010	4	4
2010s Total	4	4

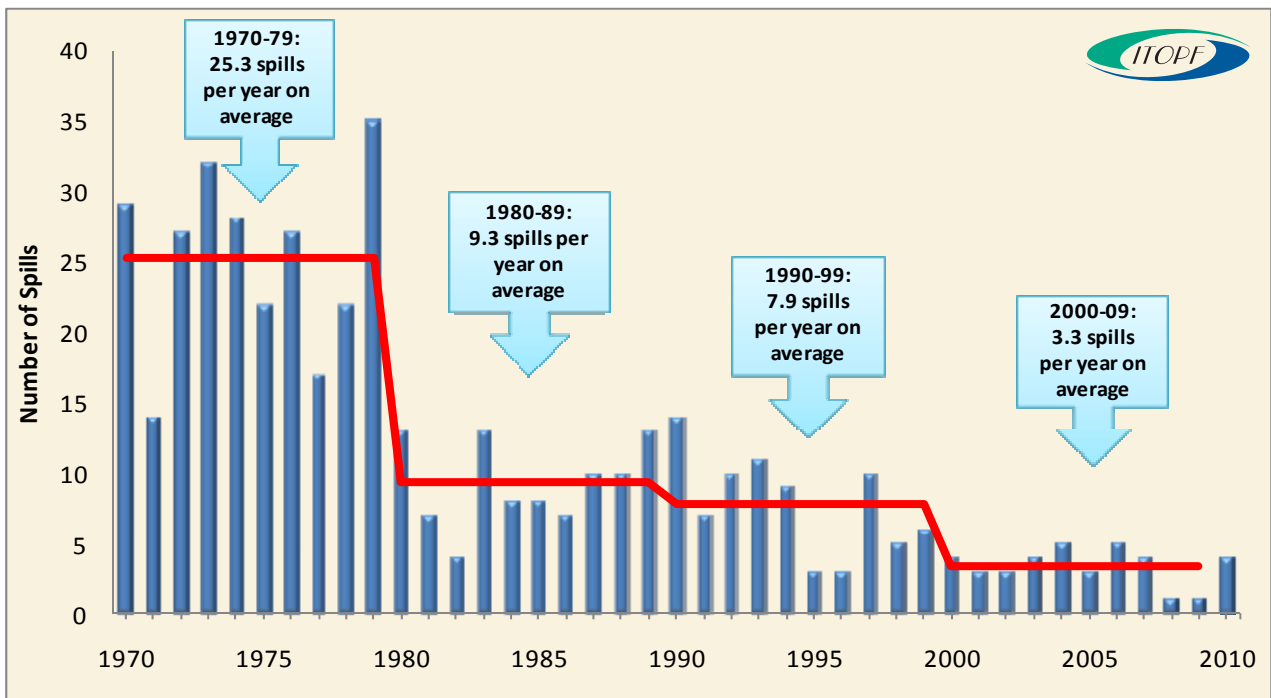


Figure 2: Number of large spills (over 700 tonnes) from 1970 to 2010

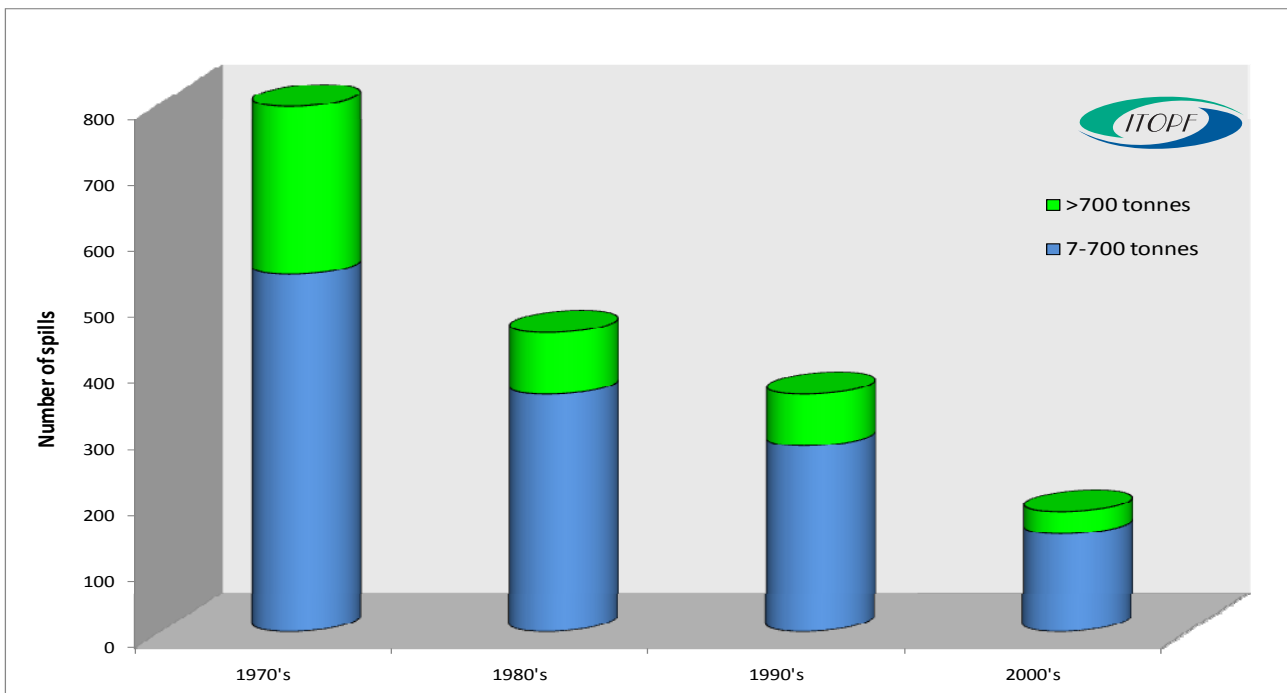


Figure 3: Number of medium (7-700 tonnes) and large (> 700 tonnes) spills per decade from 1970 to 2010

QUANTITIES OF OIL SPILT

The vast majority of spills are small (i.e. less than 7 tonnes) and data on numbers and amounts is incomplete due to the inconsistent reporting of smaller incidents worldwide.

Reports on spills of 7 tonnes and above tend to be more reliable and information from these is included in the database to give a series of annual estimates of the total quantity spilled for the years 1970-2010. These amounts are rounded to the nearest thousand where practical.

Approximately 5.71 million tonnes of oil were lost as a result of tanker incidents from 1970 to 2010. However, as Figure 4 indicates, the volume of oil spilled from tankers demonstrates a significant improvement through the decades. Consistent with the reduction in the number of oil spills from tankers, the volume of oil spilled also shows a marked reduction. For instance, from Table 2 it is interesting to observe that an amount greater than the total quantity of oil spilled between 2000 to 2009 (212,000 tonnes) was spilled in several single years in earlier decades.

The total amount of oil lost to the environment in 2010, whilst more than that of 2008 and 2009, is significantly lower than the average of oil lost in previous decades. Furthermore, at 10,000 tonnes this is the fourth lowest annually recorded figure (Table 2 and Figure 4).

Year	Quantity (Tonnes)
1970	330,000
1971	138,000
1972	297,000
1973	164,000
1974	175,000
1975	356,000
1976	398,000
1977	291,000
1978	384,000
1979	641,000
1970s Total	3,174,000

Year	Quantity (Tonnes)
1990	61,000
1991	431,000
1992	167,000
1993	140,000
1994	130,000
1995	12,000
1996	80,000
1997	72,000
1998	15,000
1999	29,000
1990s Total	1,137,000

Year	Quantity (Tonnes)
1980	206,000
1981	48,000
1982	12,000
1983	384,000
1984	29,000
1985	85,000
1986	19,000
1987	30,000
1988	190,000
1989	174,000
1980s Total	1,177,000

Year	Quantity (Tonnes)
2000	14,000
2001	9,000
2002	67,000
2003	42,000
2004	16,000
2005	18,000
2006	23,000
2007	18,000
2008	3,000
2009	2,000
2000s Total	212,000

Table 2: Annual quantity of oil spilt

Year	Quantity (Tonnes)
2010	10,000
2010 Total	10,000

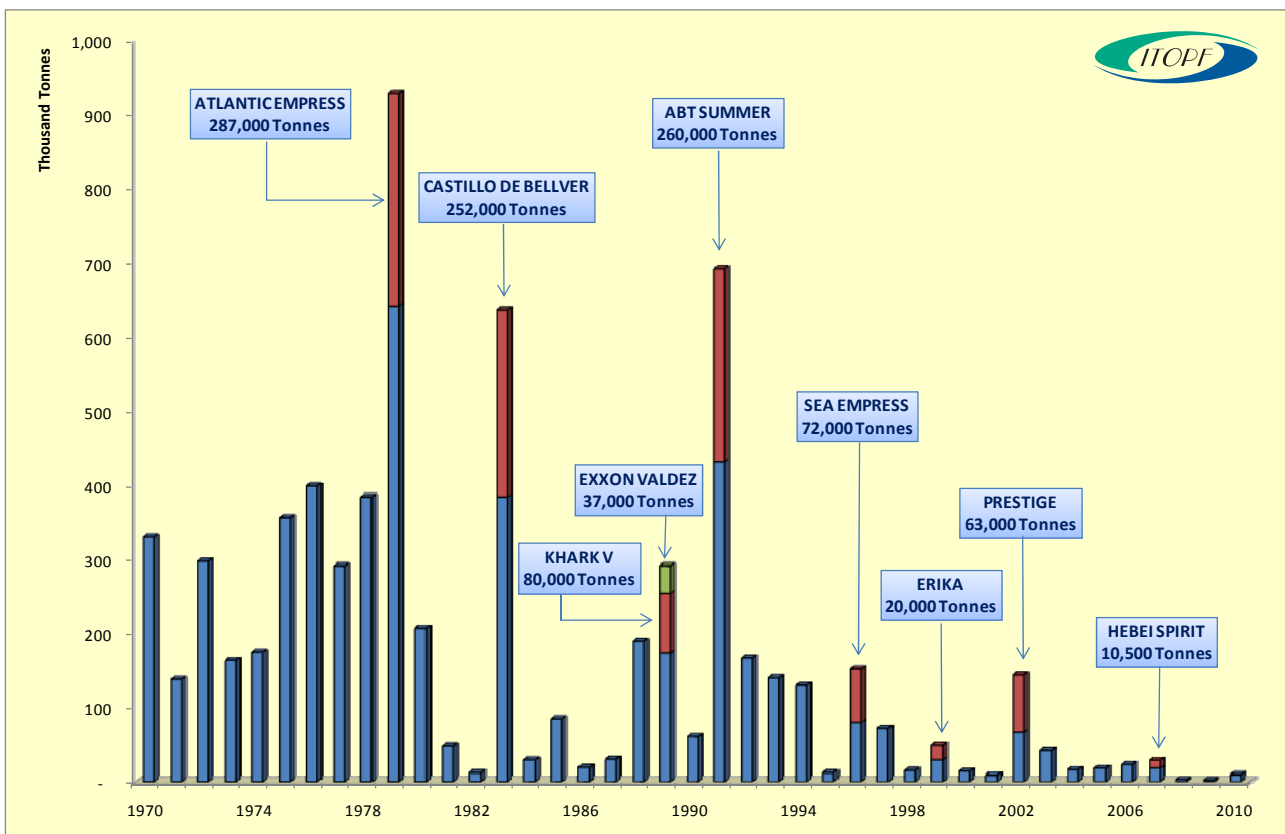


Figure 4: Quantities of oil spilt over 7 tonnes, 1970 to 2010

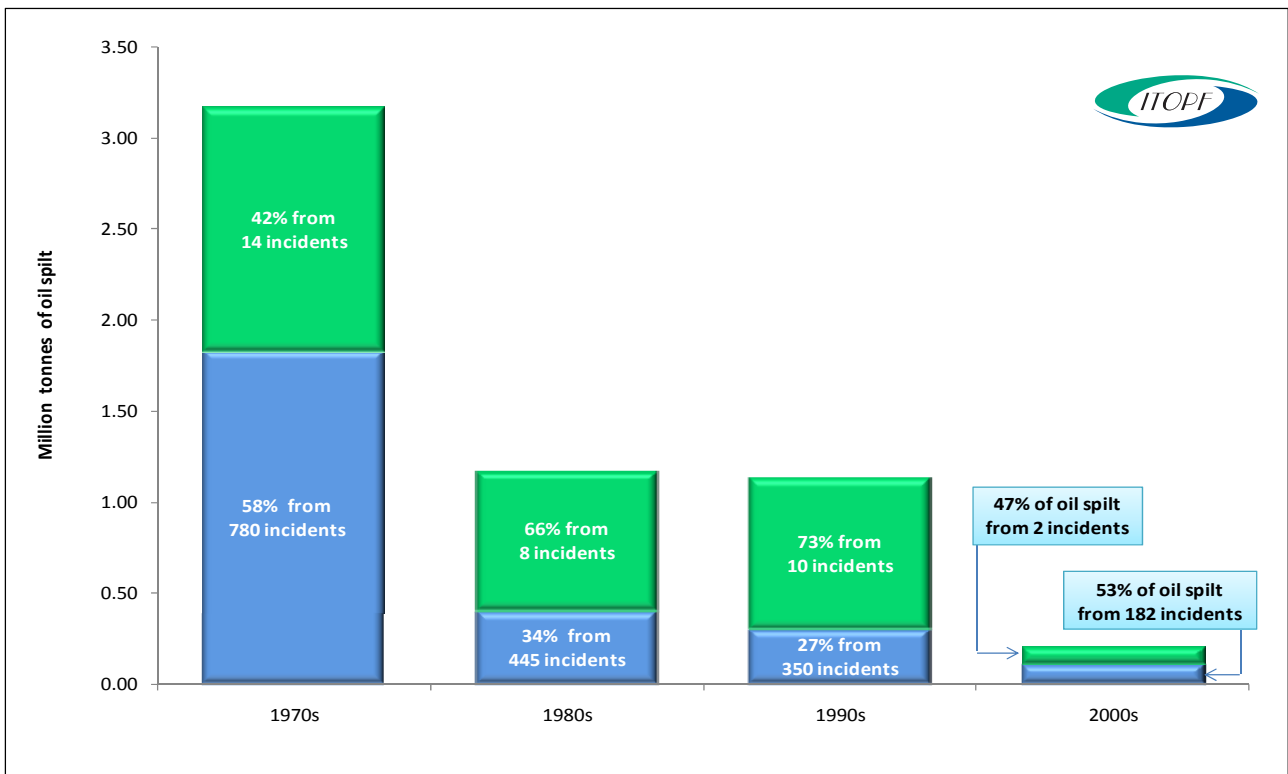


Figure 5: Spills over 7 tonnes per decade showing the influence of a relatively small number of comparatively large spills on the overall figure

As demonstrated in Figure 5, when looking at the frequency and quantities of spills, it should be noted that a few very large spills are responsible for a high percentage of oil spilt. For example, in more recent decades the following can be seen:

- In the 1990s there were 360 spills over 7 tonnes, resulting in 1,137,000 tonnes of oil lost; 73% of this amount was spilt in just 10 incidents.
- In the 2000s there were 182 spills over 7 tonnes, resulting in 212,000 tonnes of oil lost; 47% of this amount was spilt in just 2 incidents.

The figures for a particular year may therefore be severely distorted by a single large incident. This is clearly illustrated by incidents such as ATLANTIC EMPRESS (1979), 287,000 tonnes spilt; CASTILLO DE BELLVER (1983), 252,000 tonnes spilt and ABT SUMMER (1991), 260,000 tonnes spilt.

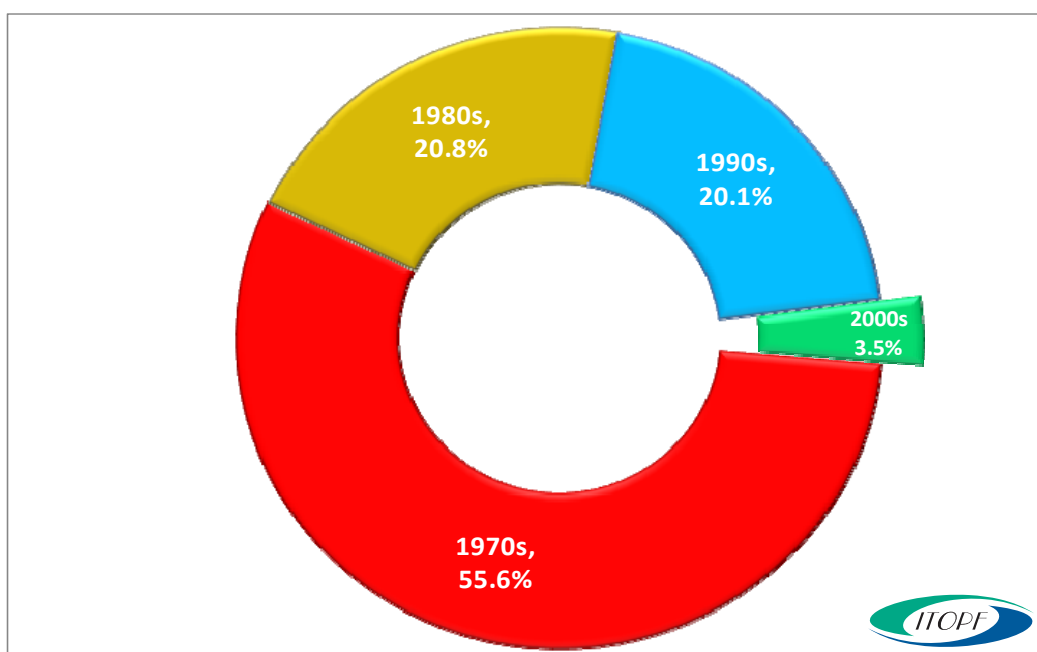


Figure 6: Oil spilt per decade from 1970 to 2009 (excluding 2010) as a percentage of the total

MAJOR OIL SPILLS

Table 3 below gives a brief summary of 20 major oil spills since 1967. The map in Figure 7 shows where they occurred. A number of these incidents, despite their large size, caused little or no environmental damage as the oil was spilt some distance offshore and did not impact coastlines. It is for this reason that some of the names listed may be unfamiliar. EXXON VALDEZ is included for comparison although this incident falls somewhat outside the group.

Position	Shipname	Year	Location	Spill Size (tonnes)
1	ATLANTIC EMPRESS	1979	Off Tobago, West Indies	287,000
2	ABT SUMMER	1991	700 nautical miles off Angola	260,000
3	CASTILLO DE BELLVER	1983	Off Saldanha Bay, South Africa	252,000
4	AMOCO CADIZ	1978	Off Brittany, France	223,000
5	HAVEN	1991	Genoa, Italy	144,000
6	ODYSSEY	1988	700 nautical miles off Nova Scotia, Canada	132,000
7	TORREY CANYON	1967	Scilly Isles, UK	119,000
8	SEA STAR	1972	Gulf of Oman	115,000
9	IRENES SERENADE	1980	Navarino Bay, Greece	100,000
10	URQUIOLA	1976	La Coruna, Spain	100,000
11	HAWAIIAN PATRIOT	1977	300 nautical miles off Honolulu	95,000
12	INDEPENDENTA	1979	Bosphorus, Turkey	95,000
13	JAKOB MAERSK	1975	Oporto, Portugal	88,000
14	BRAER	1993	Shetland Islands, UK	85,000
15	KHARK 5	1989	120 nautical miles off Atlantic coast of Morocco	80,000
16	AEGEAN SEA	1992	La Coruna, Spain	74,000
17	SEA EMPRESS	1996	Milford Haven, UK	72,000
18	NOVA	1985	Off Kharg Island, Gulf of Iran	70,000
19	KATINA P.	1992	Off Maputo, Mozambique	66,700
20	PRESTIGE	2002	Off Spanish coast	63,000
35	EXXON VALDEZ	1989	Prince William Sound, Alaska, USA	37,000

Table 3: Major oil spills since 1967

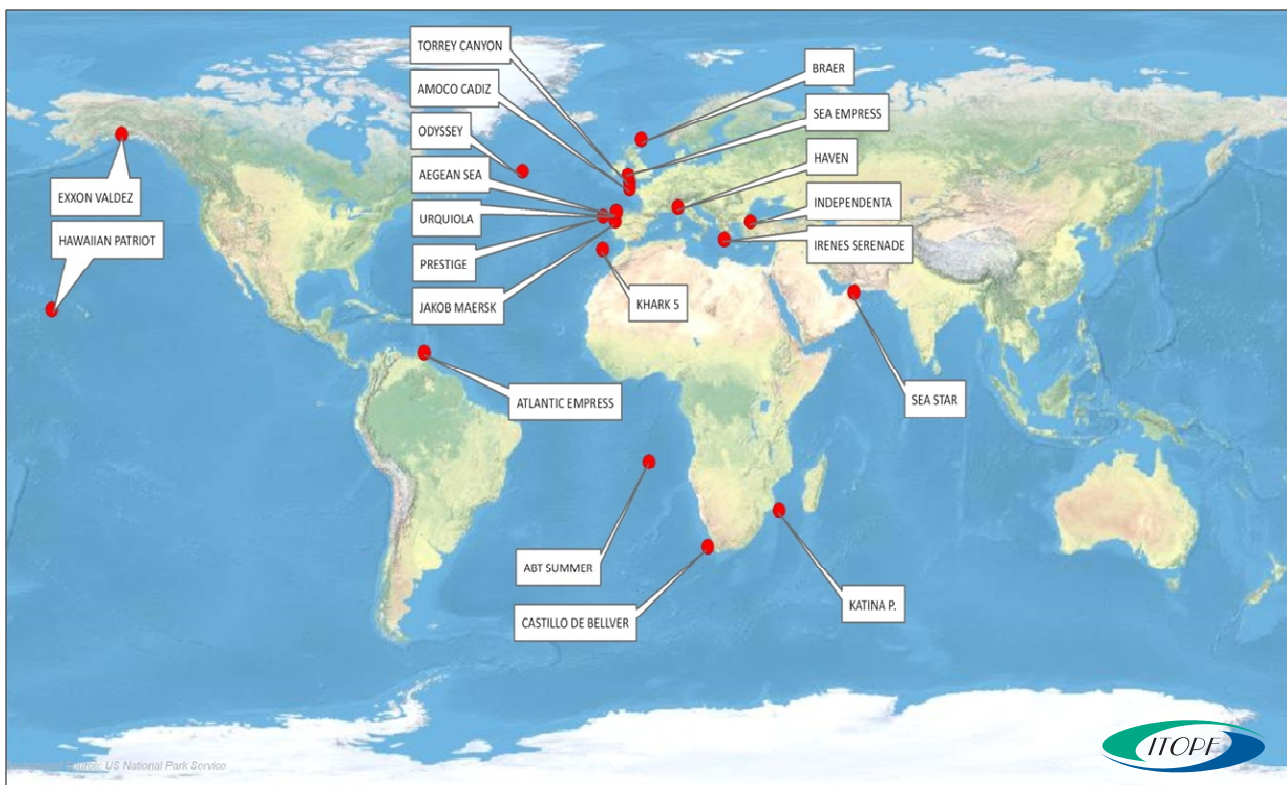


Figure 7: Location of major spills

SEABORNE OIL TRADE

Apart from a fall in the early 1980s during the worldwide economic recession, seaborne oil trade has grown steadily from 1970 (Figure 8). Whilst increased movements might imply increased risk, it is encouraging to observe however that downward trends in oil spills continue despite an overall increase in oil trading over the period.



Figure 8: Seaborne oil trade and number of tanker spills over 7 tonnes, 1970 to 2010 (Crude and Oil Product*)

CAUSES OF SPILLS

The causes and circumstances of oil spills are varied, but can have a significant effect on the final amount of oil spilled. The following analysis explores the incidence of spills of different sizes in terms of the primary event or operation in progress at the time of the spill. These "causes" have been grouped into "Operations" and "Accidents". Spills for which the relevant information is not available or where the cause was not one of those given are listed under "Other/unknown".

It is apparent from the table that:

- most spills from tankers result from routine operations such as loading, discharging and bunkering which normally occur in ports or at oil terminals;
- the majority of these operational spills are small, with some 91% involving quantities less than 7 tonnes;
- accidental causes, such as collisions and groundings, generally give rise to much larger spills, with at least 88% of these incidents involving quantities in excess of 700 tonnes.

	<7 Tonnes	7-700 Tonnes	>700 Tonnes	TOTAL
OPERATIONS				
Loading/Discharging	3157	385	37	3579
Bunkering	562	33	1	596
Other Operations	1250	61	15	1326
ACCIDENTS				
Collisions	180	337	132	649
Groundings	237	269	160	666
Hull Failures	198	57	55	310
Equipment Failures	202	39	4	245
Fires & Explosions	84	33	34	151
Other/Unknown	1975	121	22	2118
TOTAL	7845	1335	460	9640

Table 4: Incidence of spills by cause (<7 tonnes, 1974-2010; 7-700 & >700 tonnes 1970-2010)

* Product vessels of 60,000 DWT and above

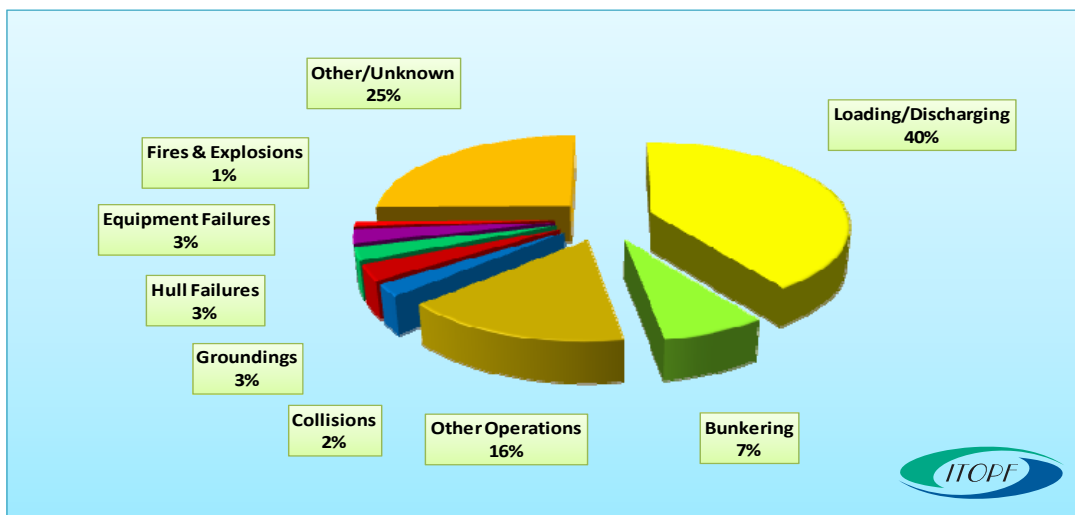


Figure 9: Incidence of spills < 7 tonnes by cause, 1974 to 2010
(Data before 1974 is not available)

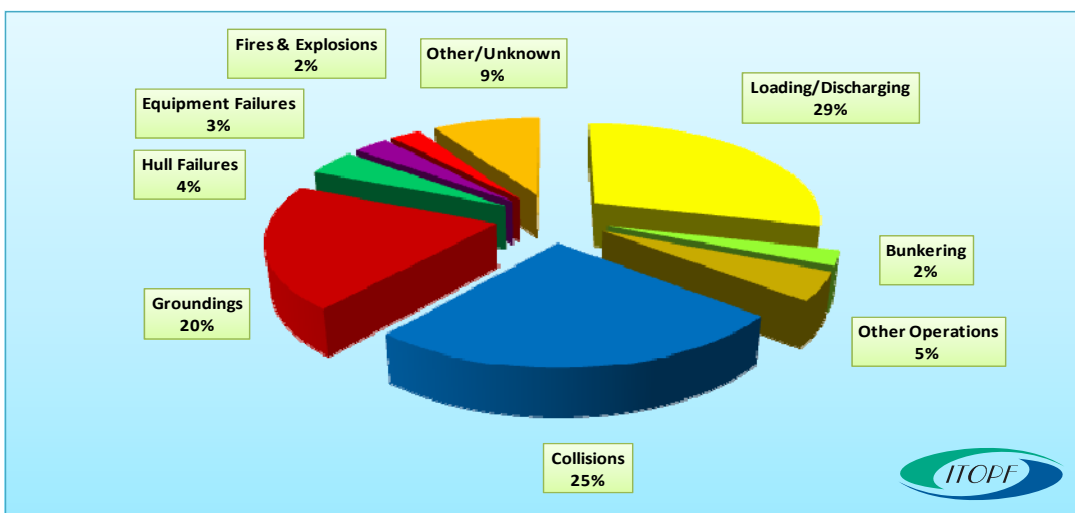


Figure 10: Incidence of spills 7-700 tonnes by cause, 1970 to 2010

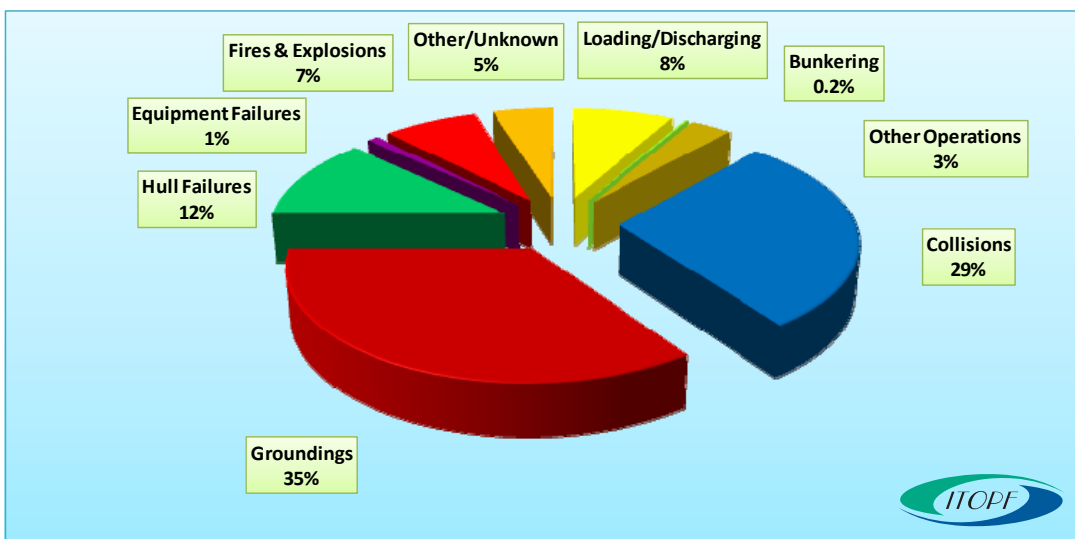


Figure 11: Incidence of spills > 700 tonnes by cause, 1970 to 2010

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