Chemical incidents
ILLUSTRATING EXAMPLES OF DIFFERENT TYPES OF CARGOES

Mont-Blanc
HALIFAX, CANADA, 1917
As the cargo ship Mont-Blanc entered the port of Halifax on December 6th, 1916, carrying a cargo of munitions (3,000 kg of picric acid, 50 t of gun cotton, 200 t of TNT and 35 t of dynamite), it collided with a cargo ship in ballast. A fire broke out. Quarter of an hour later, as the Mont-Blanc drifted towards the pier, it exploded.
1,500 people were killed instantly, including hundreds of children. 5,000 others were injured. The explosion devastated 3 km² of land. Debris was projected up to 4 km away. Fires broke out in the ruins. The neighbourhood of Richmondtown, at the north end of the port, was entirely destroyed. This was the biggest ever man-made explosion before the first nuclear bombs.

Cason
RIA DE AGENCIA, SPAIN, 1987
On December 5th, 1987, the cargo ship Cason was leaving the port of Gijón (Spain) as it travelled from Asturias to Shanghai, when a fire broke out onboard. It was transporting over 1,000 tonnes of toxic, carmine and flammable substances as well as marine pollutants, including sodium, which ignited upon contact with water.
23 crew members were killed. The fire became out of control and continued to blaze. Adverse weather conditions restricted salvage operations. Drums of sodium were projected into the water and went on fire. The lack of information on the exact nature and quantity of hazardous substances transported made response difficult. Uncertain information spread panic and confusion within the nearby population and 15,000 people were evacuated. Finally, part of the cargo was unloaded and a pollution monitoring program was implemented.

Ena 2
HAMBURG, GERMANY, 2004
On June 29th, 2004, during storage operations in the port of Hamburg (Germany), the chemical tanker Ena 2, carrying 440 t of alphaphenyl acetyl, collided with a container ship. The incident did not cause any damage to its internal structure but caused a leak of the cargo into the ventilation system. The vessel sank in its movements 35 minutes later. Its cargo began to spill out and dissolve in the port’s waters.
Eleven people were affected by the toxic and contain embers and had to be taken to hospital. Hydrogen formed in the tanks of the wreck, generating a risk of explosion. The vessel was refloated on July 6th. Over half of the cargo of acid dissolved in the River Elbe and more than a thousand fish were killed. Nevertheless, the environmental impact was short-lived.

MSC Napoli
WESTERN ENGLISH CHANNEL, 2007
During a storm in the English Channel on January 19th, 2007, the container ship MSC Napoli suffered a gash in the hull and the vessel lost power. Its cargo included around 1,300 t of hazardous substances: explosives, 177 t of flammable gases, 81 t of explosives, 474 t of toxic substances and over 200 t of corrosive substances. The crew were airlifted to safety and the vessel was towed towards the English coast.

Rena
BAY OF PLENTY, NORTH ISLAND, NEW ZEALAND, 2011
In the early hours of the morning on October 5th, 2011, the container ship Rena grounded on a reef not far from the coast of Tauranga (New Zealand), with 1,156 containers onboard, including 33 containing CNOS.
A risk of pollution was generated both by the bunker fuel and the cargo within the containers. The following day, the first signs of oil were observed around the ship. One of the vessel’s hatches was leaking. Very rapidly, operations began to pump out the oil and recover containers fallen overboard. On land, clean-up operations involving thousands of volunteers were carried out. The containers onboard were equipped with locator beacons, known as pingers, so that they could be easily detected if they were to fall overboard. Operations to remove the containers remaining onboard began in mid-November 2011 and lasted several months.

Princess of the Stars
SIBULAN, PHILIPPINES, 2008
The passenger ferry Princess of the Stars was on route from Manila to the island of Cebu (Philippines) when it was caught in a typhoon, capsized and sank off the coast of Sibuyan Island.
700 people lost their lives, mostly trapped inside the wreck, of which only the tip of the bow emerged above the water surface. Divers were sent to recover the bodies. Only then was it announced that the vessel was transporting two containers of highly toxic pesticides. Operations were suspended and a fishing ban was issued in neighbouring waters. Samples were taken to measure the level of contamination and to train European experts on site. No significant pollution was detected and activities were able to be resumed.

Yuyo Maru N° 10
TOKYO BAY, JAPAN, 1974
On November 9th, 1974, in Tokyo Bay (Japan), the gas carrier Yuyo Maru N° 10, laden with a cargo of 20,600 t of naphtha, 2001 t of kerosene, and 440 t of propylene, collided with a cargo ship. A crack opened up in the hull, permitting a ballast tank containing naphtha to leak.
33 crew members were killed. Explosions shook the blazing wreck. The fire burned for several days, before it was brought under control. The vessel was then towed out to sea and was deliberately sunk. We note that the integrity of the tanks containing flammable gases was not compromised by the fire and explosions.

1917
CARGO SHIP MONT-BLANC
EXPLOSIVE AND FLAMMABLE SUBSTANCES

1974
GAS CARRIER YUYO MARU
FLAMMABLE SUBSTANCES

1987
CARGO SHIP CASON
FLAMMABLE, TOXIC AND CORROSIVE SUBSTANCES

2004
CHEMICAL TANKER ENA 2
CORROSIVE SUBSTANCES

2007
CONTAINER SHIP MSC NAPOLI
FLAMMABLE, TOXIC AND CORROSIBLE SUBSTANCES

2011
CONTAINER SHIP RENA
FLAMMABLE, TOXIC AND CORROSIBLE SUBSTANCES

2008
FERRY PRINCESS OF THE STARS
CORROSIVE AND EXPLOSIVE SUBSTANCES

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