



FIRE INSTRUCTOR I

Student Presentation Lesson Plan

25-Ventilation Techniques

Outline of Instruction

Objective

Upon successful completion of this lesson, the student shall be able to:

- Explain the means for achieving horizontal and vertical ventilation. [NFPA® 1001, 5.3.11, 5.3.12]

Instructor Directions

1. Set up non-projectable training aids
 - a. Chart pad to include:
 - i. Title Page
 - ii. Acronym
 - iii. Summary
 - iv. 1 Application scenario
 - v. 2 Evaluation questions
2. Set up projectable training aids (LCD projector & computer)
3. Present lecture utilizing this outline of instruction, non-projectable and projectable audio visual aids.
 - a. Overall time 18 min. (set up, present topic, and take down of audio visuals)
 - b. Presentation time 8-12 min. (presentation time is part of the 18 min)
4. Breakdown of projectable training aids.

Reference Stowell, F.(2013). Essentials of Fire Fighting and Fire Department Operations (6th ed.). Upper Saddle River, N.J.: Brady Pub.; ISBN# 978-013-314080-4

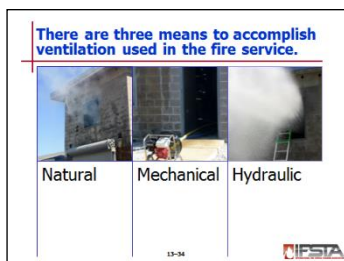
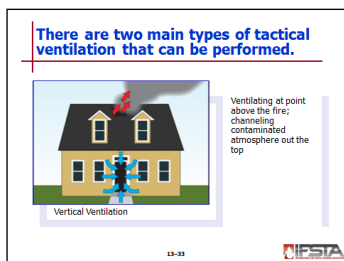
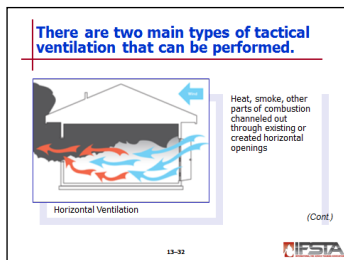
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Preparation

Introduction

- Instructor introduction
- Objectives
- Preparation Step

Presentation



Types of Tactical Ventilation

Horizontal – Any technique by which heat, smoke, and other parts of combustion are channeled horizontally out of a structure by way of existing or created horizontal openings such as windows, doors, or other openings in walls

Vertical – Ventilating at a point above the fire through existing or created openings and channeling the contaminated atmosphere vertically within the structure and out the top

Cutting a hole in roof above fire or opening existing roof access doors, scuttles, skylights

Requires horizontal inlet opening at or below level of fire

Means to Accomplish

Natural horizontal ventilation

Opening doors, windows to allow natural air currents and pressure differences to move smoke, heat out

Uses buoyancy of heated smoke and gases to draw them out through roof openings while entraining (pulling or drawing) fresh air into structure

Mechanical horizontal ventilation

Uses fans, blowers, smoke ejectors

Most often used for horizontal – May be applied to vertical

Means involve pulling smoke, fire gases out through an opening or pushing fresh air into structure and displacing smoke, fire gases

Hydraulic ventilation

Uses spray nozzle set on fog pattern to draw smoke out opening

Requires firefighters to operate nozzle within contaminated atmosphere

Disadvantage – Increased water damage to structure if done improperly

Indicators for mechanical or hydraulic ventilation

Location and size of fire have been determined

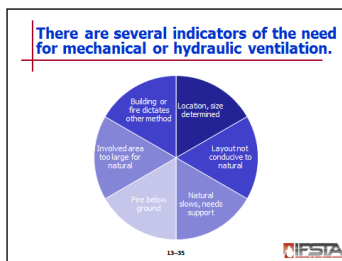
Layout of building not conducive to natural ventilation

Natural ventilation slows, becomes ineffective and needs support

Fire burning below ground in structure

Involved area within compartment so large natural ventilation inefficient

Type of building or fire situation dictates its use



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Chart Pad:

Title Page

- Name, Department, Title of Presentation

Acronym

- **L.I.P.** (Life Safety, Incident Stabilization, Property Conservation)
instructor relates these priorities to the lecture

Summary (2-4 key points)

- Instructor reviews 2-4 key points of the lesson plan to clarify uncertainties, prevent misconceptions, increase learning and improve retention

Application (1 scenario)

- The student is given a scenario where the student will apply all of the knowledge that was given in the lecture. *This is not a question*, it is merely the explanation of the scenario.

Evaluation (2 questions)

- Instructor should ask students 2 direct questions that were presented during the lesson. *Answer to the questions must be give after asking the question.*