

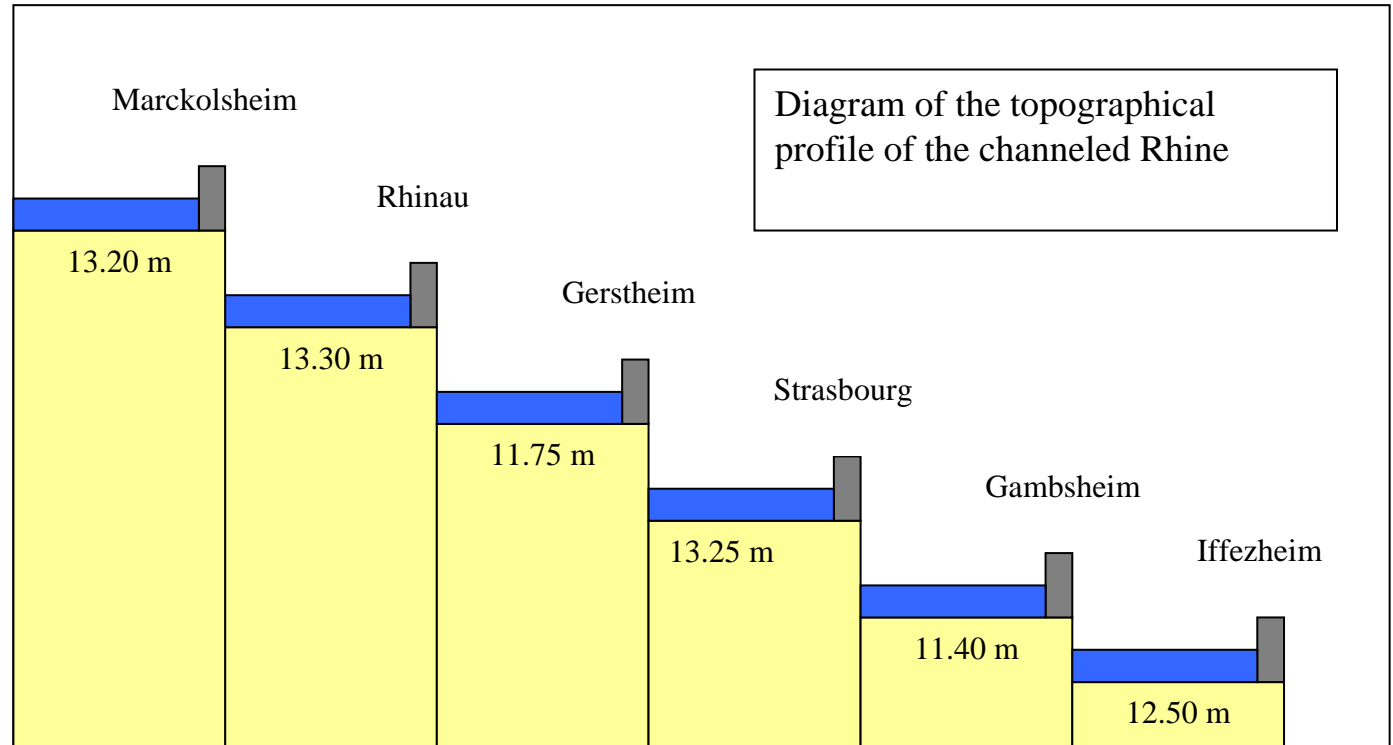


Defence of the Rhine

Lieutenant-Colonel Alex ROTH – Commandant Gerhard STECH



The Rhine...





Risks related to the Rhine

➤ Navigation

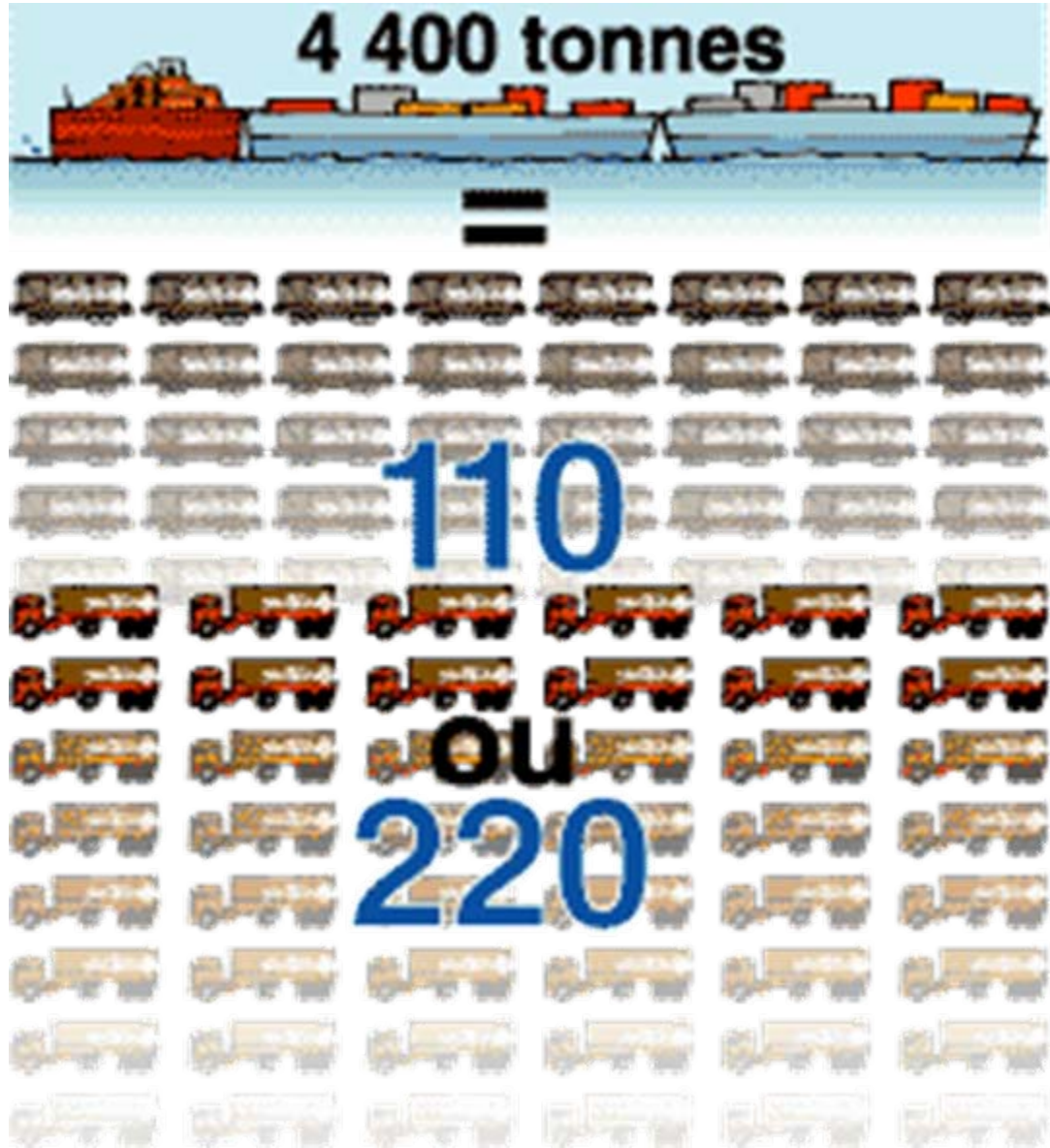
Transportation of passengers

Transportation of merchandise

Transportation of hazardous materials



Risks related to the Rhine





Risks related to the Rhine

➤ Installations on the Rhine

Falls

Locks

Bridges



Problem
of pillars...





Example





Risks related to the Rhine

➤ Ports

Storage of various types of merchandise



Concentration of boats



Risks related to the Rhine

Loading/discharging

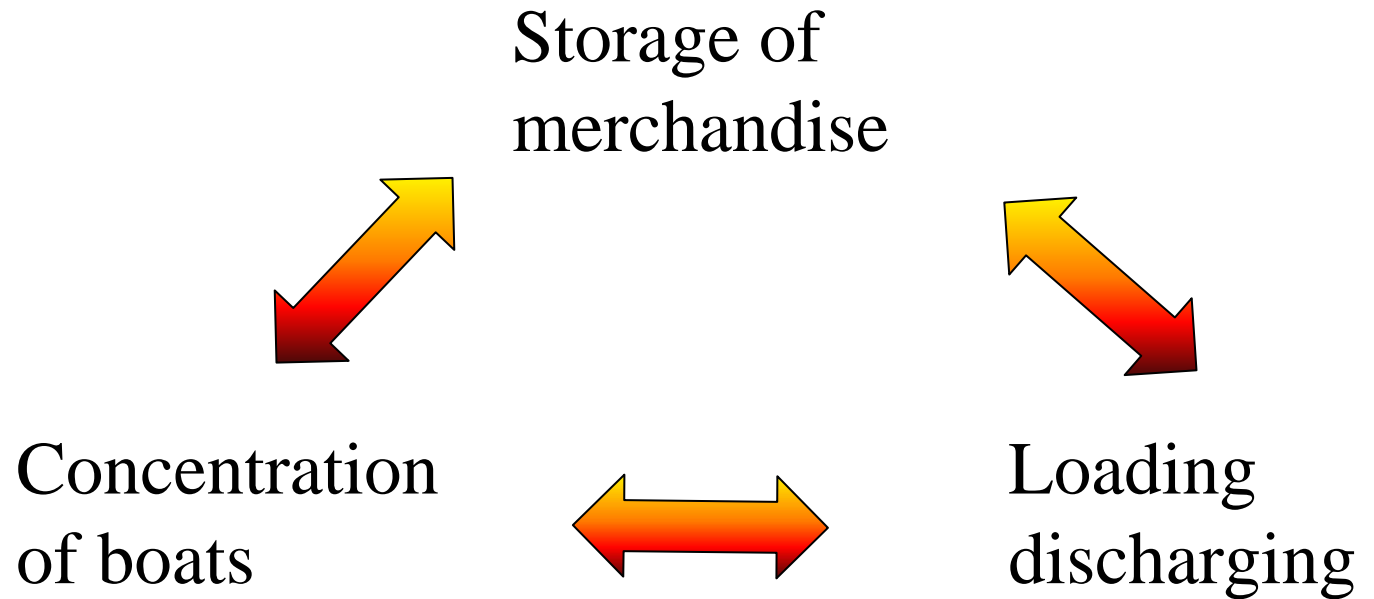


**Explosion
Fire**



Risks related to the Rhine

Domino effect





Risks related to the Rhine

Port Autonome de Strasbourg

Surface area: 1000 ha (excluding basin)

300 companies

10 regular lines of container ships
link Strasbourg to:

- Rotterdam
- Antwerp
- Zeebrugge

Example



Risks related to the Rhine

2001	Traffic
Merchandise	9.5 million tonnes
Petroleum products	2,400,000 tonnes
Chemicals	120,000 tonnes
Containers	50 000



Risks related to the Rhine

➤ Industrial installations

SEVESO classified installations

Installations classified for environmental protection



Accidents

Collisions

Leak of products

Explosion, fire

Drowning

Pollution



Accidents

Collisions





Accidents

Collisions





Accidents

Collisions





Accidents

Collisions





Accidents

**Leak of
products**





Accidents

**Leak of
products**





Accidents



Explosion
Fire



Accidents



**Explosion
Fire**



Accidents

Port
installations



Explosion
Fire



Accidents

Drowning





Accidents



Pollution



Statistics

Between 1990 and 2000, there were:

214 accidents on the Rhine



54% due to collisions
with installations

67% due to human failures



Defence of the Rhine

Safety management and risk analysis policies

List risks which should be covered by the
Fire service

Decide on the response taking into account the
current situation



Defence of the Rhine

- ✓ Risk analysis
- ✓ Consider major accident scenarios
- ✓ Define the knowledge and means needed to mitigate the risks



Existing means





Existing means





Existing means





Existing means





Risk management

- ✦ Fire of flammable liquid on boat or barge
- ✦ Leak of liquid threatening the environment
- ✦ Toxic gas leak threatening the population
- ✦ Leak of LPG
- ✦ Collision between 2 boats resulting in fire and many victims

DDSC



Risk management

DDSC

DDSC	FPT	VSAB	VCH	
10'				
20'	1	2	1	
30'	1	2		
45'		3		
60'	2	3	1	
90'				
Total	4	10	2	



Risk management

➔ 10 CSP (main emergency centres)

➔ 30 CS (emergency centres)

➔ Inventory of vehicles

➔ Intervention delay:

Treatment of the alert

Gathering personnel

Transportation time



Risk management

Lauterbourg

DDSC	FPT	VSAB	VCH
10'			
20'	Laut.	Laut.	1
30'	Seltz	Seltz/Souf.	
45'		Wiss. 1 and 2 Bisch.	
60'	Brum. Soultz	Hoch./Brum. Nieder.	1
90'			
Total	4	9	2

