OIL TANKER SPILL STATISTICS: 2009

Contents:

1. 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 (82%) 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. Not surprisingly, 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. Consequently, the figures in the following tables, and any averages derived from them should be viewed with caution.

2. NUMBERS AND AMOUNTS SPILT

2.1 NUMBER OF OIL SPILLS

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 the table below that the number of large spills (>700 tonnes) has decreased significantly during the last 40 years, such that the average number of major spills for the decade (2000-2009) is about three. Most notably, for the first time since ITOPF began collating tanker spill statistics, the number of major oil spills involving tankers reached zero in 2009.

The average for the 2000s is less than half of the average for the 1990s and just an eighth of the average for the 1970s. The same is true for medium sized spills from tankers (7-700 tonnes) where the average number of spills occurring in the last decade was 14, half of that experienced during the previous decade.

Looking at this downward trend from another perspective, it is notable that the number of large spills in the 1970s is more than a half of all the spills recorded in the 40 years between 1970 and 2009. Furthermore, the average number of large spills per year during the 1990s was less than a third of that witnessed during the 1970s. This downward trend continued during the 2000s during which only 7% of all recorded spills occurred.

Year	7-700 Tonnes	> 700 Tonnes
1970	7	29
1971	18	14
1972	48	27
1973	28	32
1974	89	28
1975	96	23
1976	67	27
1977	68	17
1978	59	21
1979	60	35
1980	52	13
1981	54	7
1982	45	4
1983	52	13
1984	26	8
1985	31	8
1986	28	7
1987	27	10
1988	11	10
1989	33	13

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	6
1999	20	6
2000	20	4
2001	17	3
2002	13	3
2003	15	4
2004	16	5
2005	22	4
2006	13	5
2007	13	4
2008	8	1
2009	3	0

TABLE 1: NUMBER OF SPILLS OVER 7 TONNES

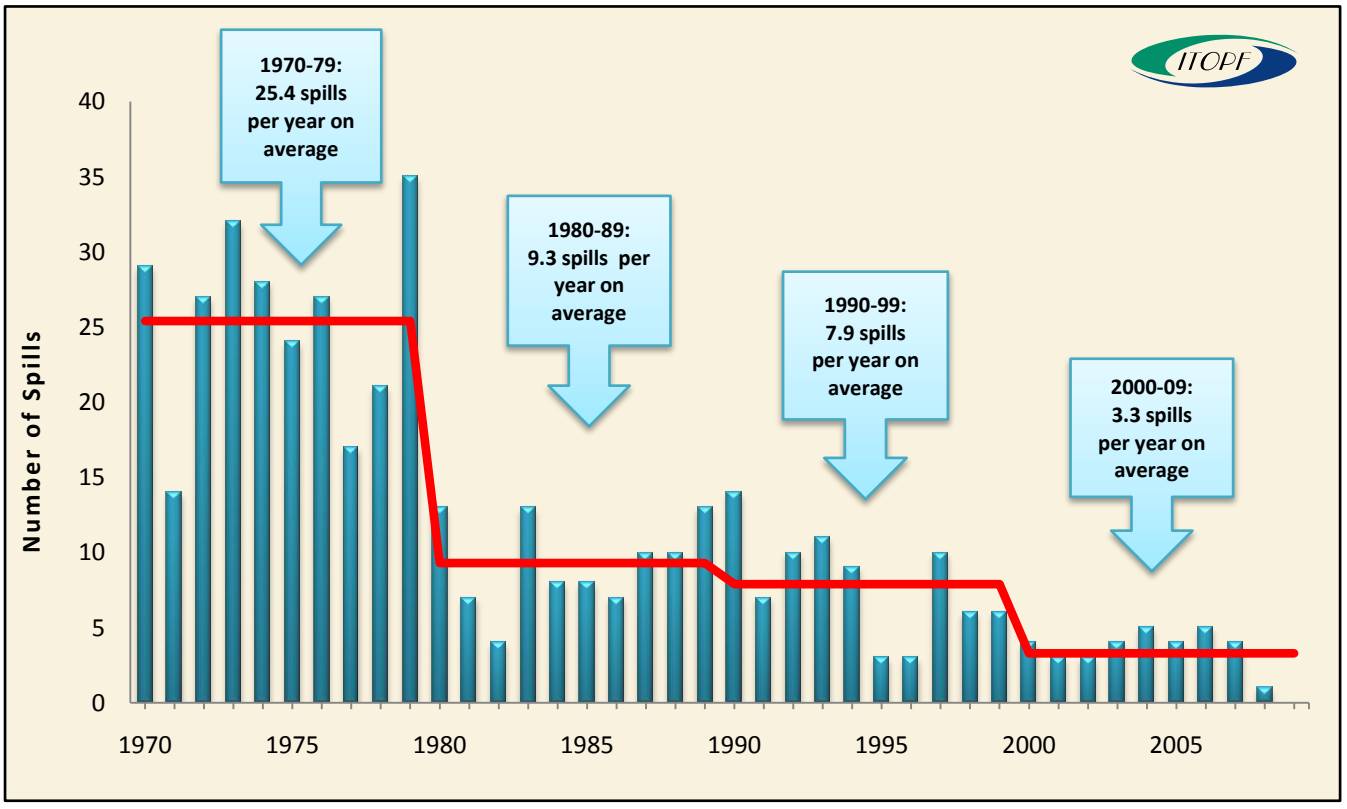

FIGURE 1: NUMBER OF LARGE SPILLS (OVR 700 TONNES), FROM 1970 TO 2009

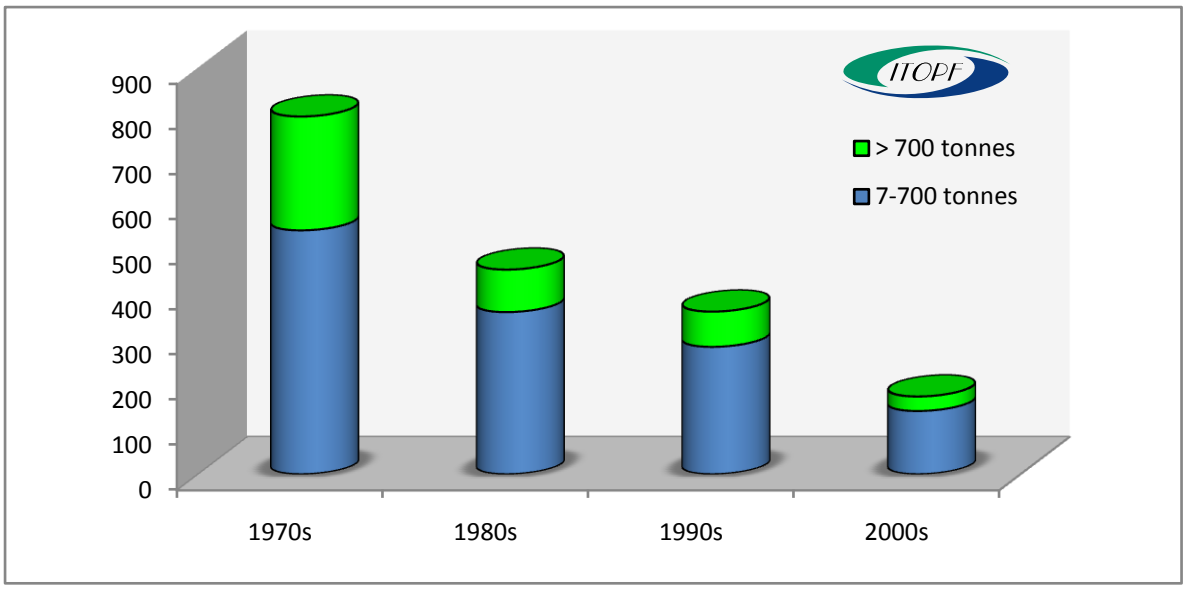

FIGURE 2: NUMBER OF MEDIUM (7-700 TONNES) AND LARGE (> 700 TONNES) SPILLS PER DECADE FROM 1970 TO 2009

2.2 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 are included in the database to give a series of annual estimates of the total quantity spilled for the years 1970-2009. These amounts are rounded to the nearest thousand where practical.

Year	Quantity (tonnes)
1970	330,000
1971	138,000
1972	297,000
1973	164,000
1974	174,000
1975	355,000
1976	398,000
1977	291,000
1978	352,000
1979	641,000
1970s Total	3,140,000

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)
1990	61,000
1991	430,000
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	1,136,000

2000	14,000
2001	8,000
2002	67,000
2003	42,000
2004	15,000
2005	18,000
2006	23,000
2007	18,000
2008	2,000
2009	100
2000s Total	206,000

TABLE 2: ANNUAL QUANTITY OF OIL SPILT

Approximately 5.65 million tonnes of oil were lost as a result of tanker incidents from 1970 to 2009. However, as figure 4 indicates, the volume of oil spilt from tankers does demonstrate a significant improvement through the decades. Consistent with the reduction in the number of oil spills from tankers, the volume of oil spilt also shows a marked reduction. In some cases, the total quantity of oil spilt in the last decade was less than had been spilt previously in a single year. Last year the volume of oil spilt was the lowest in ITOPF's history of collating statistics on tanker spills.

It is notable that a few very large spills are responsible for a high percentage of the oil spilt. For example, in the 1990s, 360 spills over 7 tonnes were recorded, totalling 1,136,000 tonnes of oil, but 830,000 tonnes (73%) were spilt in just 10 incidents (just under 3% of the number of incidents in that decade). In comparison, in 2000s, 172 spills over 7 tonnes were recorded, totalling 206,000 tonnes of oil, but 93,000 tonnes (45%) were spilt in just 2 incidents (1%). The figures for a particular year may therefore be severely distorted by a single large incident. This is clearly illustrated in 1979 (ATLANTIC EMPRESS - 287,000 tonnes), 1983 (CASTILLO DE BELLVER - 252,000 tonnes) and 1991 (ABT SUMMER - 260,000 tonnes).

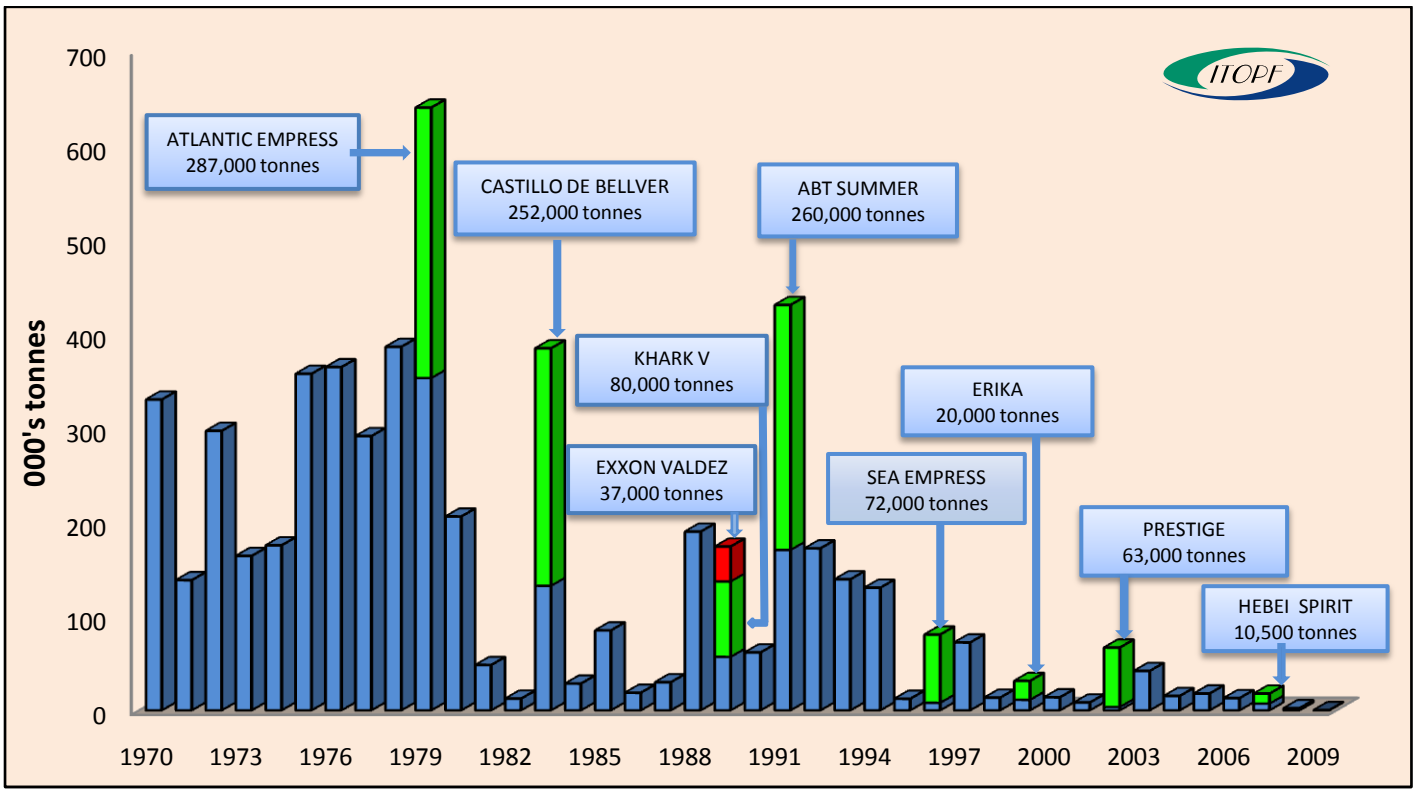

FIGURE 3: QUANTITIES OF OIL SPILT (OVER 7 TONNES) FROM 1970 TO 2009

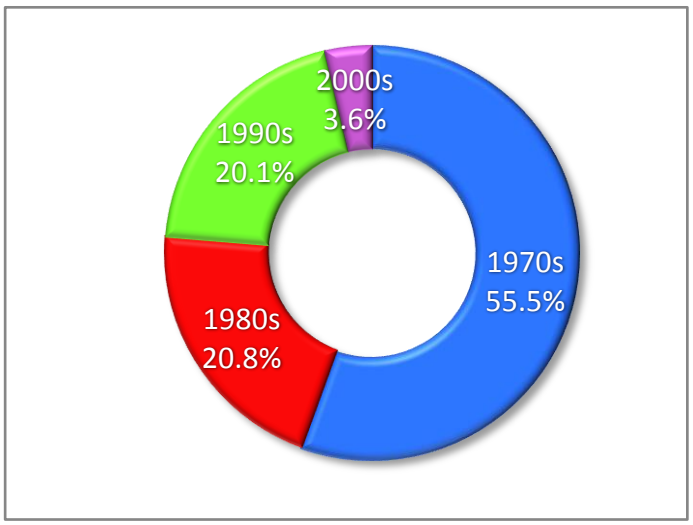

FIGURE 4: PERCENTAGE OF TOTAL OIL SPILT PER DECADE FROM 1970 - 2009

Apart from a fall in the early 1980s during the worldwide economic recession, seaborne oil trade has grown steadily from 1970 to the present (Figure 5). As increased movements would normally signal increased risk, it is encouraging to learn that downward trends in oil spills continue despite an overall increase in oil trading over the period.

FIGURE 5: SEABORNE OIL TRADE AND NUMBER OF TANKER SPILLS OVER 7 TONNES, 1970 TO 2008
(Updated figures for 2009 are not available at this time)

3. MAJOR OIL SPILLS

The table below gives a brief summary of 20 major oil spills since 1967, and the map overleaf 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 listed names may be unfamiliar. EXXON VALDEZ is included for comparison although this incident falls someway 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

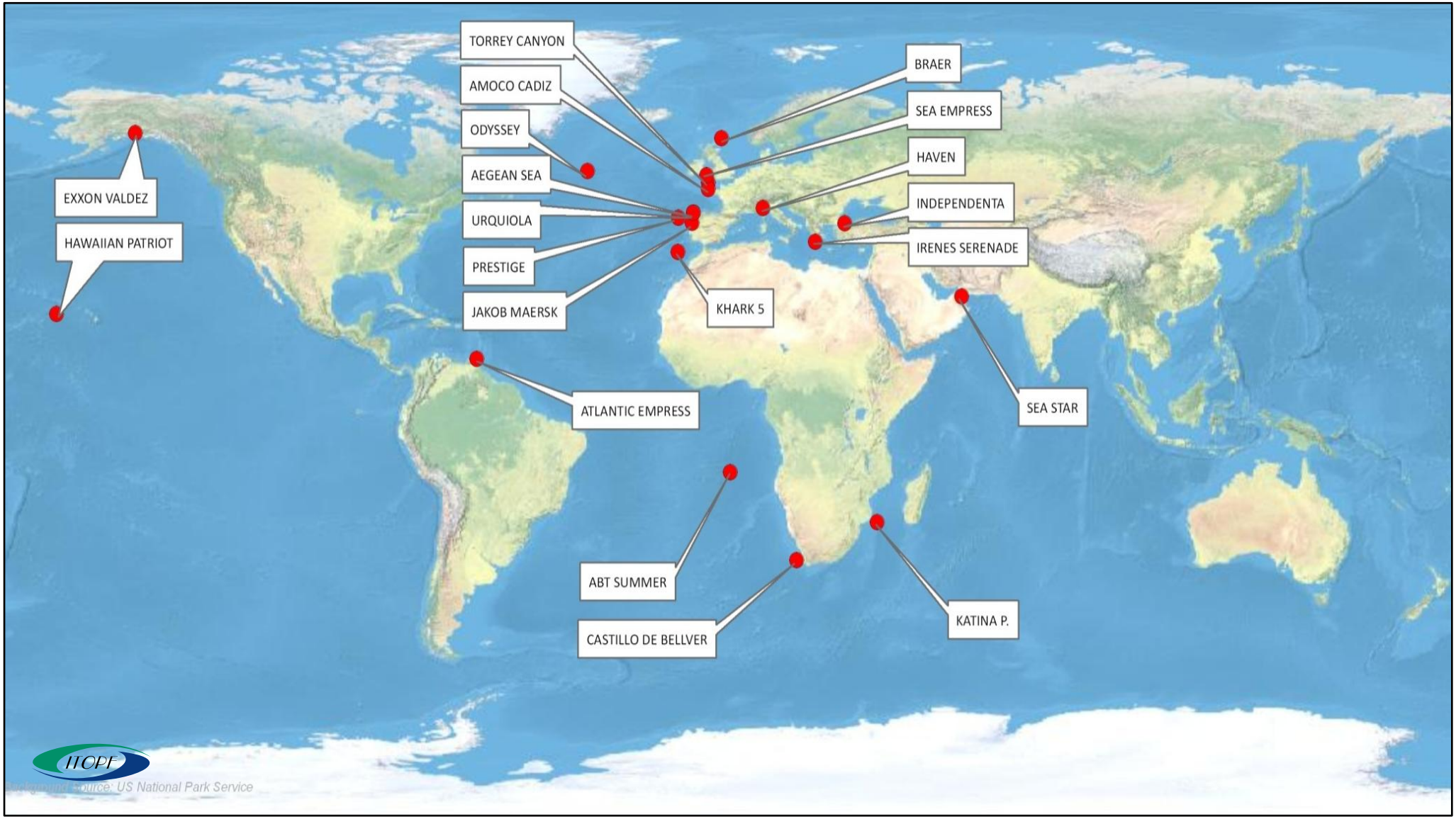

FIGURE 6: LOCATION OF MAJOR SPILLS

4. CAUSES OF SPILLS

Most incidents are the result of a combination of actions and circumstances, all of which contribute in varying degrees to the final outcome. 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 90% involving quantities of less than 7 tonnes;
- accidental causes such as collisions and groundings generally give rise to much larger spills, with at least 84% of these incidents involving quantities in excess of 700 tonnes.

	<7 Tonnes	7-700 Tonnes	>700 Tonnes	Total
OPERATIONS				
Loading / Discharging	**3155**	**383**	**36**	**3574**
Bunkering	**560**	**32**	**0**	**593**
Other Operations	**1221**	**62**	**5**	**1305**
ACCIDENTS				
Collisions	**176**	**334**	**129**	**640**
Groundings	**236**	**265**	**161**	**662**
Hull Failures	**205**	**57**	**55**	**316**
Equipment Failures	**206**	**39**	**4**	**249**
Fire & Explosions	**87**	**33**	**32**	**152**
Other/Unknown	**1983**	**44**	**22**	**2049**
TOTAL	**7829**	**1249**	**444**	**9522**

TABLE 4: INCIDENCE OF SPILLS BY CAUSE (<7 TONNES 1974 -2009, 7-700 & >700 TONNES 1970- 2009)

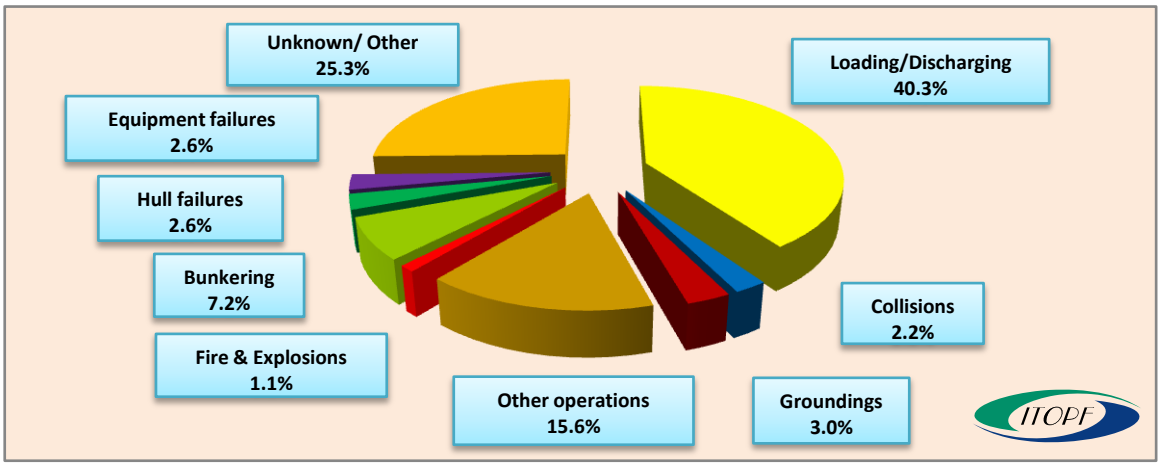

FIGURE 7: INCIDENCE OF SPILLS < 7 TONNES BY CAUSE, FROM 1974 TO 2009
(Data before 1974 is not available)

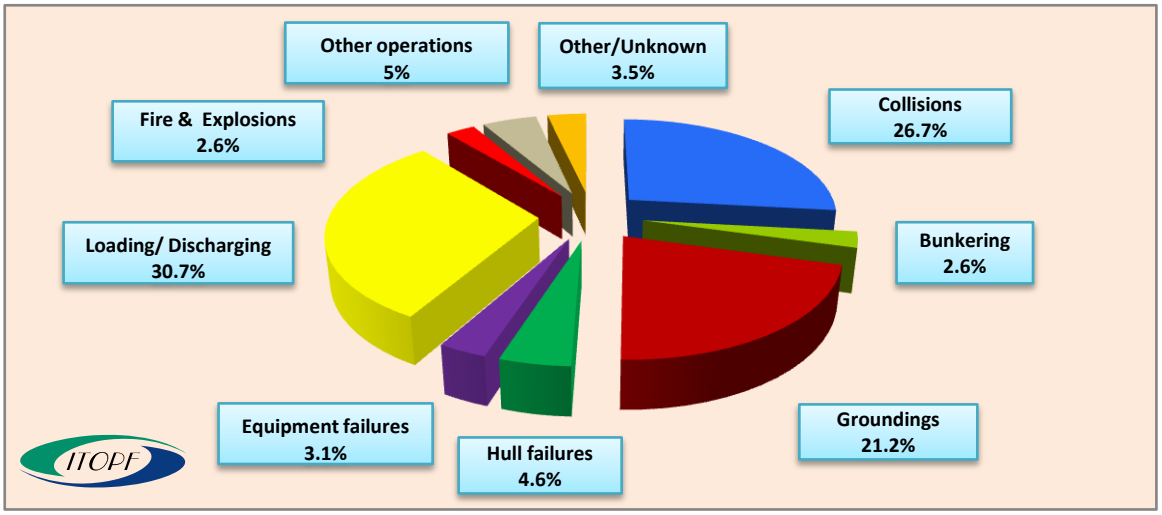

FIGURE 8: INCIDENCE OF SPILLS 7-700 TONNES BY CAUSE, FROM 1970 TO 2009

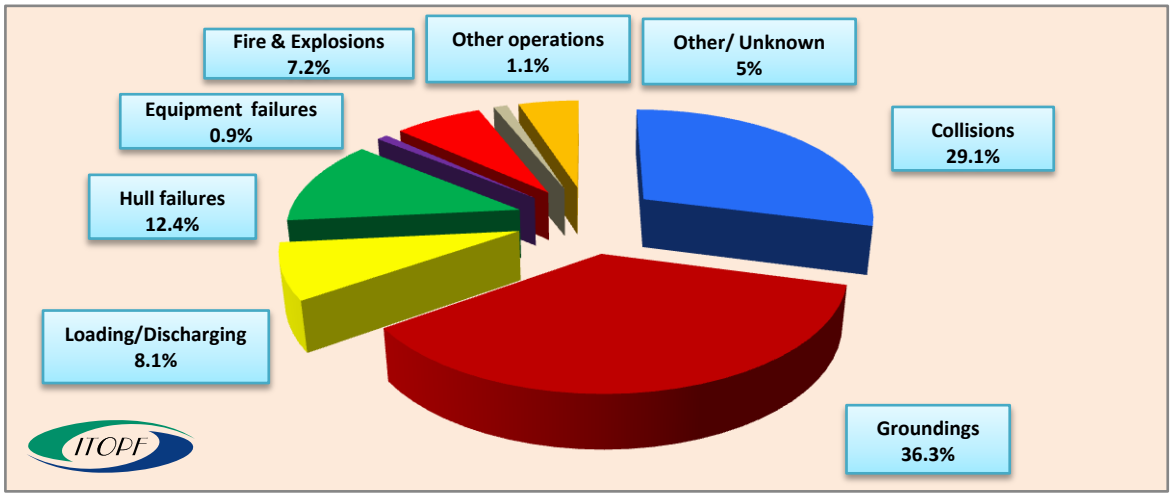

FIGURE 9: INCIDENCE OF SPILLS >700 TONNES BY CAUSE, FROM 1970 TO 2009