

WILDLAND TRAINING FOR STRUCTURAL FIREFIGHTERS COURSES

Analysis of the Wildland Training for Structural Firefighters Courses to Determine the
Applicability within the California Incident Command Certification System

Mike McLaughlin, Merced Fire Department

T.J. Welch, Alameda County Fire Department

Mike Despain, Fresno Fire Department

Ramiro Rodriguez, State Fire Training

Les Ramsey, Sanger Fire Department

Claudia Whitendale, Tulare County Fire Department

Analysis of the Wildland Training for Structural Firefighters Courses to Determine the Applicability within the California Incident Command Certification System

Introduction

In recent years it has been recognized that structural firefighters throughout the nation typically do not possess the skills required to operate safely on wildland fire incidents. In response to this identified deficiency, the California Board of Fire Services adopted the California Incident Command Certification System (CICCS) in 2000. The adoption of CICCS formally recognized the prerequisite training and experience requirements that were identified in the National Wildfire Coordinating Group (NWCG) 310-1 *Wildland Fire Qualification System Guide* (2006) as the minimum qualifications for the California fire service. The requirements imposed by 310-1 proved to greatly enhance the safety and abilities of firefighters who responded to wildland fire incidents. However, for many agencies, the newly adopted training and experience requirements have proven to be difficult to meet due to: 1) cost of implementation, 2) time needed to train personnel where the ability to meet existing training mandates was already being challenged, and 3) low wildland fire call volume, which prevented personnel from meeting the experience requirements. The United States Fire Administration (USFA) identified this challenge that has been faced in California, and elsewhere; as a result a comprehensive job analysis was completed. The analysis confirmed the compliance issues with the 310-1 and created the *Skills Crosswalk* (FEMA & NWCG, n.d.).

Background

The National Association of State Foresters (2003) issued a report to the United States Congress that described the challenge of wildland fire responsibilities of America's structural fire service. The report addressed the local, rural, and volunteer organizations serving communities near the wildland-urban interface. The report identified several areas where training was found to be deficient and the safety and capacity of personnel on wildland fire incidents was jeopardized (Ibid.). As a result of the Report (Ibid.), a panel was named to identify a means of closing the gap. The panel consisted of:

- NWCG member organizations:
 - Department of Interior/Bureau of Land Management
 - National Park Service
 - Fish and Wildlife Service
 - Bureau of Indian Affairs
 - U.S. Department of Agriculture/Forest Service
 - U.S. Fire Administration, and
 - National Association of State Foresters
- North American State Fire Training Directors
- International Association of Fire Chiefs
- National Fire Protection Association (NFPA). (FEMA & NWCG, n.d.)

The methodology employed by the panel was to identify the NWCG 310-1 (2006) requirements and to compare and contrast them to the NFPA minimum training requirements for firefighter 1, firefighter 2, and fire officer (Ibid.). The difference between the two standards clarified the gap that needed to be crossed. The final

product of the panel was the development of the *Skills Crosswalk*, which included the modified curriculum for: Firefighter – Type 2, Firefighter – Type 1, Engine Boss, and Strike Team Leader – Engine (Ibid.).

On August 10, 2009, the California Incident Command Certification System (CICCS) Taskforce met in McClellan (CA) where a discussion about the need to analyze and take action on the Wildland Training for Structural Firefighting courses occurred. A sub-committee was appointed to assess the Firefighter – Type 2 (G-130), Firefighter – Type 1 (G-131), Engine Boss (G-231), and Strike Team Leader (G-330) skills crosswalk courses. The objective of the assessment was to compare and contrast the content of the courses to the complete course curriculum as outlined in 310-1 (NWCG, 2006). Further, the sub-committee was directed to determine how the combination of the skills crosswalk courses and the State Fire Training Firefighter I and Fire Officer Curriculum address the NWCG (Ibid.) requirements. Lastly, the sub-committee was directed to develop a written report that outlines the assessment and the recommendations of the committee. The results of the analysis and recommendations of the sub-committee have been captured in this report.

Procedures

The methodology employed by the sub-committee was to quantitatively and qualitatively assess the CICCS training requirements included in the NWCG 310-1 (2006), which required the completion of the full wildfire courses, and compared them to the Wildland Training for Structural Firefighters courses as identified in the *Skills Crosswalk* (FEMA & NWCG, n.d.). The assessment included analysis of: course objectives, subjects/topics addressed, and the total training time per course.

Results

The results of the assessment have been organized by certification level so as to clearly articulate the gap courses' abilities to meet or exceed the CICCIS requirements. A matrix of the assessment has been included in Appendix A.

The April 2006 version of the NWCG 310-1 (2006) identified the minimum training requirements for a Firefighter Type 2 (FFT2) as successful completion of the following courses: (I-100) *Introduction to ICS* (NWCG, 2009), L-180 - *Human Factors on the Fireline* (NWCG, 2000), S-190 - *Introduction to Wildland Fire Behavior* (NWCG, 2006), and S-130 – *Firefighter Training* (NWCG, 2003). There were not any requirements for experience or other training, which supports development, identified in the 310-1 (NWCG, 2006). The G-130 - *Wildland Training (FFT2) for Structural Firefighters* (NWCG, 2008) omitted sections and/or units that were covered under the minimum training requirements as defined by NFPA 1001 - *Standard for Fire Fighter Professional Qualifications* (NFPA, 2008). The assessment by the sub-committee revealed that the combination of completing G-130 and California State Fire Training (SFT) Firefighter I curriculum meets or exceeds the course objectives established by the completion of the full wildland courses. A student who was required to complete the full S-130, S-190, and L-180 courses would have spent between 40 and 47.5 hours in class. Conversely, having recognized prior training through SFT, the G-130 course was identified as being 21 hours in length. It was the opinion of the sub-committee that the G-130 sufficiently addressed all topic areas and would greatly enhance a department's ability to meet the

CICCS training requirements for a FFT2 and has reduced the total number of training hours by more than one-half.

The April 2006 version of the NWCG 310-1 (2006) identified the minimum training requirements for a Firefighter Type 1 (FFT1) as successful completion of the following courses: S-131 – *Firefighter Type 1* (NWCG, 2004) and S-133/PMS-427 – *Look Up, Look Down, Look Around* (NWCG, 1992). To become qualified as a FFT1, a trainee had to successfully perform as a FFT2 and had to successfully complete a FFT1 position task book. Further, the 310-1 (NWCG, 2006) recommended the completion of the following courses: S-212 – *Wildland Chain Saws* and S-211 – *Portable Pumps and Water*. It is important to note that these classes have not been required for qualification, but rather have been recommended to enhance skills and knowledge of fireline personnel. The G-131 - *Wildland Training (FFT1) for Structural Firefighters* (NWCG, 2008) omitted sections and/or unit that were covered under the minimum training requirements as defined by NFPA 1001 - *Standard for Fire Fighter Professional Qualifications* (NFPA, 2008). The certification tracks through both the full course completion and through the G-131 course were designed to build-upon the FFT2 level of training and experience. The assessment by the sub-committee identified that the combination of completing G-131 and California State Fire Training (SFT) Firefighter I curriculum meets or exceeds the course objectives established by completing the full wildland courses. A student who was required to complete the full S-131 and S-133/PMS-427 courses would have spent between 48 and 64 hours in class. Conversely, having recognized prior training through SFT, the G-131 course was identified to be 17.5 hours in length. The sub-committee found that although the total

class time was reduced, the G-131 course provided a higher level of training than the traditional full-course option. In addition to S-131 and S-133 units, G-131 included a unit on size-up from the S-231 – *Engine Boss* course, two units from the S-212 - S-212 – *Wildland Chain Saws* course, the Basic Land Navigation (PMS-465) self-study, and an overview of narrow band radio communications. It was the opinion of the sub-committee that the G-131 sufficiently addressed all topic areas and would greatly enhance a department's ability to meet the CICCIS training requirements for a FFT1 and has reduced the total number of training hours by more than two-thirds.

Historically, the Company Officer or Engine Boss (ENGB) has referred to as the most important position in the fire service. The ENGB has also been the most difficult day-to-day position for a firefighter to meet the training and experience requirements. The ENGB assessment proved to be the most challenging for the sub-committee based on the breadth and depth of information required for an individual to perform in a successful manner. The April 2006 version of the NWCG 310-1 (2006) identified the minimum training requirements for an ENGB as successful completion of the following courses: S-230 – *Crew Boss* and S-290 – *Intermediate Wildland Fire Behavior*. To become qualified as an ENGB, a trainee had to successfully perform as a FFT1 and had to successfully complete an ENGB position task book. Further, the 310-1 (NWCG, 2006) recommended the completion of the following courses: I-200 – *Basic ICS*, L-280 – *Followership to Leadership*, S-270 – *Basic Air Operations*, S-260 – *Interagency Incident Business Management*, S-234 – *Ignition Operations*, S-231 – *Engine Boss*, and S-215 – *Fire Operations in the Wildland/Urban Interface*. It is important to note that these classes have not been required for qualification, but rather have been

recommended to enhance skills and knowledge of fireline personnel. The G-231 - *Wildland Training (ENGB) for Structural Firefighters* (NWCG, 2008) omitted sections and/or units that were covered under the minimum training requirements as defined by NFPA 1021 - (NFPA, 2009). The certification tracks through both the full course completion and through the G-231 course were designed to build-upon the FFT1 level of training and experience. The assessment by the sub-committee identified that the combination of completing G-231 and California State Fire Training (SFT) Firefighter I curriculum meets or exceeds the course objectives established by completing the full wildland courses. A student who was required to complete the full S-230 and 290 courses would have spent 56 hours in class. Conversely, having recognized prior training through SFT, the G-231 course was identified to be 44 hours in length, 32 hours of which were the full S-290 course. The sub-committee found that although the total class time was reduced, the G-231 course provided a higher level of training than the traditional full-course option. In addition to S-230 and S-290 units, G-231 also included units from S-211 – *Portable Pumps and Water*, S-231 – *Engine Boss*, and S-215 – *Fire Operations in the Wildland/Urban Interface* courses. To complete the S-215, S-230, S231, and S-290 courses without receiving credit for other training, the student would have been in class for 96-104 hours; with G-231, the total number of hours has been reduced to 44. It was the opinion of the sub-committee that the G-231 sufficiently addressed all topic areas and would greatly enhance a department's ability to meet the CICCIS training requirements for an ENGB and has reduced the total number of training hours by half.

The fourth and final course developed by the *Skills Crosswalk* (FEMA & NWCG, n.d.) was G-330 – *Wildland Training (STEN) for the Structural Firefighter* (NWCG, 2008). The sub-committee assessed this course from two different angles: the NWCG strike team leader requirements and the FIRESCOPE all-risk strike team leader requirements. The sub-committee identified that the G-330 and the NWCG strike team leader requirements adequately complimented one another. However, the G-330 course was found to be significantly inadequate to replace the current CICCS all-risk requirements. For example, the NWCG strike team leader training (S-330 and S-215) consisted of 52 - 56 classroom hours, the FIRESCOPE all-risk training (S-330AR and S-215 or Command 1C) consisted of 60 - 72 hours, and the G-330 course was 12.25 hours in length. It was the opinion of the sub-committee that the adoption of G-330 into CICCS would reduce the level of training for strike team leaders.

Discussion

Overall, the sub-committee believes that the *Skills Crosswalk* (FEMA & NWCG, n.d.) courses are an excellent solution for the multi-disciplinary issues facing the fire service. The FFT2, FFT1, and ENGB classes offer an enhanced curriculum that is not required when completing the full schedule wildland courses. It is the opinion of the sub-committee that the students will receive a better-rounded educational experience without needing to continuously repeat lessons that have been learned through other fire service training programs.

On the other hand, the sub-committee believes the strike team leader gap course falls short of the expectations that have become commonplace in California for this

position. The group unanimously agrees that this class is insufficient and should not be considered for adoption under the CICCIS umbrella.

Lastly, the sub-committee supports the instructor requirements as defined in the NWCG 901-1 *Field Managers Course Guide*.

Recommendations

The recommendations of the sub-committee as a result of the analysis of the Wildland Training for Structural Firefighters courses to determine the applicability within the California Incident Command Certification System are as follows:

1. The sub-committee unanimously recommends the adoption of G-130 - *Wildland Training (FFT2) for Structural Firefighters* as an equivalency to the current training requirements outlined in the April 2006 edition of the 310-1 - *Wildland Fire Qualification System Guide* and approved within CICCIS.
2. The sub-committee unanimously recommends the adoption of G-131 - *Wildland Training (FFT1) for Structural Firefighters* as an equivalency to the current training requirements outlined in the April 2006 edition of the 310-1 - *Wildland Fire Qualification System Guide* and approved within CICCIS.
3. The sub-committee unanimously recommends the adoption of G-231 - *Wildland Training (ENGB) for Structural Firefighters* as an equivalency to the current training requirements outlined in the April 2006 edition of the 310-1 - *Wildland Fire Qualification System Guide* and approved within CICCIS.
4. The sub-committee unanimously recommends that the G-330 - *Wildland Training (STEN) for Structural Firefighters* not be adopted as an equivalency course within the California Incident Command Certification System.

5. To streamline the certification and qualification approval processes beyond Engine Boss, the sub-committee unanimously recommends one of the following options be adopted in regards to G-231 and S-290 certification:
 - a. Leave the S-290 as a part of the G-231 course and direct peer review committees to accept the G-231 certificate as an equivalent to an S-290 certificate;
 - b. Leave the S-290 as a part of the G-231 course and itemize S-290 with the total number of training hours on the G-231 certificate;
 - c. Leave the S-290 as a part of the G-231 course and issue a separate S-290 certificate; or
 - d. Completely pull S-290 out of the G-231 course; treat both as separate courses.
6. The sub-committee unanimously recommends that SFT develop FSTEP courses to codify the certification process for the non-NWCG partners that will be teaching the *Skills Crosswalk* courses.
7. The sub-committee unanimously recommends that CICCIS adopt the instructor criteria for the *Skills Crosswalk* course as per the NWCG 901-1 – *Field Managers Course Guide*.

References

- FEMA, & NWCG. (n.d.). *Skills Crosswalk: Wildland training for structural firefighters*. Washington D.C.: Author.
- NAFS. (2003). *The changing role and needs of local, rural and volunteer fire departments in the wildland-urban interface*. Washington D.C.: Author.
- NFPA. (2008). *NFPA 1001: Standard for fire fighter professional qualifications*. Quincy: Author.
- NFPA. (2009). *NFPA 1021: Standard for fire officer professional qualifications*. Quincy: Author.
- NWCG. (2003). *Firefighter training*. Boise: Author.
- NWCG. (2004). *Firefighter type 1*. Boise: Author.
- NWCG. (2000). *Human factors on the fireline*. Boise: Author.
- NWCG. (2006). *Introduction to wildland fire behavior*. Boise: Author.
- NWCG. (1992). *Look up, look down, look around*. Boise: Author.
- NWCG. (2009). *National Wildfire Coordinating Group*. Retrieved September 20, 2009, from I-100: Introduction to ICS:
http://training.nwcg.gov/courses/i100/ICS_I100_online.html
- NWCG. (2006). *Wildland fire qualification system guide*. Boise: Author.
- NWCG. (2008). *Wildland training (ENGB) for structural firefighters*. Boise: Author.
- NWCG. (2008). *Wildland training (FFT1) for structural firefighters*. Boise: Author.
- NWCG. (2008). *Wildland training (FFT2) for structural firefighters*. Boise: Author.
- NWCG. (2008). *Wildland training (STEN) for structural firefighters*. Boise: Author.

Appendix A

NWCG Gap Analysis – Sub-committee Review

September 14, 2009
Fresno, CA

NWCG Fire Fighter - Type II

NWCG	S-130	S-190	G-130	SFT FFI
Identify the environmental factors of fuels, weather, and topography that affect the start and spread of wildland fire.		X	X	
Describe the contributing factors that indicate the potential for increased fire behavior that may compromise safety.		X	X	
Explain the LCES (Lookouts, Communications, Escape Routes, and Safety Zones) system and how it relates to the Standard Firefighting Orders.	X		X	
Construct fireline to required standards using various methods.	X		X	
Strengthen, reinforce, and use holding actions on a fireline.	X		X	
Extinguish a fire with or without the use of water.	X		X	
Complete assigned tasks in a safe and efficient manner.	X		X	
Describe factors in a given wildfire environment that could impact safety.	X		X	
Identify and discuss the three sides of the fire triangle.		X		X

Field Managers Course Guide Requirements

S-130	<i>Firefighter Training</i>	30 to 35.5 Hours
S-190	<i>Introduction to Wildland Fire Behavior</i>	6 to 8 Hours
L-180	<i>Human Factors on the Fireline</i>	4 Hours
	Total Hours	40 to 47.5 Hours

G-130 *Wildland Training (FFT2) for Structural Firefighters* **21 Hours**

NWCG Gap Analysis – Sub-committee Review

September 14, 2009
Fresno, CA**NWCG Fire Fighter - Type I**

NWCG	S-131	S-133	G-131	S-212	S-231
Accurately use navigation tools and maps to identify location. (PMS465)			X		
Use programmable radios and narrowband radios.			X		
Demonstrate the ability to use fireline reference tools to facilitate the communication and decision making processes.	X		X		
Describe the size-up elements in a wildland fire situation.			X		X
Demonstrate the ability to apply the standard operating procedures found in the Incident Response Pocket Guide (PMS 461).	X		X		
Demonstrate the ability to apply information found in the Fireline Handbook (PMS 410-1).	X		X		
Describe how to incorporate and maintain open lines of communication with appropriate personnel.	X		X		
List seven fire environment factors to monitor on the fireline.		X	X		
Recognize the indicators of the seven fire environment factors.		X	X		
Identify the effects of these indicators on fire behavior.		X	X		
Operate and maintain chainsaw in wildland environment.			X	X	

Field Managers Course Guide Requirements

S-131	<i>Firefighter Type 1</i>	8 Hours
S-133	<i>Look Up, Look Down, Look Around</i>	4 Hours
S-212	<i>Wildland Chain Saws</i>	24 to 36 Hours
S-231	Engine Boss	12 to 16 Hours
	Total Hours	48 to 64 Hours
G-131	<i>Wildland Training (FFT1) for Structural Firefighters</i>	17.5 Hours

NWCG Gap Analysis – Sub-committee Review

September 14, 2009
Fresno, CA**NWCG Engine Boss**

NWCG	S-290	S-230	S-231	S-215	G-231
Identify and describe the environmental, topographical, and fuel factors which influence the behavior of wildland fire.	X				X
Identify and describe the causes of extreme fire behavior, such as spotting, crowning, fire whirls, plume-dominated and wind-driven fires.	X				X
Assess fireline data and fire behavior estimations, and identify areas where fire suppression limitations exist.	X				X
Describe engine/crew boss responsibilities during mobilization, on the incident, and during demobilization.		X	X		X
Identify the hazards and risks on various incidents and describe how to mitigate them.		X		X	X
Describe wildland tactics which are appropriate to wildland fire situations and procedures to implement them through the chain of command.		X	X	X	X

Field Managers Course Guide Requirements

S-290	<i>Intermediate Wildland Fire Behavior</i>	32 Hours
S-230	<i>Crew Boss</i>	24 Hours
S-231	<i>Engine Boss</i>	12 to 16 Hours
S-215	<i>Fire Operations in the Wildland/Urban Interface</i>	28 to 32 Hours
	Total Hours	96 to 104 Hours
G-231	<i>Wildland Training (ENGB) for Structural Firefighter</i>	44 Hours

NWCG Gap Analysis – Sub-committee Review

September 14, 2009
Fresno, CA**NWCG Strike Team Leader**

NWCG	S-330	G-330	S-330AR	S-215
Demonstrate the ability to apply the Risk Management Process found in the Incident Response Pocket Guide (IRPG) to various incidents.	X	X		
Demonstrate the ability to apply appropriate tactics in various incident situations with various resources organized into strike teams or task forces.	X	X		
Describe elements of structure protection from wildland fire exposure.	X	X		X
Provide the skills and knowledge necessary for managing a Strike Team/Task Force on a variety of all-risk incidents.			X	
Identify and define Strike Team/Task Force configurations for various resources.			X	
Identify and describe how to implement Strike Team/Task Force Leader responsibilities prior to and during mobilization and demobilization.			X	
Identify and describe how to implement Strike Team/Task Force Leader responsibilities during incident activities.			X	
Identify the hazards and risk throughout the Strike Team/Task Force deployment and describe how to mitigate them.			X	
Recognize, plan for, and describe how to implement appropriate tactics in various all-risk incident situations with various resources organized into Strike Team or Task Force.			X	

Field Managers Course Guide Requirements

S-330	<i>Strike Team Leader - Engine</i>	24 Hours
S-215	<i>Fire Operations in the Wildland/Urban Interface</i>	28 to 32 Hours
	Total Hours	52 to 56 Hours
S-330AR	<i>Strike Team Leader – Engine (All Risk)</i>	32 Hours
2-215	<i>Fire Operations in the Wildland/Urban Interface</i>	28 to 32 Hours
	Total Hours	60 to 64 Hours
G-330	<i>Wildland Training (STEN) for the Structural Firefighter</i>	12.25 Hours