

# Hurricane Fire & Rescue

Hurricane, WV

## Operation Guidelines

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Ventilation
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**Purpose:** This guideline was established to provide guidance in ventilation practices at the scene of an incident. It is intended to explain the different options available to them in ventilating a structure after the Incident Commander so has reached the decision to do.

**Scope:** All Personnel

**Responsibility:** It is the responsibility of all personnel to adhere to these guidelines.

**NOTE:** Refer to Protective Clothing Requirements SOG

### POSITIVE PRESSURE VENTILATION

To use positive pressure ventilation effectively, firefighters should remember the following procedures:

1. ***COVER THE ENTRANCE OPENING.*** The cone of air emitted by the positive pressure fan should completely cover (seal) the entrance opening. This operation ensures that the interior atmosphere is not forced back through the entrance opening.
2. ***REGULATE THE EXHAUST OPENING.*** Exhaust openings should measure between three-fourths and one and three-fourths the size of the entrance opening.
3. ***CONTROL THE FLOW OF AIR BETWEEN THE ENTRANCES AND EXHAUST OPENINGS.*** If air is forced through an opening and is controlled and/or directed to an exhaust opening without being diverted to various other openings, heat, smoke, and fire gasses will be efficiently removed in a minimal amount of time. "OPENING UP" a structure will not facilitate a successful positive pressure operation.

## VERTICAL VENTILATION

There is no rule-of-thumb in selecting the exact point at which to open a roof except, "AS DIRECTLY OVER THE FIRE AS POSSIBLE." Many factors will have a bearing on where to ventilate, such as:

1. Existing openings such as skylights, shafts, etc.
2. Type of construction.
3. Wind direction
4. Roof sag/safe roof conditions

After the Officer has considered the types of building, the location and extent of the fire, moved manpower and tools to the roof, observed safety precautions, and selected the place to ventilate, the ventilation crew should:

1. Coordinate with ground and attack crews through Operations.
2. Note the existence of obstructions or weight (live and dead loads) on the roof.
3. Have a charged hose line on the roof.
4. Secure a secondary means of escape.
5. Utilize existing roof openings whenever possible
6. Cut one large hole rather than several small ones.
7. Exercise care in making the openings so that main structural supports are not cut.
8. Work with the wind at their back or side.
9. Extend a blunt object through the ventilation opening to remove any interior ceilings.

## HORIZONTAL VENTILATION

Structures, which lend themselves to the application of horizontal ventilation, include:

1. Residential structures in which the fire has not involved the attic.
2. Attics in residential structures, which have louvered vents at the gable ends.
3. Involved floors of multi-storied buildings.

Horizontal ventilation can be done two ways: naturally or mechanically.

Natural ventilation is making use of wind currents. Open up on the leeward side to allow the escape of gasses, and then open up on the windward side to provide fresh air replacement.

Mechanical ventilation uses smoke ejectors or hose streams to accomplish the same effect as wind currents. Caution should be used with gas powered smoke ejectors in enclosed areas.

Units assigned to ventilation will keep Command advised on the progress of ventilation and when the operation is complete. Any problems or delays will be communicated immediately.