

CONTAINMENT IN PORTS AND HARBOURS

SCOPE

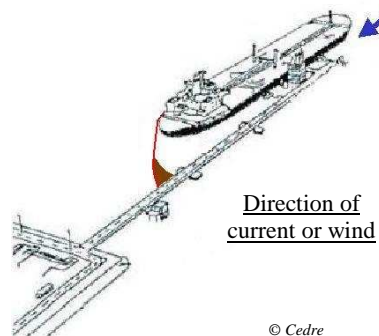
Pollution: all types
Pollutant: fluid to highly viscous
Harbour area



Katja spill - Le Havre



Melbridge Bilbao spill - Brest



Containment at berth with current, booms laid so as to enable pumping from quayside

EQUIPMENT NEEDED

Containment equipment: light duty harbour boom, anchorage system (buoy, sinker, magnetic device, chains and ropes...), possibly a bubble barrier boom.

Boats: launch (picket boat, small tug, harbour launch...).

Extra equipment: gas meters, walky-talkies, VHF sets...

DESCRIPTION/PRINCIPLE

- System for preventive containment: there may be a need to lay a boom around a vessel preventively during loading or unloading operations to limit the risk of an oil spill spreading during cargo transfer operations. The criteria requiring a preventive strategy may be the following:
 - A call for quick response
 - Difficulties mobilising boats
 - Cargo transfer operation conducted during the night
 - Risk of spreading (of volatile products likely to cause a fire or an explosion) to other sensitive or urban areas (cf "Observations" below)
 - Ecologically or economically sensitive areas nearby
- System for operational containment: if you choose the "post-pollution" response option, you will also need to ensure that the support and response equipment can be mobilised very quickly (particularly by stockpiling equipment near potential spill sites) and be used without risk (eg. sailing near slicks in the process of evaporating).

The containment system will ideally comprise a light duty boom stored near the oil wharf (cf sheet "[Prepositioning booms to protect loading/unloading areas](#)") or possibly include launching the boom from a dock with appropriate anchorings for containing all the oil and for absorbing height differences due to tidal ranges (tide sliders, buoys or concrete sinkers, shore-sealing boom, tide compensators, ballasted ropes, fire hoses; cf sheet "[Anchorage and oiltightness of booms against a quay wall](#)").

The boom will be connected up, launched and deployed gradually into the wind (speed < 2 knots). Once the boom has been entirely deployed, connect one end of it to an anchoring point ashore. Then connect the boom to intermediate anchoring points. Tie up the other end of the boom to an anchoring point ashore or on-board a vessel.

If there is a constant current or wind during (preventive) (un)loading operations or during post-pollution response operations, there will be no need to surround the vessel entirely: a boom can be positioned at the tip or the stern (downstream of the current or downwind), between the vessel and the quayside so as to form a pocket (cf drawing above).

If the oil is trapped naturally in a recess beside a quay or some other port infrastructure, a containment system will be needed to prevent the oil from escaping and polluting other parts of the harbour area.

A collection system will have to be implemented very quickly (cf sheet "[Oil recovery in harbours or industrial areas](#)") before the system's collection capacity is exceeded or before bad weather can have a chance of damaging the system.

PTO

CONDITIONS OF USE

Pollution: fluid to viscous pollutants. Precautions will have to be taken for volatile oils (petrol, gas-oil, etc...) as vapours can be harmful for responders who breathe them, not to mention a possible fire or explosion risk (cf “Observations” below).

Site: harbour area; current < 1 knot and little lapping action.

PERFORMANCES

Yield: variable depending on reaction times, size of the spill, weather conditions and equipment implemented. The efficacy of the recovery operation will be related to the performance of the containment operation.

Implementation: variable depending on the type of boom (also applies to recovery).

Waste: pollutant and macro waste.

OBSERVATIONS

- Decide not to contain and recover in the event of fire or explosion risks (oil with low flash point) and enhance evaporation and natural dispersion unless the slick seems to want to drift towards sensitive or built-up and populated areas. In this case, use booms to contain the oil and if possible use fire booms then spray low or average expansion foam to cover the slick and reduce inflammable vapours. The recovery leg will thus involve a floating suction head to recover the oil from under the layer of foam (“Delta suction head”). Use sparkproof equipment.
- The use of booms cannot be improvised; that is why boom-laying plans will have to be drafted in advance depending on what the plausible scenarios and local constraints are. Training and regular drills are key factors for success in a response operation.
- Work out in advance whether your equipment is going to be compatible with that of the local authorities or industries nearby so as to be able to use it if need be (via an agreement/arrangement).
- Deploying booms on choppy water is a very difficult operation.
- Containment may be possible using bubble barrier booms that will have to be laid in advance and maintained regularly.