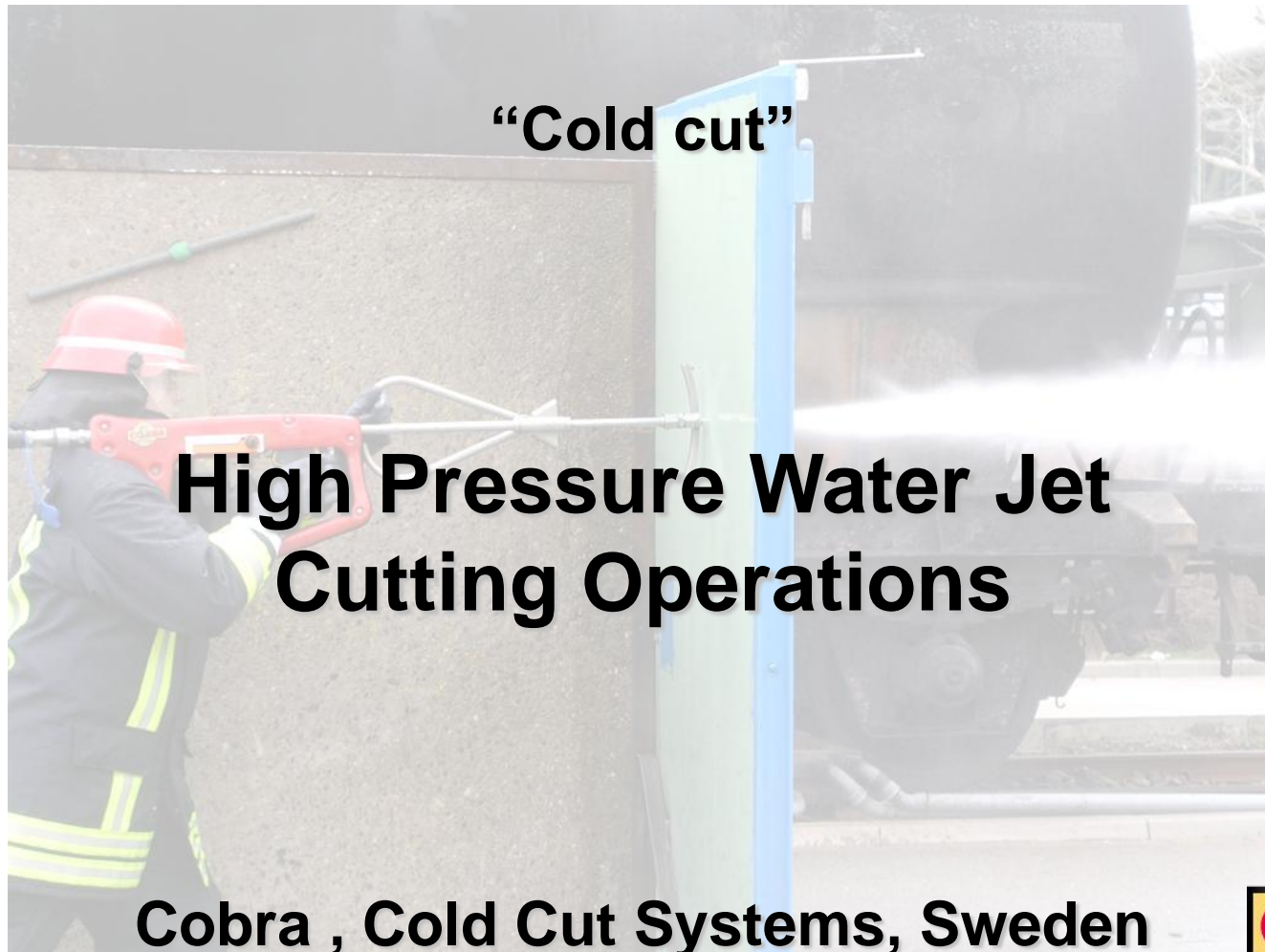


„Cold cut“ – System

5th International Conference for Fire Brigades
in Oil and Chemical Industry

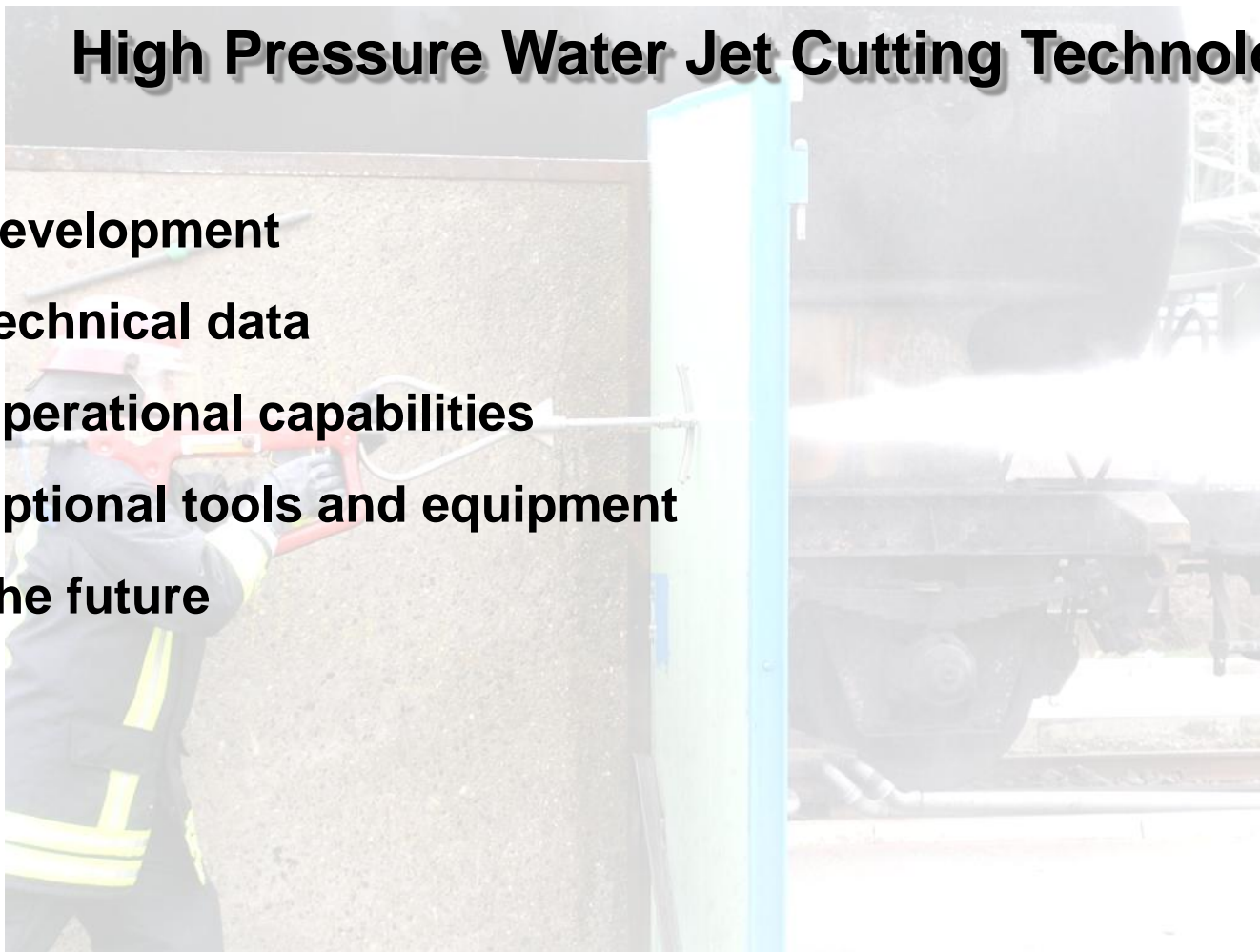
17. – 18. November 2009

Siegfried Fiedler, Fire Service Engineer,
BASF SE, Germany



High Pressure Water Jet Cutting Technology

1. Development
2. Technical data
3. Operational capabilities
4. Optional tools and equipment
5. The future



High Pressure Water Jet Cutting Technology

1. Development

- 1.1 **1996** Initial idea and assignment came from the Swedish Rescue Service Agency and Lulea Rescue Service, Sweden, with the aim of fighting building fires with sandwich type construction walls
- 1.2 Scientific support from the university in Lund, Sweden and the Räddnings Verket College
- 1.3 **1998** realization through CCS, Kungsbacka, Schweden. CCS at this moment in time had already gained 15 years of experience with high pressure water jet cutting equipment using additives as cutting abrasives. The advantage of the CCS Technology being the relatively, compared to other systems, low cutting pressure of 250 – 300 bars.

High Pressure Water Jet Cutting Technology

2. Technical Data

- 2.1 Operating pressure 300 bar
- 2.2 Water flow rate ca. 60l/min or 30l/min
- 2.3 Droplet size 100 μm on average
- 2.4 Abrasive concentration mixing rate 4%
- 2.5 Standard abrasive, Iron Oxide granules, hardness rating 7,7-8,
- 2.6 BASF standart abrasiv, vulcano sand hardness rating 7,0-8,0
- 2.7 Water / abrasive jet delivery through a **single hose**
- 2.8 Hand held lance with radio controlled operation
- 2.9 Cold Tap und cutting frame options



High Pressure Water Jet Cutting Technology

3. Operational capabilities

3.1 Cuts all conventional solid materials with a hardness rating < 8 for example:

Building construction materials, Metals, material combinations and composites

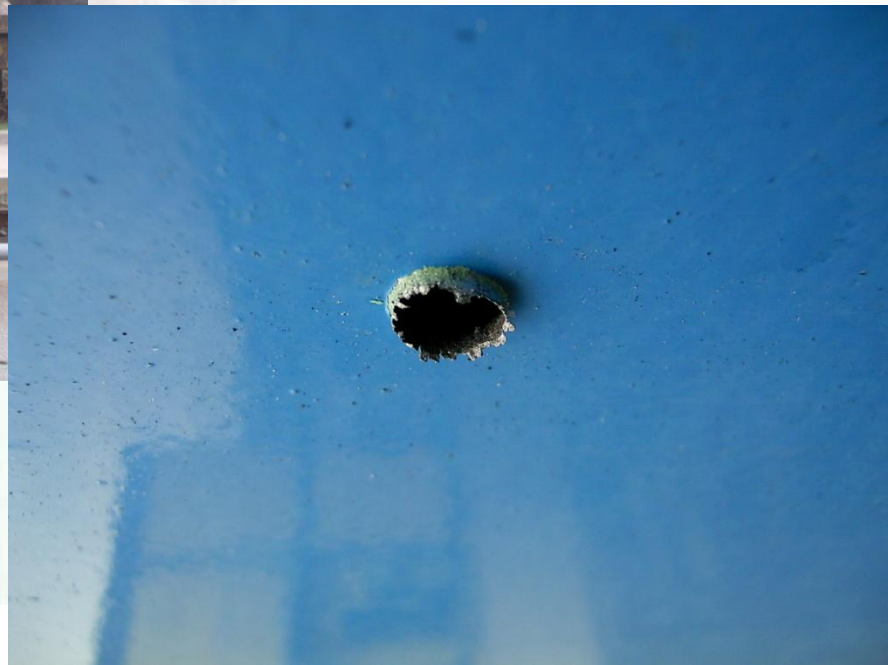
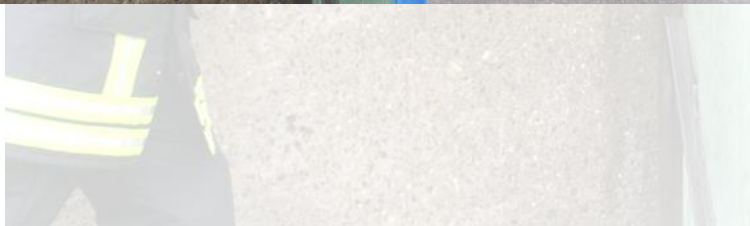
3.2 Cutting also possible under water

3.3 Emergency pressure relief of vessels, columns or other over pressurized containers

3.4 Firefighting through closed construction elements

3.5 All operations can also be carried in explosive atmospheres





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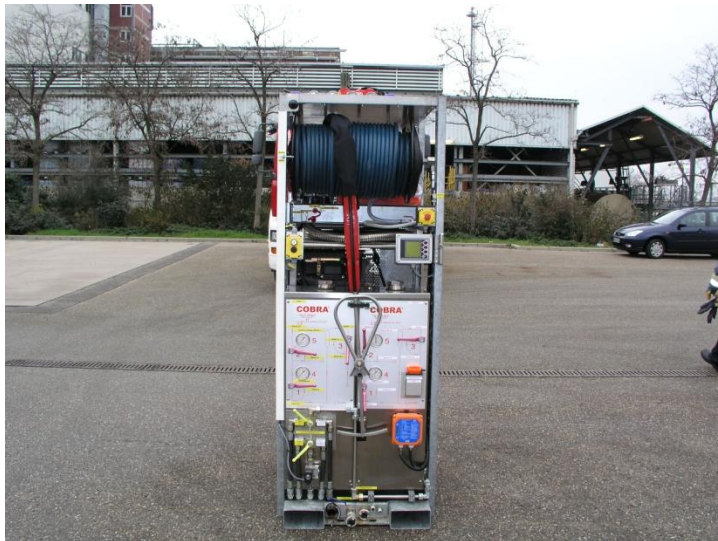
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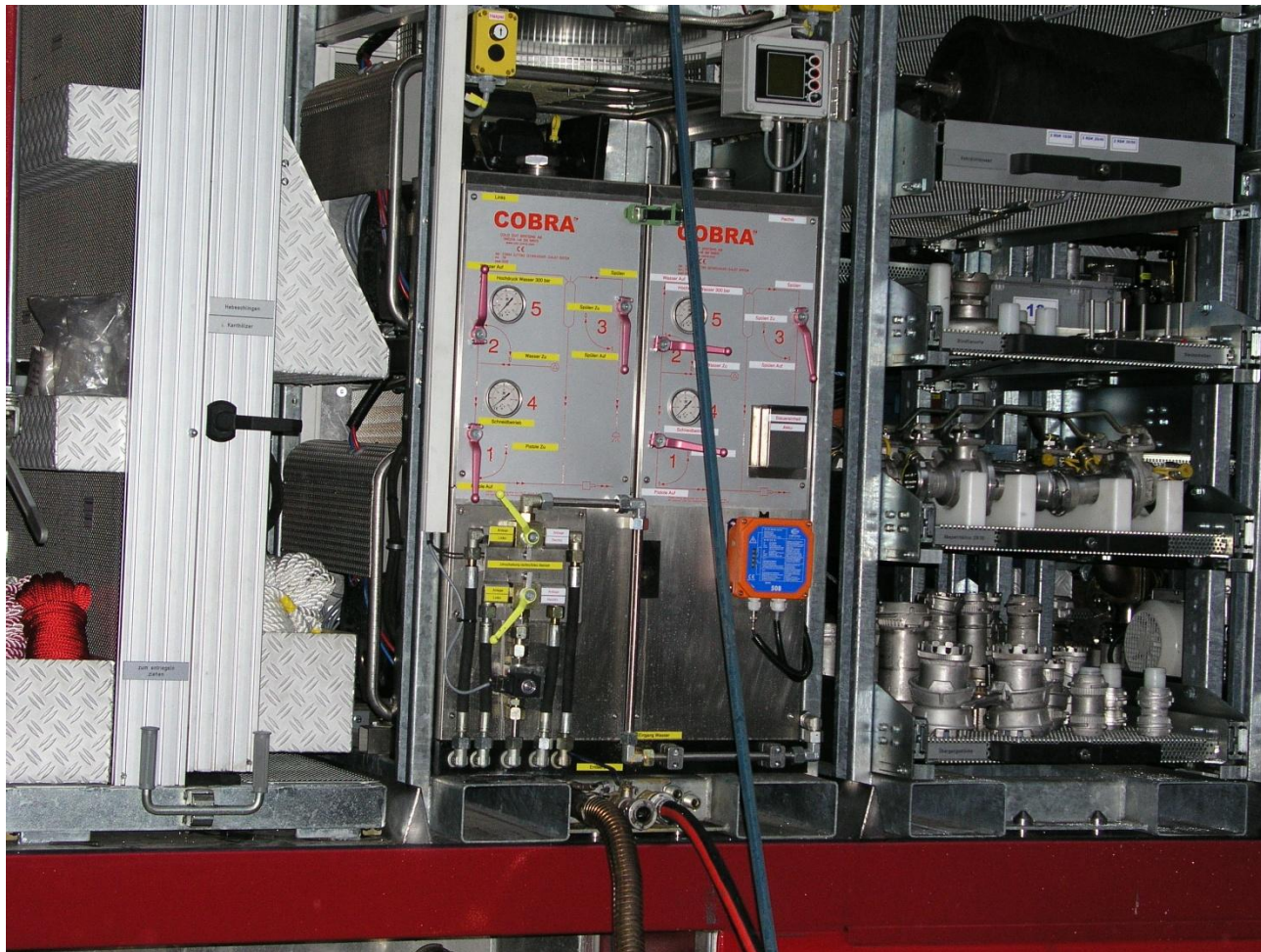


BASF Dual









Material	Material thickness in mm	Hole surface area in cm ²	time in sec
Red brick	11,5 cm		10
Building stone / Lime-sandstone	10,0 cm		5
Cool house sandwich panel construction	12	100	40
Fire door type T90	60		7
Vehicle windscreen	---	100	8
Steel plate St 42	30		40
High density reinforced concrete pipe	80		60
NH3 pressure cylinder	8		8
Stainless steel container RA4	6	78	ca. 60
ICE (High Speed Train) side windows internal / external	12+9	200	ca. 60
ICE (High Speed Train) side walls (double wall type)	4+4		8

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