

Deployment of IBP material caused by the sinking of a floating roof of large oil storage tank

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Theme's of the presentation

- The call for help
- Location
- First responding units
- scaling the operational status
- Considerations of deployment of IBP (Industrial Firefighting Pool) materials
- Strategy on scene
- Creating a safe environment
- Learning experiences
- Future developments
- Questions?

The call for help

- **Date: 31 october, 8.30 hours**
- **Message to the fire brigade emergency centre: “Sinking floating roof in a oil tank at oil storage and refinery complex**
- **First responding unit:**
 - **Industrial fire fighting unit (extended firefighting vehicle with pump capacity of 6000 l/min and 4000 l of foam)**
 - **Officer on call**

The call for help part.2

- Within 10 minutes sinking of the roof confirmed. Product is the flammable liquid Naphtha. (Flashpoint $< - 20$ C)
- Officer on call scales up with;
 - 1 industrial firefighting unit
 - 1 foam concentrate unit of 10 m³
 - Multi rescue coordination phase 1 (GRIP 1).

First impressions on location

- The roof was still sinking in the tank which happened with a lot of noise and deformation of the tank it self.
- The stationary fire prevention systems where damaged end not useable anymore.
- Operational crew and fire fighters where fleeing the scene.





The first decisions on the scene

- 21.000 m³ Naphtha in a 31 meter high tank;
can it ignite? * Yes
- Can we prevent ignition?
- * *yes, with appliance of foam.*
- Are there risks?
 - * *Yes the foam can cause ignition.*
- Are the risks minimal with a right appliance?
 - * Yes





Helikopter images



What if ???

- **What is our back-up plan for a full surface tank fire or bund fire?**
- **30 minutes after the start of incident the officer on call asks for the Industrial Fire Fighting Pool.**

What happens next

- **Large scale movement of fire fighting vehicles.**
- **Creating of two operational controls in one incident. (logistic challenges)**
- **Within 2 ½ hours the Industrial Fire fighting Pool is operational.**

Movement of specialised equipment



Movement of specialised equipment



Movement of specialised equipment



Movement of specialised equipment



Movement of specialised equipment



Strategic decisions on scene

- Two separate command structures.
- Two separate communication frequencies for the fire fighting units on the scene.
- Structural and frequent progress evaluations between officers on call.
- Two strictly separate working areas.

Where to put the IBP equipment

- 1 monitor standing ready to extinguish a full surface fire.
- 1 monitor standing ready for a bund fire to extinguish fires or cool the environment.

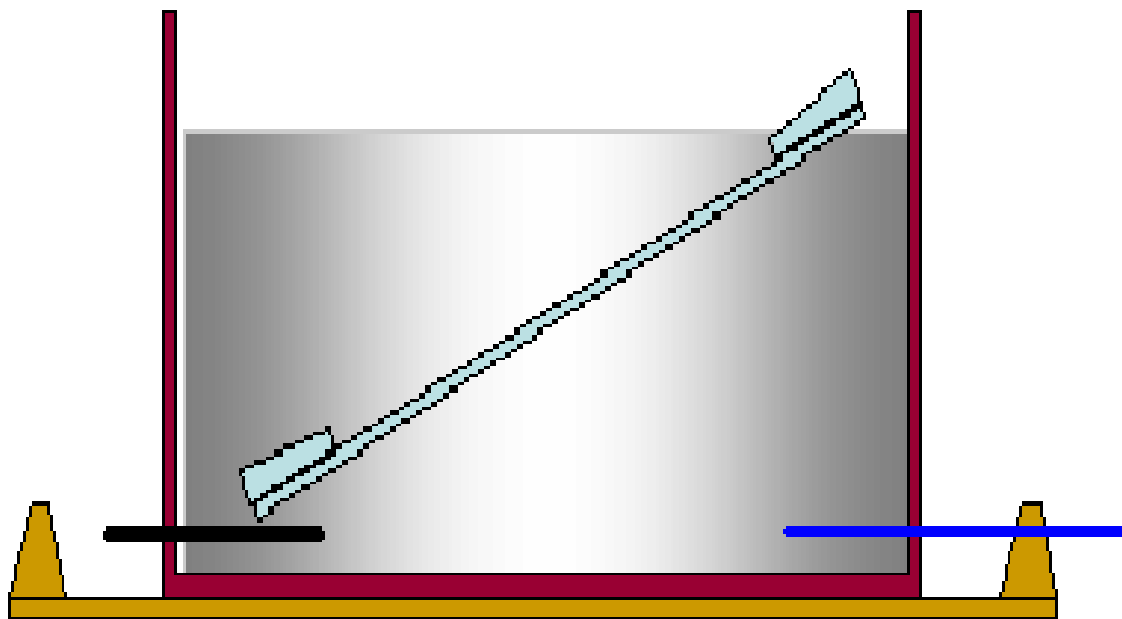




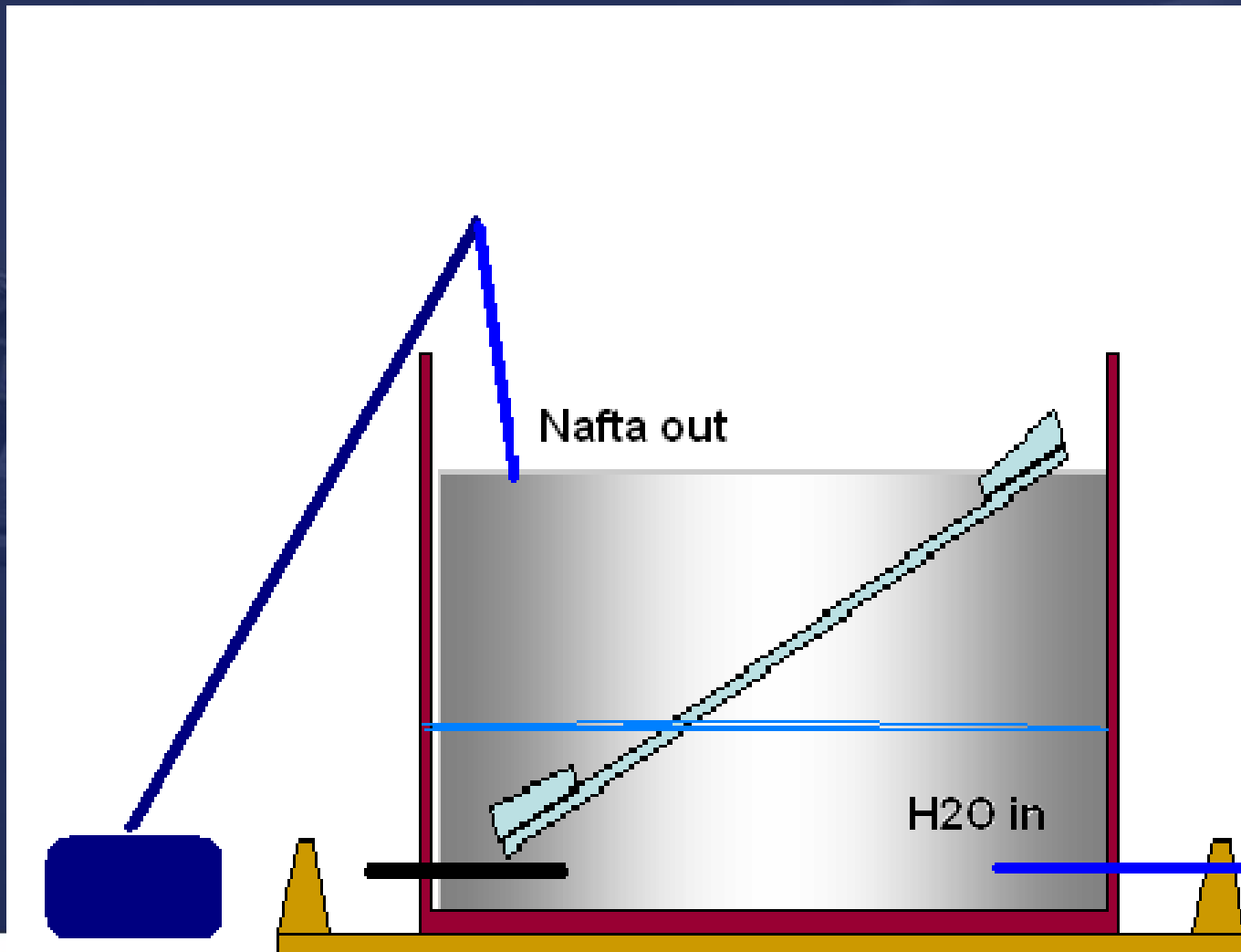
What was the risk of manipulating the naphtha in the tank.



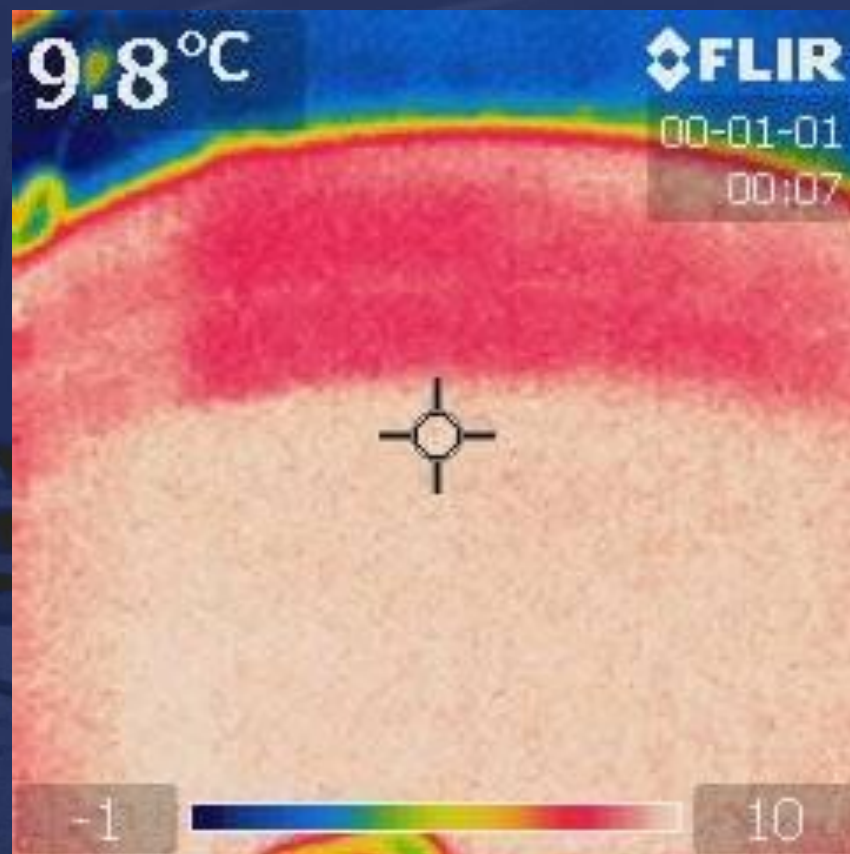
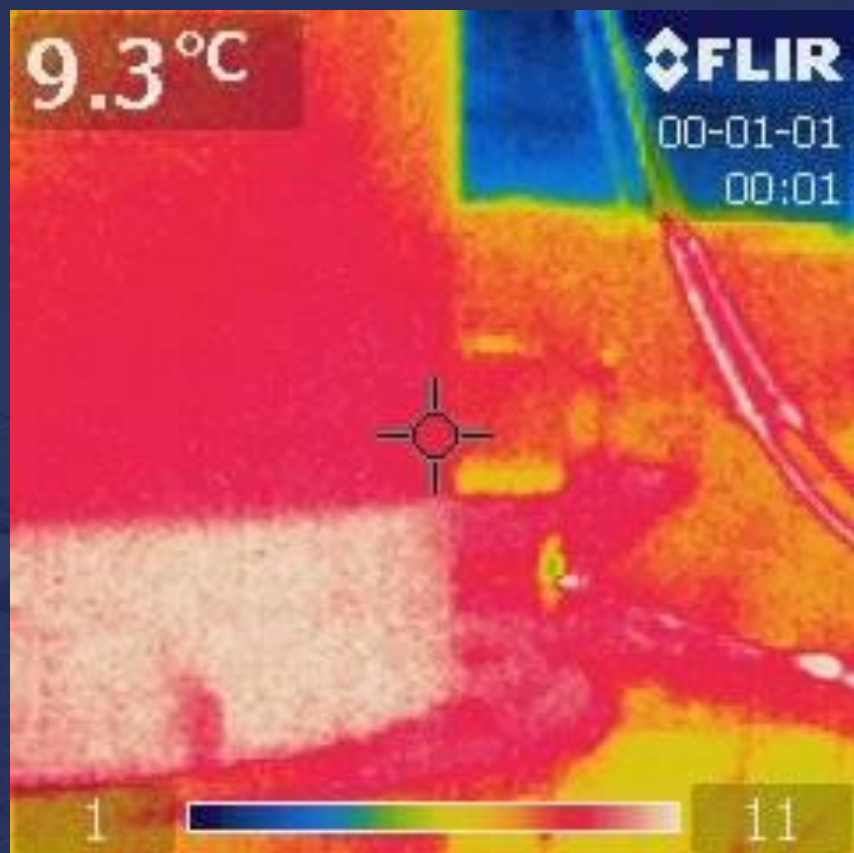
Visual sketch.1



How to get the flammable naphtha out and maintain the temporary



Maintaining the same level of liquid in the tank by visualizing it.



The results

The company involved

- After 7 days the tank was completely filled with water and the incident was formally ended.
- The naphtha was re-used after some simple refinery procedures
- During the incident the company could contain most parts of the daily operations.

The fire brigade

- 273 fire fighters where involved.
- 100 m³ of foam was used.
- 1 fire fighting vehicle broke down and was repaired a week later.

Operational challenges

- Maintaining a complete foam layer when the wind picks up or when it starts raining.
- Keeping the few specialized fire-fighters who can operate the monitor on the scene for 24 hours, 7 days in a row.
- Maintaining your operational strength in our specialized industrial area.

Future developments

- Increasing the distance where the IBP can operate away from water supply.
- Do we need special devices for bund fires?
- Increasing the numbers of specialized fire fighters which can operate the equipment of the IBP.
- Operating the equipment of IBP outside the port of Rotterdam?

New boosterpomp



80.000 ltrs/min.



Questions?