MOL Plc's PB emergency transloading unit

8th International Conference for Fire Brigades in the High Hazard Industry

2015 November 10-11

Árpád Mórocza

FER Fire Brigade

History of FER

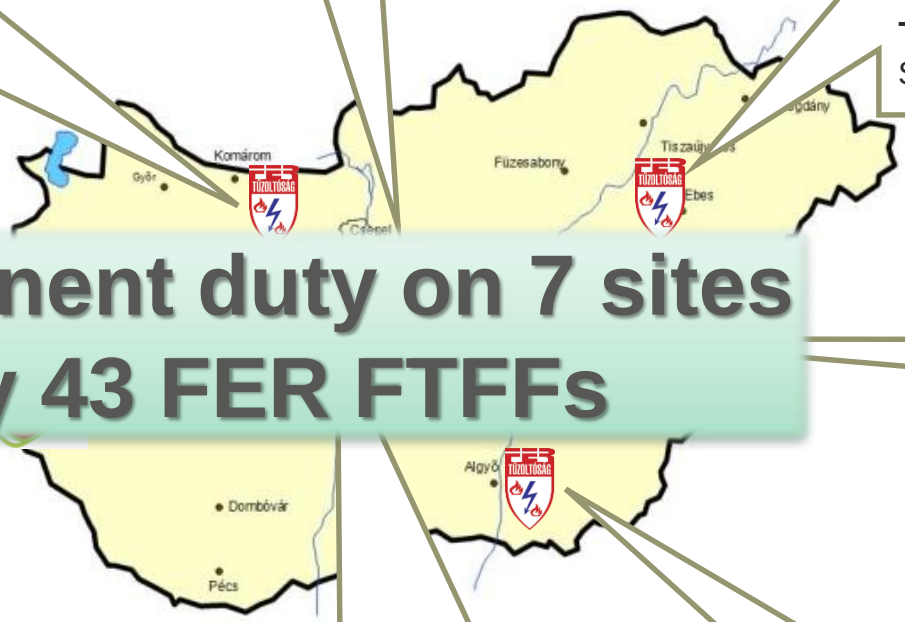
- 1963 - governmental fire brigade in Százhalombatta
- 1995 January 1 - FER Fire Brigade Százhalombatta
- 1995 July 1 – TMM Ltd. Tiszaújváros
- 2009 January 1 - FER Fire Brigade Komárom
- 2009 July 1 - FER Fire Brigade Algyő
- 2013 November 1 - TMM Ltd. merges into FER
- 2014 January 1 - FER takes over the operation of Fire Brigades in Szajol and Csepel Base Depots.

Permanent duty on 7 sites by 43 FER FTFFs

Komárom
Staff: 12 FF
(2 FTFF + 10 PTFF)

Csepel
Staff: 4 FF
(1 FTFF + 3 PTFF)

Tiszaújváros
Staff: 16 FTFF



Szajol
Staff: 4 FF
(1 FTFF + 3 PTFF)

Zala Refinery
Staff: 4 FF
(1 FTFF + 3 PTFF)

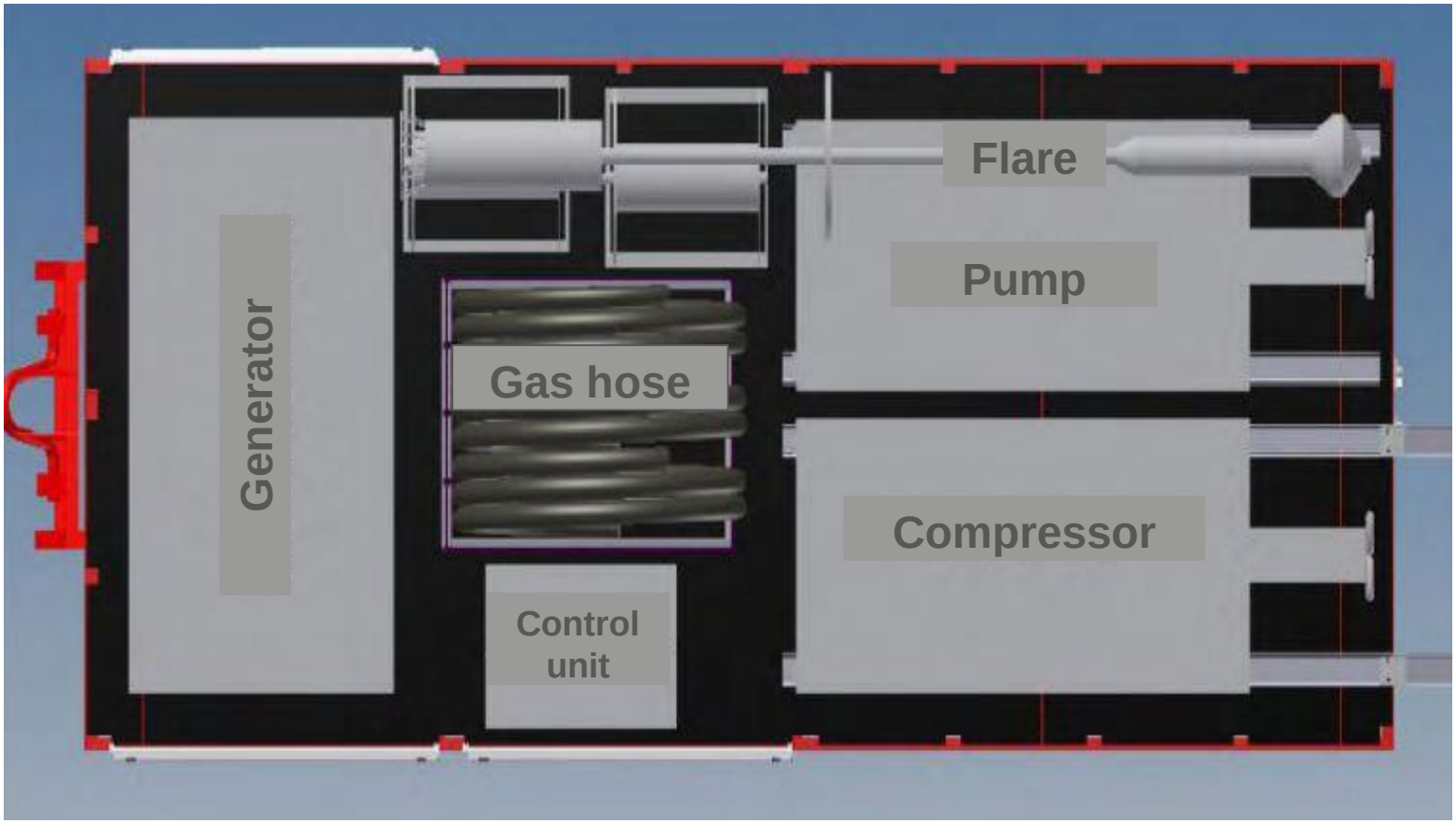
Százhalombatta
Staff: 17 FTFF

Algyő
Staff: 8 FF
(5 FTFF + 3 PTFF)

Antecedents

- In 2011 authority initiation was issued to MOL Plc. for the procurement of an equipment applicable for emergency transloading of liquefied gases.
- The unit was prepared by the end of 2013
- After several successful tests the unit has been put in readiness in 2014

Main elements & layout of the unit



Main elements

Pump

- Capacity: 30 m^3/hour
- Sliding vane type
- Portable
- 70 m cable
- EX proof
- Weight: 700 kg

Compressor

- Capacity: 58 m^3/hour
- Portable
- 70 m cable
- EX proof
- Weight: 600 kg

Main elements

Flare

- Capacity: 3.000 kg/hour
- Portable
- Height: 5 m

Gas detectors

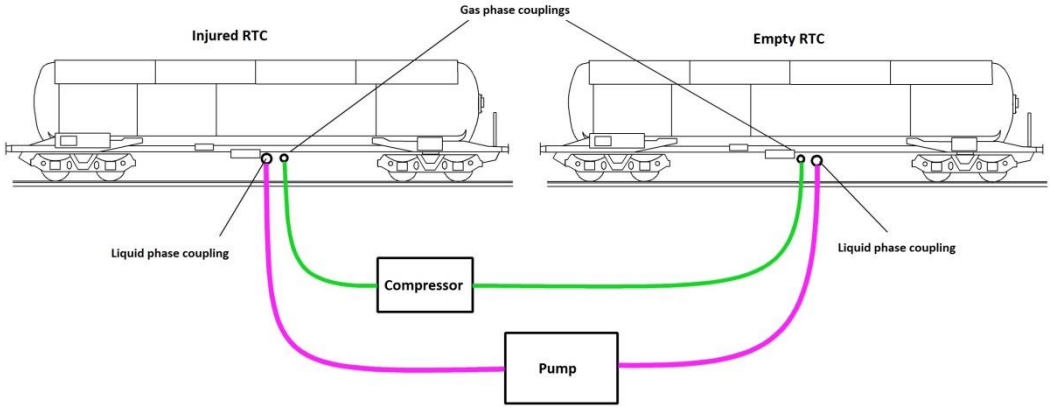
- 7 pcs

Generator and control unit

- Generator: 60 kVA
- Control unit:
  - Evaluates the data sent from the detectors
  - In case of emergency automatically stops the unit

Operating modes

3+1 different possibilities for the operation:



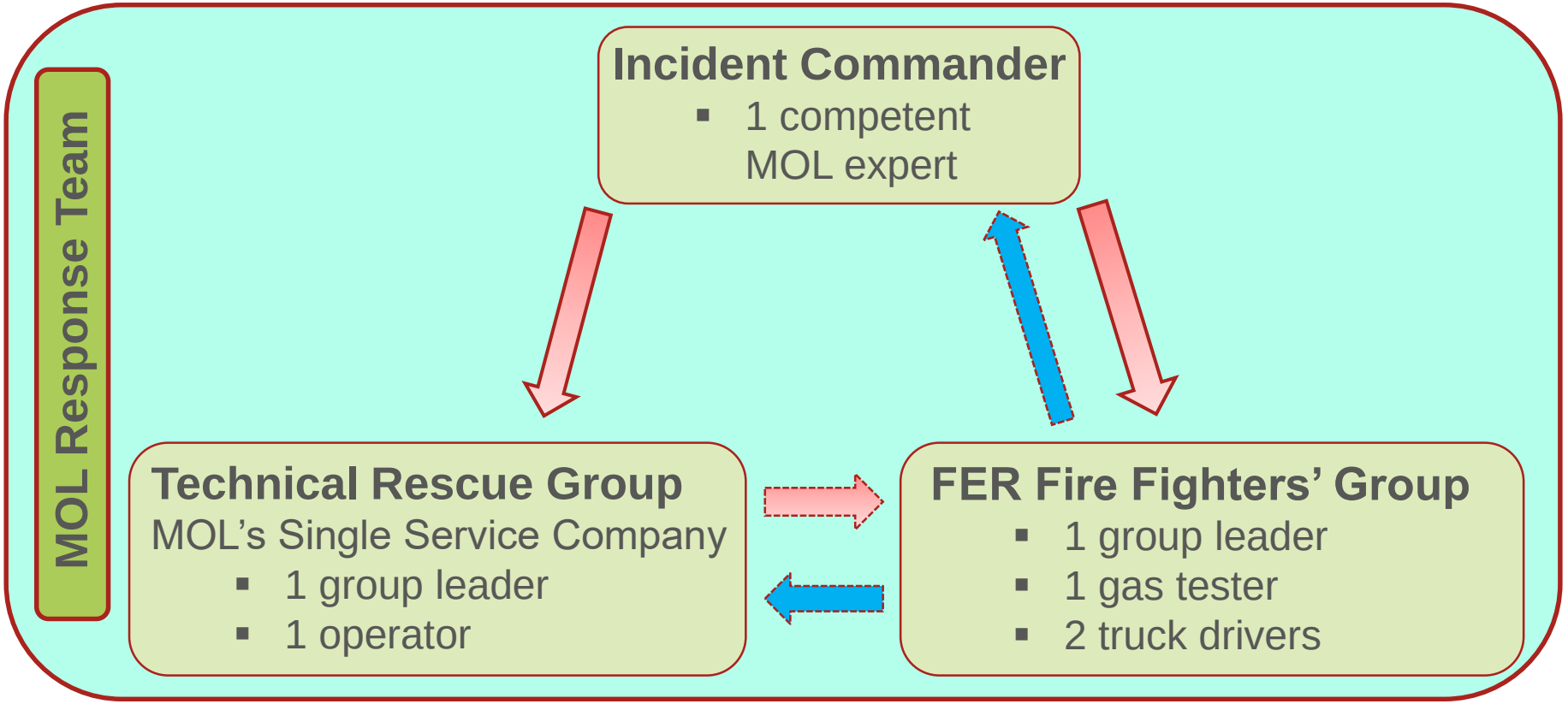
- **Pump operation**: Liquid phase discharged by pump; the two tank's gas phases connected with hoses for providing a close system.

- **Compressor operation**: Gas phase of the injured tank pressurized; the two tank's liquid phases connected with hoses.

- **Combined operation**: The compressor and the pump are used simultaneously. That's the fastest and safest mode.

- **+1: Flare operation**: Not a real transloading process. In this case, the tank's load is burned in a safe way, using a flare.

Structure of MOL Joint Team Incident Command



Fire-Fighters' backup provided by local professional Fire Brigade

Case study of Miskolc' railway tanker incident

The incident

Scene:
- Miskolc, Northern Hungary, sorting railway depot

Date:
- 2015 April 2

Involved vehicles:
- 3 pcs LPG rail tank car (RTC)

Transported material:
- UN 1965; Hydrocarbon gas mixtures, liquefied / appr. 50 tons / RTC

What happened?
- During sorting the RTCs, due to a failed switching, 1 RTC derailed and turned over, 2 other RTCs also derailed, and hit the first one.

No leakages, no personal injuries!

The main problem
- The RTC's mantle is far too weak to bear the weight of a fully loaded LPG tank while being recovered.
- As a result the turned-over RTC has to be emptied first.

„To do list”

- **De-energize** the over-head cables
- **Stop** the railway traffic
- Check for leaks (**gas detection**)
- **Re-rail** the 2 RTCs, and remove them from scene
- **Discharge** the turned-over RTC’s load into an empty, inertized RTC
- **Lift up, re-rail**, and if possible, **tow** the damaged RTC to Tiszaújváros (refinery)

Responders

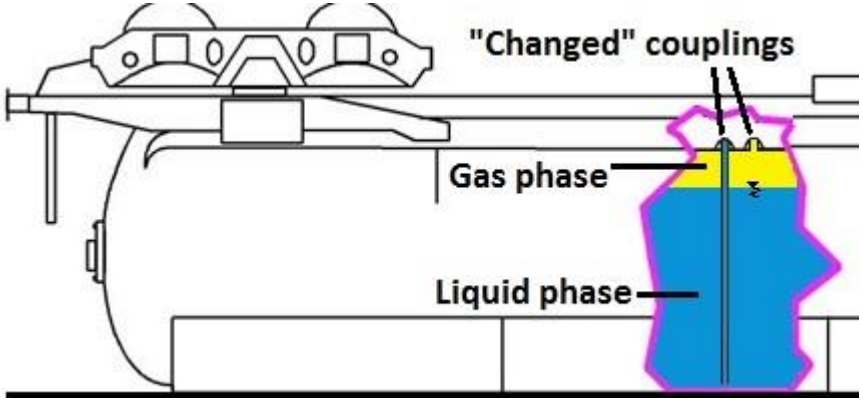
- Professional fire-fighters of B-A-Z County Directorate for Disaster Management
- Ambulances of the National Ambulance Service
- Experts of MOL Plc.
- Experts of MÁV Plc. (railway company)
- Experts of Petrolszolg Ltd. (MOL SSC)
- Fire-fighters of FER Fire Brigade Ltd.

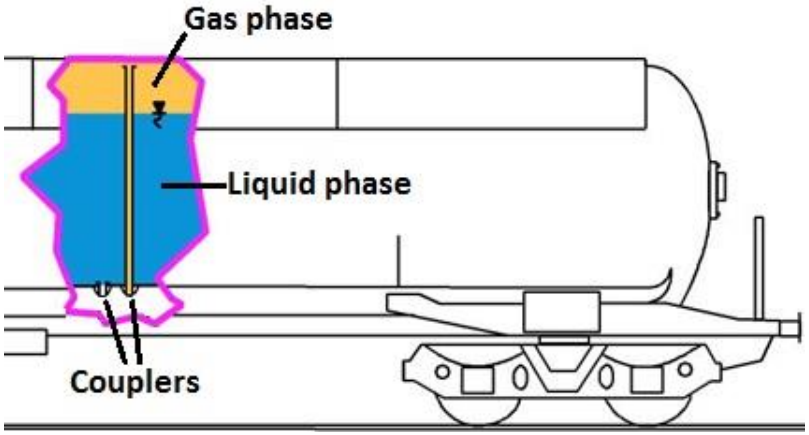
Specialties

Flanged couplers:

- There was not enough room to fit the transloading hoses, so two 90^0 elbows were manufactured.

Changing the „liquid” and „vapour” side’s couplings





Conclusions

- The transloading system was helpful.
- No injuries, no leakages, no fire, no explosion, no pollution.
- Operation of the system was smooth and successful (the RTC was transloaded, then re-railed with a heavy rail crane)
- Cooperation of various teams was exemplary

Raison d’étre: proven!

Thank you for your attention!