AFRICA FIRE MISSION

Fire Behavior

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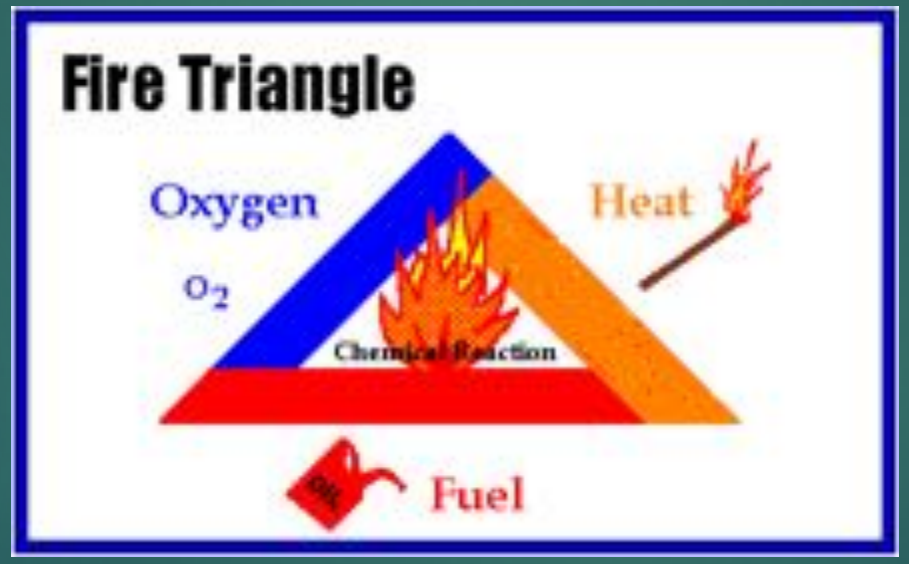
Key Points

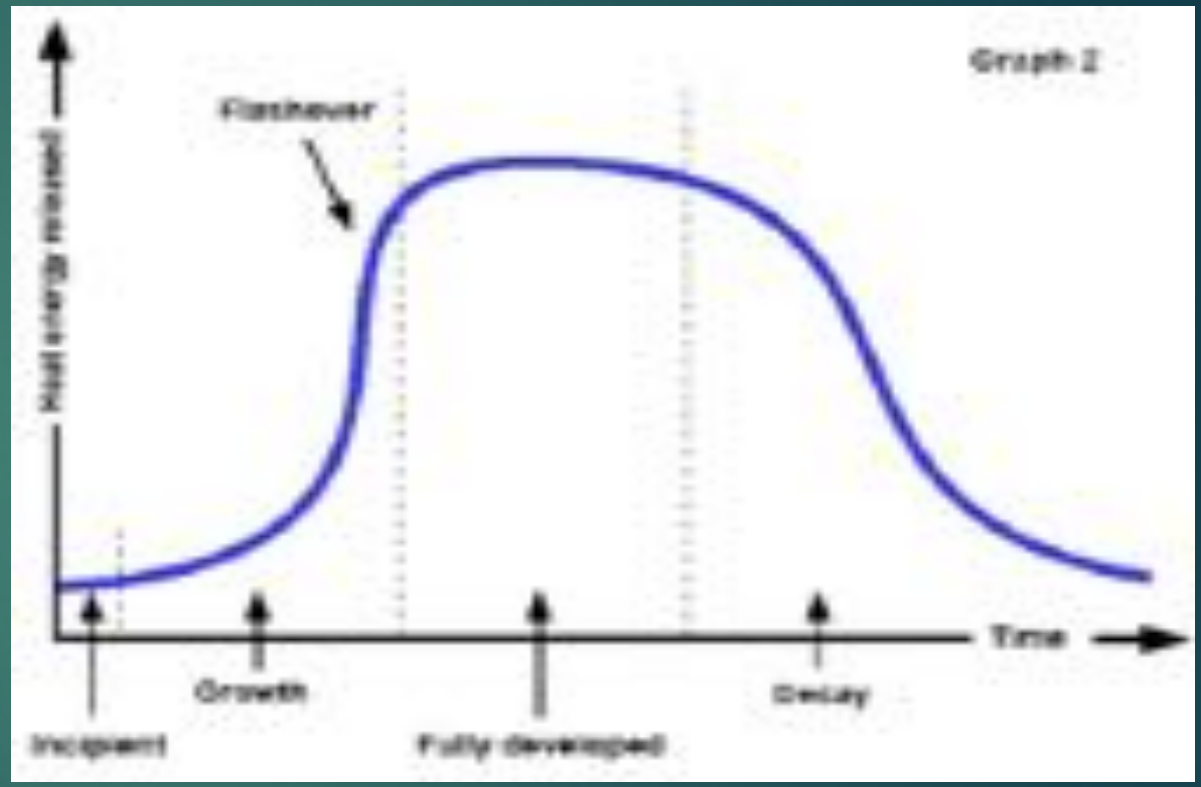
- Smoke is fuel in a gas form
- Smoke will kill you, fast or slowly
- Flashover vs Backdraft
- Risk vs. Reward

Fire Triangle



Traditional Fire Growth

Ignition
Growth
Flashover
Fully Developed
Decay



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Realistic Fire Growth

Flashover

- Flashover is **a thermally-driven event during which every combustible surface exposed to thermal radiation in a compartment or enclosed space rapidly and simultaneously ignites**. Flashover normally occurs when the upper portion of the compartment reaches a temperature of approximately 600 ºC or 1,100 °F for ordinary combustibles.
- In simple terms – the whole room explodes into flames killing anyone in it.

Flashover Indicators…

-Typically occurs around 1,100°F

-Flame over/Rollover

-Turbulent, wavy smoke

-Extreme radiant heat

Prevent a Flashover…

-Cool the atmosphere…Yes you can put water on Smoke!

-Remove yourself from the area

-Survival rates for Firefighters caught in a flashover are low

Backdraft

- A backdraft (North American English) or backdraught (British English) is the **abrupt burning of superheated gasses in a fire, caused when oxygen rapidly enters a hot, oxygen-depleted environment**; for example, when a window or door to an enclosed space is opened or broken.

Backdraft Indicators…

-Fire confined to a compartment space

-Building contents have a high heat release rate…things that put out high BTU's

-Dense Smoke with appears to be pulsing or breathing

More Backdraft Indicators…

-High Velocity, turbulent Smoke

-High Heat, Smoke Stained Windows

-Little or No Visible Flame

Caution…

-Do not assume a backdraft will always occur immediately after an opening is made.

-Gravity, air current, pressure and wind play a role.

Prevent a Backdraft…

-Tactical Ventilation…The Planned, Systematic and coordinated removal of fire gasses from a structure.

-Ventilate as high as possible

-Flow water to cool fuel

Who/What are we Saving?

Risks as a Firefighter

- We risk a lot to save a lot
- We risk a little to save a little
- We risk nothing to save nothing

Any Questions?