THE TRENCH CUT

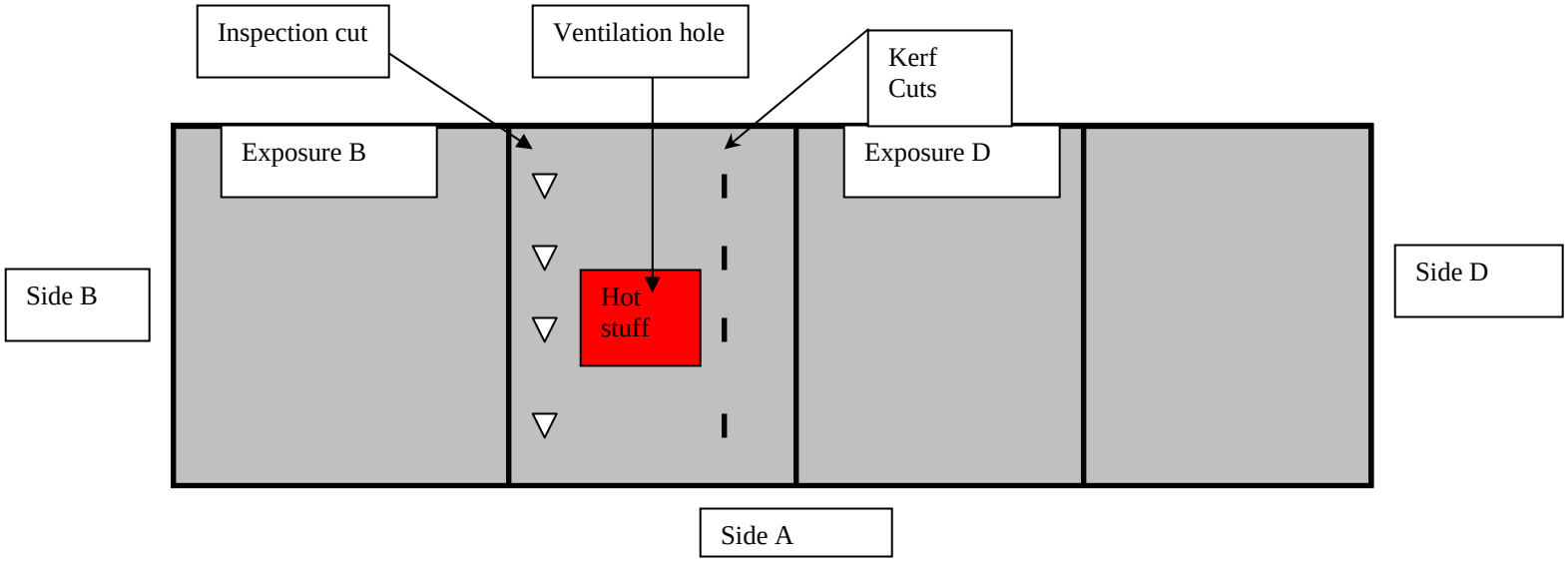
This months segment is dedicated to all "truckies"within our department. Over a month ago, an enlightening conversation between two officers occurred that centered around vertical ventilation. The discussion included a number of items on the subject ranging from roof construction to kerf cuts. When it came to the area of strip ventilation or trench cuts, simular views were shared although some differences of opinion arose on how to achieve the desired result when it came to placement along a firewall. After doing some extended research, it was

discovered that neither officer was wrong in their approach; the choice of tactics were contingient upon fire conditions.

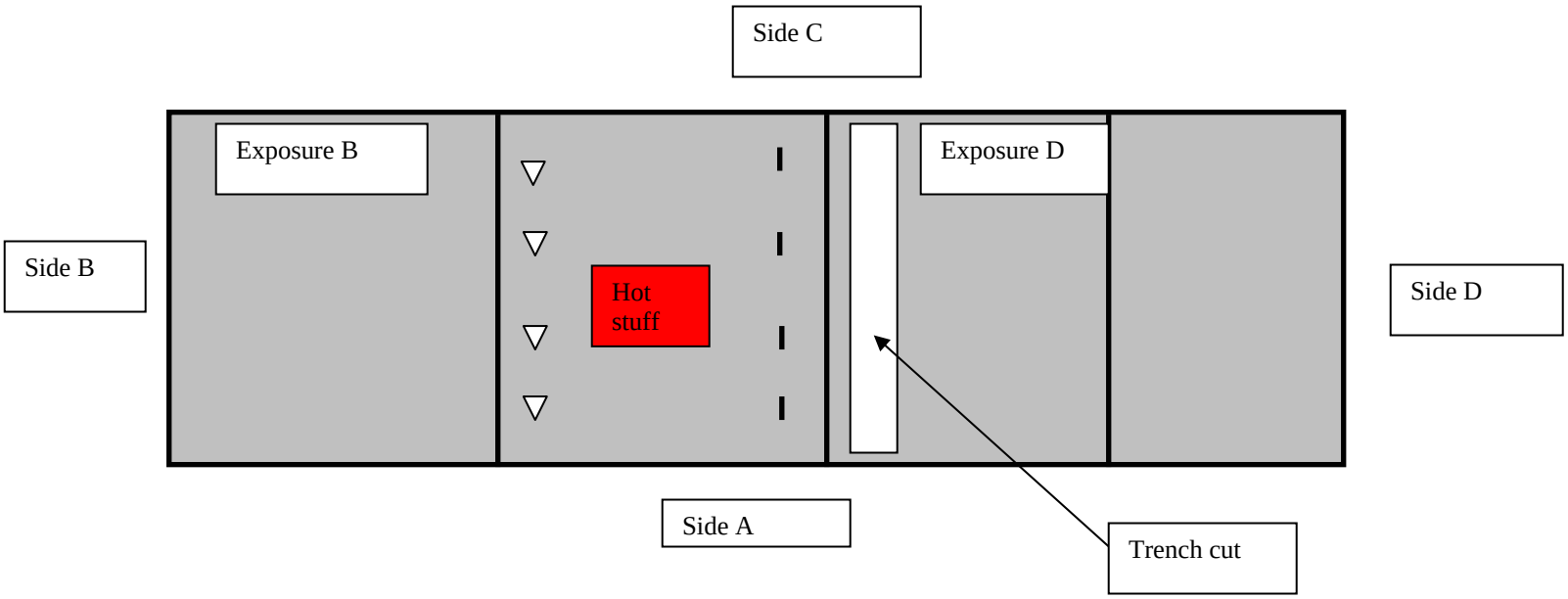
Let's first identify the purpose of the trench cut. It is a defensive tactic used to create a fire break along the surface of a roof in large buildings or multiple buildings sharing a common cockloft such as stripmalls, garden apartments, and townhouses. These types of structures usually share a common attic or cockloft with either a firewall or fire partion separating units or buildings. The trench cut is made ahead of the fires route of travel in an effort to "make a stand" and prevent lateral spread throughout the remainder of a large building or to an attached structure. Essentially, you are writing off a portion of the structure in order to save unburned segments.

It is a labor intensive operation that requires, at minimum, two truck crews working simultaneously to accomplish the task. In addition to making the cut, hose teams *separate from the attack crew* would be required on the interior to hold and prevent the lateral spread of fire below where the cuts have been made ***(command consideration)***.

Now let's talk about the mechanics of the trench cut. If fire has not already vented through the roof, then a ventilation hole must be made directly over the fire ***(if it can be done safely)*** to allow for standard vertical ventilation. A kerf cut (a single plunge into the roofing material with a power saw) or inspection cut (a small triangular cut) may be used as observation openings to determine the location of the cockloft fire.



Once the Incident Commander has determined the need for a trench cut, a site must be decided by the vent group. Let us assume that the fire was progressing toward Exposure D. Where should the trench cut be made? On the fire side of the firewall or the exposure side of the firewall (assuming that a firewall is present)?



Ideally, the trench cut should be made from the fire side of the firewall with hose crews underneath fortifying the firewall. Determining factors relating to the timing of a defensive attack, available manpower, the progression and intensity of the fire and the safety of the vent group may change the preferred application of the trench cut. If the fire has traveled up to the observation holes just prior to the firewall, then the practical application will have to be initiated on the exposure side of the firewall; this provides the vent group with a safety margin as it relates to:

1. available time to complete the task
2. a route for egress in the event the fire spreads faster than the vent group can accomplish the assignment
3. an area of safety while watching for the fires progression

Watching for the fires progression is important because if the fire is extinguished beforehand or if the standard ventilation hole stops the fires advancement, then there is no need to open the cuts to the trench. Prematurely opening up the trench can draw the fire to the location of interior crews and the vent group without warning. In addition, if it is decided to open the trench, the ceiling material below must be removed completely. If not, it can add to the fire load and assist with lateral fire spread across the attic space.

A couple of important points to remember:

- trench cuts are labor intensive; commit at least to truck crews
- ensure that wherever the cut is made, multiple means of egress are available to the vent group ***(ladders, aerial, tower)***
- a hose line should be in place on the roof with the vent group
- addition hose crews need to be in place under the trench to fortify the "stand"
- do not open the trench prematurely; must be coordinated
- once opened from the roof, all drywall underneath must be removed completely

Sources for this article include:

Fire Officer's Handbook of Tactics by John Norman

Strategic and Tactical Considerations on the Fire ground by James P. Smith

KEEP IT SAFE!

"DEDICATION TO EDUCATION"