

J2.3 A COLLABORATIVE FIRE WEATHER TRAINING ENDEAVOR INVOLVING THE NATIONAL WEATHER SERVICE AND THE NORTHEAST COMPACT

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1. INTRODUCTION

In November of 2004 the Fire Weather Working Team (now Fire Sciences Team) of the Northeast Forest Fire Protection Commission (hereafter referred to as the Northeast Compact) identified a training need for weather information and its impact on fire behavior and fire operations. To meet this need, the Fire Sciences Team partnered with the National Weather Service (NWS) to develop a fire weather training program called WxOps. This paper will examine the formation and implementation of the WxOps fire weather training course used by various fire groups within the Northeast Compact.

2. METHODOLOGY

At the Northeast Compact annual meeting (January 2005) the Fire Sciences Team and the NWS identified critical weather topics that would be a part of WxOps. An important aspect of the program was the ability to not only define these weather components, but to also emphasize the impact weather would have on fire behavior and fire operations.

For each weather topic, a PowerPoint presentation was developed complete with review questions at the end of each lesson to ensure participants understood the concepts.

A wide variety of training tools were used to teach each lesson. These included video of fire activity/behavior, software applications to visualize atmospheric variables, and internet technologies.

The WxOps training program had material that would initially require a course length of two days. The outline for the WxOps course consisted of the following: An introduction section which included a firestorm video showing the impacts of weather on fire and fire behavior, an observational data section consisting of topics such as clouds, satellites, radar, air masses, pressure systems and fronts, surface analysis, wind and stability.

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Following the observational data section was forecast information, which included the concept of upper level troughs and ridges, an examination of fire climatology in Vermont, weather patterns that have a negative impact during peak fire season, computer models, summer weather hazards, and winter weather hazards. Many of the concepts discussed in the observational data and forecast information sections were integrated into a case study from April of 2005, where weather had a significant impact on fire and fire behavior. The final topic of the WxOps course dealt with NWS operations, the role of the NWS in fire weather, products and services provided, and new technologies (i.e. online spot forecast program and graphical depictions of critical weather elements via a gridded database of weather information) used to provide pertinent weather data to fire personnel.

3. RESULTS

The first WxOps Course was held in the Fall of 2005 in Portsmouth, New Hampshire. The class mainly consisted of personnel from the Fire Sciences Team, with representatives from all New England states and several fire personnel from the eastern provinces of Canada. After each lesson given, a discussion period ensued to determine strengths and weaknesses of the lesson and what, if any, changes were needed. A small summary guide was developed to highlight key points from each lesson for fire personnel to reference if necessary at a later time.

Overall the Fire Sciences Team was rather pleased with the material and the presentation, with only subtle changes needed for the program. Fire Sciences Team members from eastern Canada, who attended the first WxOps Course, indicated a need for fire weather training in their area. The WxOps Course was a useful vehicle to accomplish this goal.

A second WxOps Course was held in Fredericton, New Brunswick (September 2006). The course remained two days in length, but revisions were made to convert units to the metric system, adjust visuals in the individual lessons to show examples of weather in eastern Canada, and incorporate weather information available on the

world wide web to meet the needs of fire personnel in eastern Canada. Nearly 80 people attended the course and once again feedback was positive. A compact disc containing the PowerPoint lessons and a printable reference guide was distributed to all who attended. Comments from attendees were used to refine some of the material in the course. In addition, the concept of converting the course into a one day session was discussed.

A third WxOps Course was held in January 2007 at the Northeast Compact's annual meeting in Portland, Maine. The WxOps course was restructured and converted into a one day session. The course outline was as follows:

- 1 – Fire Video Introduction
- 2 – Clouds and Satellites
- 3 – Radar Interpretation
- 4 – Air Masses
- 5 – Stability/Haines Index/Mixing Height and Transport Wind
- 6 – Pressure Systems and Fronts/Surface Analysis
- 7 – Wind
- 8 – Upper Levels
- 9 – Vermont Fire Climatology
- 10 – Summer Weather
- 11 – Case Study
- 12 – Web Tools

Nearly 100 fire personnel attended the one day session of the WxOps Course and it became very clear this was the optimal way to present the material. The most relevant information from each lesson was utilized to help concentrate the most important aspects of the meteorological concepts.

As was the case with the first two WxOps Courses, the incorporation of weather's impact on fire behavior and fire operations was a key component to the course. This made the lessons more relevant to fire personnel and helped produce a better conceptual model of the interactions between weather and fire.

4. CONCLUSIONS

The interactions between the NWS and the Northeast Compact led to a successful collaborative fire weather training course called WxOps. The NWS and the Northeast Compact worked closely together to define the key components needed to develop a functional training course. Positive participant feedback helped to refine and strengthen the content of the course. The incorporation of the impact weather has on fire behavior and fire operations made the course relevant and beneficial to the fire

community. Because of the partnership between the NWS and Northeast Compact, the WxOps Course is an opportunity to successfully educate and enhance the knowledge of weather within the Northeast Compact or any other fire community.

In the future, the NWS will continue to make the WxOps Course available to any fire agency in need of such training. The course will be kept relevant by making necessary adjustments to the curriculum as users needs change and/or technological changes ensue.

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