

# FRENCH RESPONSE TO THE KATJA INCIDENT<sup>1</sup>

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**ABSTRACT:** *On 7 August 1997 at 0h30, the Bahamas flag tanker Katja hit a berth in Le Havre harbor. Immediately 187 m<sup>3</sup> of heavy fuel oil flowed out of the aft port fuel tank into the harbor. It took two hours to complete the mooring of the ship, during which it was impossible to close the basin. About 30 to 60 m<sup>3</sup> drifted out of the harbor following the ebb current. The situation was difficult to assess and got worse because of the heavy fog which lasted four days and thus jeopardised any aerial survey for the first days, and as it was in the middle of the summer holiday season, half of the harbor employees were on vacation, sensitive tourist areas were full of holiday guests, and the media were in search of sensational stories. Cleaning operations took place in the harbor and on fashionable tourist beaches such as Deauville and Trouville, using national and local equipment and personnel.*

*The paper emphasises the problems encountered in the operations particularly when no sea survey is available and when close co-operation is required between administrations, "departements" and districts.*

## The incident

On 7 August 1997 at 0H20, the *Katja*, a 232-m Bahamas flag tanker built in 1995 and carrying 80,000 mT of crude oil was about to moor in basin n°8 of the harbor of Le Havre in the north of France. The night was calm, with a poor visibility. Three tug boats were assisting the mooring operation. Suddenly, for reasons still unclear, the port side of the stern hit a corner of the wharf. Unfortunately, the 0.7 m<sup>2</sup> hole caused by the impact was located at the level of the bunker fuel tank where the hull was single skinned, unlike the double hull of the cargo tanks.

187 m<sup>3</sup> of Bunker C fuel (350 cSt at 50°C) were immediately released into the basin, and during the time necessary to complete the mooring of the tanker, some of the fuel oil was carried outside the harbor by the ebb currents.

It has to be emphasised that the ship's crew responded quickly and transferred some of the bunker oil to another tank by changing the trim of the tanker, thus limiting the volume of released oil.

The causes of the incident are still under investigation, and, at present, no mistake by the various parties (tug crews, pilot, captain, harbor pilot) has been proved.

## First measures

The harbor master was immediately alerted and the first action was to close the basin by the means of booms. These booms are normally handled by the personnel responsible for handling mooring lines. Thirty members of this team are always available in the harbor and they can react very quickly to an accident in this location. Nevertheless, it was not possible to close the basin until two hours later when the mooring operation had been completed. The initial manoeuvres of the tug boats would have been hindered by the floating booms.

In order to assess the impacts, surveys were carried out, but due to the heavy fog and the darkness this survey was not very accurate. During the night, various authorities were alerted: the town administration, district (sous-prefecture), civil defence, maritime authorities (CROSS<sup>3</sup> Jobourg) and the French Navy.

CEDRE was called at 07H40 in the morning and the first crisis meeting took place at 8H30 A.M. under the chairmanship of the administration of Seine Maritime (one of the 95 departements into which France is divided).

A first assessment (H+4) estimated that half of the volume of spilled oil remained in the port area but also that 20 to 30 m<sup>3</sup> of fuel had escaped to areas outside the harbor. At day light, the first investigations showed that many piers were polluted by floating slicks and that some patches of oil had drifted away by the tidal stream.

The fire brigade had been alerted immediately of the accident by the owner of the storage tanks in order to avoid any fire hazards. It conducted surveys on the shoreline and specially on the beach of Ste Adresse, close to the harbor.

## Le Havre and its environment (Figures 1, 2, and 3)

Le Havre is the second largest French port (after Marseilles) and the largest for container traffic. Although the harbor of Antifer, about 10 miles north of Le Havre, is dedicated to hydrocarbons, Le Havre still receives some tanker traffic.

Le Havre is located on the northern side of the River Seine, and has the popular beach of Ste Adresse nearby. This beach is particularly crowded in August. Fifteen miles away from the port are the famous cliffs of Etretat, with pebble beaches.

The south side of the bay of Seine, 7 miles from Le Havre, is known for the beaches of Deauville-Trouville, where the fashionable Parisian jet-set society go on holidays. This beach area is famous for its leisure activities (casino, horse races, etc.).



Figure 1. Le Havre location.

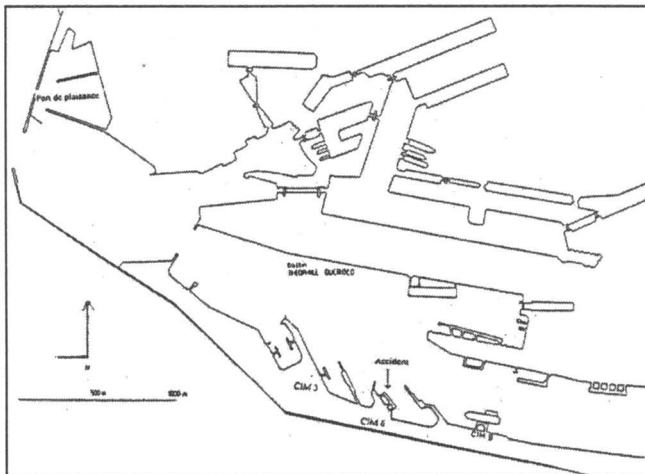


Figure 2. The Port Autonome.

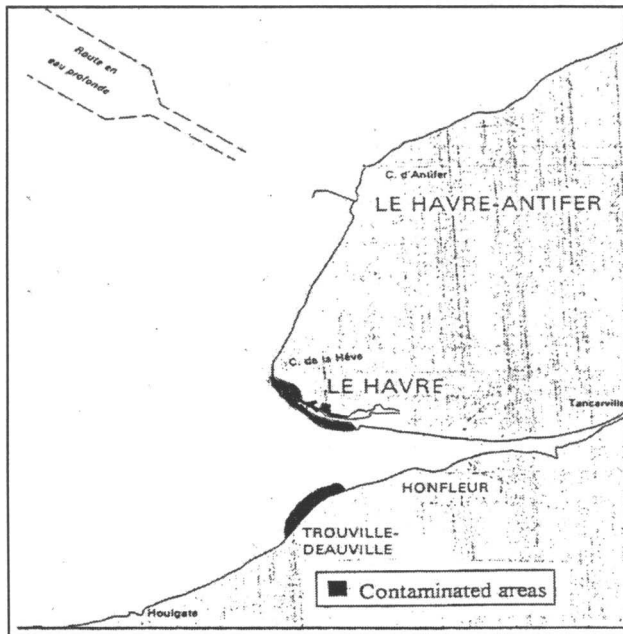


Figure 3. Contaminated areas.

Upstream the river Seine, mud banks with a rich wildlife, in spite of the industrial environment (refineries, petrochemical industry) reveal a very rich ecological sanctuary. Fishing is another economic activity of the area. The main catches are shrimps and flat fishes.

**Organisation**

The level of pollution was considered as moderate by the national authorities, so the French National Oil Spill Contingency Plan (POLMAR<sup>4</sup>) was not activated. When implemented, this plan specifies that means and expenses related to oil spill control operations should be handled by the national authorities.

In the *Katja* incident the operational control and immediate financing of the response measures were the responsibility of the Port Authority and the authorities of the coastal towns affected, taking advice from relevant technical experts such as those of CEDRE. The clean-up operations more than 300 m offshore were the responsibility of the Navy.

The crisis meetings were supervised by the Department prefects (Seine Maritime for Le Havre-Ste Adresse and Calvados for Deauville-Trouville). The Administration representatives concerned were: Public Health, Maritime Affairs, Civil Safety, Fire Brigades, Navy, Harbor Technical Services (such as dredging and environment). Between 30 and 45 people from various authorities were habilitated to express views during these meetings.

**Means available**

About 3,000 m of booms are available in the Port of Le Havre but only 400 metres were located close to the n°8 basin. One skimming vessel, *Le Glouton*, owned by the Harbor Authority, was also available on site. In addition, Le Havre is an important storage centre for the national oil spill contingency equipment, belonging to the Ministry of Equipment, mainly dedicated to be used in case of activation of the POLMAR Plan. However, in case of need, this equipment can be made available to the Harbor Authority.

**First impacts and countermeasures**

At the end of day 1, a first mass balance of the spill had been estimated:

- Volume spilled: 187 m<sup>3</sup>
- Volume trapped in basin n°8: 100 m<sup>3</sup>
- Volume remaining in the harbor (floating or trapped on the rocky jetties): 30–60 m<sup>3</sup>
- Volume outside the harbor: 30–60 m<sup>3</sup>
- The evaporation of this type of heavy fuel oil is low (maximum up to 10% after 24 hours).
- The water content of the water-in-oil emulsion was estimated at 60% after 24 hours

After the arrival of the CEDRE expert at the end of day 1, it was decided to stop the use of dispersant in the harbor and to focus the actions on the skimming option by using equipment from the POLMAR storage centre. A survey was made on the Ste Adresse coastline by the fire brigade. Small patches of black fuel oil were observed on three kilometres of the coastline to the north of the town.

Until day 4, no aerial survey was possible due to poor visibility. A light northern wind (a few knots), caused stranding of oil on the southern berth of the Bay of Seine and on the northern beaches.

Inside the harbor, kilometres of piers were more or less polluted. Surveys were made by the Harbor Authorities together with the experts of ITOPF and CEDRE in order to define the cleaning priorities. Fishing and bathing were prohibited by the responsible administrations in Deauville, Trouville, Le Havre and Ste Adresse.

### Further operations

The southern beaches of Deauville-Trouville were hit by a few patches in the morning of day 3 and immediate and strong actions were initiated by the prefect of Calvados district as follows:

- Bathing was prohibited
- 300 men were mobilised to clean the beaches
- Approximately 900 m<sup>3</sup> of sand polluted by oil were collected by mechanical means and stored in a safe area

Treatment of the polluted sand was completed in 1998.

Media impact was extensive due to the lack of other important national events and public pressure was significant. In Seine Maritime, Ste Adresse and Le Havre the Mayors asked for similar strong actions on their shorelines and did not understand the difference in the strength of the response action between the areas of Calvados and Seine Maritime. Newspapers underlined the difference in approach to the clean up operation between the two prefects.

It was recommended to clean the beaches by hand in order to avoid having large amounts of material to be disposed of, but it was difficult to refrain the municipalities' actions, as they hurried to put an end to this pollution and protect their tourist reputation. In the Seine Maritime Department, approximately 2,700 m<sup>3</sup> of material were collected, mainly sand and pebbles. Later, these pebbles were ground for road construction.

### Aerial survey and offshore operations

At day 4 in the afternoon, the first aerial survey of Etretat to Deauville-Trouville was undertaken by ITOPF and CEDRE. No significant trace of emulsion was observed apart from some specific sea areas, where waters of the river Seine meet sea water from the Channel. On day 5, the Navy informed the authorities that thick (a few centimetres) and large patches of oil threatened the Calvados coasts. A helicopter flight confirmed the presence of something thick drifting at the sea surface. A sample was collected by a patrol boat, showing that this slick was composed of algae and plankton mixed with only some tiny droplets of oil. Under these circumstances no action was undertaken and the command centre was de-activated at day 6.

The only offshore action undertaken by the Navy was to spray approximately 8 m<sup>3</sup> of dispersants from a tug boat. The spraying was undertaken without aerial guidance, due to poor visibility.

### Cleaning the harbor

The cleaning of the harbor structures was started as soon as the water surface was oil free. High priorities were given, on the recommendations of the insurance experts, to clean piers and fenders in port areas receiving passenger ships and ferries.

Port Administration and technical experts also quickly agreed that priority should be given to cleaning the jetty ladders, for safety reasons, and the seaward side of the northern jetty, as this is the first one to be seen by tourists on incoming ferries. Public contract procedures imposed by the statutory roles of the harbor authorities for contracts over FF 300,000 (US\$50,000) and ex-

tensive discussions with experts of the P&I Club and IOPC Fund delayed further cleaning to the beginning of 1998. For that reason, the cleaning operations were almost completed one year after the incident only. The final costs for the harbor cleaning are expected to be approximately 8 million FF (US\$1.33 millions).

### Conclusions

This incident could be considered as minor when taking into consideration the volume involved. However, the operations have identified some issues to be corrected as follows:

**Organisation.** Many people attended the crisis meetings and it was difficult to make decisions in a plenary assembly. A restricted crisis committee with a limited number of members would be more efficient.

**Co-ordination.** Response operations would benefit from an improved co-ordination of the two prefects (Calvados and Seine Maritime) and the Maritime Prefect, in order to harmonise the action.

**Emergency plan.** In 1991 CEDRE undertook an audit of the contingency plan and made a number of recommendations to improve the plan in case of accidental spillage in the port of Le Havre. The plan played its role but it appeared that action schemes could be developed for each level of the emergency plan. The Action Schemes are now under preparation.

**Use of dispersants.** Without speaking of toxicity, the efficiency of the use of approved dispersant on fresh bunker oil is poorly known. CEDRE has undertaken tests in order to clarify this uncertainly.

**Training.** The *Katja* incident clearly demonstrated the need for realistic exercises including organisation and equipment deployments, and based on realistic scenarios.

### Biography

Mr Cabioc'h is a highly experienced chemical engineer. He held for 11 years positions of technical and commercial responsibilities in industrial firms related to the oil drilling industry. Within these activities he travelled extensively abroad (19 countries in Europe, Africa, the Middle East and America) particularly in oil drilling regions. He joined CEDRE in 1989, to take over research and experimentation activities in water pollutions by oil and hazardous substances. He belongs now to the Response Department of CEDRE.

<sup>1</sup> The views expressed in this paper are under the responsibility of the author, and represent the author's point of view.

<sup>2</sup> Centre de documentation, de recherche et d'expérimentations sur les pollutions accidentelles des eaux. This centre is located in Brest. It is a non-profit organization, placed under the authority of the Ministry of Environment.

<sup>3</sup> Centre Régional Opérationnel de Secours et de Sauvetage. The French coastline is under the responsibility of four CROSS. They are in charge of coordinating the offshore operation in case of sea incident.

<sup>4</sup> In France, each coastal department has its own Plan POLMAR Terre. This Plan POLMAR describes the resources to be protected (on shore), the means to implement the protection and the organisation required (role of each administration involved in case of major spillage). At the moment, the Plans POLMAR Terre are under a complete updating.

