



Rogers Fire Department Standard Operating Procedures

Policy Title:	Ventilation	Volume:	Tactics
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Approved By:	Tom Jenkins	CAAS Reference:	N/A
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PURPOSE

This procedure identifies the tactical application of ventilation tactics during structural fire operations and other techniques for use.

POLICY

The department recognizes that most structure fires involve fires that are ventilation-limited. Because of this, firefighters should be careful to limit intentional and unintentional ventilation of a structure fire until such time as the fire has been extinguished or “knocked down”.

Flow path curtains should be placed in the doorway of occupancies prior to ventilation. These curtains prevent the influx of oxygenated air, thus limiting the growth of fire and maintaining its ventilation-limited status. It is the responsibility of the Ladder Company FEO to place this curtain and notify the incident commander when it is in place. This is done with a radio transmission that includes the benchmark “flow path curtain in place”.

Example:

L1 FEO: “Ladder 1 Operator to Command, the flow path curtain is in place”

IC: “Command copies the flow path curtain is in place”

When ventilation is necessary, the preferred method is through the use of positive pressure ventilation (PPV). Other forms of ventilation, such as vertical ventilation, may be more effective, but come with the increased risk of placing firefighters on the roof of a building that has been involved in fire. The benefits of PPV include:

1. Rapidly removing heat and smoke from the building
2. Improving the atmosphere inside a building, making it more livable for victims left inside

3. Removal of smoke improves the urgency with which firefighters can conduct search and rescue

All fire companies are equipped with high volume positive pressure fans. By standing fireground orders, PPV fans are placed at a strategic ventilation location by the driver of the 1st due Ladder Company at every first alarm fire preferably at the same time the flow path curtain is placed. PPV should be used only after it is requested by the Fire Attack Group or appropriate Division Supervisor.

Fans should be placed at the point of entry from the unburned side of the fire. Fans should be positioned 12-15 feet back from the entry point. The objective is to create a pressure “cone” around the door. Positioning fans in this manner also ensures they do not inhibit ingress/egress to the structure.

Where additional fans are required, placing two or more fans in tandem (one behind the other) should be conducted.

Tactical Considerations - General

When conducting PPV, the following two items must be addressed:

1. An “exit” for the pressurized air must be provided and located near the fire area. This is generally a window, door, or other opening similar in size to the inlet of the fan.
2. Positive pressure ventilation must be injected from the unburned side of the fire.

Air flow from PPV must be controlled to ensure the effectiveness of PPV. Windows and doors already open may need to be closed to direct the air flow into the fire area.

Tactical Considerations – High-Rise / Multi-Story

Multi-story buildings require greater coordination and additional fans. Stairwells should be used to direct air flow to the floor requiring ventilation. An exit opening in the area of the fire (window) is the first choice for exhausting contaminated air. The second choice is a stairwell on the opposite side of the fire area. Using a stairwell to exhaust contaminated air requires roof access. Multiple fans may be needed, including fans at various levels in the stairwell and on the fire floor.

Precautions

1. An exit for contaminated air must be in the burned area. Otherwise, fire may be pushed into an unburned portion of the structure.
2. Because of positive pressure, a “blow torch” effect of the fire blowing far out of the exit may occur. This is normal and predictable. Protect exposures are necessary.
3. Do not direct a fire stream into an operating PPV exit point.

4. All concealed spaces needed to be checked for extension.
5. The Ladder Company FEO shall ensure the PPV is operated and placed appropriately.
6. The gas powered fans do produce carbon monoxide and breathing apparatus may be required when PPV is used during overhaul operations.