

Hytrans Fire System

mobile water supply



HFS

A graphic consisting of four rectangular blocks in a row: gold, orange, dark blue, and silver, with a downward-pointing arrow shape integrated between the orange and dark blue blocks.

Hytrans Systems

Hytrans Fire Systems

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The Netherlands

Wednesday November 7th - 2007

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Hytrans Systems



About Hytrans Systems

In 1964 Kemach machinery was founded. In 1978 Kuiken NV became the major shareholder and since 1991 Kemach was a 100% subsidiary of Kuiken NV. The Kemach name was then changed to Kuiken Hytrans BV.

In 2006 Kuiken Hytrans BV joined the Holland Special Pumps group, already a long term partner. The name was changed to Hytrans Systems BV.

Hytrans Systems BV has two subsidiaries:



HFS



Hytrans Fire System

mobile water supply

HTS

Hytrans Traffic System

mobile traffic information



HFS



Hytrans Fire System

mobile water supply

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Consider this:

- **Fixed Fire Water Systems:**
 - Designed many years ago
 - Capacities designed according to old safety criteria
 - New bigger tanks need more water
 - Maintenance budget constantly under pressure
 - Corroded / blocked up
 - Pressure required these days is higher. Corrosion may have caused the wall thickness to deteriorate so much that a sudden increase in pressure may cause the system to rupture

What alternatives do you have?



The Alternative:

Mobile High Volume Water Supply System





What makes up a Mobile High Volume Pumping System?

- HydroSub
- Large Diameter Hose
- Hose Layer Container
- Hose Recovery Unit



The HydroSub

The HydroSub is a diesel over hydraulic driven water supply pump.

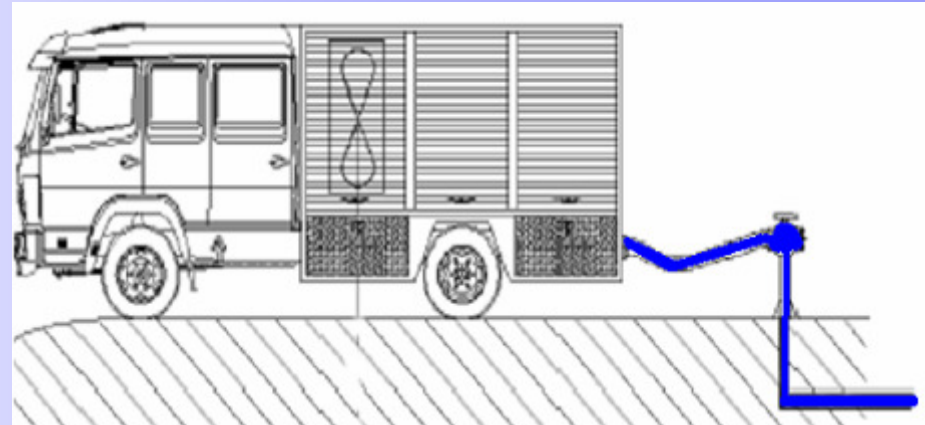
The HydroSub is capable of getting the water in almost any situation, independent of the draft height.





Conventional system

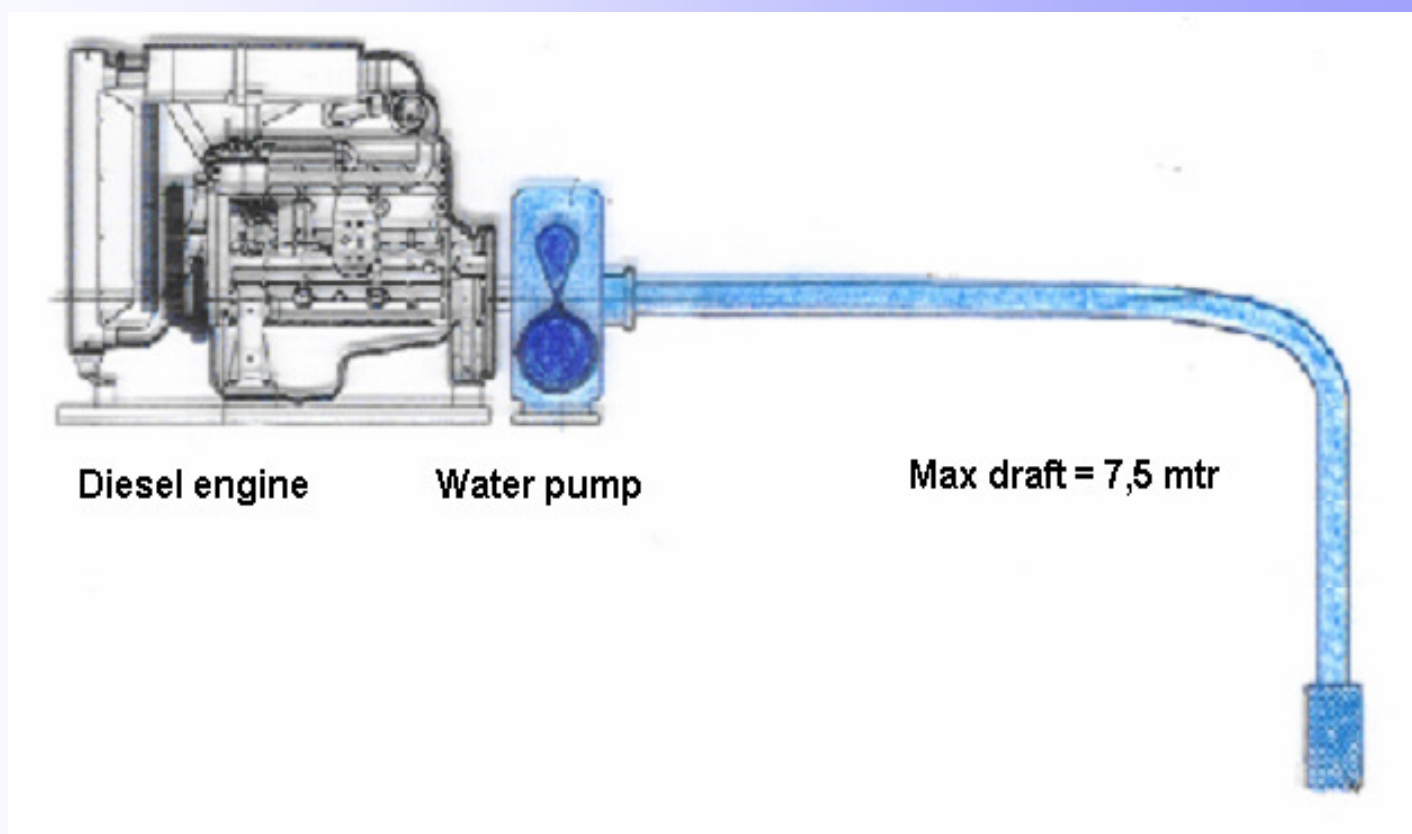
- system is designed to draft water from hydrants
- Only then 100% performance





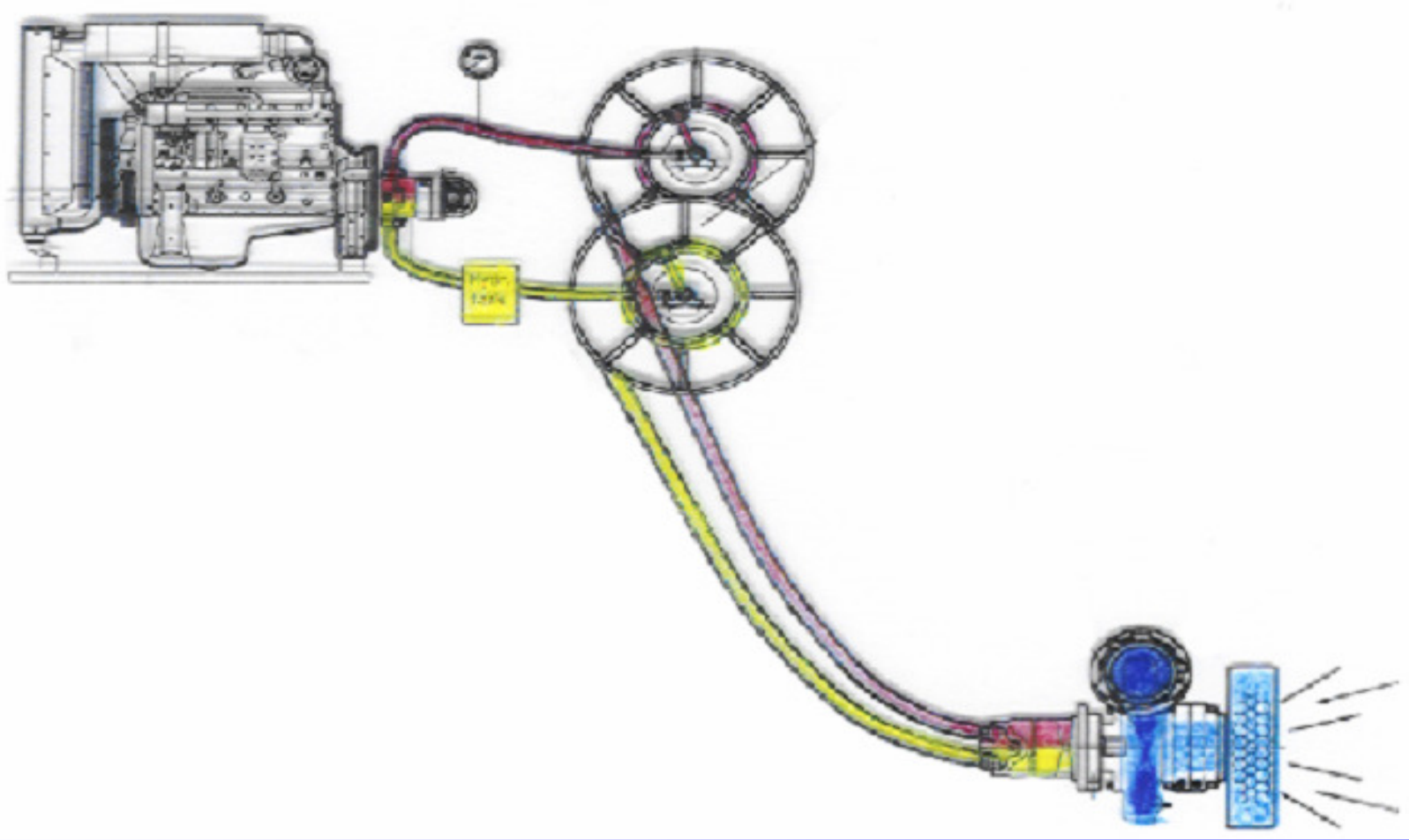
Conventional drafting system

70% Capacity loss when draft = 7,5 meter





The Solution





Hydraulic driven Submersible pump

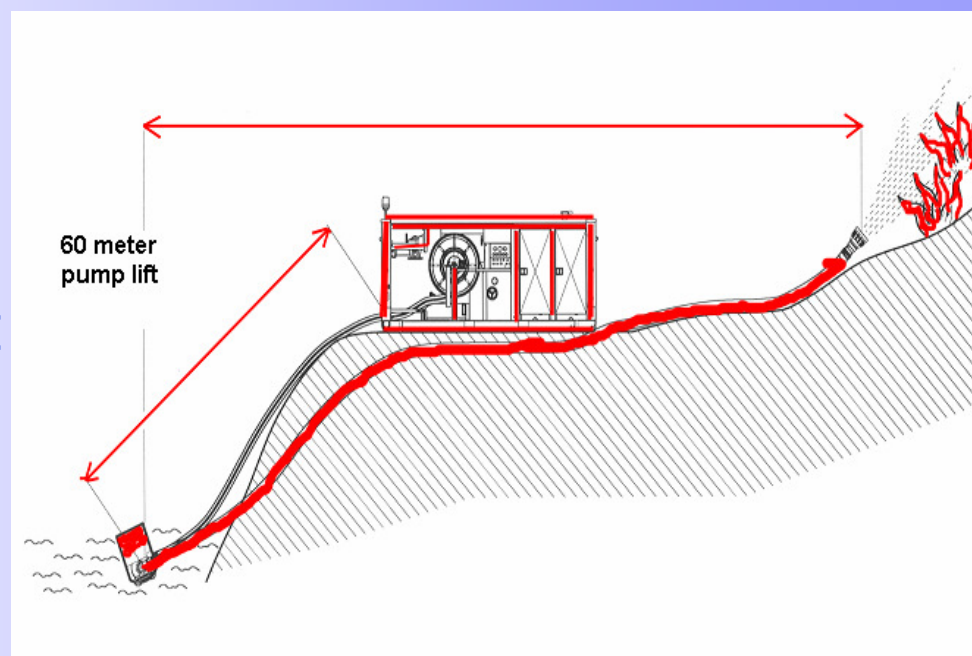
- Standard
 - (3500l/min @ 10 bar)
- High Flow
 - (8000 l/min @ 2.5 bar)
- Super high Flow
 - (11000 l/min @ 2.5 bar)
- Can be used for Hydrant or booster pump functions



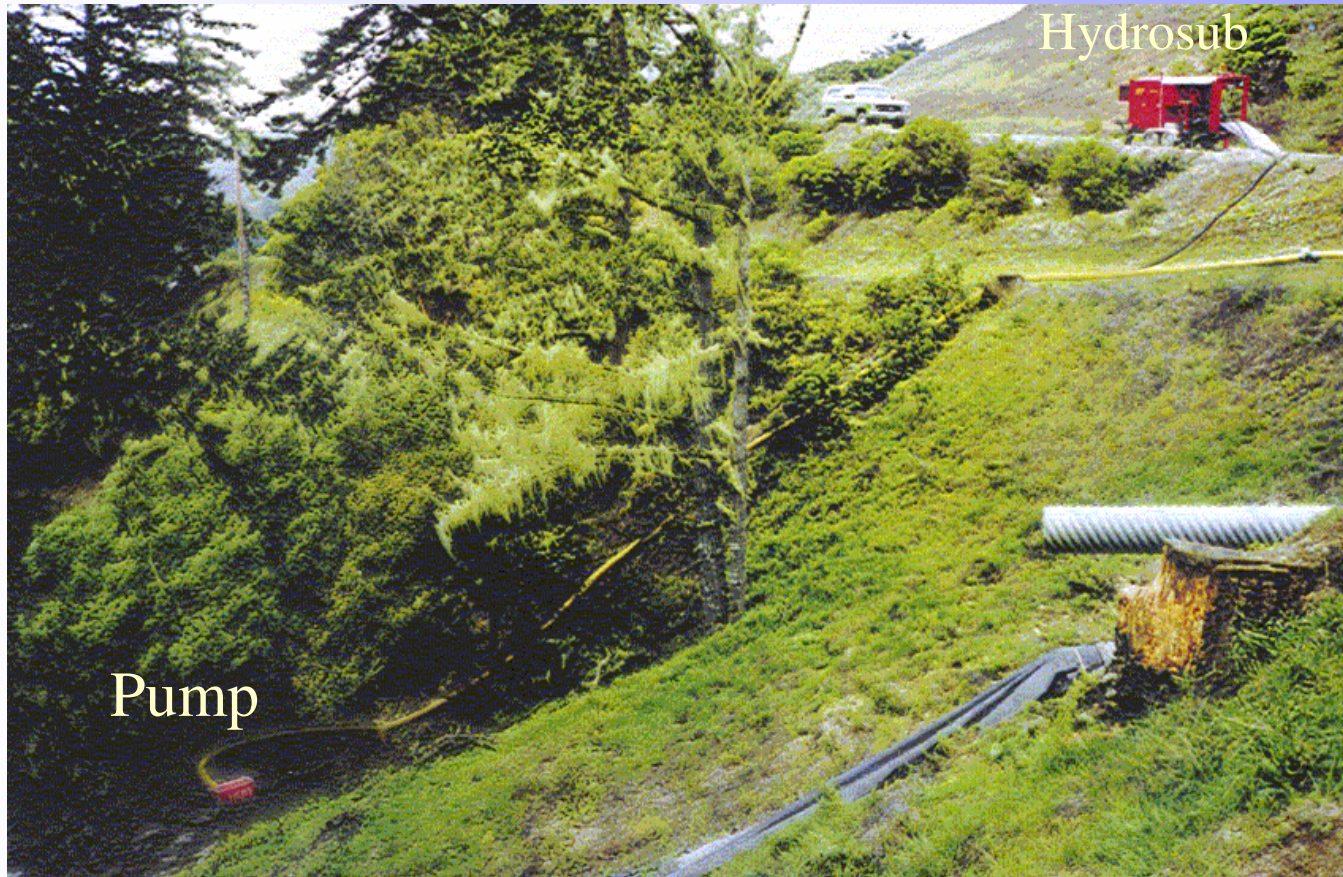


Advantages

- No loss due to suction
- Clean water
- Portable
- Sea Water Resistant
- Dry running
- Fast deployment
- Hydrant pumping
- High capacity



Advantages



> 35 meter (100 ft) down hill

Advantages

Hydrosub

Pump





Large Diameter Hose

Hoses

- Up to 12"
- High pressure rating
- Lowest possible weight
- High flexibility
- Small elongation
- Small bend radius
- High resistance to
 - Ozone
 - Abrasion
 - Heat

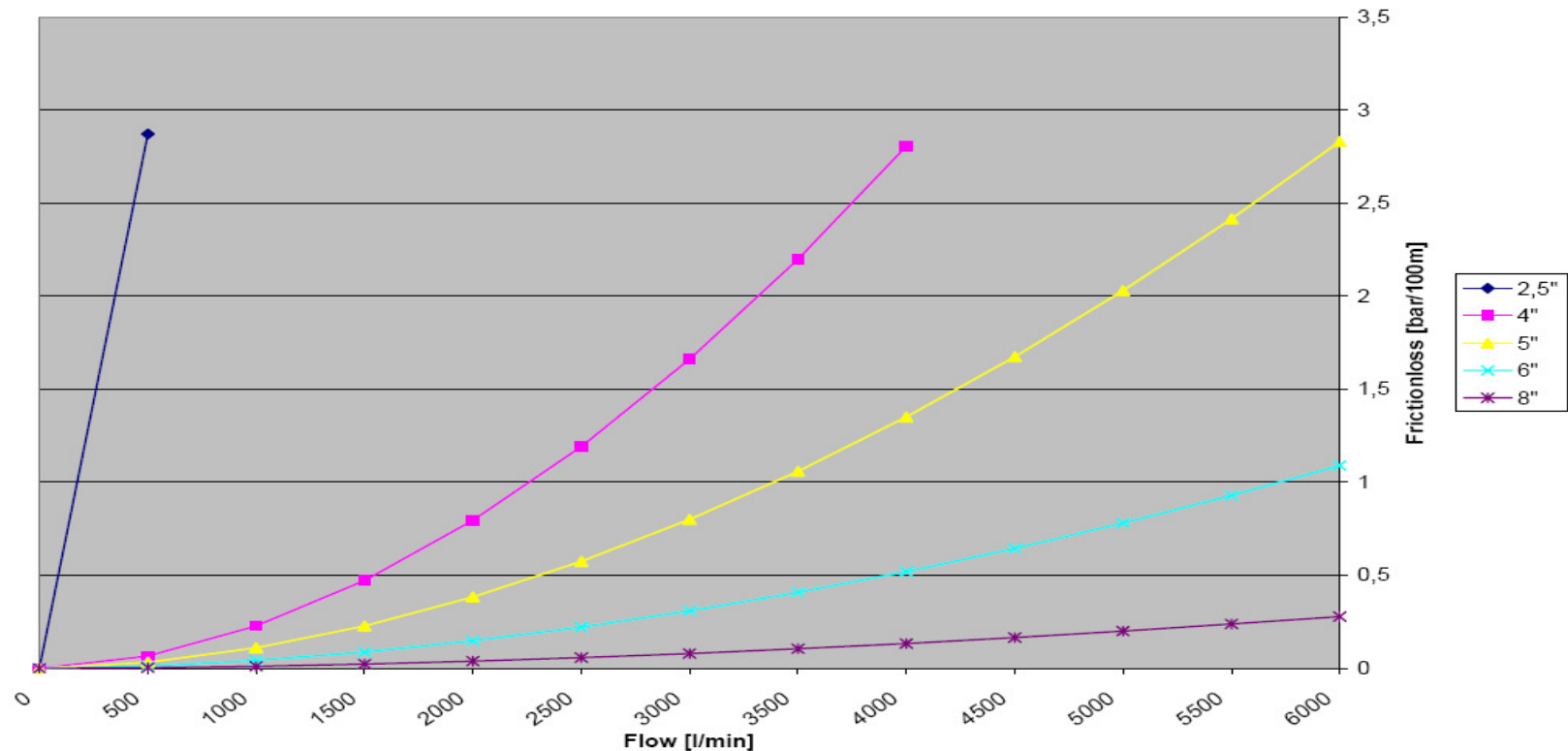


Large Diameter Hose

High Volume Pumping Systems demand large diameter hoses to minimise the pressure loss



Frictionloss 2,5"- 8" hoses





Hose layer Container

- Hose box
 - Up to 50 km/hr hose laying
 - Several configurations





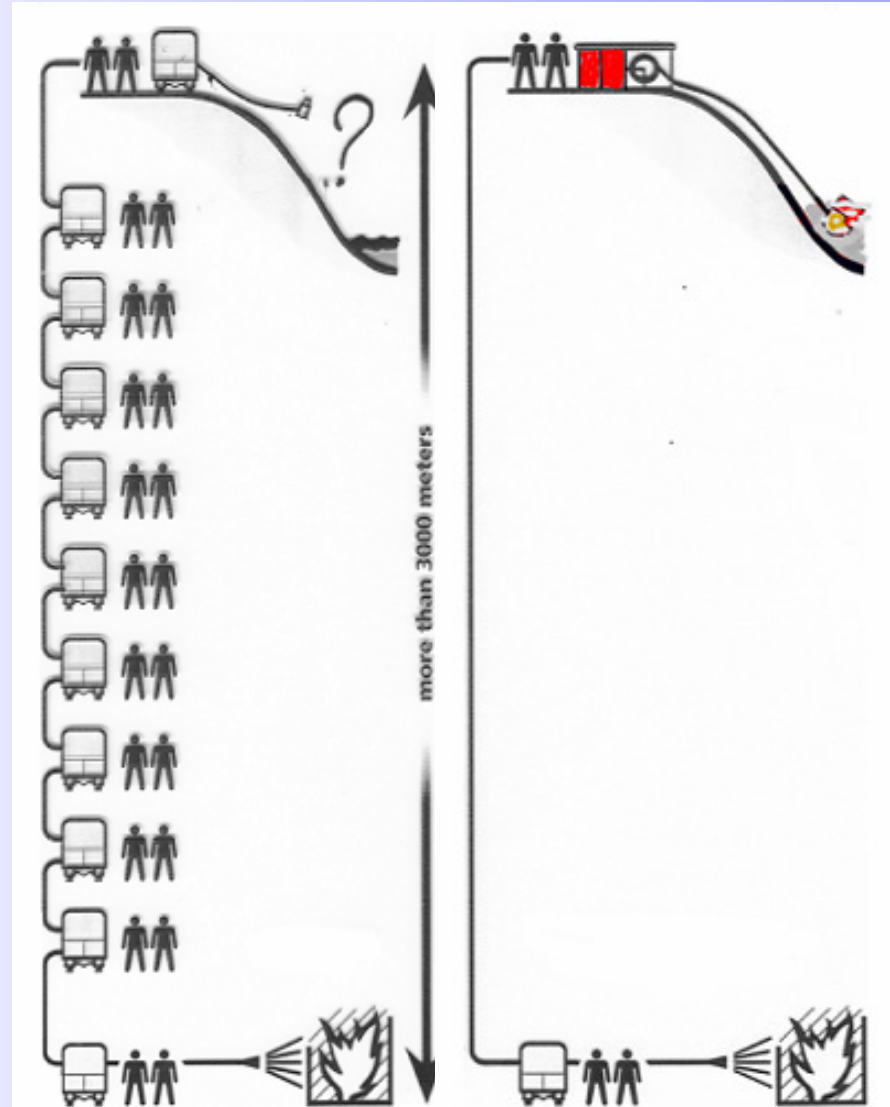
Hose Recovery Unit

- Hose Recovery Unit
 - HRU 150 Up to 8"
 - HRU 300 Up to 12"
- Minimum personnel
- Easy handling
- Up to 4 km/hr



Mobile Water Supply Systems

Compare:



Incident whereby the fixed fire water system
could not be used...



Buncefield Tank Farm Explosion

Hemel Hempstead – UK
11th December 2005



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After
Explosion
22 tanks
were on fire

Fixed water supply system damaged by explosion

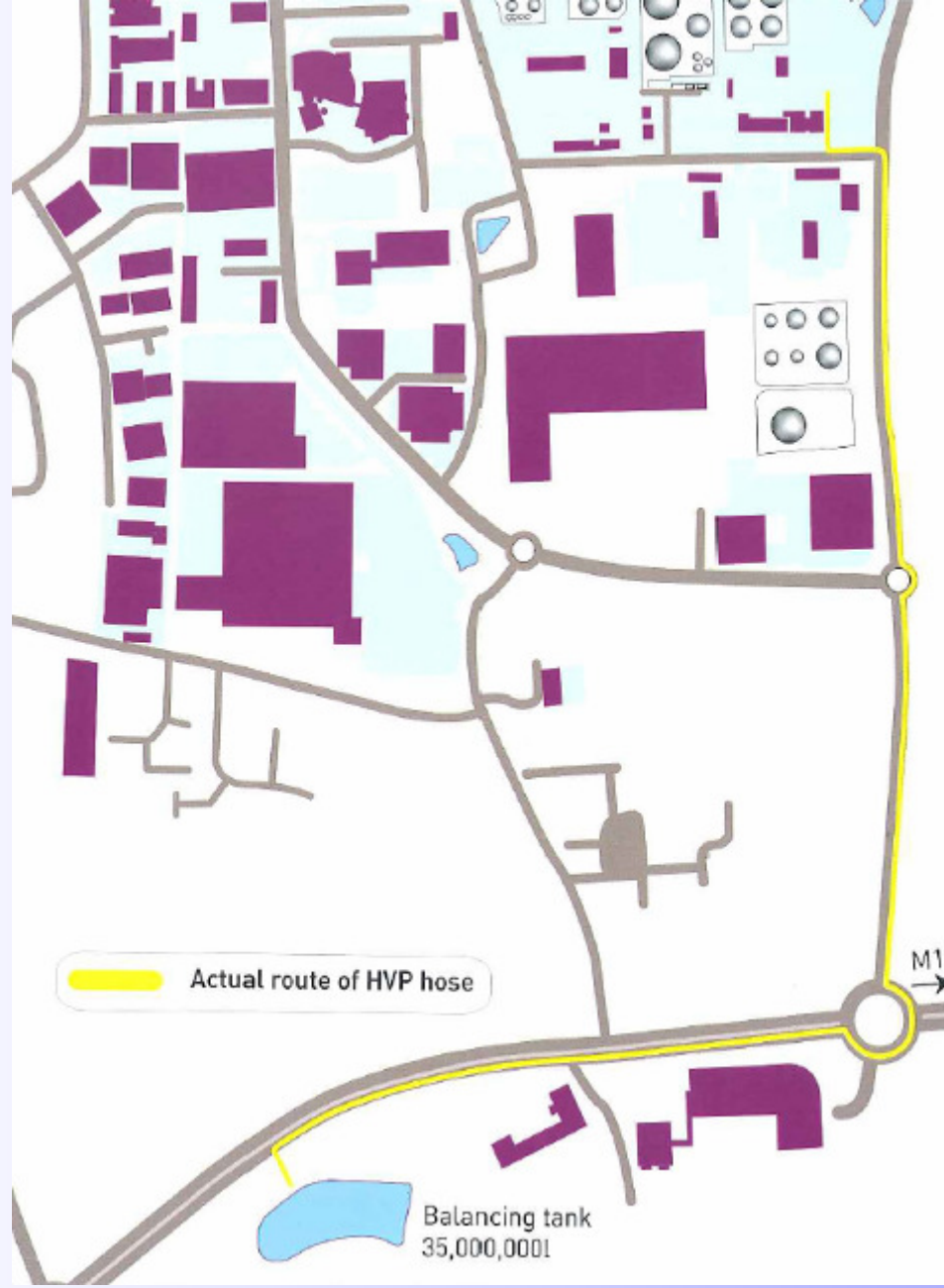




Water Source

The on-site water sources were not sufficient to cope with the planned attack. Fire fighting experts on site began the search for alternative 35m³ liter water supply.

A balancing tank was found to be a suitable supply. This location was 1.8km away from the incident location. The location was in-accessible by drafting pumps.





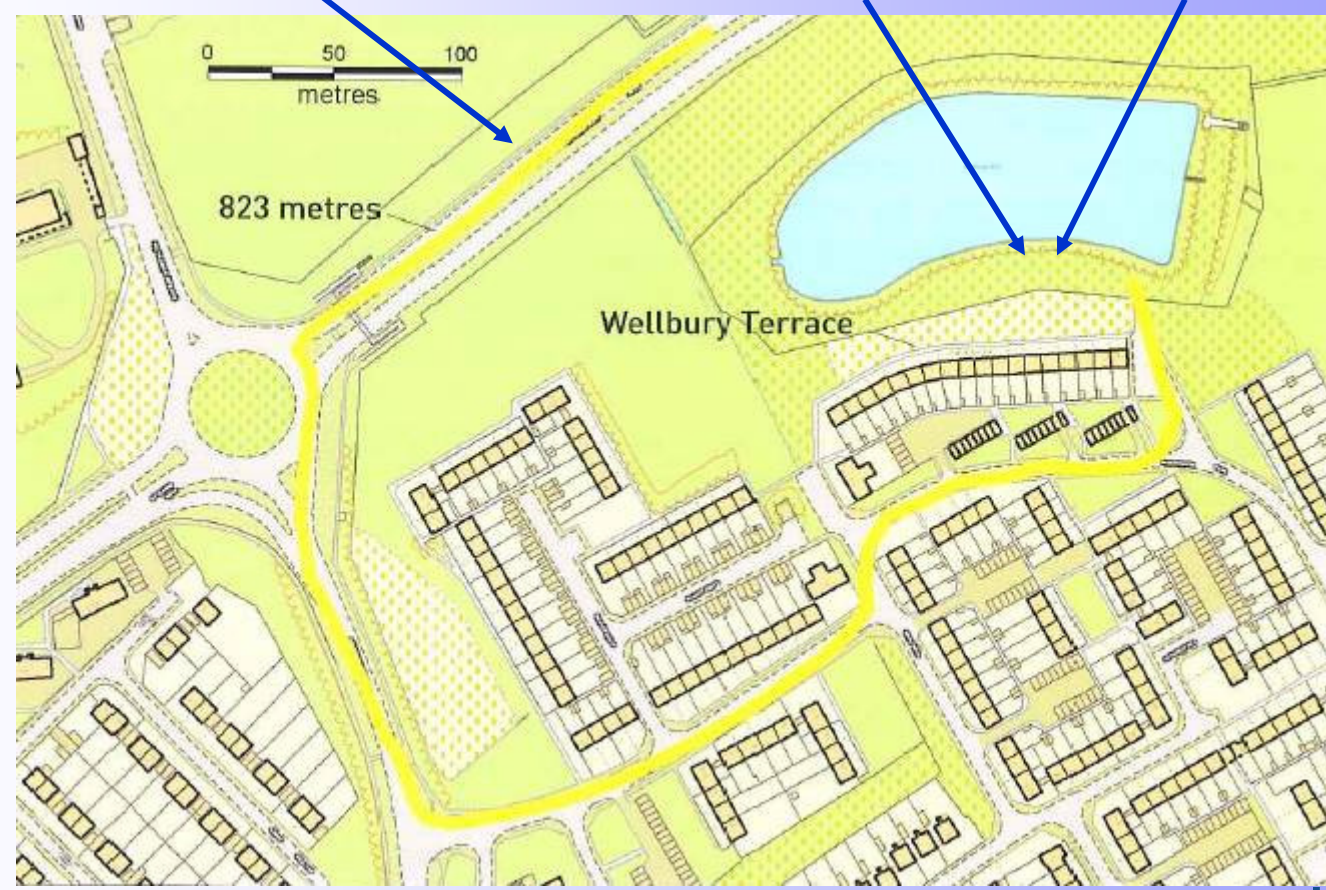
Setting up

- Prime Movers with each 2 Hose Boxes with 2000mtr hose, layed out the 12 lines of 6" hose
- 6 HydroSubs were placed at the water source (inaccessible for normal fifi pumps)
- 3 HydroSubs were positioned on site as boosterpump, another 4 to manage the run off water
- In total 33.000mtr of hose was deployed in an hour





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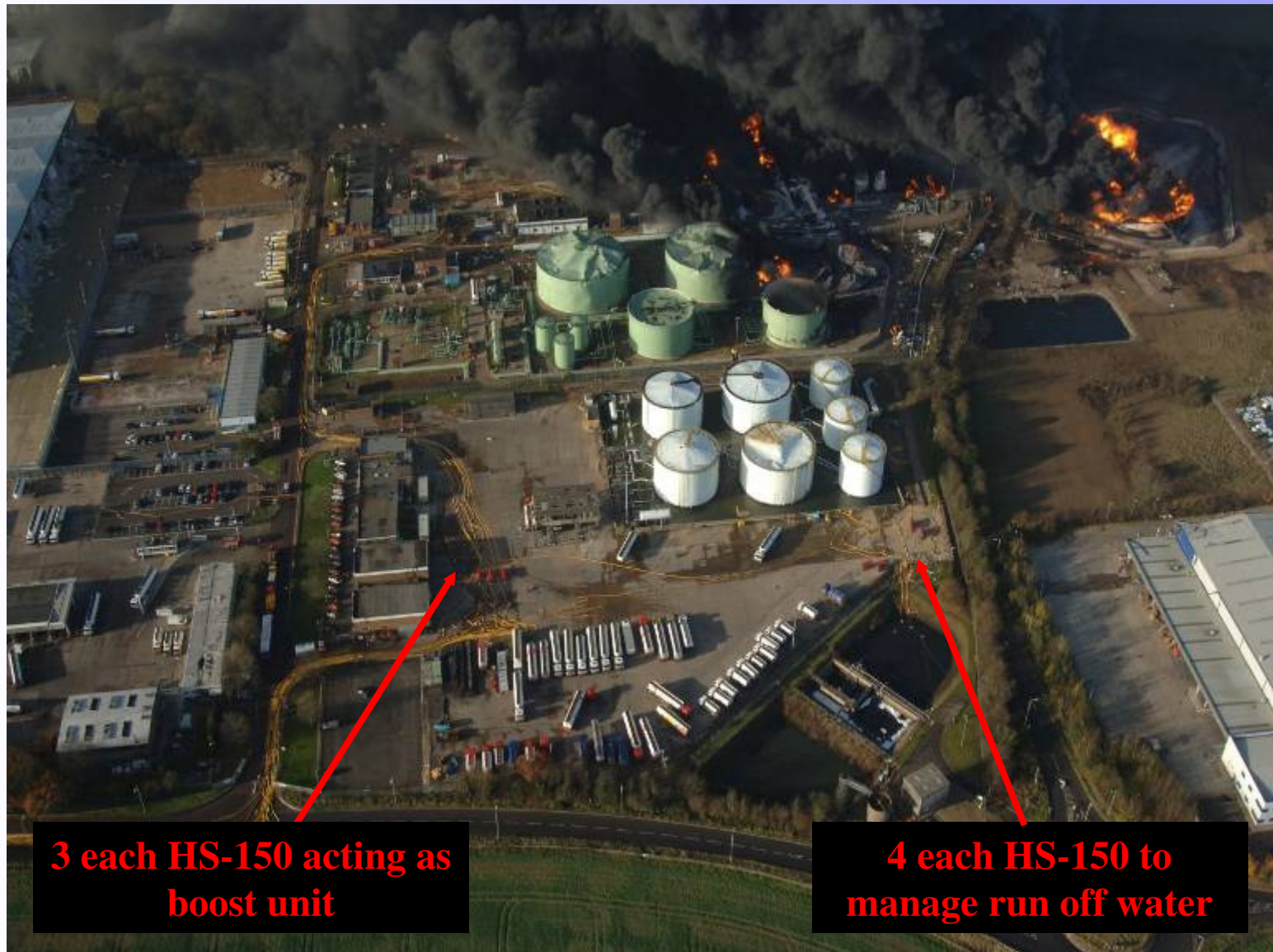


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**3 each HS-150 acting as
boost unit**

**4 each HS-150 to
manage run off water**

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Recovering equipment



- During the afternoon of the 16th, the hose was recovered.
- Total time to recover 33,000 mtr of Hose approximately 8 hours



Conclusion:

- 6 HydroSubs at water source
- 33,000mtr 6" hose deployed in one hour!
- 3 HydroSubs as on site booster pumps
- 4 HydroSubs to manage the run off water
- The HydroSubs performed the task which would normally require 160 Fire Fighting Vehicles



Incident - Denmark

- On Wednesday July 11th, 2007 it was discovered that the floating roof on one of the 70mtr Diameter tank was damaged. At this moment the tank contained 33,000m3 crude oil.





Incident - Denmark

- The fixed water supply system could not provide enough water to extinguish a possible full surface fire (appr. 38.000 lpm)
- As 'luck' would have it, Hytrans Systems had performed a life demonstration at a Shell refinery in Denmark few weeks earlier, which had stuck into the Fire Chiefs mind
- The oil company contacted Hytrans Fire Systems with the request to immediately dispatch a 22,000 lpm HydroSub-900 and a HLC-6500 Hose Layer Container with 1500mtr 12" rubber hose
- On Wednesday evening two trucks with personnel left for Denmark
- Following brief communication with the Fire Chief, the pump was set up and the hose was deployed over 600 mtrs. The system was operational in less then 90 minutes

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