10 Guidelines for Coordinating Ventilation

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#1: Communicate with the officer in charge of the fire floor (and the incident commander) prior to executing ventilation operations.

- Incidents necessitating I.C. authorization for additional accountability:
  - Wind-impacted
  - Hoarding conditions
  - Deep-seated/Below-grade fire

- Vent prompts:
  - "In position." (venting firefighter announcing they are ready and where)
  - "Hold off." (fire floor officer announcing they are *not* ready for vent)
  - "Vent. Vent." (fire floor officer requesting/confirming vent)

#2: Control the door to the fire area until the nozzle team is ready to make entry with a charged handline, and quickly scan/sweep the immediate area prior to advancing.

- Perform a rapid entry scan ("belly down" inside the doorway) to look for the 3 L's:
  - Life
  - Location
  - Layout

- Thermal imager sequence:
  - Scan the ceiling and assess the velocity of the thermal currents
  - Trace the ceiling to the far wall
  - Rotate 90° (orienting the screen vertically) and assess the thermal balance
  - Scan to the left, to the right, and down at the floor ahead
  - Identify your travel path and put the TIC down before you advance
  - Scan the entryway at about the hallway point to re-assess conditions

- Search crews can enter ahead of the handline if conditions allow:
  - Door must be controlled after entry is made – restricting the intake
  - Ensure the door does not latch shut to prevent forcible entry issues
  - Place a spring-clamp on the knob-side or engage the deadbolt to do so
  - Should have a 2.5-gallon pressurized water can to knockback/confine fire

- Prop the door open when the nozzle team is ready to advance in on the fire
  - Maximize the intake and air exchange to aid in suppression/tenability
  - Ensures unobstructed movement of the handline through the entryway
  - Move the spring-clamp to the hinge-side or place a chock to do so

- Replace the door to the fire room if it is burning through or one is not present
  - Remove an adjacent door from its hinges and prop it up in the doorway
  - Hang a hook on the top hinge and slam the door closed to force it off

#3: Access the fire on its level and from the upwind side, operating within the intake path, whenever feasible.

- Impact of sustained wind speeds on fire conditions:
  - 10-15mph = moderate
  - 20-25mph = severe

- Gauging wind speed by flag angle (check when leaving quarters):
  - Half extension (45°) ≈ 10-15mph
  - Full extension (90°) ≈ 20-25mph
  - Full & Flapping < 30-35mph

- Alternative measures when access is limited:
  - Wall breaching (i.e., adjacent apartment)
  - Wind control devices (e.g., KO Fire Curtain, smoke curtain)
  - Exterior stream (e.g., High-Rise/Floor-Below Nozzle, blitz attack)

#4: Use the downwind side of the building when venting for extinguishment.

- Ensures the wind is not blowing into the opening (towards the advancing crews)

- The sides adjacent to the upwind side can easily become affected if the wind shifts

- Using the downwind side of a peaked roof provides cover from the wind

#5: Vent in a manner that does not create an exposure problem.

- Vent openings should not impinge on any exposures, victims, or firefighters

- Do not vent below areas of refuge and access/egress
  - Exhausting heat and smoke can endanger victims or firefighters operating

- Exposure hazards:
  - Buildings in close proximity
  - Combustible siding
  - Windows directly above or across
  - Fire escapes and open porches

- Radiant heat can pass through glass and ignite combustibles before window failure

#6: Ensure suppression is imminent or initiated prior to horizontally venting for extinguishment.

- Nozzle team must be moving in – capable of flowing water to the seat of the fire

- Verbal confirmation is ideal, but signs of extinguishment are sufficient

- Vent the top pane of the window first (assessing the conditions) then the bottom
  - Where the heat/smoke are accumulating – venting them immediately
  - Weakest area of the glass (subjected to the highest heat)
  - Prevents large sections of glass from being dislodged at once

- Trim out the entire opening (remove sash, window treatments, A/C unit, gates, etc.)
    - Maximize the opening size and exhaust capacity

#7: Ensure suppression is initiated or isolation of the targeted area is achieved or imminent prior to horizontally venting for search, unless required to affect a rescue.

- Window-initiated ("targeted") search procedures:
    - Place the ladder just beneath the sill
    - Position head-level with the sill in full PPE
    - Use the length of the hook to take the top corner of the window first
    - Briefly pause to further evaluate conditions and determine tenability
    - Trim out the remainder of the opening
    - Sweep and sound the floor for victims and integrity
    - Make entry and immediately locate the doorway (use TI if available)
    - Use the "Corner Trick" – traveling opposite the outside corner to do so
    - Briefly scan the hallway for victims and assess the conditions
    - Control the door to isolate the room
    - Search the space and report the findings
    - Extend the search beyond if feasible and authorized
    - Control the door when exiting if the fire is not in check

- Door-initiated ("conventional") search procedures:
    - Enter the room
    - Control the door to isolate the room
    - Search the space and report findings
    - Feel up the outside walls for windows
    - "Vent as you go" if the room is isolated from the fire
    - Windows can serve as an alternative means of victim removal
    - Remove victims in the manner that will maximize survivability
    - Control the door when exiting if the fire is not in check

#8: Ensure suppression is imminent or initiated, or isolation of the targeted area is achieved prior to vertically venting.

- Venting for extinguishment over the fire:
    - Nozzle team must be moving in – capable of flowing water to the seat
    - Verbal confirmation is ideal, but signs of extinguishment are sufficient

- Venting for access/search over an enclosed stairwell:
    - Can be done preemptively if there is control over the fire apartment door
    - Shall not be performed until the fire is in check if wind-impacted

- Bulkhead doors should be accessed to search the top-floor landing for victims
    - Door integrity and control must be maintained until authorized to vent

- Mechanical ventilation fans can pressurize enclosed stairwells to maintain tenability
    - Can reduce the effects a wind-driven fire – not reverse it

- Vertical openings can prevent or minimize the effects of a deflagration

- Procedures for deflagration (e.g., backdraft) venting:
    - Ensure a charged handline is in a shielded position and ready to move in
    - Vent at the highest point – using natural openings first when feasible

- Contributing factors and potential signs of an impending backdraft:
    - Building or void space tightly sealed up (e.g., attic/cockloft or knee-wall)
    - Severely ventilation-limited fire conditions
    - Yellow-/mustard-colored smoke
    - Smoke reversal
    - Smoke pushing from the seams of the building

- Signs of vertical extension or attic/cockloft involvement (must be communicated):
    - Smoke and/or embers discharging from soil pipes or vents
    - Soil pipes that are hot
    - Melting tar at the base of the soil pipes and melting snow/ice
    - Smoke venting from the eaves or gable louvers or pushing from shingles

#9: Ensure a nozzle team is in position with a charged handline prior to opening up walls and ceilings.

- Opening up to access concealed (void) spaces is a form of ventilation

- Try to be within a doorway when initially pulling ceilings
    - Most important when breaching the top-floor ceiling
    - Provides protection if the sheathing violently drops (e.g., cockloft explosion)
    - Make your purchase/inspection hole with the handle/pry-end of the hook
    - Easier to penetrate and limits the size of the initial opening

- Exercise caution when fire is suspected in the knee-walls of a finished half-story:
    - Do not overcommit – conditions can deteriorate rapidly
    - Stage the handline at the top of the stairs until the seat has been located
    - Use TIs and inspect the knee-walls before advancing
    - Keep inspection holes small
    - Check the near-side from the top of the stairs first and address one at a time
    - Nozzle can be inserted into an inspection hole if conditions are severe
    - Coordinate vertical vent to limit extension and relieve the conditions

#10: Ensure the integrity of the route being traveled, maintain the egress path, and establish a secondary means.

- Sound/probe the surface ahead when transitioning and moving on/in a space

- Know your way out and locate/obtain a back-up in case of emergency

- Keep yourself between any openings being made and the means of egress

- Work from the furthest point back to the means of egress when opening up