Daniel Madrzykowski, PE, FSFPE

Connecticut Fire Academy
2010 Seminar Series
Friday • December 10, 2010

Structure Fires: What You Don't Know Can Kill You

This presentation will discuss how building geometry, materials, furnishings, ventilation and firefighting tactics can influence fire growth and spread leading to untenable conditions for firefighters. Fire behavior will be described using a combination of videos and data to characterize the thermal environment that firefighters may be exposed to. Attendees will get an inside view of the fire progression through structures to compare with what they may see on the outside during size-up.

Fire behavior or fire dynamics is based on the fundamental relationship between fuel, oxygen and heat, i.e. the fire triangle. The type of fuel, the location of fuel in the room, the geometry of the fuel, building construction and ventilation can have a significant effect on the speed of fire growth and spread. Ventilating the structure can provide cooling by removing heat. But ventilating a "fuel rich" room may cause a flashover, by allowing fresh air into the structure. It is important to remember that smoke is fuel. Ventilation does not equal cooling. Understanding ventilation will lead to improved tactical decisions, such as when to use positive pressure ventilation.

Fire incidents and fire ground line of duty death incidents will be used as case studies to demonstrate the interaction of fire dynamics and fire ground tactics. This presentation is intended to provide insight to complement the fire behavior training that occurs in the training tower or the experience gained on the fire ground. Appropriate tactics to address issues of rapid fire development will be discussed.

Daniel Madrzykowski, PE, FSFPE • National Institute of Standards and Technology (NIST)

Dan is a fire protection engineer with the National Institute of Standards and Technology. He has a Masters degree in Fire Protection Engineering from the University of Maryland. He has conducted research and investigations to improve fire fighter safety. Dan received the ISFSI/Fire Engineering Instructor of the Year Award in 2009.

Course #11050 • Course fee $40.00
Class held at the Connecticut Fire Academy

All Seminar Series presentations are scheduled from 8:30 am until 4:30 pm, registration begins at 8 am. Lunch is included. Acceptance confirmation notices, with directions, will be mailed approximately two weeks prior to the start of the program. Students canceling seven days in advance will receive a full refund. Application forms can be duplicated or downloaded from **www.ct.gov/cfpc** and returned via fax or mail with payment. Additional questions can be directed to Program Manager Mark Salafia, phone 877-528-3473 ext 286 or email mark.salafia@ct.gov

COMMISSION ON FIRE PREVENTION AND CONTROL
CONNECTICUT FIRE ACADEMY

34 Perimeter Road • Windsor Locks, CT 06096-1069
860-627-6363 • Toll Free **1-877-528-3473** • Fax **860-654-1889**
Please visit our website: **www.ct.gov/cfpc**

2011 Seminar Series Speakers

Seminar Series

Chief Robert J. Moran and Lieutenant John J. Lewis

James Augustine, MD
Lieutenant Jason Emery
Lieutenant Thomas Donnelly
Captain Bill Gustin
Lieutenant Mike Wilbur

2011 Instructor Development Seminar

Christopher J. Naum, SFPE