

## Reading Smoke Basics



Photo courtesy of Holly S. Anderson/VillageSoup.com

Based on the fire scenes above:

1. What type of strategy would each of these incidents be? Explain your reasons.
2. What tactical decisions would you make for the **first arriving** companies at these incidents? Explain your answers.
3. What is your inventory of the key factors regarding the smoke visible here? (Volume, Velocity, Density, Color) What will happen next?
4. Are these incidents getting better? Getting worse? Or unchanged? Explain your decision.
5. Based on the above information, is this a stable, rapidly changing or unpredictable situation?
6. Define your companies objectives at these incidents for **First-in Engine** and **First-In Truck** companies. What assignments do you have for **Second-due** units?

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 is volume, velocity, density and color
- Getting Worse: Increases is above with visible flames or other significant events

Decide on Tactics/Strategy

- Categorize: The event one of three ways:
  - v Stable: Contained within an area
  - v Rapidly Changing: Preflashover, developing significant heat
  - v Unpredictable: Confusing, unstable fire behavior, plan for worst case scenario

*Information from David Dodson, "The Art of Reading Smoke" FDIC 2005.*