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1. BACKGROUND

Since 1974, the Federation has maintained a database of oil spills from tankers, combined carriers and barges. This covers all accidental spillages except those resulting from acts of war.

The database contains information on both the spill itself (amount and type of oil spilt, cause and location) and the vessel involved. For historical reasons, spills are generally categorised by size (<7 tonnes, 7-700 tonnes and >700 tonnes) although the actual amount spilt is also recorded. Information is now held on nearly 10,000 incidents, the vast majority of which (85%) 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 amount of oil spilt in an incident include all oil lost to the environment, including that which is burnt or remains in a sunken vessel. There is considerable annual variation in both the incidence of oil spills and the amounts of oil lost and so 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 thirty years. The average number of large spills per year during the 1990s was about a third of that witnessed during the 1970s.

TABLE 1: NUMBER OF SPILLS OVER 7 TONNES

Year	7-700 tonnes	>700 tonnes
1970	6	29
1971	18	14
1972	49	24
1973	25	32
1974	91	26
1975	97	19
1976	67	25
1977	65	16
1978	54	23
1979	59	34
1980	51	13
1981	49	6
1982	44	3
1983	52	11
1984	25	8
1985	29	8
1986	25	7
1987	27	10
1988	11	10
1989	32	13
1990	50	13
1991	27	8
1992	31	9
1993	30	11
1994	27	7
1995	20	3
1996	20	3
1997	27	10
1998	22	4
1999	19	5
2000	18	3

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. However in most years it is probable that they make a relatively small contribution to the total quantity of oil spilled into the marine environment as a result of tanker accidents.

Reliable data on spills of over 7 tonnes is held and the amounts of oil spilt during these incidents have been added to give a series of annual estimates of the total quantity spilled for the years 1970-2000.

TABLE 2: ANNUAL QUANTITY OF OIL SPILT

Year	Quantity ('000 tonnes)
1970	301
1971	167
1972	311
1973	166
1974	169
1975	342
1976	369
1977	298
1978	395
1979	608
1980	103
1981	44
1982	11
1983	384
1984	28
1985	88
1986	19
1987	30
1988	198
1989	178
1990	61
1991	435
1992	162
1993	144
1994	105
1995	9
1996	79
1997	67
1998	10
1999	29
2000	12

It is notable that a few very large spills are responsible for a high percentage of the oil spilt. For example, in the ten-year period 1990-1999 there were 346 spills over 7 tonnes, totalling 1096 thousand tonnes, but 830 thousand tonnes (75%) were spilt in just 10 incidents (just over 1%). The figures for a particular year may therefore be severely distorted by a single large incident. This is clearly illustrated by 1979 (Atlantic Empress - 287,000 tonnes), 1983 (Castillo de Bellver - 252,000 tonnes) and 1991 (ABT Summer - 260,000 tonnes).

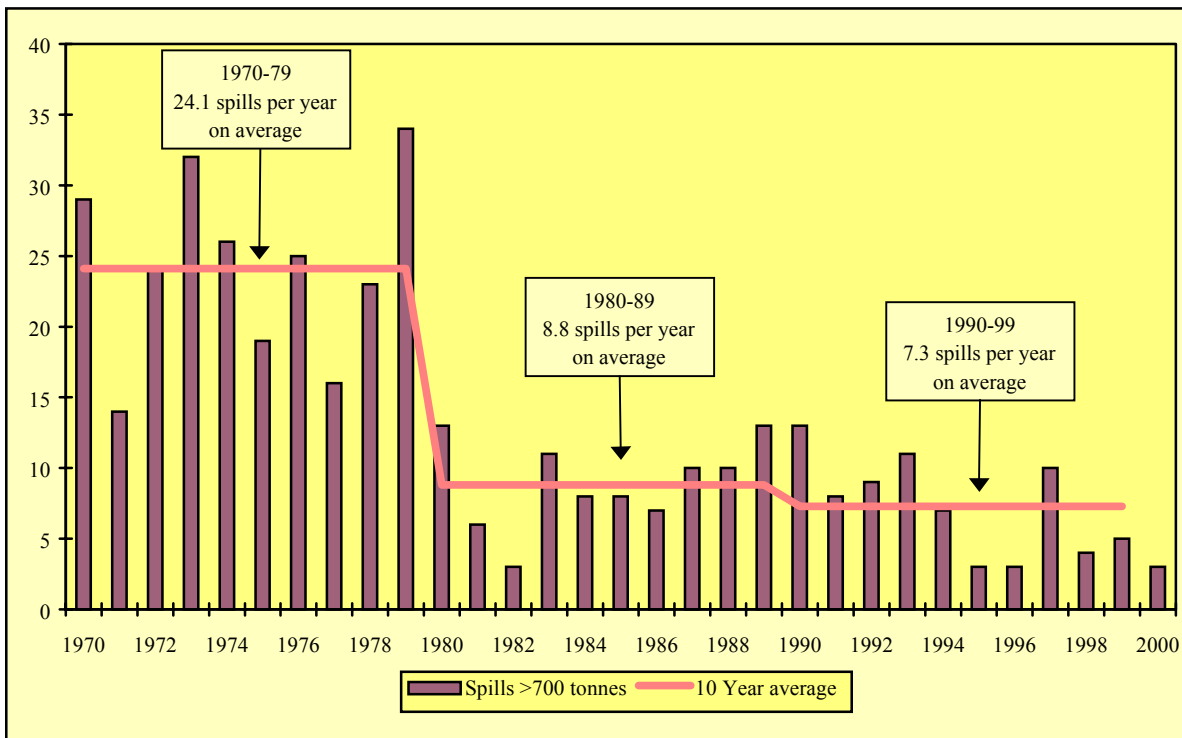


FIGURE 1: NUMBERS OF SPILLS OVER 700 TONNES

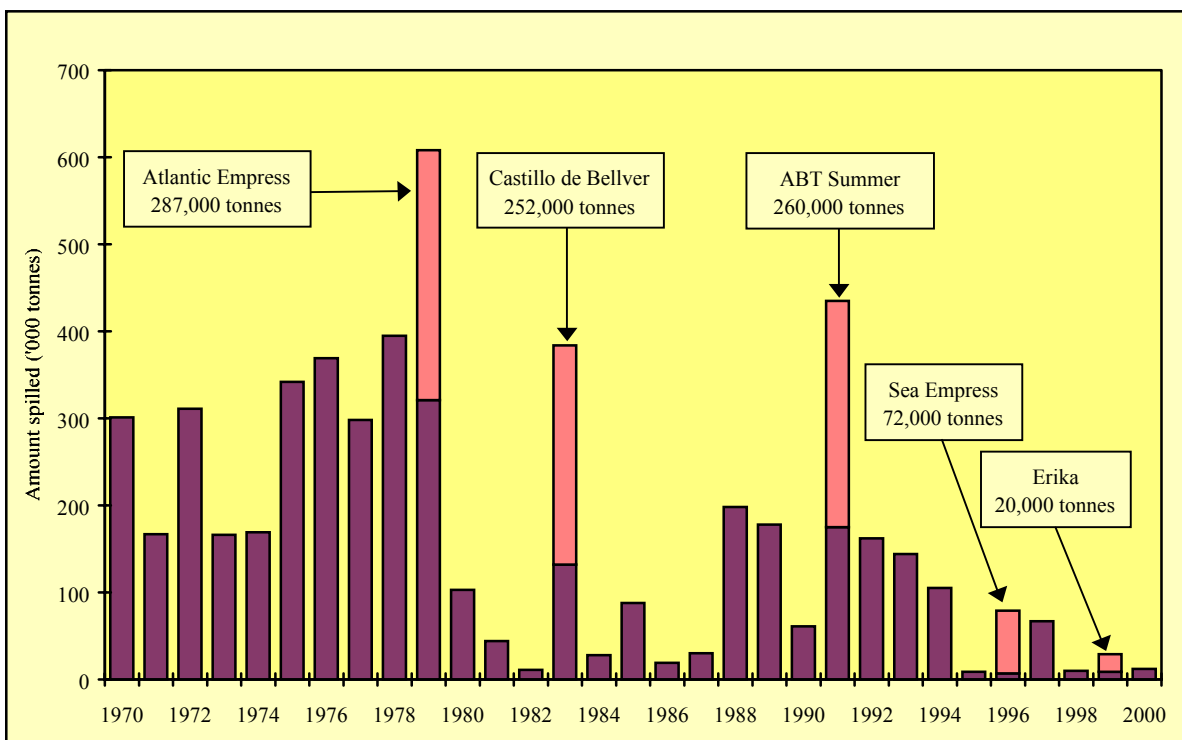


FIGURE 2: QUANTITIES OF OIL SPILT

3. MAJOR OIL SPILLS

The table below gives a brief summary of 20 major oil spills, 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 did not impact coastlines, which is why some of the names will be unfamiliar to the general public. The Exxon Valdez is included because it is so well known although it is not the twentieth largest spill of all time but rather about number 34.

TABLE 3: SELECTED MAJOR OIL SPILLS

Shipname	Year	Location	Oil lost (tonnes)
Atlantic Empress	1979	off Tobago, West Indies	287,000
ABT Summer	1991	700 nautical. miles off Angola	260,000
Castillo de Bellver	1983	off Saldanha Bay, South Africa	252,000
Amoco Cadiz	1978	off Brittany, France	223,000
Haven	1991	Genoa, Italy	144,000
Odyssey	1988	700 nautical. miles off Nova Scotia, Canada	132,000
Torrey Canyon	1967	Scilly Isles, UK	119,000
Urquiola	1976	La Coruna, Spain	100,000
Hawaiian Patriot	1977	300 nautical. miles off Honolulu	95,000
Independenta	1979	Bosphorus, Turkey	95,000
Jakob Maersk	1975	Oporto, Portugal	88,000
Braer	1993	Shetland Islands, UK	85,000
Khark 5	1989	120 nautical. miles off Atlantic coast of Morocco	80,000
Aegean Sea	1992	La Coruna, Spain	74,000
Sea Empress	1996	Milford Haven, UK	72,000
Katina P.	1992	off Maputo, Mozambique	72,000
Assimi	1983	55 nautical. miles off Muscat, Oman	53,000
Metula	1974	Magellan Straits, Chile	50,000
Wafra	1971	off Cape Agulhas, South Africa	40,000
Exxon Valdez	1989	Prince William Sound, Alaska, USA	37,000

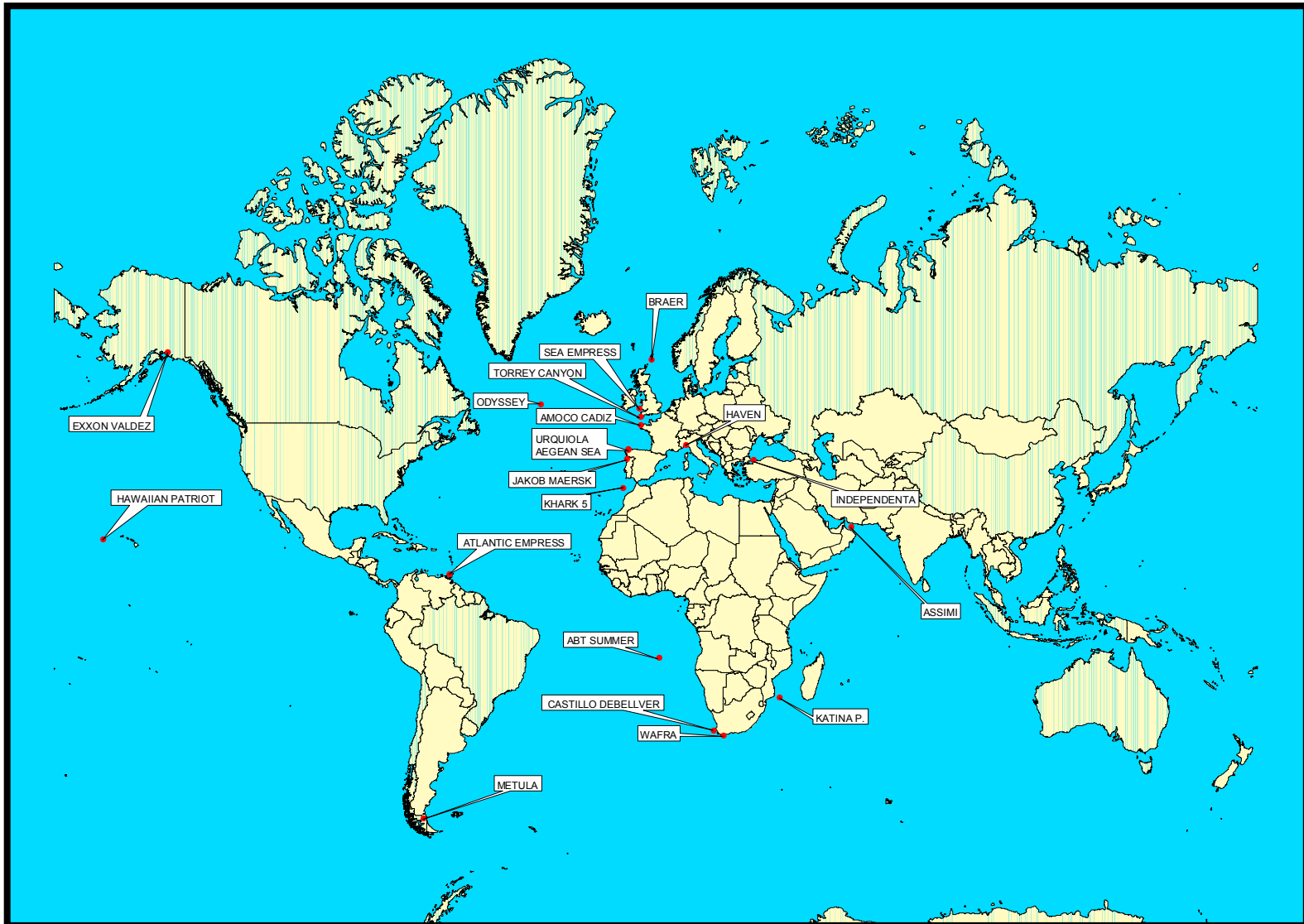


FIGURE 3: LOCATION OF SELECTED SPILLS

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".

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 92% involving quantities of less than 7 tonnes;
- accidents involving collisions and groundings generally give rise to much larger spills, with a fifth involving quantities in excess of 700 tonnes.

TABLE 4: INCIDENCE OF SPILLS BY CAUSE, 1974-2000

	< 7 tonnes	7-700 tonnes	> 700 tonnes	Total
OPERATIONS				
Loading/discharging	2763	297	17	3077
Bunkering	541	25	0	566
Other operations	1165	47	0	1212
ACCIDENTS				
Collisions	159	246	86	491
Groundings	221	196	106	523
Hull failures	561	77	43	681
Fires & explosions	149	16	19	184
OTHER/Unknown	2217	163	35	2415
TOTAL	7776	1067	306	9149

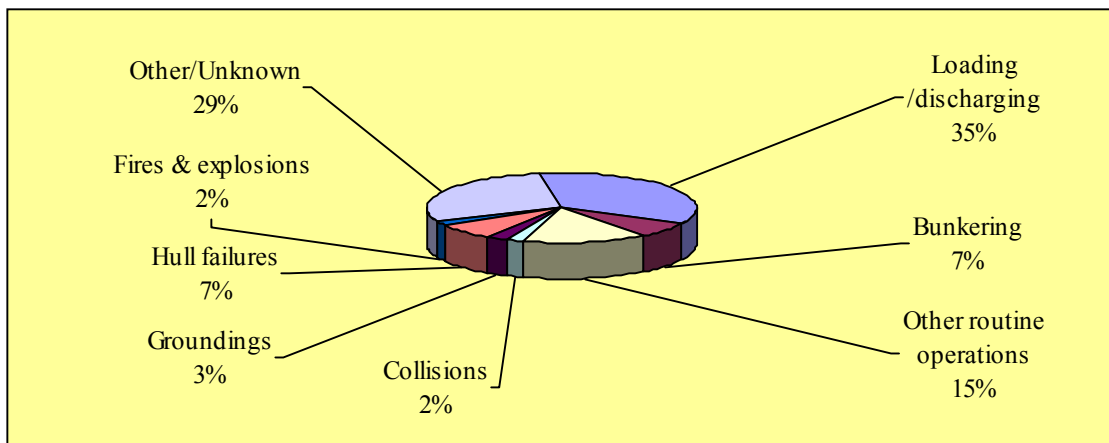


FIGURE 4: INCIDENCE OF SPILLS < 7 TONNES BY CAUSE, 1974-2000

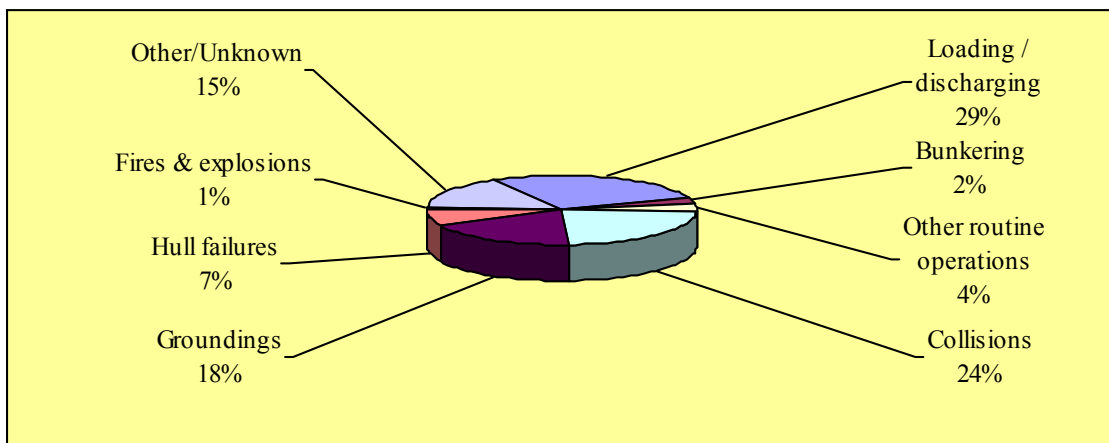


FIGURE 5: INCIDENCE OF SPILLS 7-700 TONNES BY CAUSE, 1974-2000

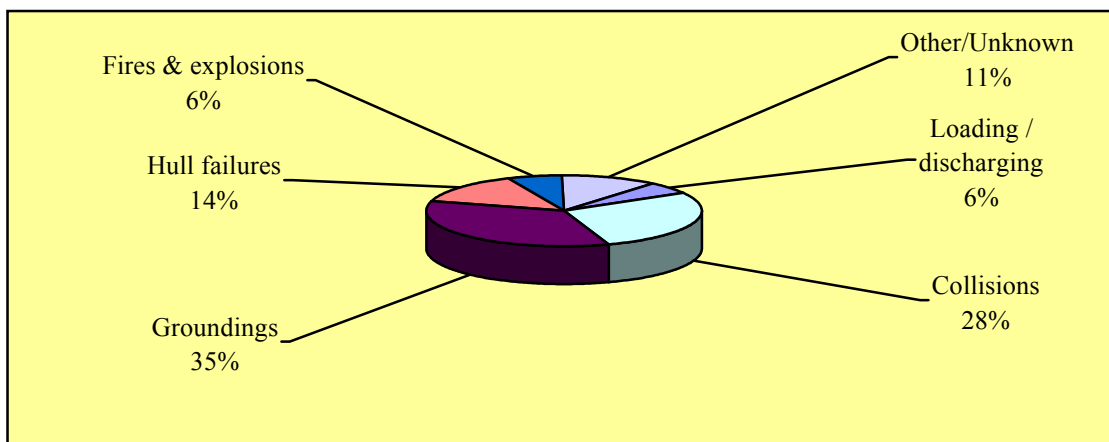


FIGURE 6: INCIDENCE OF SPILLS >700 TONNES BY CAUSE, 1974-2000