



# STRUCTURE DEFENSE GUIDE

## STRUCTURE TRIAGE DECISION PROCESS (S-FACTS)

### SURVIVAL

- Initial Assessment: can you survive here? **If not, LEAVE NOW!**
- Is there a Safety Zone nearby? **If not, LEAVE NOW!** (IRPG)
- Do you have a viable Escape Route?
- What is the decision point at which you will leave based on fire behavior and rate of spread?
- Is there a Temporary Refuge Area (TRA) on site? **If not, LEAVE NOW!**
  - Preplanned area for immediate, temporary refuge
    - Use of fire shelter should not be necessary
  - Is there a viable Escape Route to the TRA or Safety Zone?
- Is "Prep and Go" tactic an option?
- Do you have communications with your supervisor and adjoining forces?
- If safety issues cannot be mitigated, **LEAVE NOW!**

### FIRE ENVIRONMENT

- Can you survive based on current and expected fire behavior? **If not, LEAVE NOW!**
- Look up, Look Down, Look Around Indicators:
  - Fuels (characteristics, moisture, temperature)
    - What will the intensity of the fire be when it arrives?
    - How long will it take to consume the fuels?
  - Wind
    - Current speed/direction
    - Expect changing winds
  - Terrain
    - Are you in a chute, chimney, or saddle? **If yes, LEAVE NOW!**
    - Is wind in alignment with topography?
    - What is your position relative to topography?
    - Are you mid slope or on top of a ridge?
  - Atmospheric Stability
  - Fire Behavior (requires constant monitoring)
    - Spotting, crowning, sheeting, rate of spread?
    - Flame length and height?
- Other weather considerations:
  - What is the current relative humidity?
    - Is there an expected change?
  - Are thunderstorms forecasted?

### ACCESS

- Is access compatible with time and distance factors necessary to utilize as an Escape Route to a Safety Zone?
  - Road surface adequate for speed necessary?
  - Adequate width?
  - Turnaround/turnouts?
  - Bridges within limits for fire apparatus?
  - Drainage ditches/culverts?
  - Steep grades?
  - Is there a safe place to spot apparatus?

# CONSTRUCTION/CLEARANCE

- Does the structure have adequate defensible space, based on topography, fuels, and current and expected fire behavior?
- Can defensible space problems be mitigated quickly?
- Will building materials and yard clutter compromise safety?
- Is the construction wood siding or shake shingle roof?
- Are there vent openings, open eaves, large glass windows facing fire front, decks with vegetation below?
  - Will ember intrusion through attic or foundation vents be a problem?
- What are the contents in the garage and outbuildings?
- Are there hazardous materials present?
- Are there propane tanks, fuel tanks, or power lines?
- Is there an adequate water supply nearby?
- Are additional resources needed to mitigate issues?
- Consider "Prep and Go" or "Prep and Defend" tactics

# TIME CONSTRAINTS

- Is there time for an adequate size up of the structure defense problem?
- Is there time to mitigate safety concerns?
- Is there time and adequate resources to properly prepare and defend the structure?
- Is there time to escape, utilizing Escape Routes, to a Safety Zone? **If not, LEAVE NOW!**

# STAY OR GO

- Tactical decision based on the S-FACTS
- Is it safe to stay? If no, utilize "Check and Go" tactic
- Is there time to prepare the structure for defense and what will the fire behavior be when the fire gets here?
- "Prep and Go" or "Fire Front Following" tactics should be used when it is not safe to "Prep and Defend"

## STRUCTURE TRIAGE CATEGORIES

### Not-Threatened

- Safety Zone nearby and TRA present at structure
- Construction features/defensible space make the structure unlikely to ignite
- Residents may/may not have evacuated

### Threatened Defensible

- Safety Zone nearby and TRA present at structure
- Construction features/defensible space require structure defense tactics during fire front impact
- Residents may/may not have evacuated

### Threatened non-Defensible

- Lack of adequate Safety Zone nearby
- Structure cannot be safely defended
- Residents must be evacuated

## ENTRAPMENT AVOIDANCE

- Are you adhering to the **10 Standard Firefighting Orders?** (IRPG)
- Have you considered the **18 Situations that Shout Watch Out?**
- Have you considered the **Common Denominators of Fire Behavior on Tragedy Fires?** (IRPG)
- Are you maintaining **LCES?** (IRPG)
- Look Up, Look Down, Look Around (IRPG)
- Have Decision Points ("Trigger Points") been established?
- Conduct Risk Management (IRPG)
  - Situational Awareness – Hazard Assessment – Hazard Control – Decision Point – Evaluate

## STRUCTURE DEFENSE TACTICAL ACTIONS

- **Check & Go** – Most appropriate action when no Safety Zone/TRA is present and fire front impact is imminent. Conduct rapid evaluation to check for occupants and evaluate for follow up action. **LEAVE promptly.**
- **Prep & Go** – Structure preparation can be safely completed prior to fire front impact. Potential fire activity is too dangerous to remain and/or there is no Safety Zone/TRA present. **LEAVE before escape routes are compromised.**
- **Prep & Defend** – Appropriate when a Safety Zone is nearby and TRA is present. Adequate time exists to prepare the structure for defense prior to fire front impact. Escape routes must be maintained.
- **Fire Front Following** – Follow-up tactic after passage of the fire front. Involves searching for victims, perimeter control, hot spotting, and ember control.
- **Bump & Run** – Resources move ahead of the fire front extinguishing spot fires and defending structures. Utilize extreme caution.
- **Anchor & Hold** – Resources use large volume fire streams to extinguish structure fires, stop structure-to-structure ignitions, protect exposures, and control embers.
- **Tactical Patrol** – Resources remain mobile and continuously monitor assigned area after fire front passage. Involves aggressive mop up around structures.

*Structure defense tactics are a vital part of perimeter control operations.*

- *Stopping fire spread significantly eliminates the fire's threat to structures.*
- *Connect contained points along the fire's perimeter – typically near the structures at risk ("Connect the Dots").*
- *Perimeter control and structure defense should be done concurrently.*

## LEVELS OF ENGAGEMENT

Consider **PACE**

- **P**Primary Plan (Offense)
  - Focused on firefighter safety and objectives
- **A**lternate Plan (Offense)
  - Fallback plan that closely resembles primary plan
- **C**ontingency Plan (Defense)
  - Focused on firefighter safety, move to a safety zone, temporary refuge areas
- **E**mergency Plan (Defense)
  - Firefighter survival
    - Deployment zones/Refuge areas
    - Fire shelters

Consider **DRAW-D**

- **D**efend – **R**einforce – **A**dvance – **W**ithdraw – **D**elay

## IMMEDIATE NEED EVACUATION CHECKLIST

- Co-locate with law enforcement at ICP
- Identify evacuation area utilizing local maps. Include area of incident potential when determining evacuation area.
- Identify traffic control points for entry and exit of resources and civilians
- Identify areas that must be immediately evacuated and label “evacuation order” areas
- Identify areas that are potentially threatened and label “evacuation warning” areas
- Identify community safe refuge areas inside evacuation areas
- Determine and publish evacuation routes
- Identify and clearly communicate the decision points for implementing additional evacuation areas
- Identify areas of special needs population and large animals
- Consider use of public notification systems for evacuations

## STRUCTURE DEFENSE FUNDAMENTALS

- Back equipment in for tactical mobility
- Shield apparatus from radiant heat – be aware of structure ignition potential
- Park in a cleared area (watch for power lines, trees)
- Have an engine/crew protection line identified
- Determine if residents are home. Determine best course of action – evacuate if safe to do so or shelter in place at safe location
- Maintain communications with all crew members
- Maintain at least 100 gallons of water reserve in your tank
- Top off your tank at every opportunity (use garden hose)
- For roof access, place owner’s ladder at a corner of the structure on the side with the least fire threat and away from power drop
- Keep fire out of heavier fuels (suppress in lighter fuels)
- Clear area around above-ground fuel tank, shutting off tank
- Close windows and doors, including garage, leaving doors unlocked
- Place combustible outside furniture inside the structure
- Charge and place garden hoses strategically around structure for immediate use
- Move wood piles away from structures
- Consider applying foam/gel to the structure (roof and siding) and/or fuels
- **REMEMBER** to follow up with **TACTICAL PATROL!**