



FIRE INSTRUCTOR I

Student Presentation Lesson Plan

1-Backdraft Basics

Outline of Instruction

Objective

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

- Recognize signs, causes, and effects of rapid fire development. [NFPA® 1001, 5.3.11]

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.

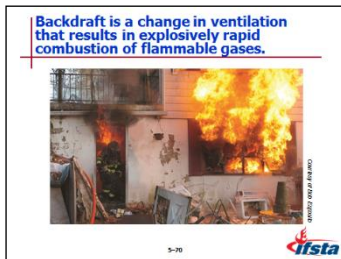
Reference Stowell, F.(2013). Essentials of Fire Fighting and Fire Department Operations (6th ed.). Upper Saddle River, N.J.: Brady Pub.; ISBN# 978-013-314080-4

Preparation

Introduction

- Instructor introduction
- Objectives
- Preparation Step

Presentation



Backdraft

Increase in low-level ventilation prior to upper level ventilation results in explosively rapid combustion of flammable gases

Occurs in decay stage – In a space containing high concentration of heated flammable gases that lacks sufficient oxygen for flaming combustion

When potential conditions exist introduction of new source of oxygen will return fire to fully involved state – Can occur with creation of horizontal or vertical opening

Consider potential for before creating any openings into compartment

Be aware of indicators

Building indicators

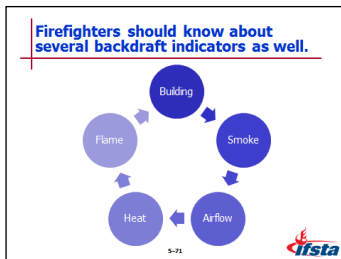
Fire confined to single compartment or void space

Building contents have high heat release rate

Smoke indicators

Optically dense smoke, light colored or black becoming dense gray-yellow – Color alone is not reliable indicator

Neutral plane rising, lowering similar to pulsing or breathing movement



Airflow indicators – High velocity, turbulent smoke discharge, sometimes appearing to pulse or breath

Heat indicators – High heat, smoke stained windows

Flame indicators – Little or no visible flame

Effects vary depending on factors

Volume of smoke

Degree of confinement

Pressure

Speed with which fuel and air are mixed

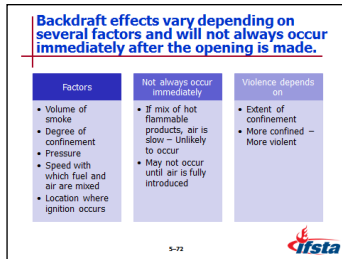
Location where ignition occurs

Will not always occur immediately after opening made

If mix of hot flammable products, air is slow – Unlikely to occur

May not occur until air is fully introduced

Violence depends on extent of confinement – More confined, more violent backdraft will be



Smoke Explosion

May occur before or after decay stage

Occurs as unburned fuel gases contact ignition source

Cooling smoke can accumulate in other areas, mix with air – If contact ignition source while in flammable range, can result in explosively rapid combustion

Violent because involve premixed fuel, oxygen

Smoke generally cool, less than 1,112° F (600° C), located in void spaces connected to fire or in uninvolved areas remote

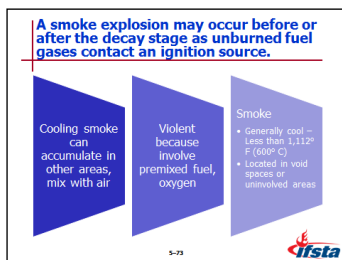


Chart Pad:

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.*