International Fire Instructors Workshop – POLAND 2014

High-rise Firefighting

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High-rise firefighting – What's the problem?

- The height difference?
- Firefighting equipment that needs to be transported on certain floor level?
- Different fire behavior?

Main problem in Croatia

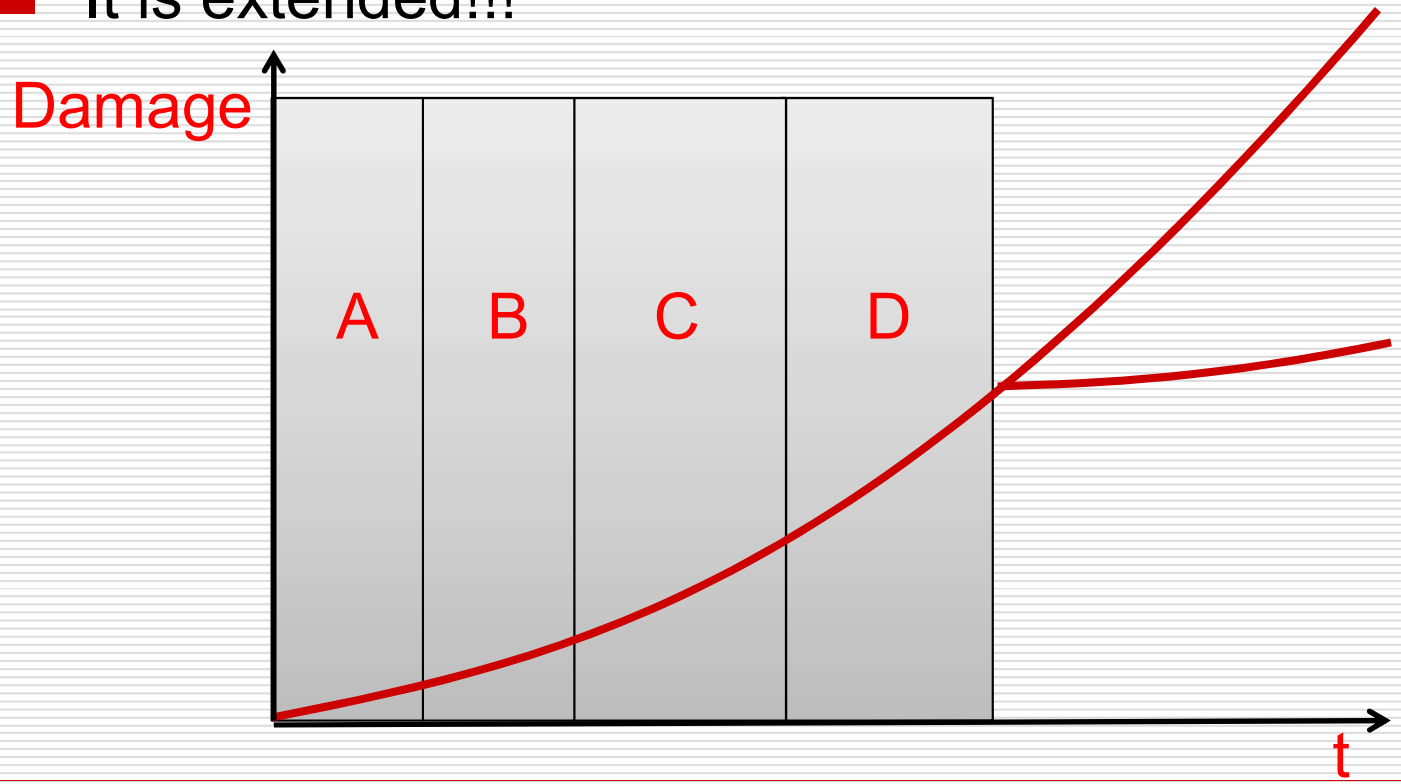
- **Fire prevention:**
  - Dry hydrant;
  - Fire elevator;
  - Fire stairs;

Reality…

- **Dry hydrant:**
  - Out of order;
    - Valves opened;
    - Missing spindles on valves;
    - Couplings covered with trash;
- **Fire stairs?**
  - Equal to storage room;
    - Evacuation?;

Reality…

- **Delay in fire extinguishment???**
  - It is extended!!!



Reality…

- **Aerial ladder/platform working area?**
  - High-rise firefighting exercise;
  - Rijeka, Ante Kovačića 20 street:
    - Something to think about…
    - Gap between concrete and soil caused by soil settlement through years in front of the main entrance in to the building;
    - Concrete collapses under the aerial ladder stabilizer;
    - Is this isolated case?
    - Do you have the same situation?

High-rise buildings - Rijeka

High-rise buildings - Rijeka

Access roads

Working arias

Positive influence

- High-rise firefighting training exercise;
- Improvement can be seen;
- Depending on occupants representatives;
  - On some buildings approach is changing;
    - Positively look toward fire prevention;

City of Rijeka, high-rise buildings

- About 140 high-rise buildings;
- 30 floors max;
- The biggest fire on June 9 1987 in Jadranska street;
  - 21-st floor;
  - Two apartments burned out;
  - 13 apartments damaged;

High-rise firefighting

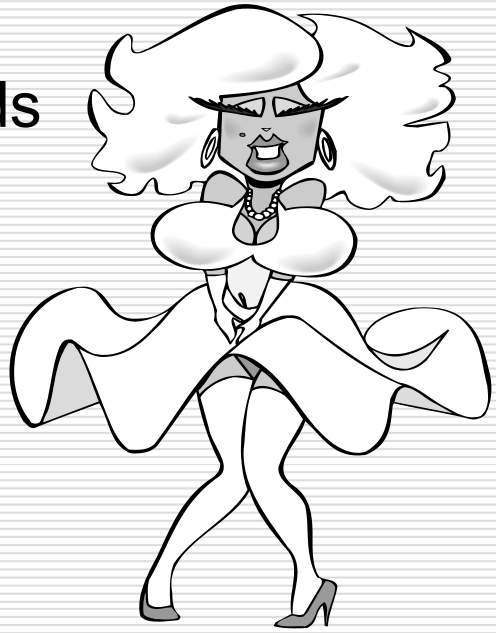
- Main problem:
  - To reach the floor involved in fire;
  - When we have reached the floor, tactical procedure will be the same as any other indoor tactical procedure?

High-rise fire development

- Depending on:
  - Amount and type of fuel;
    - Apartments;
    - Offices;
  - Amount of air;
    - A significant impact of natural air flow;

Air flow influence!!!

- Natural air flow that is normally present on the high-rise building is reinforced by the heat;
- Wind;
  - Wind speed and direction are important factors that needs to be taken into consideration;
  - Wind driven fire;



Vertical spreading of fire on high-rise building

- Characteristically for vertical fire spreading is possibility for fire to skip one floor and spread in to another;

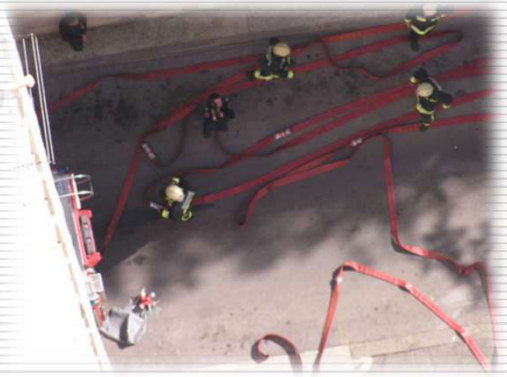
High-rise firefighting tactics

- SOP;

- Tactical procedures:
  - Fires up to level of 10th floor;
  - Fires above level of 10th floor;

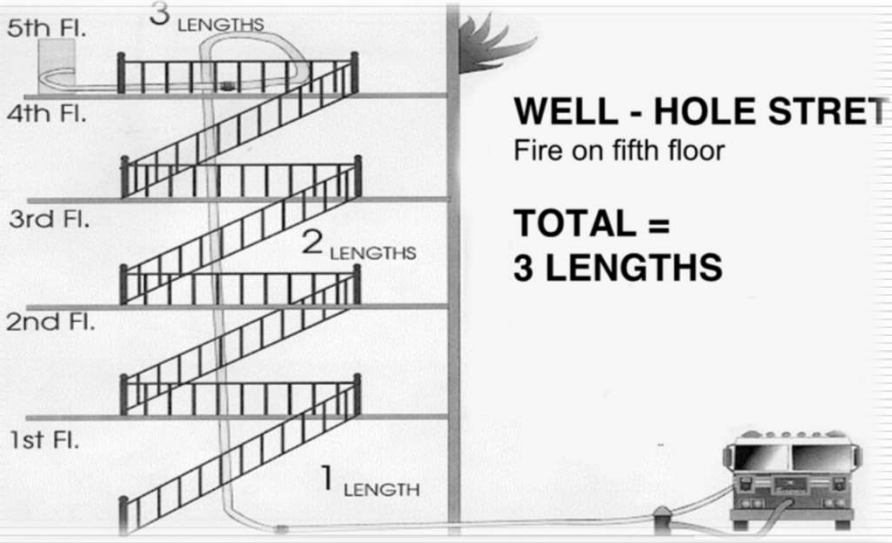
Three sectors of work

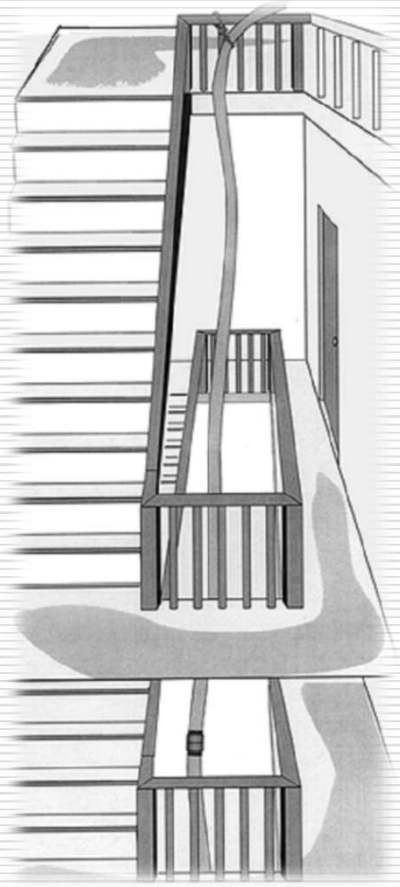
- Water supply;
- Hose line securing;
- Extinguishing the fire;
  - Water supply:
    - Using dry hydrant;
    - Using fire brigade's hose line;



Laying the hose line

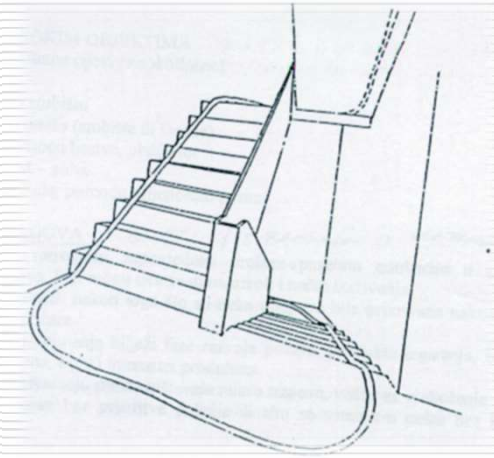
- Water supply hose: 75mm;
- Through the stairs shaft;
- Required hose number:
  - In theory: 1 floor = 3m;

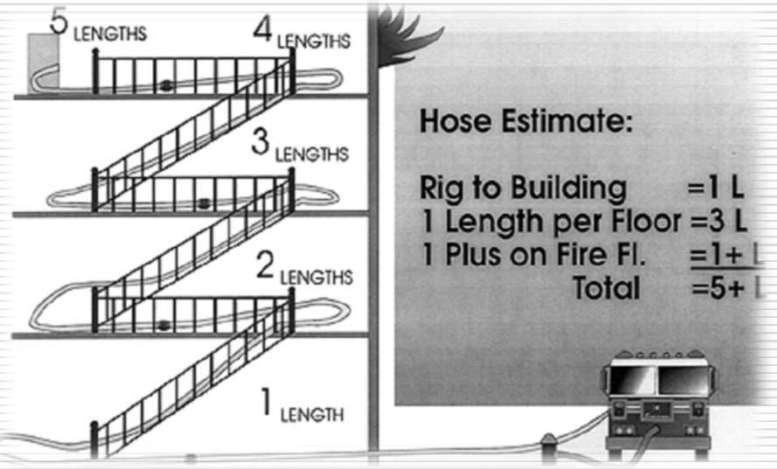




Laying the hose line

- Through the stairs;



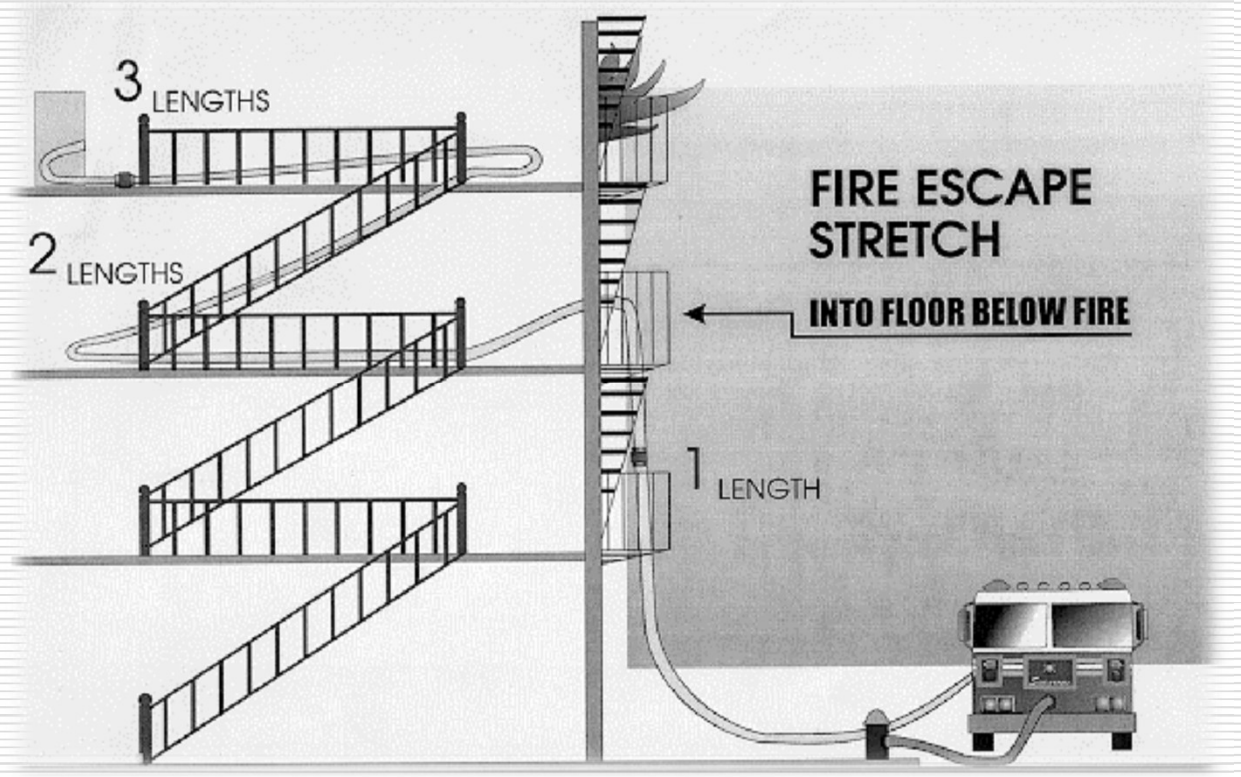


Laying the hose line

- Next to the facade;

Laying the hose line

- Combined;



Rule

- Divider on base of the building;
- Divider one or two floor below the one involved in fire;

Possible problems

- Couplings disconnection or hose burst;
  - Injuries;
  - Damage;
  - Time loss;

How to avoid it?

- Each coupling connection has to be supported;

Suction coupling

Possible problems

- Water flow?;

Dry hydrant check

- At the same time with vertical hose line preparing;
  - Fire engine connection;
  - Valves;
  - Couplings;

High-RiseTraining Excercise

High pressure in high-rise firefighting

- + Quick laying of the hose line;
  - Easy to lift up;
  - Less demanding for securing the hose line;
- + Very good water dispersion;
  - Very good heat absorption;
    - Very good cooling effect;
- + Less damage;
- Sufficient flow???;

CAFS in high-rise firefighting

- Easier hose line;
- Lower pressure;
- Less damage;
- Protection of unburned surfaces;
- Gas cooling?;
- Use in combination with water;

Some of the ideas…

IFEX

Thank you for your attention!