TRANSPORTATION OF OIL AND HAZARDOUS MATERIALS BY RIVER

CFT
COMPAGNIE FLUVIALE DE TRANSPORT

CFT:
the company
its traffic
its shipping units

Presentation of the company

One group, with several agencies and subsidiaries:

CFT COMPAGNIE FLUVIALE DE TRANSPORT NORD

CFT COMPAGNIE FLUVIALE DE TRANSPORT SEINE

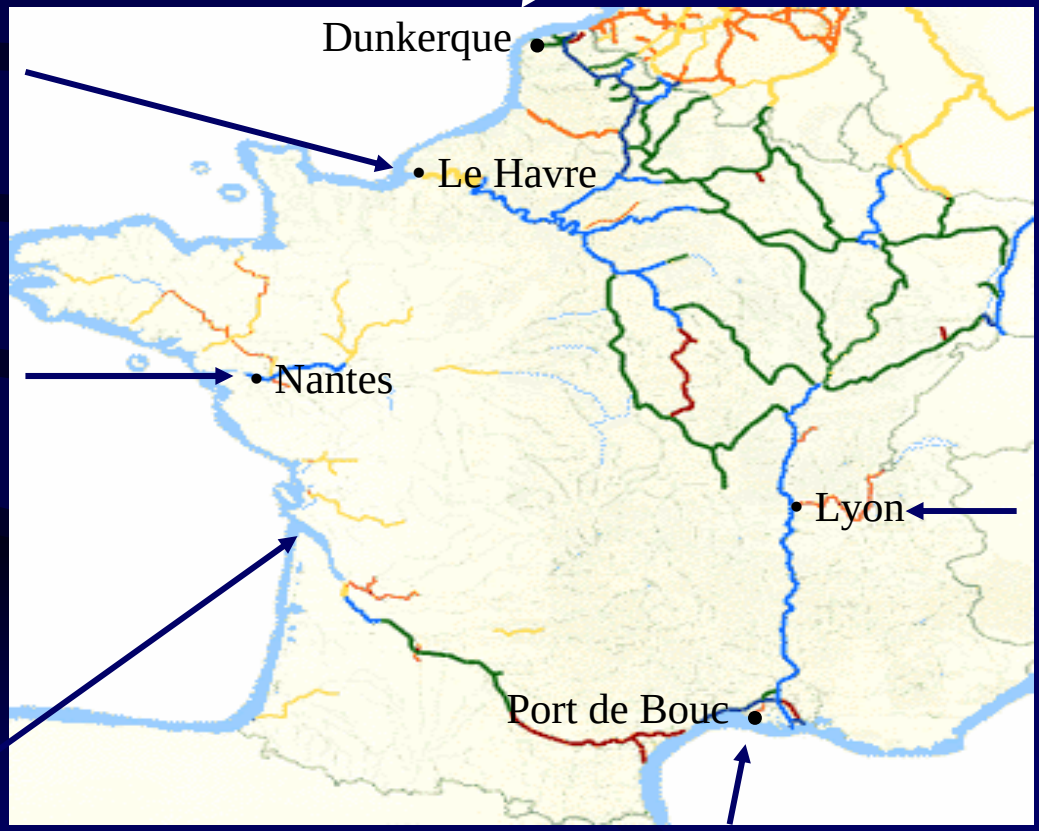
Mahieu

CLT

Loire marine soutes

Finist'mer

Marine énergie



CFT COMPAGNIE FLUVIALE DE TRANSPORT RHONE

CFT GIE

CFT COMPAGNIE FLUVIALE DE TRANSPORT NORD

MARITIMA

CFT H.S.E

Presentation of traffic and shipping units

The company's activity covers all types of traffic:

- ***Gas:*** propane, VCM
- ***Bulk liquids:***
  - Hazardous substances such as petrols, heavy fuel oils, diesels, benzene, methanol, chemical products, fuel of merchant ships
  - Non-hazardous bulks: cooking oil, diester...
- ***Solid merchandise:***
  - in bulk: coal, salt, cement
  - big bags of ammonium nitrate, containers, special packages

Presentation of traffic

and shipping units:

GAS transportation

PAMPERO, gas carrier

Displacement:

Deadweight tonnage:

Gas loading operation on the PASSAAT

Displacement:

Deadweight tonnage:

Presentation of traffic and shipping units:

transportation of bulk liquids

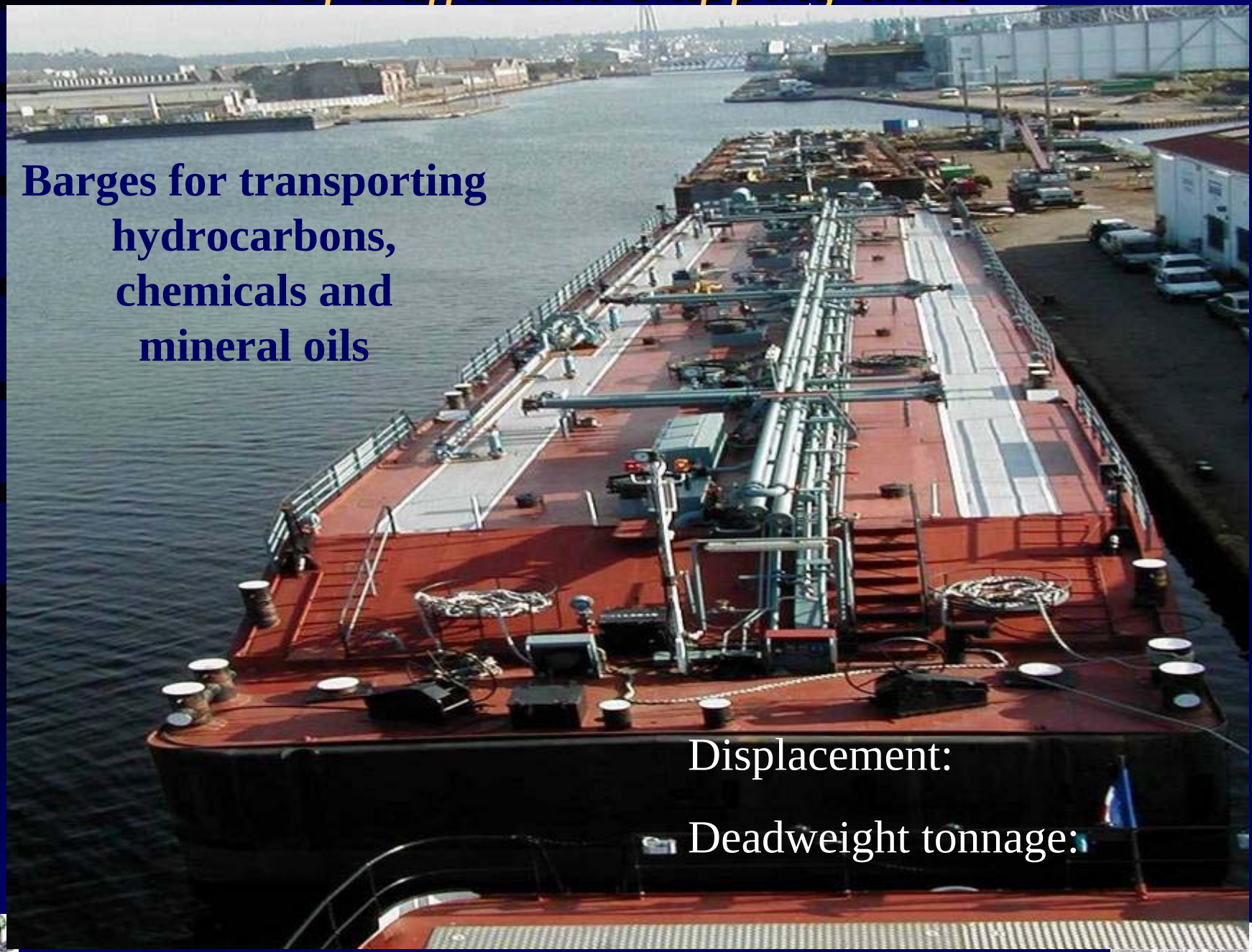
Hazardous materials:

- petrols
- heavy fuel oils
- diesel
- benzene
- methanol
- chemical products
- ship fuel

Non-hazardous bulks, such as:

- cooking oil
- diester

Presentation of traffic and shipping units



Presentation of traffic and shipping units

The barge Annemasse used to transport benzene

Displacement:

Deadweight tonnage:

Presentation of traffic and shipping units

The barge Orchet used to transport diester

Displacement:

Deadweight tonnage:

Presentation of traffic and shipping units

Refuelling tanker
Aquilon

Displacement:
Deadweight tonnage:

Presentation of traffic and shipping units

Refuelling of a container ship by the Dunkerquois

Displacement:

Deadweight tonnage:

Transportation of bulk liquids or dangerous gases: 2005 summary

CFT Rhône	901 609 T	class 3 
CFT Seine	799 812 T	
CFT North	441 600 T	
CFT Gas	521 000 T	class 2 

Presentation of traffic and shipping units:

solid goods

Often goods which are not "dangerous"…

In bulk:

- coal
- salt
- cement
- cereals
- urea

Packaged:

- big bags of ammonium nitrate
- containers

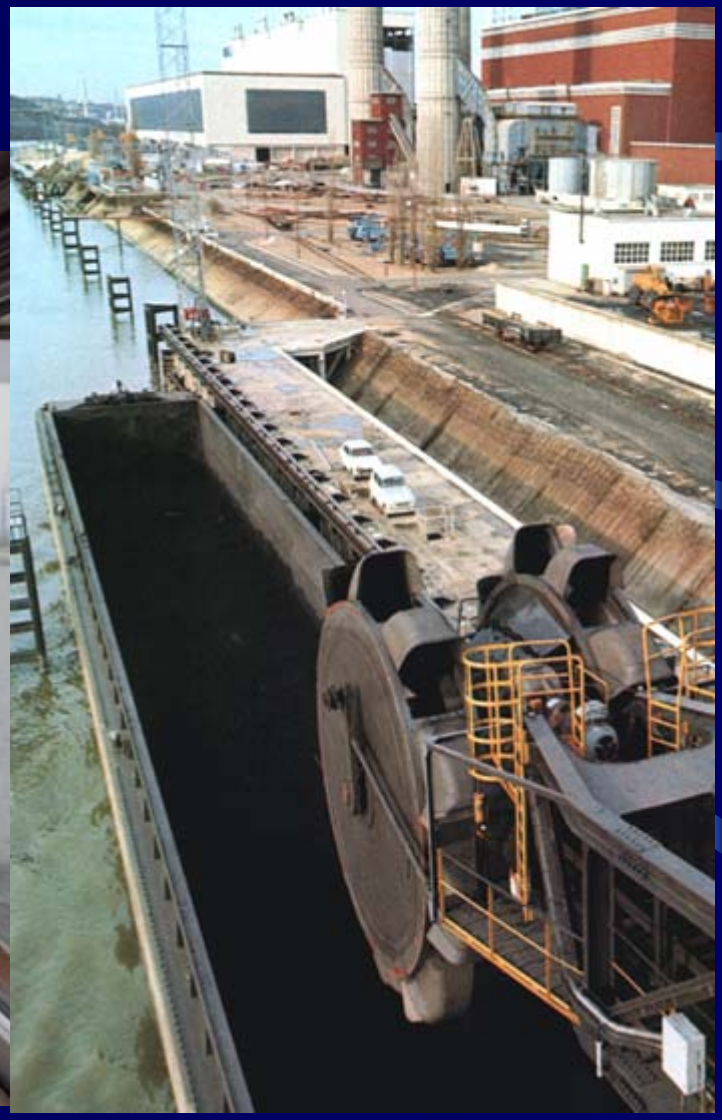
Particular items:

- cars
- special packages

… often with little known environmental impacts

Presentation of traffic and shipping units

Transporting and offloading coal



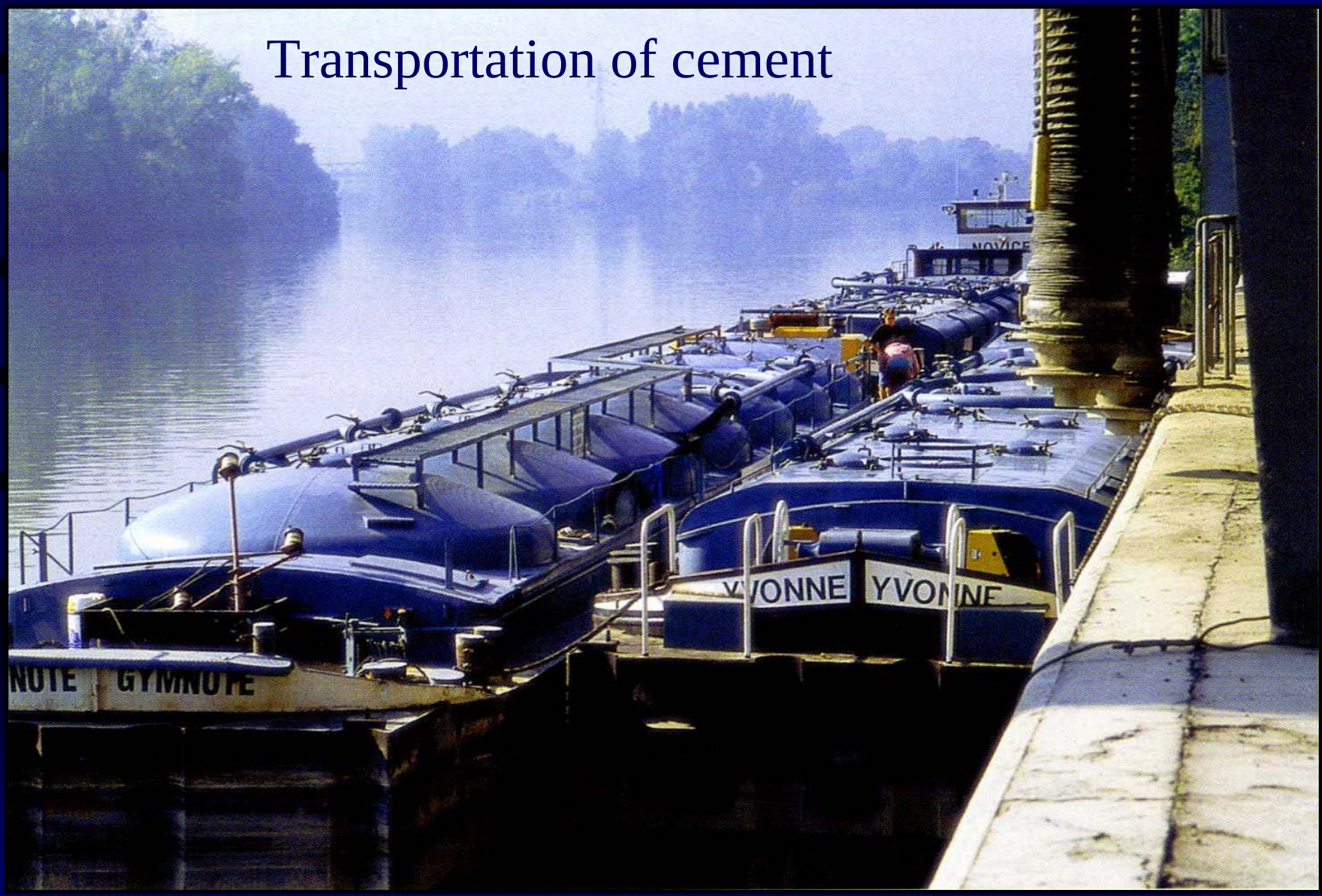
Non hazardous products … with little known impacts

The convoys can transport up to 5,000 tonnes of coal

Today, it is very difficult to determine the impact of a coal spill in a river.

Mechanical crushing or choking of the ecosystem can easily be imagined, however it is not possible to obtain more information. As this product is not classed as dangerous, not much research is carried out on its impact.

Presentation of traffic and shipping units



Non hazardous products … with little known impacts

Convoys can transport up to 1,000 tonnes of cement

Prevent spills of cement into the water *and sweep working and storage areas in order to avoid run-off of rainwater contaminated with atmospheric dust fallen on the ground or in suspension in the air. These matters in suspension provoke* ***mechanical water pollution*** *(turbidity of water) and* ***threaten the ecological balance of the aquatic environment****: contamination of surfaces and spawning areas, reduction in the habitability of surfaces, asphyxiation of eggs, abrasive effects, clogging of gills, reduction in photosynthesis, disappearance of aquatic vegetation, sedimentation causing flocculation in planktonic organisms, decrease in dissolved oxygen due to the introduction and disappearance of certain species of fish.**

*: data provided on product manufacturers' SDS

Non hazardous products … with little known impacts

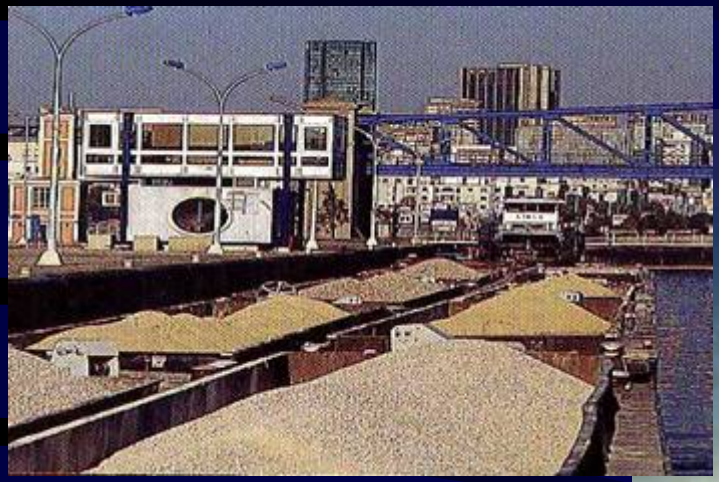
Convoys can transport up to 1,000 tonnes of salt

*Product which is easily soluble in water. A loss of this merchandise in inland waters can lead to a **local increase in the salinity of the water** during the product's dissolution time and its movement downstream by the current. The impact can be significant, affecting all local flora and fauna used to living in a freshwater environment.**

*: elements provided by the CFT environmental analysis

Non hazardous products … with little known impacts

Convoys can transport up to 1000 tonnes of sand or cereals



Potential temporary disturbance to the ecosystem by asphyxiation of the aquatic environment. The duration of this asphyxiation and in particular its impact will depend on the product spilled, its density and its capacity to be displaced by the water course.

*The shipwrecking of the Fenes in the strait of Bonifacio in September 1996 will of course spring to mind. This Panamanian cargo ship was transporting cereals and their spillage impacted on the local ecosystem (1 hectare of Posidonia sea grass).**

* : elements taken from ADEME, IFEN, the website www.environnement.gouv.fr and analysis of the FENES spill

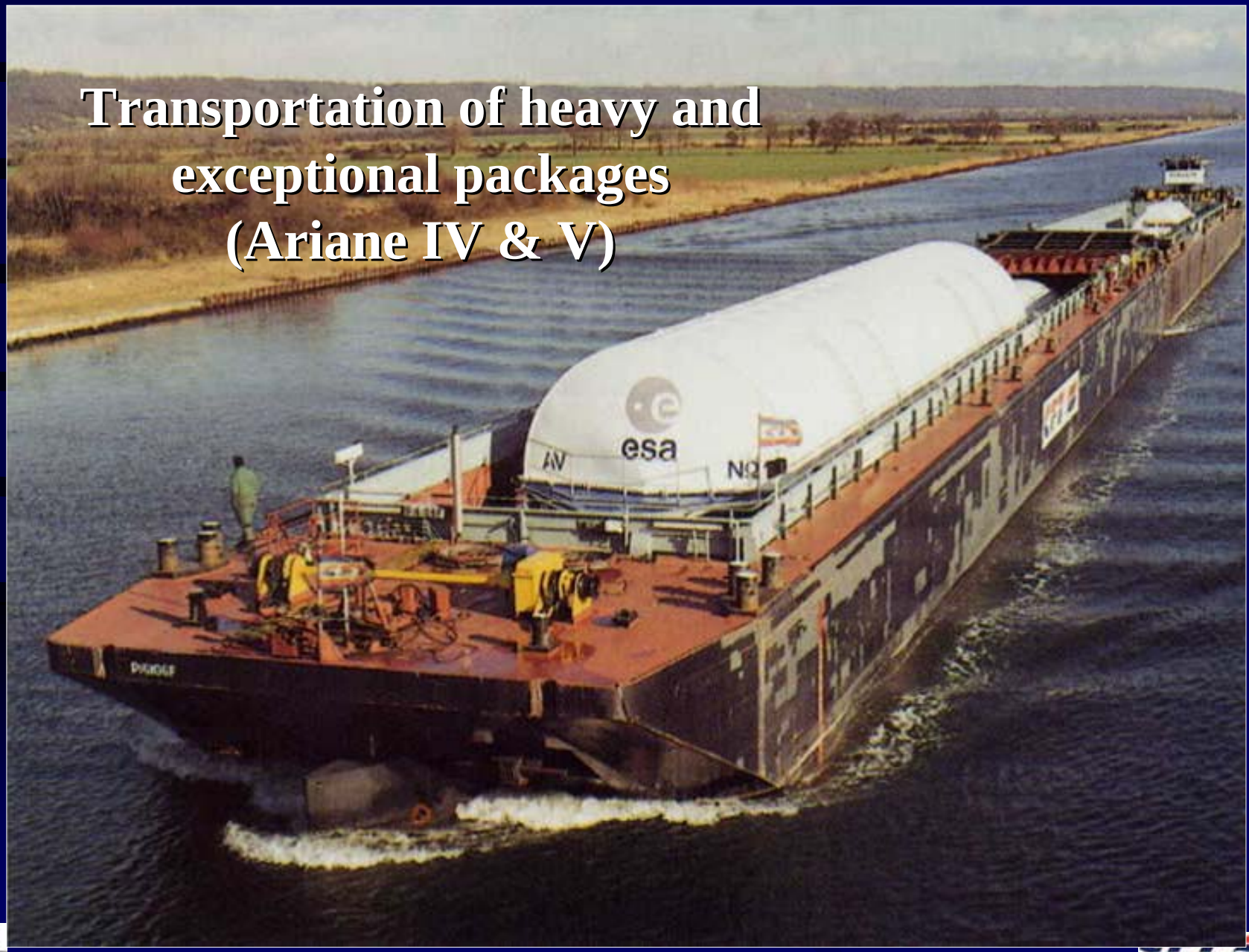
Non hazardous products … with little known impacts

Convoys can transport up to 2,000 tonnes of phosphates

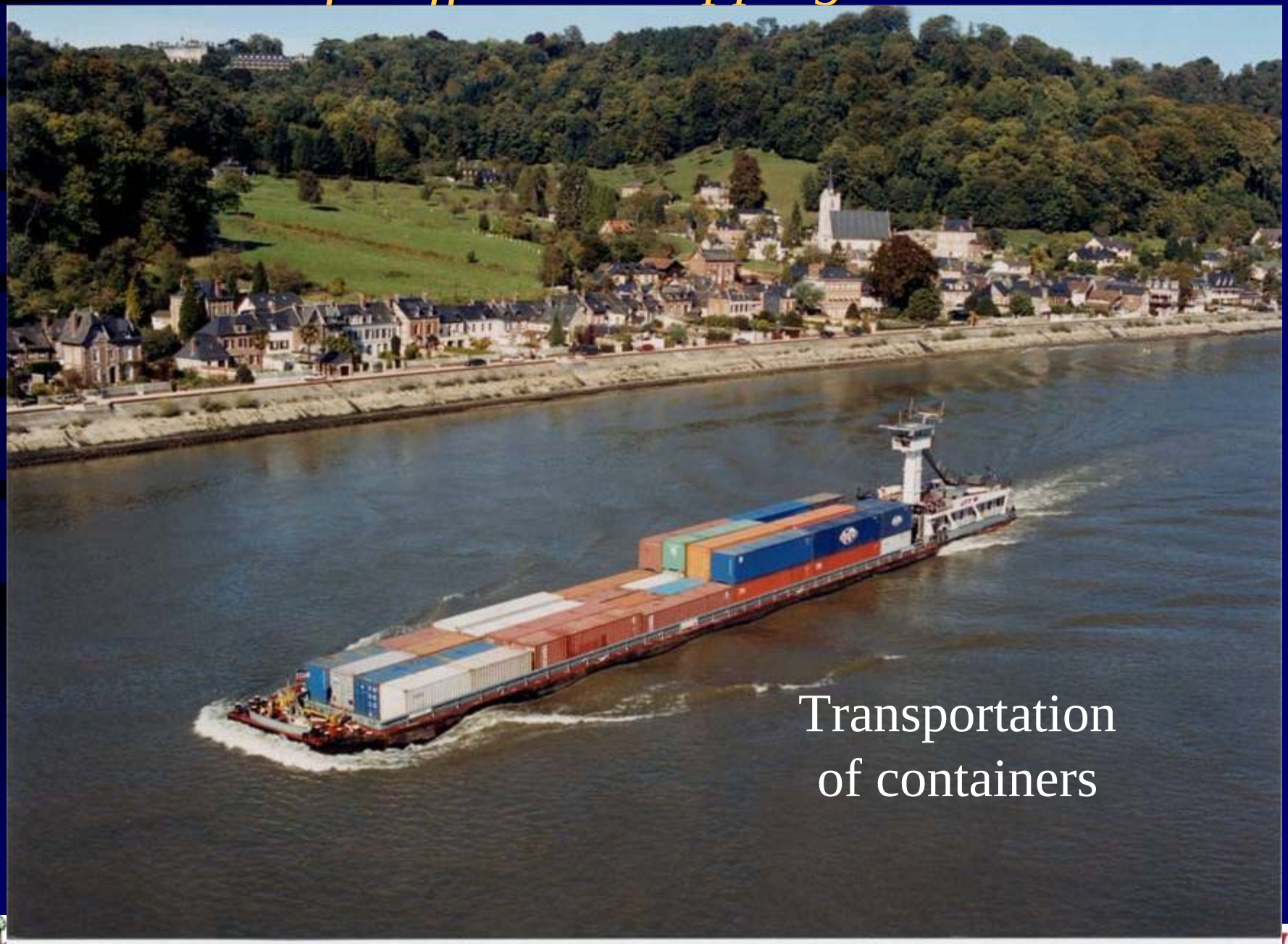
Product which is easily soluble in water. A loss of this merchandise in inland waters can lead to a potential ***local eutrophication of the water*** *(excessive enrichment of the water with nutrients, degradation of the water quality, increase in the algal biomass, decrease in biodiversity), during dissolution of the product and its movement downstream by the current.**

* : elements taken from ADEME, IFEN, the website www.environnement.gouv.fr

Presentation of traffic and shipping units



Presentation of traffic and shipping units



Transportation
of containers

Transportation of hazardous containers: 2005 summary on the Rhône

class 2	32 T	6 containers	
class 3	905 T	52 containers	
class 6	2170 T	116 containers	
class 8	363 T	23 containers	
class 9	102 T	8 containers	

The transportation of hazmat containers is still underdeveloped, but is currently been improved

Fluvial transportation Of hazardous materials

A major regulation: ***ADNR***

Fluvial transportation of hazardous materials

- All hazmat transportation operations by river are regulated by the ADNR legislation

… which also includes pollution response measures

Fluvial transportation of hazardous materials

ADNR concerns all transportation of hazardous materials:

In packages or containers

ADNR also concerns all actors in transportation logistics

Fluvial transportation Of hazardous materials

Loading/offloading operations


Connecting a
loading arm

Connecting a loading arm


Connecting a
loading arm

Connecting a loading arm

Pollution of inland waters: experience feedback

Experience feedback N°1: High risk situation without resulting pollution

"La Voulte": February 2005

Major accident involving a convoy made up of a push tug, a container barge and a barge transporting benzene

Experience feedback N°1:

"La Voulte": February 2004

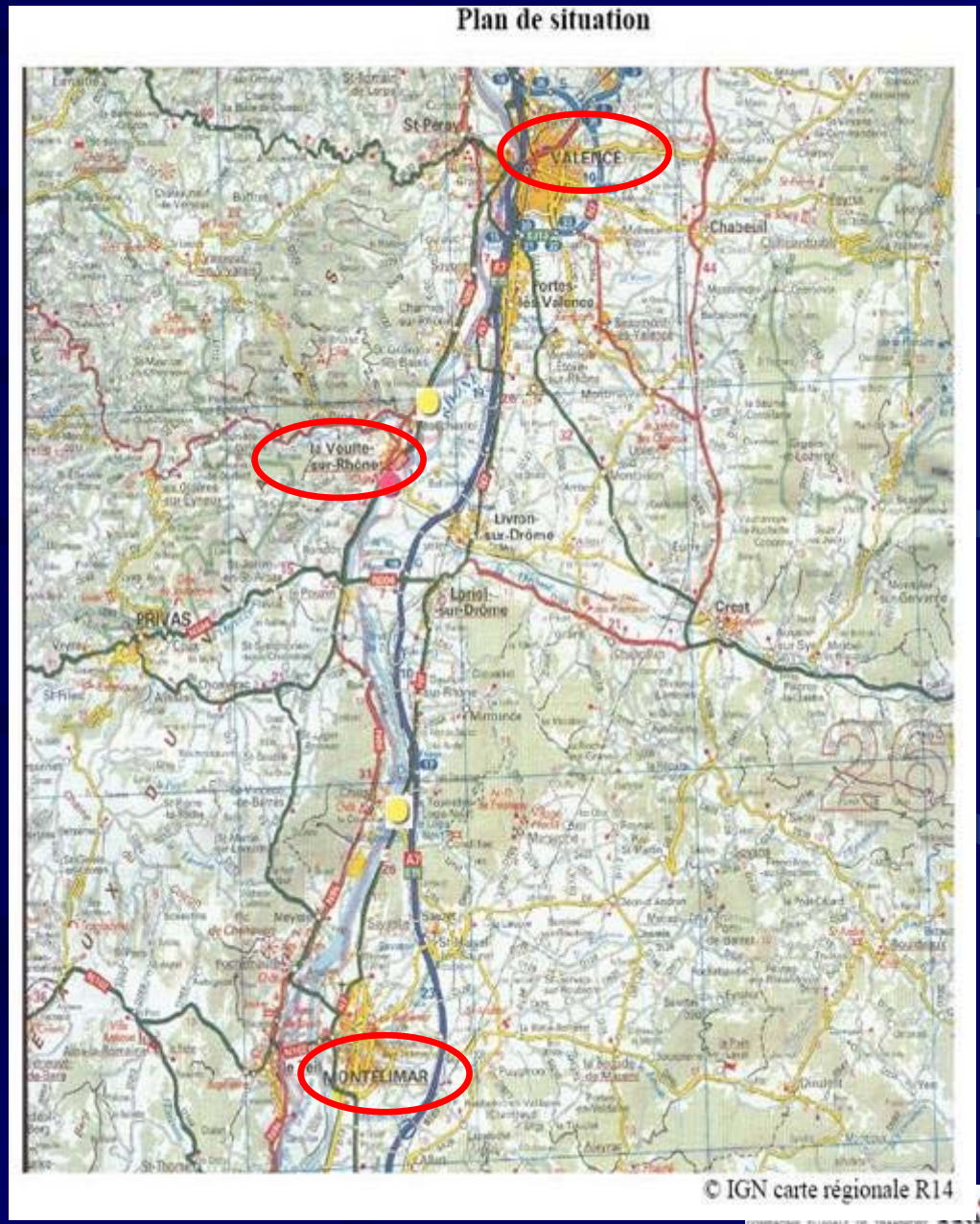
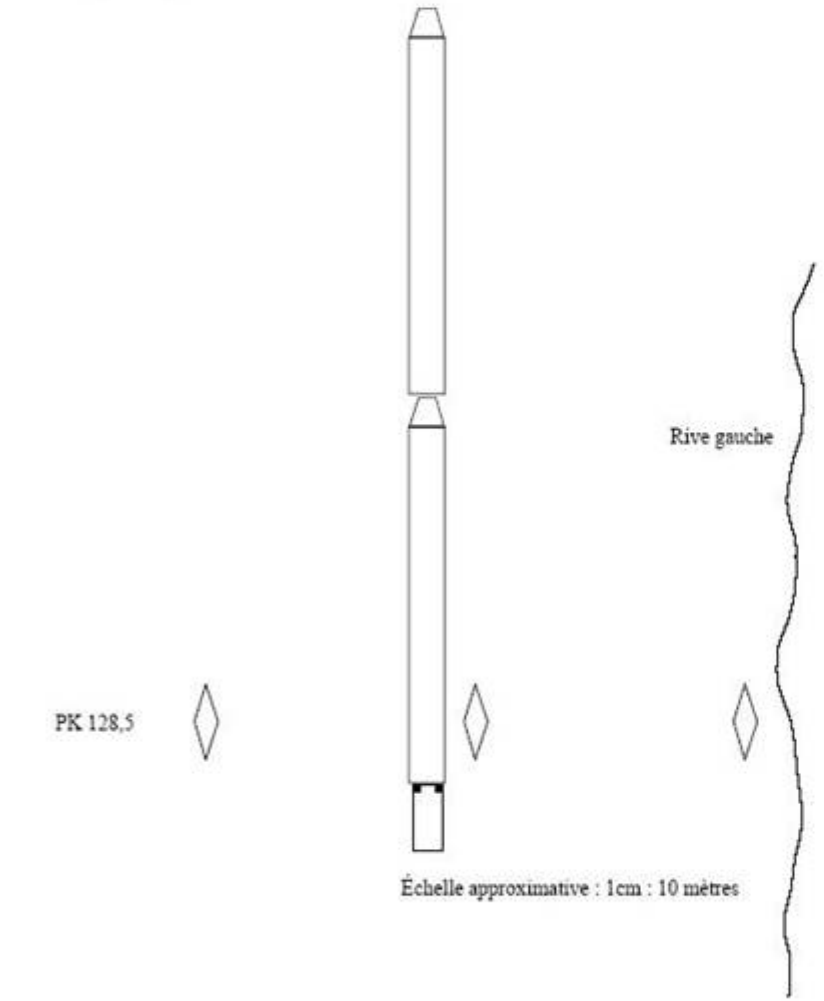


Schéma 3

orientation du courant

Convoi ne pouvant plus avancer : début de la situation d'accident

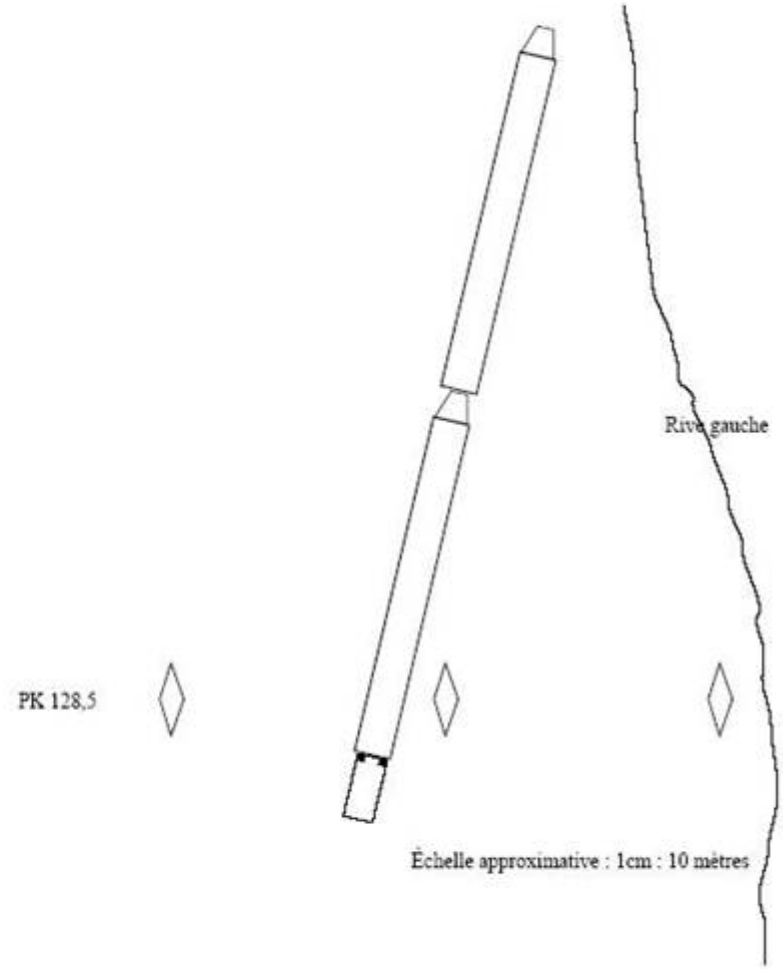


Échelle approximative : 1cm : 10 mètres

Schéma 4

orientation du courant

Choix de mettre bouteur à tribord, pour coincer le convoi sur rive



Échelle approximative : 1cm : 10 mètres

A release of water worsened the situation, causing the "second accident"

Schéma 5

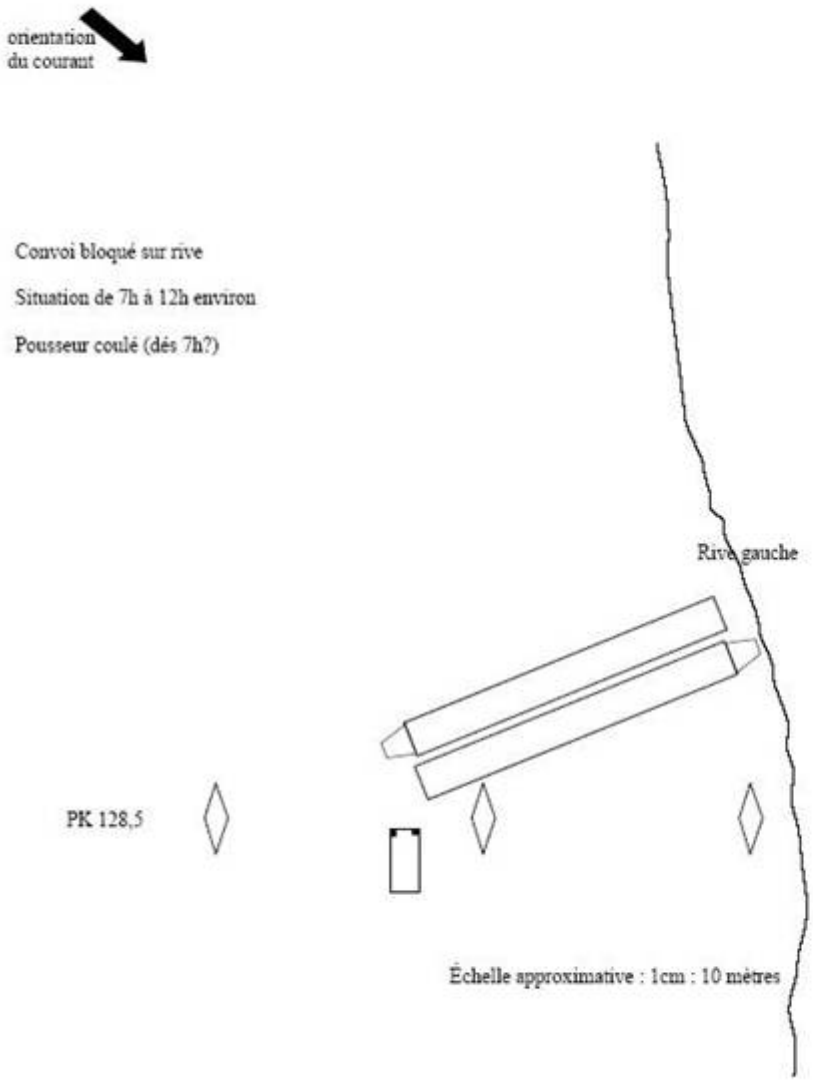
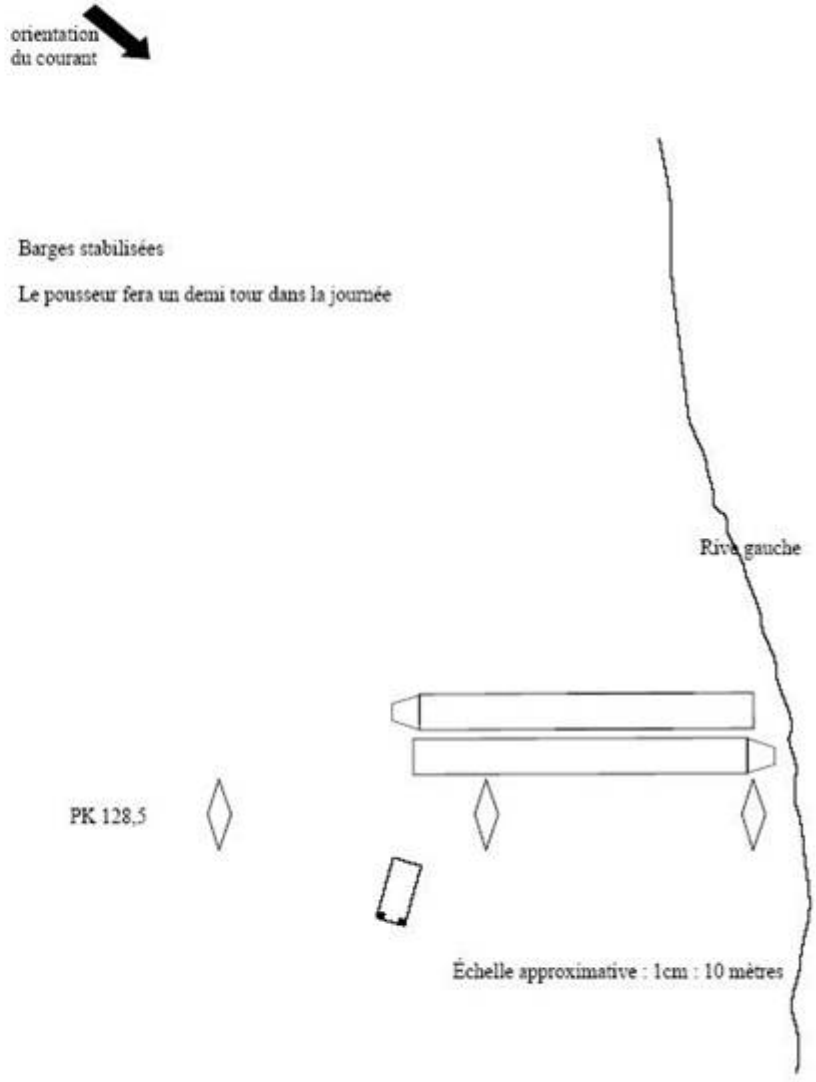


Schéma 6



Les barges Annemasse et Bourgogne entre les piles P1 et P2

Main strengths

- CFT crisis unit rapidly set up
- Means from the whole group made available
- Double hull of the benzene barge
- Technical knowledge of the product: transhipment without release into the Rhône
- Close collaboration with the *Préfecture de l'Ardèche*, the *Drôme* and the fire service

Pollution of inland waters: experience feedback

Experience feedback N°2:

Thursday 9 March 2006

Spreading of heavy fuel oil on the deck of a barge during an offloading operation

Cleaning up after a pollution incident contained onboard

Cleaning up after a pollution incident contained onboard

Cleaning up after a pollution incident contained onboard

Cleaning up after a pollution incident contained onboard

Cleaning up after a pollution incident contained onboard

Cleaning up after a pollution incident contained onboard

Pollution of inland waters: experience feedback

Experience feedback N°3:

Overflow of a tank during loading of marine fuel at a wharf

Overflow of a tank during loading of marine fuel at a wharf

Overflow of a tank during loading of marine fuel at a wharf

Overflow of a tank during loading of marine fuel at a wharf

Overflow of a tank during loading of marine fuel at a wharf

Pollution of inland waters: experience feedback

Feddback from various incidents

Pollution by mineral oil due to a collision

Pollution by mineral oil due to a collision

Rupture of the valve of a loading arm in operation
Heavy fuel oil

Pollution caused by corrosion of the hull: the hull was not painted where the keelblocks had been placed

Comparison of fluvial and maritime pollution incidents:

	positive	negative
quantities	fluvial: small quantities transported and spilled	maritime: larger quantities
environment	maritime: in high seas, dispersion by wave action first occurs, before the pollutant reaches the coast	fluvial: in direct and immediate contact with embankments, quays, jetties...
containment	fluvial: containment is often possible and simpler: booming, closure of the dock or reach	maritime: offshore containment around the vessel can be very difficult
number of manoeuvres	maritime: for long journeys, offloading may take place 3 months after loading	fluvial: several commercial transactions can take place in a week
external technical assistance	maritime: ports and maritime authorities are better prepared for risk situations, notably through the POLMAR organisation	fluvial: river ports and authorities along waterways are not well prepared; response is often conducted jointly with the shipowner and a refinery with response means

Presentation of the CFT's HSE policy and preventative pollution response measures

Presentation of CFT's HSE policy:

The CFT group implemented an environmental policy, which highlighted the following impacts:

- Oil spill response:

This is clearly the major environmental impact in our mode of transport and related logistics (terminals, wharfs…)

- Release of VOCs
- Energy consumption of engines
- Sorting
- Treatment of waste waters

These environmental aspects are important but their impacts remain inferior to those of oil pollution

Response to accidental pollution in inland waters
Preventative measures: our goals

- To prevent pollution incidents and releases by controlling operations and carefully following procedures
- In the event of an overflow, to contain onboard
- In the event of release into the water, to contain within a limited perimeter and prevent the pollution from spreading in the port or waterway

1 - Prevent incidents, by ensuring participants' competences

- Participation of bargemen in professional training courses: important partnership with professional training organisations
- Creation of a new position onboard: officer in charge of the cargo
- Internal and external training courses and exercises in a safe environment and pollution response
- Advanced ADNR training: CFT regularly has 2 or 3 ADNR expert bargemen onboard

1 – Prevent incidents, by keeping shipping units clean

1 – Prevent incidents, through regular exercises

- Carry out 1 crisis drill per year, per agency and per subsidiary
- Carry out 1 HSE exercise per month for each vessel shipping unit, with 1 pollution response exercise per trimester for each unit

2 - Contain onboard: equip each shipping unit with a kit

2- Contain onboard: provision of pollution response trailers on land-based sites

3 - Contain around the shipping unit: booming

Spill response can only be conducted with assistance from the port and river authorities and using landing stages

Certain types of booms which are able to reach the important points can only be deployed using technical means or port launches

3 - Contain around the shipping unit

It is important to be aware that:

- once the pollution goes beyond the ship's deck, the bargemen no longer have any response means
- booms are often heavy and difficult to handle
- it would be impossible and very dangerous to try to move a boom from a barge

Our instructions are therefore clear - crews should:

- warn port and river authorities as soon as possible in the event of a spill

4 - The group's means:

- A HSE service for the whole group
- 5 safety ADR and/or ADNR officers
- Monthly security and quarterly spill response exercises for the shipping units and annual crisis drills
- A continually increasing training effort
- A research bureau for the company, working closely with HSE for experience feedback
- Unprecedented investment in double hull vessels (160 m € since 2001), exceeding all ADNR regulations


Thank you
for your attention