



***EDWIN VAN DE SNEPSCHEUT***

***ROTTERDAM INTERNATIONAL SAFETY  
CENTER***



## ***REFINERY FIRE IZMIT***

- 18 September 1999
- Greatest Earth Quake ever happened in Turkey
- Scale 9.6
- 3 minutes



## ***REFINERY FIRE IZMIT***

- **IGNITION FROM SERVALS FIRES DIRECT AFTER THE EARTH QUAKE**
- Collapsing stack
- Pipe rack
- Furnace CDU
- Water cooling Tower
- Battery limit
- 3 tank explosions
- 6 tank fires
- Storage building
- Flare area



## ***REFINERY FIRE IZMIT***

- **FIRST ATTACK**
- Direct by duty operational personnel
- Local fire brigades arriving after 45 minutes



## ***REFINERY FIRE IZMIT***

- **FIRST ATTACK PRIORITIES**
  - Head counting duty personal
  - Crude unit
  - battery limits
  - Tank fires
- **BURN OUT TACKTIK**
  - Storage building
  - Cooling tower

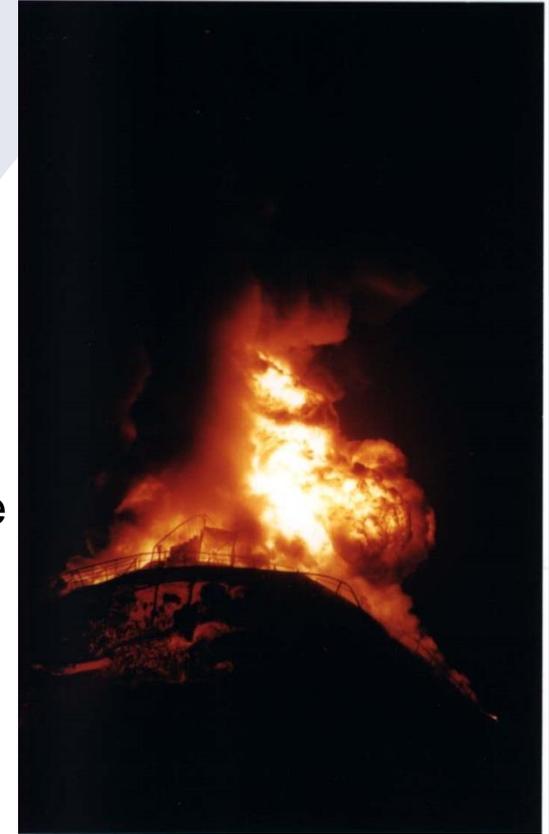


## ***REFINERY FIRE IZMIT***

- **FIRST HOUR**
- De process fires where extinguished
- De tank fires continued

## ***REFINERY FIRE IZMIT***

- **TANK FIRES**
- 4 Floating roof tanks with nafta
- 3 fixed roof tanks with gasoline
- Explosion in 3 other fixed roof tanks with gasoline vapours





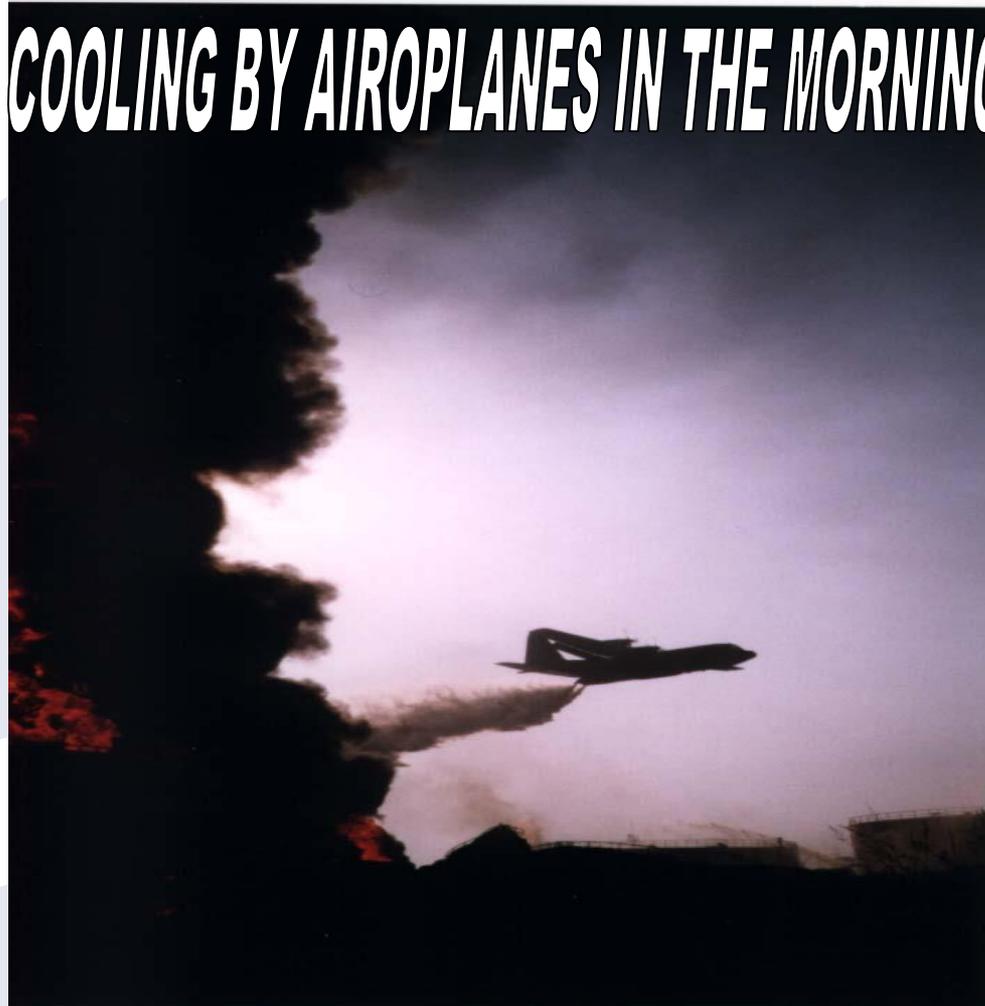
## ***REFINERY FIRE IZMIT***

- **TACTIC BY THE TANK FIRES**
- Stop the run down
- Close all the valves
- Cooling of exposures
- Problem was de damage from the infra structure on the site and the rupture from one tank



## *REFINERY FIRE IZMIT*

**COOLING BY AIROPLANES IN THE MORNING**





## ***REFINERY FIRE IZMIT***

- **The question of international help by the earth quake**
- **Preparation FOR ERT**
- Personal
- Equipment
- Charter Flight



# ***REFINERY FIRE IZMIT***



FAOM AND EQUIPMENT IN A C-130



## ***REFINERY FIRE IZMIT***

In the morning they start to try extinguish the fires with aeroplanes



# ***REFINERY FIRE IZMIT***

The first view from the fire for the arriving ERT





## ***REFINERY FIRE IZMIT***

- **FIRST VISIT INCIDENT AREA**
- Process fires where under control
- Tank fires
- Exposures

## ***REFINERY FIRE IZMIT***

- **DANGER BY THIS OPERATION WAS**
- The nature





# ***REFINERY FIRE IZMIT***

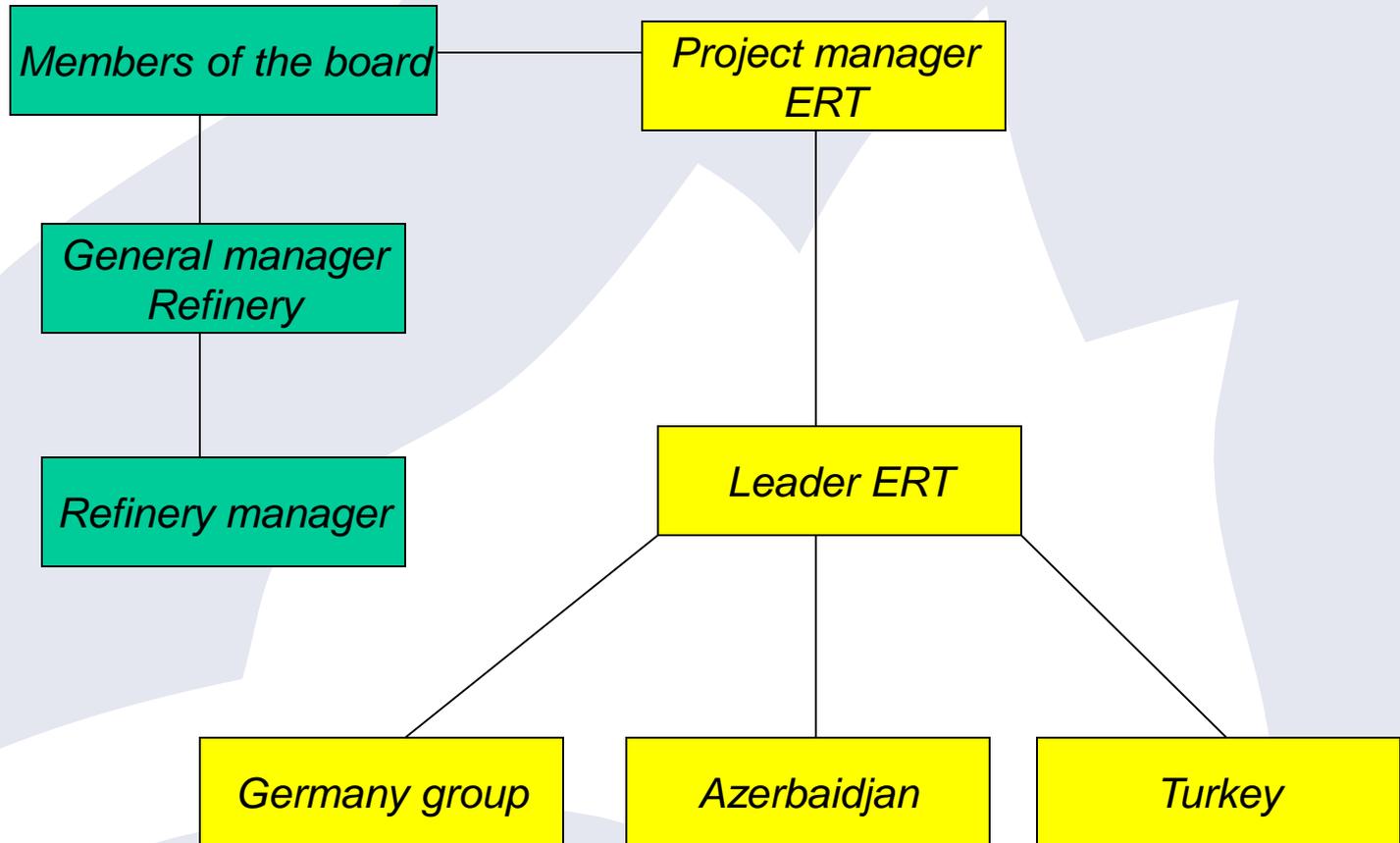




## ***REFINERY FIRE IZMIT***

- **THE FIRST ACTIONS**
- Make contact with the refinery management
- Make contact with the local fire brigade
- Make contact with the other international people

# ***REFINERY FIRE IZMIT***





# REFINERY FIRE IZMIT



*Cooling from Exposures*





## ***REFINERY FIRE IZMIT***

- **FIRST ATTACK PLAN**
- Burn out Tactic
- Cooling exposures
- Attack the bund fires



# *REFINERY FIRE IZMIT*



*BUND FIRE*

*BURN OUT TACTIC*





## ***REFINERY FIRE IZMIT***

- After two days 20 September 1999
- Change tactic under international pressure
- Extinguish the tank fires



## ***REFINERY FIRE IZMIT***

*With out any co-ordination the countries start immediately with a attack*





## ***REFINERY FIRE IZMIT***

- **ATTACKPLAN NUMBER TWO**
- Stop immediately de aeroplanes
- Make attack plan for the tanks
- Make a plan for oil pollution
- Investigation other tanks



## ***REFINERY FIRE IZMIT***

- **ATTACK PLAN TANK**
- Diameter 42 meter
- Application rate 6,5 ltr/min
- Mains a foam storage from 16,2 M3 for one tank
- For the whole attack 64,8 M3 on storage



## ***REFINERY FIRE IZMIT***

- **ATTACK PLAN FOR THE OIL POLLUTION**
- Smit Tank International
- South Hamptan spill control

## ***REFINERY FIRE IZMIT***

- Investigation from the Other tanks
- All the roofs from the floating roof tanks on the site where sinking or sunk.





## ***REFINERY FIRE IZMIT***

- **ATTACK PLAN**
  - No open fire
  - Organise floating storage
  - Control of loading en pipe facilities
- **PREAPPEAR FOR A TOTALY SURFACE FIRE ON A CRUDE TANK**

## ***REFINERY FIRE IZMIT***

- On the end of the day one of the groups make a failure an all the 4 tanks ignite again

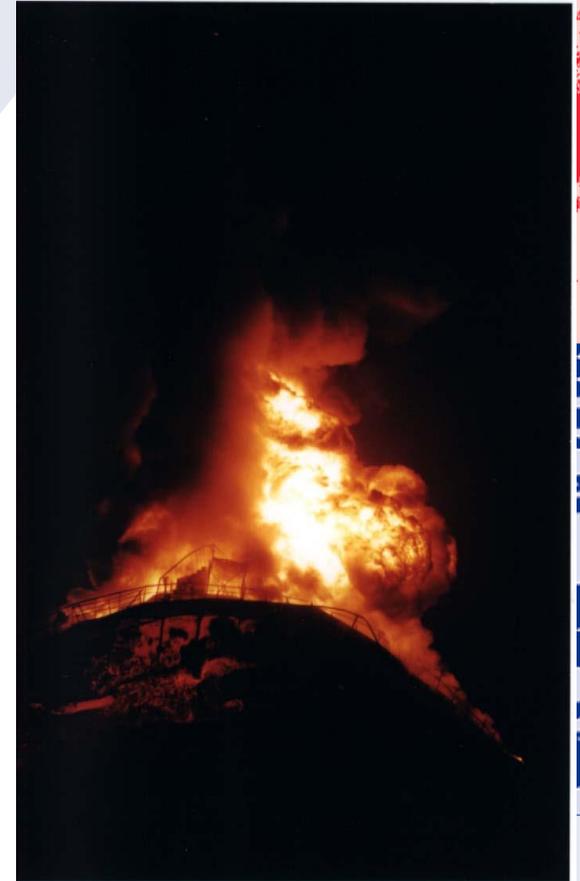




# *REFINERY FIRE IZMIT*



*NIGHT 4 WITH FIRE*





## ***REFINERY FIRE IZMIT***

- **DAY 4 THE FINAL ATTACK**
- The final attack start at 10.00
- The fire was extinguish at 17.00
- 2 days fire fighting cost 250 M3 foam



# ***REFINERY FIRE IZMIT***





## ***REFINERY FIRE IZMIT***

- **TREATMENTS AFTER THE FIRES**
- Open surface crude tanks
- Oil pollution on the sea



## ***REFINERY FIRE IZMIT***

- **THE DAYS AND YEARS AFTER THE FIRE**
- It cost two weeks to pump out the total crude storage
- It cost 2 months to control the oil pollution on the sea
- Rebuilding the site cost 2 years