

Ventilation (Vent) Group

If command is supposed to focus on the entire incident the sector officer should tunnel in on their assigned area/task.

The Main Goal

The main goal of the ventilation group is to quickly remove heat, poisonous gases, and other by-products of combustion from the structure in a coordinated fashion with due regard for possible trapped civilians, the hose crew, and likely fire spread.

Incident Priorities

Yes, again, life safety, incident stabilization, and property conservation are the incident priorities. When you are assigned to the vent group you are responsible for ventilation in the entire structure. The discussion of ventilation here is limited and only concerns how to approach the ventilation group as an entity. I talk about ventilation at length elsewhere on this site and the links page has links to at least two other sites devoted to ventilation.

Ventilation is an important task. When we ventilate properly we are able to lift the curtain of heat and toxic gases off of trapped victims while easing the advance of the hose stream. However, if we vent incorrectly we run the risk of increasing fire spread or increasing the magnitude of the fire beyond our ability to control it.

When we talk about ventilation in relation to the incident priorities it is apparent that we should be ventilating early and aggressively. Trapped civilians breathing only smoke cannot live for more than a few minutes, the search group is fighting an uphill battle.

Again, I can only speak from my perspective but in the D.C. Metro area my experience is that the vent group almost always plays a dual role, at least initially. They not only vent but also provide the secondary means of egress, typically with ladders, for the operating interior crews. While the duality of this role is usually "understood" it is not usually iterated. We tend to rely on the SOPs and the judgment of officers to get the laddering done. However, I would argue that perhaps we should really call the group vent/egress to drive home the point that ventilation and egress are equally important tasks. In my experience both roles can be performed simultaneously. One local company has gotten in the habit of attaching 6' poles to their ladders so that right after they throw the ladder the hook is right there for ventilation efforts.

Of course in order to ventilate well and ladder well more than one person needs to be working in the vent group. This means with our three sometime four person staffing someone is going to have to stay outside with the driver. Because

ventilation is so important and because improper ventilation is so dangerous I vote for the truck officer to stay outside and assist the driver with the dual role. We can all agree that the unit officer should be the best-equipped person on the ladder company to make the proper ventilation decisions, right?

The vent group leader has the same basic functions as the other leaders we have discussed:

- ❑ The safety of his/her group
- ❑ Coordinating ventilation with search and fire attack
- ❑ Keeping command informed

Vent Group Leader Function

In order to run the vent group you must know where the fire is and how big it is. You must have a grip on building construction so that you can reasonably predict fire spread. You must be aware of the other functions occurring on the fire ground so as to not negatively impact a search or attack group. In other words you need to listen and communicate.

The vent officer should do a circle check of the building and based on that check decide what kind of ventilation should occur and where. Of course there are different ventilation methods each with both positive and negative aspects. Some are listed below:

- ❑ **Horizontal Ventilation**
By far the quickest and easiest way to get heat and smoke out of a structure.
- ❑ **Vertical Ventilation**
This method is by far the most time consuming of the options. It also happens to be the most labor intensive. Often I see ladder companies around me insisting that they must get to the roof quickly. I think sometimes watching our big city brother in action on the rooftops drives this urge. I caution everyone to remember where they are operating and to operate in a manner that is consistent with your staffing and prevailing building construction. I am simply opposed to peaked roof cuts in the majority of single-family residences.
- ❑ **Positive Pressure Ventilation**
Outside the high-rise fire I have absolutely no use for positive pressure ventilation until after the fire is out and searches for extension complete.
- ❑ **Hydraulic Ventilation**
This is a cheap and easy way to clear the smoke. You can even ventilate hydraulically with a smooth bore nozzle.

It is up to the vent group leader to determine, in concert with command, which type of ventilation will be most effective for any given fire situation.

Vent Group on the high-rise

The high-rise fire is where the vent group leader will find him/herself most challenged. Even a small fire in a high-rise leads to many floors filled with smoke. It is crucial that the vent officer have a way to coordinate the efforts of the vent group. I am a firm believer in giving the vent group an operating channel of their own when faced with a high-rise fire.

Some things the vent group leader should be concerned with on the high-rise fire include but are not limited to:

- ❑ Pressurizing as many stairwells as possible
- ❑ Dedicating a stairwell for ventilation
- ❑ Not ventilating stairwells that have not been cleared of civilian traffic
- ❑ Coordinating ventilation with the movements of other groups in between floors
- ❑ Locating and accessing the roof hatches
- ❑ Controlling the buildings HVAC unit

Many factors play into the decisions made by the vent group leader including:

- ❑ Stack effect
- ❑ Reverse stack effect
- ❑ Mushrooming
- ❑ Stratification
- ❑ Location of fire
- ❑ Status, type and location of building HVAC ductwork
- ❑ Availability of elevators

In most cases the Vent group leader can be a part of the vent group effort. However, in the case of high-rise fires, or fires in other large or complexly configured structures the vent group leader may be forced to grab a clipboard instead of a fan and find a stationary spot to manage the group from.

Vent must inform command if additional resources are needed for the group.

Benchmarks

The benchmark of the vent group depends on the given situation but should include the areas ventilated, the results of that ventilation, and the areas of the building where secondary egress was secured if applicable.