Travis County Emergency Services District No. 9
Westlake Fire Department

Standard Operating Procedure

Subject: **Ventilation**

Effective Date: **July 1, 1997**

Authorized By: **Chief Paul Barker Date: May 11, 2000**

I. Purpose

To establish general guidelines for the safe and efficient ventilation of structures during fire operations.

II. Policy

Vertical and/or horizontal ventilation shall be accomplished as quickly as possible during fire operations in order to make the structure more tenable, to facilitate rescue, to assist in locating the fire, to reduce damages, to reduce the chances of flashover, to improve visibility, to confine the fire, and to improve firefighter safety.

III. Procedure

1. Vertical Ventilation

The following procedures should be followed when ventilating a roof:

- The need to ventilate a roof, and alternate means of ventilation should be considered by the IC before making the assignment to cut a ventilation opening.
- A hose line and two separate means of egress (ladders) will always be in place before beginning the operation.
- Observe wind direction in relation to the roof vent and place the opening on the leeward (away from the wind) side of the roof.
- A roof ladder will be used as a cutting platform when making ventilation openings.
- Ladders will be heeled when firefighters are climbing. The preferred climbing angle will be approximately 60-70 degrees from the horizontal.
- The standard hole cut in a roof will be no less than four feet in any dimension. Care must be taken not to cut support timbers, such as trusses or rafters. Locate those roof supports by sounding or by looking where they appear at the edge of the roof.
- Ventilators and skylights should be used for ventilation when appropriate.
- Face shields will be down when firefighters are pulling sheetrock from below in order to open up the ventilation pathway.
- Any operation over the fire, particularly ventilation, is hazardous, and must be closely supervised by the operations officer. All members conducting operations above the fire must wear SCBA and full PPE.
- Hoselines will not normally be directed through a ventilation hole in the roof except to protect a firefighter in trouble.

2. Horizontal Ventilation

Horizontal ventilation should be considered as the primary ventilation method if the fire has not involved the attic. The following procedures should be followed when accomplishing horizontal ventilation:

- Locate horizontal ventilation openings as high as possible in the room in order to take advantage of natural convection and to allow the highest temperature gases in the room to escape.
- Observe wind direction in relation to the windows opened. If possible, open the windows on the downwind side first and then open the upwind windows. Firefighters should attack the fire from the direction the wind is coming from.
- Raise windows rather than break them when time permits to minimize the damage caused by firefighting operations.
- Remove screens on all windows to improve airflow.
- When using a hose line directed through a window to affect ventilation, check to be sure that the firestream will not strike personnel or undamaged property outside the structure before opening the nozzle.
- At the earliest, set up positive pressure ventilation through a doorway, even while opening all windows. Once the fire is extinguished, the windows can be again selectively closed and positive pressure ventilation can be used to ventilate the structure.