



PEA RIDGE FIRE DEPARTMENT

CORE COMPETENCY DRILL



Fire Dynamics—Reading Smoke Basics

DESCRIPTION AND EXPECTED PERFORMANCE: Answer the given questions about the photographs of fires you see. Take into account all of the factors listed in the drill.

Length: 2 HOURS

REFERENCE: PRFD S.O.G.s for tactics and strategy for firefighter in accordance with NFPA standard 1001, current edition.

Officer Size-up of Structures: SMOKE

One of the best ways of determining your courses of action at a fire is to properly read the smoke present.

Key safety issues are identified by doing so.

Inventory Key Factors

- Volume: amount of fuel, fullness of windows
- Velocity: Rate of heat release, speed exiting from the structure
- Density: Quality of burning, potential for other events; flashover
- Color: Illumination, shimmering, unusual, heavy carbon (fuel) based

Weigh Other Factors

- Container: Where is the smoke coming from, is this the origin or is it traveling to an opening
- Weather: Low temperatures & humidity usually mean low hanging smoke
- FF efforts: Has entry been made or other openings that allow the smoke to migrate from areas of origin

Determine Fire Status

- Getting Better: Smoke changing in volume, velocity, density and color

Getting Worse: Increases in volume with visible flames or other significant events

Decide on Tactics/Strategy

- Categorize: The event in one of three ways:
 1. Stable Contained within an area
 2. Rapidly Changing: Pre-flashover, developing significant heat
 3. Unpredictable: Confusing, unstable fire behavior, plan for worst case scenario



What Strategy would each of these incidents be? Explain?
What tactical decisions would you make for FIRST ARRIVING companies?
What is your inventory of the key factors regarding the smoke visible (volume, velocity, density, color)?
Are these incidents getting better? Getting worse? Or unchanged?
Based on the above info., is this a stable, rapidly changing or unpredictable situation?