Fire Ground Risk Assessment and Decision Making
Objectives

• Discuss risk assessment and decision making
  – What is today’s fire fighting environment?

• Discuss the challenges and inherent dangers of building construction, materials, and contents
  – Are yesterday’s strategy and tactics applicable in today’s fire environment?

• Discuss strategy and tactics
  – Are “traditional” fire ground operations matching the fire environment?
That Was Then, This Is Now...
Structural Firefighting Safety

• The combat fire environment has changed
• Plastics and synthetic materials
  – Materials are off-gassing
  – Greater heat release
• Smoke is fuel
• Firefighter safety
  – Wear and use PPE correctly
• Situational awareness
  – Listen to tactical radio transmissions
Foundation of Fire Ground Operations

Strategic & Tactical Considerations

- Risk Assessment
- Rescue
- Exposures
- Confinement
- Extinguishment
- Overhaul
- Ventilation and Salvage

Risk Assessment
Decision Making
Occupant Survivability
Fire Fighter Survivability
Structural Firefighting Safety

- The combat fire environment has changed
- Plastics and synthetic materials
  - Materials are off-gassing
  - Greater heat release
- Smoke is fuel
- Firefighter safety
  - Wear and use PPE correctly
- Situational awareness
  - Listen to tactical radio transmissions

© Fairfax County Fire and Rescue Department
# Modern Residential Construction

<table>
<thead>
<tr>
<th></th>
<th>Legacy</th>
<th>Modern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuel Load</strong></td>
<td>Natural materials</td>
<td>Synthetics</td>
</tr>
<tr>
<td><strong>Occupant escape time</strong></td>
<td>~15 minutes</td>
<td>~6 minutes</td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td>Inefficient</td>
<td>Efficient</td>
</tr>
<tr>
<td><strong>Average home size</strong></td>
<td>983 sq. ft.</td>
<td>2,349 sq. ft.</td>
</tr>
<tr>
<td><strong>Ceilings</strong></td>
<td>8 ft.</td>
<td>9-12 ft.; Vaulted</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>Compartmentalized spaces</td>
<td>Larger size, open floor plans, more void spaces</td>
</tr>
<tr>
<td><strong>Structural Components</strong></td>
<td>Solid sawn lumbar</td>
<td>Less mass</td>
</tr>
</tbody>
</table>
Company Officers

• The first in unit officers make or break the incident

• Emphasize the need for a complete initial size up and strategy
  – RECEO-VS
  – SLICERS

• Company officers’ risk assessment and decision making – occupant and firefighter survivability

• Strategies and tactical considerations
  – “Resetting the fire”
• Risk Assessment and Size Up

• Flow Path Control - Tactic of controlling or closing ventilation points
  – If one exists - attempt to control; Limit additional oxygen thereby limiting fire development and heat release
  – If one does not yet exist and fire is vent-limited - do not create one until you are ready to do so
  – VES – includes “isolate” (VEIS)

• 90 – 200 Seconds

• Resetting the Fire
Strategies

- **Adjustment of strategy and tactics**
  - Size up and situational reports
  - Outside and inside box
  - “Resetting the fire”
  - Anticipate rapid change of conditions
  - Early structural compromise

- **Firefighter Self Rescue**
  - Deflect the flow path – find areas of refuge; shut doors
Resetting the Fire

- Do your SOPs need to adjusted?
- Not selling out or wholesale change – just adjustments where needed
  - Outside and inside box
  - Basement fires
  - Things get better when water goes on the fire
- Primary concern – life safety (occupant and firefighter)
- 200 second window
Changed Environment...
Fireground Operations

Size Up?
Fireground Operations

Risk Assessment?
Fireground Operations

Decision Making?
Fireground Operations

Tactical Operations?
Fireground Operations

Training, Training, Training!
Questions

Fire Chief Richie Bowers
(Richard.Bowers@fairfaxcounty.gov)