

**LESSONS LEARNED THE HARD WAY:  
INCIDENT COMMAND SYSTEM LEARNING AND TRAINING**

by

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I dedicate this work to the 19 fallen members of the  
2013 Granite Mountain hotshot crew.

Rest In Peace

June 30<sup>th</sup>, 2013

And to their surviving brother,

May you know peace.

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## ABSTRACT

As of April 5<sup>th</sup>, 2013, there were 5,095,275 people who had taken the ICS-100 class as an independent study online from the FEMA Emergency Management Institute. Despite the widespread use of ICS, debates continue about whether it is an appropriate tool for emergency management. While much disagreement exists, critics and proponents generally agree that *implementation* of ICS is a cause for concern and may be reducing the system's effectiveness. Though many factors could influence the implementation of the system, this thesis focuses on ICS training and learning. The theory of Situated Cognition suggests that ICS learners would learn ICS best by practicing the system in the cultural context where they would apply the system. Using the theory's three learning pillars of *Concepts*, *Authentic Activity* and *Culture*, a conceptual framework is developed and an ethnographic study of three ICS related cultural contexts is conducted. Multimode methods are used for data collection (participant observations, interviews, and document analysis) and data analysis (deductive, directed coding, and inductive, open coding, and constant comparison). Findings maintained the core of the original conceptual framework, but other elements emerged as the data was analyzed. Based on these findings, it is suggested that a lack of cultural context may be a significant factor in the ICS learning process and consequently implementation of the system as a whole. Recommendations include training ICS in-house and tailoring ICS training programs to the organizations that will be applying the tool.

## **Chapter 1**

### **LITERATURE REVIEW**

*“It’s like you’re bilingual. . .you can speak the language but you just can’t read it.” –State Trooper, commenting on ICS*

#### **1.1 Introduction**

As of April 5th, 2013, there were 5,095,275 people who had taken an ICS-100 class as an independent study class online from the FEMA Emergency Management Institute (source: email with FEMA training coordinator, April 5th, 2013). This does not include the number of people across the nation trained “in-class,” or those trained in ICS through their employer (not a FEMA-issued class) and it does not include the number of people who have taken ICS-200 through 400 level classes, either online or in-person.

The Incident Command System, commonly known and referred to as ICS, is a component of the National Incident Management System (NIMS), which is the federal government’s approach to standardizing incident management across the nation. Out of the 153 pages of the NIMS document, 67 of those pages (including appendices) are dedicated to ICS (Department of Homeland Security, 2008). This is important because government agencies at all levels are required to demonstrate compliance with NIMS in order to receive federal funding for emergency management programs. To be able to demonstrate compliance, these agencies must show that they have

adopted ICS as their chief emergency response system and that their personnel are adequately trained and can function in the system during a response.

Despite the federal mandates, there is much to learn about actual ICS implementation in emergency management. Some have suggested that ICS usage is inconsistent (Buck *et al*, 2006, pg.4; Decker, 2011 pg. 225; Jensen, 2011). Some have even debated the appropriateness of ICS as the national system for major disasters, suggesting it may not work well for such events (Drabek, 1985; Dynes, 1983; Neal, 1995; Quarantelli, 1996; Wenger *et al*, 1990).

As a former wildland firefighter, these arguments stirred curiosity, given that I have seen, first-hand, the effectiveness and efficiency of the ICS system. As many know, ICS as it is currently taught emerged from FIREScope, the system used by wildland firefighting organizations across the country. Based on this system, wildfire crews thousands of miles apart are dispatched to fires across the nation and dropped into the ICS structure seamlessly. From what I have seen in this setting, the system works.

Despite the utility of ICS in wildland firefighting, my experience with ICS in emergency management has been quite different. Though every emergency management agency I have come in contact with maintains that it is “NIMS compliant,” many of the individuals in those organizations do not know what ICS *is*, much less how to implement it. Some emergency managers I have spoken with have surprised me by making statements that ICS does not work and should not be used in emergency response. One emergency manager went on to say that there was a discrepancy between the way the system is taught and the way the system is implemented “in the field.” Again, this seemed contrary to my experience with ICS

and I began asking other emergency managers about their thoughts on or experience with the system. In general, most agreed that ICS was not proving effective in the realm of emergency management. When I asked them why not, the most common response was that people are not *learning* the system.

Because I received this answer from multiple sources, I decided to look into ICS learning and see what differences, if any, there were between how ICS is learned in the wildland firefighting context and how it learned in the emergency management context. The following sections detail the study I conducted on ICS training and learning, starting with the remainder of this chapter where I took a closer look at the ICS debate and the significance of implementation to that conversation. The final section of this chapter explains the theory of Situated Cognition and how *Culture* may have significant bearing on an ICS student's learning experience. Chapter 2 explains my multimode, qualitative methods used to collect and analyze data on ICS trainings and how I use my previous experience in wildfire ICS training to compare the experiences. My findings are demonstrated in Chapter 3, including an adjusted framework that emerged during the data analysis and I discuss these findings and my conclusions in Chapter 4. In Appendix A, I share my experiences with learning ICS in the wildfire training context so that readers may have a clearer picture of my basis for comparison.

First, however, we turn to the conversation surrounding the Incident Command System.

## **1.2 The ICS Debate**

The history of ICS is well-documented and can be found in nearly any piece of literature on the topic: The system was developed in California in the early 1970's

after a particularly devastating wildfire season. Agencies responding to the fires were unable to manage the emergency effectively for many reasons, but the overarching issue was an inability to coordinate and integrate their resources. The FIREScope program (Firefighting Resources of California Organized for Potential Emergencies) was established and from the program came the original version of the Incident Command System. Since then, a number of iterations and alternate versions manifested to address emergency management needs in wildfire and various other disciplines -- Brunacini's IMS (Incident Management System) for structural firefighting, LEICS for Law Enforcement, HICS for hospital incident command; all of these variations contributed to the design of the current ICS written into NIMS.

However, arguments from the ICS debate suggest that ICS has not been as effective in emergency management as it has been in wildfire management (Baltic, 2004). In fact, the primary criticism of the system is that it is not an appropriate tool for general emergency response.

The initial critique of ICS comes from the early founders of disaster sciences whose main complaints focus on the "command and control" style of ICS (Dynes, 1983,1990; Quarantelli, 1996; Wenger, 1994). According to these scholars, the rigid bureaucracy of "command and control" is not well suited for the emergent behavior that is indicative of a disaster situation. They claim a single "incident commander" is not suitable because disasters regularly affect multiple jurisdictions and involve multiple agencies; they argue one commander cannot effectively make decisions and design objectives for the all organizations responding to an incident.

Other scholars argue that emergent behavior plays too great a role during a disaster for “command and control” to be effective (Buck *et al*, 2006; Neal and Phillips, 1995). Emergent behavior can take the form of *ad hoc* developments, either of groups or plans that are not congruent with the assumed “prepackaged” nature of ICS. Unsolicited volunteers and self-dispatched resources are ready examples of emergent behavior immediately following disaster impact. According to the critics, “command and control” does not allow for these resources to be integrated into the system (Dynes, 1994; Neal and Phillips, 1995; Quarantelli, 1996; Wenger, 1990).

One reason why integration of emergent resources is viewed as difficult is because ICS is regarded as needing extensive training or experience. In a study on volunteer firefighters, the ICS training required of the firefighters was seen as an impediment due to the limited time volunteer firefighters have to dedicate to such requirements (Jensen & Yoon, 2011). Another study discussed the importance of training in maintaining cohesion of ICS teams, as well as the difficulty integrating emergency volunteer organizations into an ICS structure owing to insufficient ICS training (Buck *et al*, 2006).

ICS critics also raise concern about using a system developed specifically in the context of one type of hazard and instituting it as “all-hazard” management (Buck *et al*, 2006; Lutz and Lindell, 2008; Wenger *et al*, 1990). They believe that a system designed in the context of managing one particular hazard (wildfire) is not necessarily transferable to “all-hazards.”

There are advocates of ICS, however, who offer points and counterpoints in defense of the system. For instance, a number of defenders suggest ICS is more flexible than the critics acknowledge and cite the system's designed capacity to expand or shrink with the size of the incident (Bigley and Roberts, 2001; Deal *et al*, 2010; Moynihan, 2007; NIMS, 2008). If a small incident turns into a large one, resources can be added to the system as needed or as an incident winds down, resources can be subtracted (NIMS, 2008).

Furthermore, while the system may take time to set up initially on-scene, once instituted, the structure of the system provides for very efficient and effective communications, resource management, and agency coordination (Moynihan, 2007).

In fact, *agency coordination* is addressed in a number of documents and articles. Many ICS proponents submit that agency coordination is what the system was designed to do (Cole, 2000; Irwin, 1989; National Wildfire Coordinating Group, 1994; Strambler and Barbera, 2011). These contributions provide empirical knowledge and conceptual work that show that the design of ICS was one of a multi-resource coordination system. Specifically, they point to the inability of the various response organizations to coordinate in the management of the disastrous fires in California experienced in the 1970s. As a result, ICS creators made multi-agency coordination a priority capability for the system. This perspective suggests that, ICS was explicitly designed to incorporate multiple resources from varying agencies and goes on to suggest that great pains were taken to develop a system that was conscious of varying agency needs.

In addition to the academic contributors, most practitioners who have written on this subject insist on the functional virtues of ICS (Haney 1990; Hansen 2006; Deal *et al* 2010; Decker 2011). They submit that not only does this tool offer flexibility, efficiency, and organization to address chaos, but the “management by objectives” philosophy on which the system is based allows autonomy for system users while maintaining unity across resources. The table below illustrates the arguments on either side of this debate.

Table 1. Major Arguments in ICS Debate

Authors/Citation	Weaknesses
Quarantelli, 1996	The "command and control" model of ICS that is based on centralized authority is inappropriate for disaster response because response efforts are usually community oriented. Pg. 12
Dynes, 1994	"It is true that organizations based on the para-military model have considerable difficulty in "absorbing" volunteers because they cannot easily incorporate them into their rather rigid rank and authority structure." pg. 155
Wenger, 1990	1. Lack of ICS implementation consistency between organizations 2. Information is lost during the changing of command 3. ICS does not coordinate multiple agencies well 4. Does not integrate volunteer agencies well 5. In small incidents, ICS facilitates a deployment of too many resources 6. "ICS does not solve common issues with communication and coordination common of a disaster site." 7. "the system does not solve the problems of coordination among responding units." 8. ICS does not transfer to community-based organizations easily



Table 1. continued

Neal and Phillips, 1995	". . .command and control approaches advocate non-use of emergent groups . pg. 334 "However, we advise that emergency managers not take the command and control approach. First, its theoretical argument is weak. Second, its supporting empirical data base is diminutive. Finally, the methodology used for supporting the few command and control hypotheses is not strong." pg. 335
Jensen and Yoon, 2011	Volunteer firefighters require extensive ICS training, for which they do not have much spare time.
Jensen, 2011	The intent of NIMS cannot be fulfilled because implementation behavior is too inconsistent throughout the U.S.
Buck <i>et al</i> , 2006	"It cannot incorporate individual and collective volunteers that are not part of the official first responder community and would not be willing or able to integrate themselves into an ICS structure." pg. 15
Lutz and Lindell, 2008	Addresses the functions of ICS, how they work in firefighting and how this may not be applicable in other hazards Pgs. 124 - 125
<b>Strengths</b>	
Bigley and Roberts, 2001	Study provides evidence for flexibility and high-reliability of ICS.
Deal <i>et al</i> , 2010	Book details the value of ICS outside of the response phase
Moynihan, 2007	Submits that ICS is not a true hierarchical system and is actually a hybrid between a network and a hierarchy, granting it more inherent flexibility than critics say it has. Pg. 2 ICS takes time to set up on scene initially, but once initiated, provides for efficient and effective communications, resource management, and agency coordination. Pg. 27
NIMS, 2008	Upholds flexibility as one of its key principles. Pg. 6
Cole, 2000	Chartered by the U.S Congress in 1972, the FIRESCOPE coalition was charged with a national mandate to develop a system for multi-agency coordination of complex emergencies that exceeded the capabilities of any single jurisdiction (FEMA, 1987).pg. 207
Irwin, 1989	One of the design criteria for ICS was "It must provide for effective operations at three levels of incident character: 1)single jurisdiction and/or single agency; 2) single jurisdiction with multiple agency support; and 3) multi-jurisdictional. and/or multi-agency support." pg. 102

Table 1. continued

National Wildfire Coordinating Group, 1994	Throughout this document, the importance of interagency interoperability is stressed.
Strambler and Barbera, 2011	"Part IA–Policy: 'Establish a coordinational concept that can be fitted to the legal, procedural, and political requirements and constraints of all agencies' (MRC&SDC, 1974, p.1-1)." pg. 5

Many of the concepts and claims shown in the table above re-emerge throughout much of the disaster studies and emergency management literature. Yet, one issue in particular appeared in almost every article included above, regardless of the author's position in the debate, and that is the issue of *Implementation*.

Specifically, *implementation* is seen as a problem in that ICS does not work if not implemented completely.

Some authors explicitly identify incomplete implementation as a cause for system failure (Buck *et al*, 2006 pg. 21; Lutz and Lindell, 2008 pg. 133; Moynihan, 2007 pg. 38). A later article by Moynihan highlights a specific case study in which ICS broke down due to lack of cohesive implementation by responders from different agencies (2009).

Published practitioners cite implementation as a primary indicator of system failure or ineffectiveness (Cole, 2000; Decker, 2011; Deal *et al*, 2010; Haney,1990). For many of these practitioners, their primary argument is that critics of ICS do not

have experience with the system and fail to see that the primary cause of system failure is incorrect implementation.

Examples provided by one critic illustrate instances of ICS not being effective due to the responders not implementing any or all of the system (Wenger *et al*, 1990). Such an example is also provided in a study published in 2001, where an interviewee in the study describes the failure of his comrades of not understanding that ICS is more than “filling out the boxes” (Bigley and Roberts, pg. 1287). Other authors acknowledged in their article the opinion of practitioners that “deviations from standard operating procedures create problems” (Neal and Phillips, 1995 pg. 335). Though these authors later go on to advocate against “command and control models” for emergency management, they do not refute that implementation is an issue.

Perhaps the most compelling case to suggest that implementation is a concern associated with ICS however, is the inconsistency with which ICS/NIMS is implemented across the country. This inconsistency is documented and analyzed in a 2008 study that provides empirical evidence that implementation of this system is inconsistent at best (Jensen, 2011). Though this study specifically addressed NIMS implementation, ICS effectively makes up the largest portion of NIMS – out of the 153 page document, ICS makes up 67 of those pages (Department of Homeland Security, 2008).

These examples point to a conversation that has not yet been directly addressed in the broader ICS discussion. System critics and advocates ostensibly agree that implementation, specifically *complete* implementation, factors in to whether the

system works or not. To date, *none of the major articles in the debate contend this point*. Nevertheless, there has been no systematic evaluation of the degree of ICS implementation and how it impacts ICS effectiveness. Furthermore, there is no consensus on *why* implementation is a factor. Critics attribute it to an inherent failure of the system and advocates believe it to be a failure of system users.

This distinction is important. If implementation is indeed a critical factor in ICS effectiveness (or ineffectiveness), conversations should shift away from the appropriateness or inappropriateness of the system and should begin to focus more on the feasibility of improving its implementation. Ultimately, the implementation of ICS warrants greater scrutiny.

With well over 5 million people trained in the system from online courses alone, not to mention the organizations we know that conduct their own in-house training (fire, law enforcement, hazmat), there appears to be ample opportunity for people to learn how to use this tool. The question is what separates those who learn it from those who do not.

### **1.3 Situated Cognition**

The theory of Situated Cognition serves as the theoretical basis for this analysis of ICS training and learning. This theory, developed in the late 1980's expressly addresses learning of skills or knowledge that have to be practically applied by working adults.

Situated Cognition is based on the idea that learning is the process of an individual interacting in and with a situation (Allal, 2001; Brown *et al*, 1989; Greeno, 1998; Lave, 1988, 1991; Lave and Wenger, 1991; Kirsner and Whitson, 1997; Russ-Eft *et al*, 2011). Theorists of situated cognition assert that people learn best when they perform the functions they are attempting to learn when they are trained or experienced in the actual context where they will be using them. Brown *et al*, present three interdependent pillars of this type of learning: *Concepts*<sup>1</sup>, *Authentic Activity*, and *Culture* (1989). They suggest that for a person to truly learn, they must encounter *Concepts* through *Authentic Activities* in the actual *Culture* in which they intend to apply their knowledge.

Consider the example of a foreign language student. In many cases, a student wishing to learn a foreign language signs up for a class, acquires the class materials, attends class on a predetermined schedule, learns basic language mechanics, and practices in the classroom with the instructor and other students. The instructor likely encourages the students to speak only in the new language and to find ways to practice the language outside of the classroom. Per Situated Cognition, what the instructor is encouraging the student to do is to become *immersed* in the experience of speaking the language, because theoretically speaking, it is not until the student is *immersed* in an

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<sup>1</sup> For the remainder of this document, the word *Concept* written as such will refer to the Situated Cognition pillar. Written any other way will indicate a general use of the word, or as otherwise indicated by the surrounding context.

experience of practicably *using* the language that the student learns to speak the language well.

Now consider this theory applied to the ICS student. Like the foreign language student (and to many ICS *is* a foreign language!) those attempting to learn ICS attend class, acquire the manuals, recite the litany of ICS positions and terms, and walk through scenarios applying the terms and concepts. According to the theory, the ICS student too, must become immersed in the experience of *using* ICS in order to learn to use the tool well. They must apply the *Concepts*, through *Authentic Activity* within the *Culture* in which they will be using the tool. The following are elaborations on these three pillars in the ICS context.

### **1.3.1 *Concepts***

As mentioned above, in the classroom, the foreign language student learns basic language mechanics such as vocabulary, sentence structure, and pronunciation (*Concepts*).

So, too, does the ICS student learn *Concepts*, such as the basic sections of the ICS structure, what is considered “plain speak” or “clear text,” “chain-of-command,” and the names for specific positions within the ICS structure. Such *Concepts* appear in every class, no matter the format or level and are generally considered common use ICS *Concepts*.

For this study, I needed to document what *Concepts* were taught in the courses and determine whether these *Concepts* were applicable to ICS *implementation*. This

would mean that I would, of course, be comparing in part, retroactively to my experience in wildfire ICS training. Another part of this determination would depend on how these *Concepts* were applied in class and through what *Activities*.

### **1.3.2 *Authentic Activity***

All courses involve some sort of activity, be that activity a lecture, a discussion, an assignment, etc. In Situated Cognition, for students to truly understand a *Concept* and be able to apply it in their work later, they must learn it through what Brown *et al.*, call “authentic activity.” These authors define *Authentic Activity* as “the ordinary practices of the culture” (1989 pg. 34). Other theorists provide more detailed definitions:

. . .for the brain to make meaningful connections, learning needs to be tied to physical, embodied experience: “The brain’s physical responses to the sensory data are recorded—literally, embodied— as experience, hence accessible to reconstruction as memory; without such physical responses, there is no basis for constructing meaning. (Merriam, 2008 pg. 95)

For our foreign language student, this means that the student must practice speaking the language in order to be able to recall later how to speak the language.

“Normal” activities for a foreign language course usually consist of classwork, reading and writing assignments, reciting words or phrases, and exams. To gain immersive experiences, students are often asked to participate in *Authentic Activities*, such as using only the new language in the class or to attending an out-of-classroom-practicum.

In many ways, the experience of the ICS student is essentially the same: the instructor teaches the *Concepts*, and then asks students to either complete the assignments in the student manuals, talks through scenarios with the class, and then in most instances, asks students to complete a test. In some cases, students engage in activities in the form of exercises of some kind, in order to demonstrate that they understand and know how to use certain ICS *Concepts*.

As illustrated previously, a foreign language student learns the language by engaging in dialogue in the language she is attempting to learn. An ICS student theoretically learns ICS by practicing use of ICS. Conversely, both the student's learning of *Concepts* and her performance during activities in a classroom setting places the learner in an abstract environment where the problems to be solved and the information to be acquired are predetermined. Thus, much like the foreign language student, ICS learners need *Authentic Activity* to understand the pertinent *Concepts*.

In any case, opportunities for *Authentic Activity* in emergency management do not present themselves with predictable regularity. Exercises such as drills, table-tops and simulations become the closest representations of *Authentic Activity* to learn ICS. This underscores the usefulness of ICS courses, because it is quite likely that they are the primary means and environment for learning ICS and thus they make possible the experience of *Authentic Activity*.

According to the Situated Cognition theory, however, *Authentic Activity* must take place in the *Culture* where the *Concepts* will be applied.



### 1.3.3 *Culture*

It is this third pillar, *Culture*, that provided the greatest challenge for developing a framework for this study. I first had to ask myself: *What is the Culture in which an ICS learner must operate to truly learn ICS?* Ultimately, I defined three cultural contexts for this study: 1) the temporary cultures that emerge in ICS trainings, 2) the expression of the culture of an organization during day-to-day operations, and 3) the expression of that same organization's culture during emergencies.

First, it is important to note that whatever ICS *Culture* may be identified, the very nature of ICS is one of a temporary and *situational* system. ICS is not a tool being applied by one individual, one organization, or even by one nation (Jensen shows in her 2011 article that the goal of nationwide uniform application has yet to be reached.) Indeed, the very conditions that helped to create ICS (a devastating fire season), that continue to shape ICS (various events and disasters), and that are called for in implementation and nature of ICS have always been *situational*. Even if all governments and organizations at all levels began using the system today in its entirety, every application of this tool would be different due to the needs and available resources for the incident as every incident is different; different hazards, different objectives, different agencies, different partners, different communities, and even different parts of the ICS organization are more necessary than others given each case or event. Response to a chemical spill on an interstate highway requires a different ICS application than a response to a tornado devastated community, or a gunman on the loose after a campus shooting. The impracticality and perhaps

impossibility of identifying a single ICS culture is why I chose to define three different, temporarily-based cultures.

Furthermore, ICS is often implemented in a multi-agency or multi-multiorganizational response. A single organizational culture becomes one of many or rather, a component of what Bigley and Roberts identify as a “temporary organization” – a composite of the agencies and organizations responding to the emergency (2001). Many ICS courses seem designed to mimic this composite situation, as often times various agencies are represented in a single course. I took this into account during the study of my first identified cultural context – the culture of the ICS classroom. This is the crux of the research because this is where the assumed breakdown is for people in attempting to learn the system.

The ICS training classroom also qualifies as a “temporary organization” as the participants of a class, much like responders to an emergency, come together to accomplish a set of objectives, and then disperse once those objectives have been met. Additionally, like the multi-organizational nature of an emergency response, ICS courses often have many agencies represented.

Individual organizations, such as a fire companies or emergency management agencies, likely have their own ICS. To stay true to the theory of Situated Cognition, it is within these *Cultures* that learners would need to participate to learn ICS. However, these individual ICS *Cultures* likely manifest primarily during incidents or emergencies. Therefore, the second cultural context, was that of *organizations during emergencies*.

The third type of cultural context I identified were the expressions of daily cultures of the individual organizations that would be represented in the ICS classes. These *Cultures* were chosen in order to identify any crucial elements of *Culture* during daily operations. If such crucial elements could be identified, then it could be determined if these elements were present during either of the other two identified cultural contexts. However, if a participant takes a FEMA ICS course online, at their kitchen table, does the term *Culture* even apply?

Before attempting to answer this question, it was first necessary to clarify what *Culture* means in the realm of Situated Cognition and how this applies to ICS learning. Unfortunately, Brown *et al* do not explicitly define *Culture* in their article, but the general idea from their work suggests that *Culture* is the **common language, behavioral norms, beliefs** and **values** shared by a group of people in a specific context or situation (1989). In an effort to integrate their *Culture* characteristics into a more tangible definition, Richard L. Daft, provides a similar overall statement about organizational culture. He writes: “Culture is the set of **values, norms, guiding beliefs, and understandings** that is shared by members of an organization and taught to new members as correct” (2008, pg. 361). We see that both definitions cite **values, beliefs, and norms** in their general concepts. Both identify **language** as well, though Brown *et al* include it with their general concept and Daft identifies it as one of four “important observable aspects” of an organization’s culture: *Language, Symbols, Stories, and Rites and Ceremonies*. Daft further breaks down “Rites and Ceremonies” into four types: “*Rite of passage* facilitates employees into new social roles, *Rite of*

*enhancement* creates stronger social identities, *Rite of renewal* denotes training and development activities that improve organization functioning, and *Rite of integration* creates common bonds and good feelings among employees and increase commitment to the organization” (2008, pg. 363 – 364). I applied these “observable aspects” to the three identified cultural contexts to try to determine if any patterns or themes presented themselves in the data. Specifically, I wanted to identify the significant examples of these in ICS trainings and then within individual organizations identify any disconnections or obstacles in ICS learning. I also examined practices or “affordances” as Gibson states, which exist to move learners beyond these obstacles and which allow them to understand ICS complete implementation and effective use (The Theory of Affordances, 1977). For *Rites and Ceremonies*, I looked at common organizational practice such as hiring processes, initiations, awards ceremonies, and special events. For *Language*, I looked for instances of jargon, slang, or organization-specific terminology. I looked for logos, images, objects of significance as well as important people or ideas when identifying *Symbols* or *Tools*. *Stories* are self-explanatory but I identified these as any anecdotes or common examples used to illustrate a point. This set of sensitizing concepts – *Concepts, Authentic Activity, Culture, Stories, Language, Rites and Ceremonies, and Symbols and Tools* – is the framework with which I approached my data in attempts to determine if a lack of cultural context in ICS trainings is indeed why the participants are not learning the subject matter.

These sub-elements, *Language, Stories, Symbols and Tools*, and *Rites and Ceremonies*, along with the primary elements, *Culture, Authentic Activity*, and *Concepts* make up the conceptual framework for my study. Using these, I examined my data through the theoretical lens of Situated Cognition to determine if these elements were present or missing in my experiences in ICS trainings.

As discussed in earlier sections, many ICS critics believe ICS will not work in emergency management due to flaws in the system but evidence, some provided by the very same critics, suggests that there are not systematic flaws but flaws in the implementation of the system. Conversations with practitioners led me to the idea that the system may not be implemented effectively because people are not *learning* the system effectively. The next section describes the study I conducted to examine ICS courses to see if any conclusions could be made about *why* people may not be learning the system.

## **Chapter 2**

### **METHODOLOGY**

#### **2.1 Overview**

Building on the ideas presented in the introduction and literature review, my study focused on three cultural contexts: 1) the temporary culture that emerges in ICS trainings, 2) the expression of an organization's culture during day-to-day operations, and 3) the expression of an organization's culture during emergency operations. To understand participants' experiences, including opinions, feelings, and general thoughts, I decided that a qualitative methods approach was most appropriate for this study (Strauss and Corbin 1990).

As is required by qualitative inquiry, I remained open to emergent pattern and themes, but my initial approach to understanding the role of these different cultural contexts on training and learning was driven by certain questions: 1) What kind of cultural variations exists within ICS trainings? 2) What influence does that culture have on learning? 3) How does the culture of the temporary training settings resemble or differ from the context in which the users implement the ICS tool?

Because I wanted to see if there were any critical components of an organization's culture that were present during normal operations that were not present during emergency operations, I also explored 4) What are the characteristics of the

contexts in which users are implementing the ICS tool during emergencies? I reviewed organizations' day-to-day operations to further explore the critical qualities of those *Cultures* that influence ICS learning. FEMA ICS trainings are attempting to reach different audiences in the same venue. If ICS courses are designed to represent the cultural context in which the user will be applying the tool, I first needed to understand what cultural context needing to be represented.

Because *Culture* was a central focus, the approach for this study was one of ethnographic inquiry. "Ethnographic inquiry takes as its central and guiding assumption that any human group of people interacting together for a period of time will evolve a culture" (Patton, 2002, pg. 81). Though the "periods of time" for the cultural contexts studied here are temporary in nature, it was the *emergent culture* or the *expression of a culture* during these periods that was a central focus.

Using the conceptual framework described at the end of the section on Situated Cognition, *Concepts, Activity, Culture, Symbols and Tools, Stories, Language, and Rites and Ceremonies*, I concentrated on these seven identified elements as I went through the data collection process.

## **2.2 Data Collection Overview**

To collect data for this study, I used multimode methods that triangulated information from participant observations of ten different ICS courses, their respective training materials, and 25 in-depth, semi-structured interviews. I wanted to get as close to the source of information as possible and thought the closest I could get was

to *be the source*. Therefore, I conducted participant observations of ICS trainings. As a basis for comparison, I finished the data collection with a retrospective consideration of my previous experience in wildfire ICS trainings (documented in Appendix A).

All data collection began with, and thus was directly influenced by the identified trainings. Initially, my searches focused on courses taking place within the state of Delaware but wanting to gain a broader perspective, I opened my searches to surrounding states – New Jersey, Pennsylvania, and Maryland. I was able to attend at least one class in all the surrounding states.

For the participant observations, I observed a variety of courses, spanning the four ICS level, 100 – 400, from various training entities, to in-class courses, and online courses that were intended for specific professions (as opposed to the general format that was supposed to be applicable to all professions). These variations allowed for a broader scope of ICS trainings, but obviously did not cover all ICS trainings everywhere.

From these courses, I sampled for interviews. I knew my experience alone would not provide an adequate assessment of the courses and I decided to include interviewing as a data collection method. As Patton aptly states, “We interview people to find out from them those things we cannot directly observe. . . The fact is that we cannot observe everything” (2002, page 340). Not only can we not *observe* everything, but different people bring different experiences, which lend to different perspectives, which bring to light thoughts, feelings and ideas that may not have been thought or felt by the observer.



My third type of data source, course materials, was also linked to the trainings . From previous experience with ICS trainings, I knew the materials, such as manuals, booklets, and print-outs that accompanied each course would be rich with data such as *Concepts, Symbols and Language*.

Through these sources, I examined the cultural elements of *Language, Stories, Rites and Ceremonies*, and *Symbols and Tools* to determine the similarities and differences between the various cultures and what influence these components may have on learning. Details on all of these methods are presented below.

### **2.2.1 Participant Observations**

Participant observations were an obvious method choice for this ethnographic study. To understand the *Culture* of ICS classes and what affect this context may or may not have on learning, the most data rich source for this information would be the observation of my own experience.

The most complete form of the sociological datum, after all, is the form in which the participant observer gathers it: an observation of some social events which precede and follow it, and explanations of its meaning by participants and spectators, before, during, and after its occurrence. Such a datum gives us more information about the event under study than data gathered by any other sociological method. Participant observation can thus provide us with a yardstick against which to measure the completeness of data gathered in other ways, a model which can serve to let us know what orders of information escape us when we use other methods. (Becker, 1978, p. 76)

Specifically, what participant observations provide better than any other data collection method is *context*, and cultural *context* is one of the primary foci of this study. As I am intending to identify possible generalizations about ICS trainings, it is necessary that I am exposed to the context about which I will be generalizing, including components of context that may not immediately be obvious but play an important role, such as the physical arrangement of the classrooms, or internalized notions about pressures or expectations (Wilson, 1977, p. 247).

Selecting ICS courses consisted of “mixed purposeful sampling” that combined elements of criterion sampling (establishing criteria for data sources to meet) and opportunistic sampling (sampling sources as they became available during the study) (Patton, 2002, pg.244). I sought to observe at least 10 ICS courses and the criteria for my classes were that they needed to be either 1.) FEMA ICS classes online, or 2.) Any level of available ICS courses within a 70 mile radius of Newark, Delaware. Through the course of the data collection process, I took advantage of opportunities (opportunistic sampling) to attend in-class courses as I learned about them.

I began by identifying ICS trainings within the state of Delaware. Observations of wildfire ICS trainings were intentionally limited in efforts to mitigate against any further bias from the perspective of this discipline, though I did observe one of these courses. Government agencies websites were scanned for any upcoming ICS courses. Then, I conducted a simple search through an online search engine with key words such as “ICS training course,” “Incident Command System Training” “ICS

100,” “ICS 200,” “ICS 300,” and “ICS 400.” For a couple of classes, I was connected to the training instructor through a colleague and gained access to their courses.

Once I had identified courses of interest, I contacted the agency or organization conducting the course and explained that I was conducting a study of ICS courses and wanted to attend their class as a participant. Every person in an agency with whom I made contact agreed to allow me to observe their training, though in several cases I had to assure them that my study focused more on the course itself and not their training style or ability. There were agencies or organization from whom I never received a reply, but one attempt to contact each organization was all I made.

All told, I observed 10 ICS trainings; two courses were taken online from FEMA’s independent study program – ICS 100 for Schools and ICS 200 for Healthcare/Hospitals, five were taken from government agencies – ICS 100 through ICS 400 and three were taken from an emergency management consulting agency – ICS 100, 300 and 400. The guide that I used for these observations is located in Appendix B.

When I attended the courses, I arrived 10 – 20 minutes early to find a spot in the classroom that had a wide view of the room. On the first day of each class, with the permission of the instructors, I announced myself to the rest of the participants, explained who I was and what I was doing. I then let them know about the interview sign-up sheet I had placed next to the course sign-up sheet so they would know its location for the duration of the course. As I found out, the longer the sign-up sheet

was available, and the longer the other participants had a chance to talk with me and build some trust, the more names turned up on the sign-up sheet.

For the duration of each class, I made notes about the specific items related to my sensitizing concepts: *Concepts, Activity, Culture, Symbols, Tools, Stories, Language or Rites* and *Ceremonies*. For example, I noted items hanging on walls, like informational posters, or awards, equipment, or what images were displayed in the presentation slides, or the topics discussed by the other participants. Items such as these fell under the *Symbol* category. Any stories told in class by the instructors or the participants were documented, as were any tools used by the instructors or the students. As Patton explains, “. . .the participant observer employs multiple and overlapping data collection strategies: being fully engaged in experiencing the setting (participation) while at the same time observing and talking with other participants about whatever is happening” (2002, pgs. 265-266).

I also made note of any significant moments in class. For instance, in one class, the instructor was asking for examples of information that might be shared in a briefing from the acting Incident Commander to the oncoming Incident Commander. One participant stated that budget might be a piece of information but this was not an answer that the instructor was looking for and so the instructor tried to explain to this participant as to why. When the participant expressed disagreement with the instructor, a few other participants tried to further explain why a budget would not be a piece of information included in such a briefing, but the more people who tried to explain, the more the first participant became agitated, and eventually, he began

making loud, sarcastic remarks and stated that he was “just trying to contribute to the discussion.” Not only did I make notes about the moment, but I also noted my own discomfort in the situation, as well as the actions or comments of the players involved in the scene.

Notes were also taken on the class proceedings, the *Concepts* and activities presented in class and any of these that seemed difficult for course participants to understand or instructors to explain, as indicated by participant and instructor behavior and attitudes. Specifically, special attention was paid to cultural indicators such as *Symbols, Rites and Ceremonies, Language, and Stories*. Per Patton’s description, I made a point to converse with other students both during the class activities and breaks and made note of any significant pieces of information that came from these conversations.

After each day of observation, the day’s hand-written notes were scanned and stored as PDF files and any unfinished thoughts were expounded upon and added to the file prior to scanning. Notes were taken in a journalistic style using thick description as described in Patton to consolidate the information for future analysis (2002, pgs. 437-440).

### **2.2.2 Interviews**

The interviews extended from the observations. Because I wanted to understand individual or shared perspectives of ICS learners other than my own, I also used in-depth, semi-structured interviews, in order to collect data. Though participant

observations are the best method for gaining context, interviews provided opportunities for a more personal encounter that drew each individual's own observations and narratives (DiCicco-Bloom, 2006). Particularly, in-depth, semi-structured interviews provided both the reliability of a standardized question set for each interview participant and the flexibility to explore areas of interest with each individual (Patton, 2002). Additionally, I wanted to limit the bias to the data from participant observations and input from other training participants provided a source of other perspectives.

To sample, I chose to let course participants self-select by signing up on the previously mentioned sheet placed next to the course sign-up sheets. The information provided was used to attempt to contact each person and only one initial attempt was made. If the person responded, an interview was set up at a time and place of their convenience. If the person did not respond, they were not contacted again so as to respect their right to not participate. Prior to the interview, every participant was sent a copy of the interview questions and the consent form (located in Appendix D) in an email that explained that prior to the interview, the consent form would be reviewed and one copy would be signed and returned and one copy would be for them to keep. No one refused to interview after reading the consent form, though one participant declined audio recording. In this case, I took more detailed and more extensive notes during the interview.

Using the semi-structured method described in Patton's book, the interviews mostly followed the interview guide (located in Appendix C) to maintain consistency

across interviews, although every interview contained probes and spontaneous questions based on a response to a question from the interview guide (2002). All interviews but one were audio recorded with the express permission of each participant (as indicated in the consent form) and hand-notes were taken during all interviews. During the interviews, I noted instances of any *Concepts, Activities, Culture, Symbols and Tools, Language, Stories, and Rites and Ceremonies*. Additionally, if the interview participant emphasized ideas or *Concepts* while speaking, or repeated any words or phrases, I made note of this. As I progressed from one interview to another, I also noted conceptual elements that spanned interviews or repeatedly emerged in the conversations.

Twenty-five in-depth, semi-structured interviews were conducted. Professional disciplines of the participants in the interviews varied -- there were eight law enforcement professionals, six education professionals (primary, secondary, and college levels combined), four government emergency management professionals (state and local), two private emergency management professionals (consultants), two from a department of transportation, one from a department of agriculture, one from a department of health, one structural firefighter, one wildfire fighter, and one rehabilitation facility professional.

### **2.2.3 Documents**

Additionally, I conducted a document analysis of student materials from the trainings I attended. From previous experience, I knew the materials would be rich in

data as they offered formal representations of the classes, capturing on paper such cultural elements as *Concepts*, *Symbols* (such as images), and *Language*. Because each course provided student materials, all materials were analyzed and thus, the sample comprised all student materials provided in the courses.

Aside from the two online independent study courses and the one department of forestry course, the class materials consisted of books that were essentially printed copies of the FEMA issued power-point presentations; if I had missed any of the slides during the courses, it would be contained within the student manuals. However, because of the duplication of information, the course materials were visually scanned (as opposed to read line for line) for information, and then digitally scanned to be coded.

### **2.3 Approach to Data Analysis**

Analysis of the data was conducted using directed content analysis. I chose this strategy over analytic induction because I was not attempting to develop a new theory, but rather to potentially validate or extend the existing theory of Situated Cognition by applying it to ICS training and learning.

The goal of a directed approach to content analysis is to validate or extend conceptually a theoretical framework or theory. . . It can provide predictions about the variables of interest or about the relationships among variables, thus helping to determine the initial coding scheme or relationships between codes. (Hsieh and Shannon, 2005, p. 1281)

Essentially, directed content analysis is an analytic induction approach to data that requires a conceptual framework be applied directly to the data.



From the Situated Cognition theory, I identified a set of core concepts as initial coding categories: *Concepts*, *Activities*, and *Culture* (Potter and Leving-Donnersten, 1999). However, because Situated Cognition did not give parameters for the concept of *Culture*, I researched and identified four cultural indicators: *Symbols and Tools*, *Language*, *Stories*, and *Rites and Ceremonies*. Therefore, my initial framework consisted of these original seven items. Details on these concepts and their operationalization are included below.

Using Atlas.ti coding software, I entered scanned and digitized documents into the computer program for a three-part coding process. The first was a modified analytic induction, where I applied my pre-determined set of concepts to the data, but remained open to discovering new concepts and emergent themes (Patton, 2002, pg. 494). The second stage involved axial coding, where I identified the general patterns and sub-patterns in the data selected from the first round of coding (Strauss and Corbin, 1990, 1998). A numbered list of codes from this second stage is presented later in this document.

Third, I used thematic development coding, where I identified the general themes that emerged from the data and this became my final set of concepts (Strauss and Corbin, 1990).

Across the coding stages, I used the technique of constant comparison to validate my findings. “Although this method is a continuous growth process – each stage after a time transforms itself into the next – previous stages remain in operation throughout the analysis and provide continuous development to the following stage

until the analysis is terminated” (Glaser, 1965, pg. 439). For me, this meant I first compared individual codes to other codes within their general theme within each source, and then, I compared that theme across the cultural contexts I identified. For example, when I coded an item as a “*Symbol*,” I first compared it to the other instances of “*Symbols*” in the document in which I was working, and then I compared “*Symbols*” across the cultural contexts.

The Situated Cognition theory provides a distinct set of concepts to explain workplace learning, upon which I built my first conceptual framework: people learn *Concepts* by engaging in *Authentic Activity* in the *Culture* where they will be performing. Cultural identifiers such as *Rites and Ceremonies*, *Language*, *Stories*, and *Symbols and Tools* were referenced to help conceptualize *Culture*. As such, the data analysis was approached with a pre-identified conceptual framework. In the research proposal, it was thought that the focus would be strictly on *Culture*, but as the study progressed, it became evident that *Activities* would also play a central role. *Rites and Ceremonies*, *Language*, *Stories*, and *Symbols and Tools*, and *Concepts* remained a secondary focus.

For each set of data, the primary items that I noted in the documents were *Symbols*. By the time the document analysis began, the data had started taking shape and I grew increasingly interested in the importance of *Symbols* to my three identified cultural contexts. *Concepts* and *Language* were also documented, but as these were training documents, almost every line could have been coded as either *Language* or *Concepts* so for these sensitizing concepts, I specifically made note of any information

that was repeated or repetitious or any contradictory language either in one manual or between manuals.

After the initial round of coding, a scan of the existing codes helped eliminate superfluous or irrelevant codes. The original codes list included 113 items. When scanning this original list, I recognized a few codes that no longer applied. Per the strategy of constant comparison, any coded item that gave me pause or came across as confusing was noted, reevaluated, and either the parameters for a conceptual group were expanded to allow for the coded item, or the item was reassigned, or deemed irrelevant and discarded. Some items I coded anticipating a pattern to manifest that never did. Some items I coded as a ‘flag’ for me to review and consider when I had my list that, in the end, proved irrelevant. Also, if items were coded that hung in balance between relevance and irrelevance, I looked to see if that item fit under any of my original seven and if it did not, it did not make the final list. For example, if a code appeared fewer than five times and I did not find that the code held any significance to the study as a whole, I eliminated the code.

A listing of the second stage of codes can be found in the table below (as referenced above).

Table 2. Second Stage Code List

1. ACTIVITIES: Authentic Activity {105}
2. ACTIVITIES: Average Day {49}
3. ACTIVITIES: Course Training Activity {142}
4. ACTIVITIES: Examples Used in ICS trainings {39}
5. ACTIVITIES: ICS Class Format {16}

Table 2. continued

6. ACTIVITIES: Improvisation {3}
7. ACTIVITIES: Teaching practices for ICS {15}
8. CONCEPTS {442}
9. CONCEPTS: Difference Between Day-to-Day and Emergency {44}
10. CONCEPTS: What are the principles of ICS? {14}
11. CONCEPTS: What is ICS? {28}
12. CONCEPTS: What is important to organization {1}
13. CONCEPTS: When is ICS used? {18}
14. CONCEPTS: Who uses ICS? {17}
15. CONCEPTS: Why is the system used? {16}
16. CULTURE: Food {28}
17. CULTURE: ICS not required for position {21}
18. CULTURE: ICS not used in day-to-day job {11}
19. CULTURE: ICS required for interviewee {10}
20. CULTURE: ICS used for emergencies {6}
21. CULTURE: Interaction with Different Departments {8}
22. CULTURE: Language {268}
23. CULTURE: Language: Communication {98}
24. CULTURE: Member of Culture {2}
25. CULTURE: Positions and Roles {118}
26. CULTURE: Rite of Enhancement - Creates stronger social identities and increases the status of employees {80}
27. CULTURE: Rite of Integration - Create Common Bonds and good feelings among employees and increase commitment to the organization {108}
28. CULTURE: Rite of Passage - Facilitates the transition of employees into new social roles {53}
29. CULTURE: Rite of Renewal - Reflect training and development activities {115}
30. CULTURE: Story {111}
31. CULTURE: Symbol {531}
32. CULTURE: Tool {265}
33. Facilitators {18}
34. Facilitators: Easy concepts to teach {9}
35. Facilitators: Easy ICS concepts to learn {2}
36. Facilitators: Ideas on how to Improve ICS Training {9}
37. Facilitators: Liked Most/Most applicable to job {39}
38. Lack of Understanding of ICS {38}
39. Obstacles {18}
40. Obstacles: Difficulties Learning ICS {44}
41. Obstacles: Difficulties Teaching ICS {30}
42. Obstacles: Not applicable to job/Didn't Like as much {20}
43. Obstacles: Overwhelming amount of information {2}
44. Obstacles: Redundant {7}
45. Personal Experience: Confidence in Abilities {9}
46. Personal Experience: How long person has had experience with ICS {34}
47. Personal Experience: How often Use ICS {19}

Table 2. continued

- 48. Personal Experience: ICS Trainings Attended by Interviewee {32}
- 49. Personal Experience: Level of comfort with ICS {27}
- 50. Personal Experience: Reason for Taking ICS Class {3}

As mentioned above, some codes were eliminated. However, some codes aligned with one of my original seven concepts and were then nested under a “parent code.” All four “Rites” codes were recombined under the *Rites and Ceremonies* code and this along with *Stories*, *Language*, and *Symbols and Tools* were subsumed under the parent code of *Culture*. Even still, some codes, such as “obstacles” and “facilitators” were central to the study but did not belong to any of the pre-identified concepts. It was at this point where the analysis moved from directed coding, with the preconceived set of concepts that I applied to the data, to a more naturalistic, inductive coding that involved identifying the emergent themes. These became clearer the more I aggregated the data and joined sub-codes under coalescent ideas.

Fifty primary codes were identified. The manifest of the coded items was reviewed and the information was inputted into a mind-mapping computer program for organizational purposes. As data were entered into the program and significant themes emerged, they were organized accordingly.

By the end of the coding process, the set changed to from the original seven (*Concepts*, *Activities*, *Culture*, *Symbols/Tools*, *Language*, *Stories*, and *Rites and Ceremonies*) to *Concepts*, *Activities*, *Culture*, *Personal Experience*, *Lack of*

*Understanding of ICS, (Learning) Obstacles, and (Learning) Facilitators.* Below is a table illustrating these elements, with the emergent elements in bold.

Table 3. Table of Cultural Indicators

Concept	Description	Example
<i>Concepts</i>	ICS ideas or principles taught during the course, or that were significant to a culture or an interview participant	“Chain-of-Command” is an example of a concept that is integral to ICS. Integrity is an example of a concept that was mentioned by every law enforcement interview participant, indicating that “integrity” is significant to law enforcement organizations.
<i>Activities</i>	The action of an individual or group of individuals to achieve an objective	At the end of an ICS-200 section on ICS facilities, each small group of people was asked to review a map and identify the correct locations for ICS facilities. In an organizational setting, an example of an activity is the public health organization performing free health clinics for the local community.
<i>Culture</i>	The common language, behavioral norms, beliefs and values shared by a group of people in a specific context or situation (Brown <i>et al</i> , 1989) ". . . the set of values, norms, guiding beliefs, and understandings that is shared by members of an organization and taught to new members as correct” (Daft, 2008, pg. 361)	In ICS courses, the culture is a temporary gathering of a group of people who use common terms related to ICS, act in similar ways as prescribed by the instructing agency, to attempt to learn the information as it is presented during the course.
<i>Language</i>	Common form of communication so individuals of a culture can understand each other	"10-code" is the language that is used by law enforcement organizations to represent common phrases in their operations and allow for brevity and standardization of phrases.
<i>Stories</i>	Anecdotes that illustrate an important or a significant point	A firefighter explained a time when his crew members were spread out to where they could not hear each other, but they could see each other. They improvised and invented their own hand signals to communicate with each other across the distance. This story was told in order to illustrate the resourcefulness and ingenuity of his crew.

Table 3 continued

<i>Symbols and Tools</i>	Symbol: A representation of something of significance to the culture; Tool: An item used for a specific function	Symbol: The ICS organizational chart represents the entire ICS structure; Tool: Cell phones are used for communication by everyone interviewed for every day purposes and emergency operations.
<i>Rites and Ceremonies</i>	Significant occasions for individuals of a culture	Job application process represents the first hurdle employees of organizations must overcome in order to become a member of the organization.
<i>Obstacles</i>	Anything identified as an impediment to learning	Many interview participants explained that they could not pay attention in class because ICS information is "dry and boring."
<i>Facilitators</i>	Anything identified as an aid to learning	First-hand accounts of actual events were popular methods of instructors and students to illustrate ICS concepts.
<i>Personal Experience</i>	An individual's personal or professional background	A brand new ICS user who has never heard of the system will have a different learning experience than someone with extensive ICS experience
<i>Lack of Understanding</i>	A course participant or an interview participant saying something or taking action (during a course activity) in a way that was not in accordance with a principle or concept taught in the ICS course, or an admittance by the interview participant that they did not understand something about or all of ICS	In one interview, I came to the questions about ICS implementation (Explain ICS in your own words, under what circumstances is ICS used, who uses ICS). The participant flatly told me that she did not know anything about ICS. Then I asked if she remembered for what "ICS" stood. She replied: "No, I, oh my god, I don't. It was funny because [another class participant], her and I were trying to figure out what NIMS stood for . . ."

The table begins by describing and providing examples for the original concepts. Items that were coded as *Concepts* were simply ideas or notions that came up during the data collection process. The objective was to try to see if any *Concepts* were unique to any of the three identified cultural contexts – classroom, organizations' day-to-day, and organizations during emergencies – or if any of the notions

overlapped the cultural contexts. For instance, “loyalty” was a *Concept* that came up with the law enforcement participants several times, but it did not show anywhere else; whereas “communication,” which was sub-coded under *Language*, was a concept that spanned all professions and all three of the cultural contexts. There were also interview questions I asked specifically to probe for specific information, such as “What is the difference between ‘day-to-day work’ and ‘emergency work’?” With this question, I was looking to see if culturally there were any differences or similarities between the professions as to how this question was answered.

*Activities* were coded as to whether a person or persons in a classroom performed any specific activity, such as small group table-tops or self-introduction or if any participant discussed any specific action they took in their jobs for emergencies or day-to-day operations, such as setting up road blocks or conducting inspections.

The code *Personal Experience* was applied to items that described experiences of individuals that were more specific than a “cultural” experience. (The *Culture* code will be covered later.) There were several interview questions that elicited information from participants for this particular code, such as “How long have you had experience with ICS,” “What ICS trainings have you attended” “Describe your level of comfort with ICS.” Also, any notes of personal thoughts or feelings, such as anxiety or comfort, or moments of confusion or clarity taken during the observations were included in this code.

If any participant expressed a lack of understanding, their response was coded as just that. Or when asked such questions as “What is ICS,” “When is ICS used,”



“What is the purpose of ICS,” (answers to such questions were presented in all of the observed classes) and the participant gave an answer equivalent to “I don’t know” or provided an answer that was not close to the information provided during the observed trainings, then these answers were coded as *Lack of Understanding of ICS*.

Anything that interview participants explicitly stated as something that impeded or helped their learning process, were coded as either *Obstacles* or *Facilitators*, respectively. These typically came out as suggestions from interview participants about how to improve the class or complaints about what made it difficult for them to understand the material. Participants were asked to provide examples of parts of the classes they felt hindered or helped their learning experience, or what could be done to improve the classes. Sometimes the information came unsolicited.

The *Culture* code is discussed last as this particular code had many “sub-codes” or “children” codes. Four primary sub-codes were part of the original analytic induction set of sensitizing concepts: *Language, Symbols/Tools, Stories, and Rites and Ceremonies*. The last of these was further divided into four types of “rites.” The primary item coded as a *Rite of Passage* (which transitions employees into new social roles) was a description of a hiring process or what their process was for joining an ICS class – essentially, how members came into the organization. *Rites of Integration* (e.g., create common bonds and good feelings among employees and increase commitment to the organization) were identified as ways groups came together to celebrate or ways organizations provided support for their members, either during the day-to-day or during emergencies. *Rites of Enhancement* (create stronger social

identities and increases the status of employees) were coded if they were events such as awards ceremonies or safety breakfast's to celebrate a certain amount of time without an accident. *Rites of Renewal* reflect training and development activities, such as any training required for the participant's position.

Of the four components of *Culture, Symbols and Tools* contained the most codes, perhaps because they were the most easily observable. *Symbols and Tools* included everything from literal symbols taught in the ICS trainings, to an item of significance for an organization or participant, like a logo, to an item that the participant used on a regular basis, such as a computer or radio.

*Stories* were easy to observe in the classes as every instructor and every online course, elicited some story as an illustration of a *Concept* they were trying to teach. In alignment with Daft's findings, the stories told were meant to express something of importance to the organization (2011). Indeed, *Stories* in the form of "real-life examples" were highly valued by several of the participants, as many stated that "real-life examples" helped them to understand the *Concepts*. However, when interview participants were asked to supply a story to demonstrate a point they were making, they struggled to provide one if they could provide one at all.

Lastly, the *Language* code identified language that was used in the courses as well as language that was used by the participants themselves.

During the course of the analysis, I sensed my own bias of my wildfire management experience. Initially, I spent less time analyzing the wildfire ICS course observation than I did any of the other courses. Once I realized that I had acted in this

way, I made note of my actions and I went back and reassessed my notes on the wildfire course. The next section discusses in more detail my efforts in reflexivity.

## **2.4 Reflexivity**

“Being reflexive involves self-questioning and self-understanding, for “all understanding is self-understanding” (Schwandt 1997a:xvi). To be reflexive, then, is to undertake an ongoing examination of *what I know* and *how I know it*, “to have an ongoing conversation about experience while simultaneously living in the moment” (Hertz 1997:viii). Reflexivity reminds the qualitative inquirer to be attentive to and conscious of the cultural, political, social, linguistic, and ideological origins of one’s own perspective and voice as well as the perspective and voices of those one interviews and those to whom one reports” (Patton, 2002, pgs.64-65).

In general, I tried to remain aware of my own personal experiences in each class. I documented my own anxiety, frustration, or when I felt particularly confident or lucid. When I felt bored, I noted it and at what points I noticed my attention fading. In the beginning, I struggled with what my participation in each class would be. If an instructor was asking questions for which I knew the answer but for which no one else was answering, would I speak up or simply note the silence of the classroom? Because of the nature of the type of data collection I was conducting, I decided that I was required to participate and did answer some questions, but for me the participation of the others in the classroom was the most important part, so I only answered questions occasionally.

When it came to interaction with other participants outside of the in-class activities, (during breaks, before or after class) I allowed them to approach me and did not pursue them for information while attending the class. If a fellow participant engaged me in conversation and anything of note took place during the conversation, I noted it. However, I decided that to respect people's desire to be or not be included in the study personally. If they self-selected for an interview, it was in the interview where I would collect my data.

That is not to say that I did not speak with students or initiate any conversations. Indeed, I engaged with course participants in every class but the wildfire class I attended. (The wildfire ICS unit was merely part of a week-long training course and I only needed to attend one half of one day to observe the full course.)

As mentioned previously, I noted on many occasions my own personal bias towards wildland fire ICS training and learning. Therefore, I tried to limit this bias as much as possible by limiting the wildfire contributions to this study. However, I also realized that if it were not for my experience, this study would never have been initiated and thus, when I realized my bias affected the study, I tried not to view it from another course participant or an interview participants perspective, but rather from a third party perspective. For example, when I noticed myself wanting to discount the perspective of someone whose views on ICS differed from mine, I considered our respective backgrounds, experiences, and how long each of us had experience with the system. This helped to ensure other perspectives were included.

### **2.4.1 Role of Prior Experience**

Because my experiences in wildland fire trainings seem to differ greatly from the general experiences of other emergency management practitioners, specifically in regards to ICS, the entirety of my research experiences were juxtaposed to my wildland fire experience. Understanding the unavoidable bias in my data because of this, I attempted to limit the wildland fire bias by limiting the wildland fire data collected outside of my own experience: I only observed one wildland fire training for which I reviewed the materials and interviewed only one wildland firefighter. In the subsequent sections, I explain in further detail my process in collecting, organizing, and analyzing this data.

Years have passed since even my most recent experiences of attending ICS 100 for wildfire training. I had officially taken the 100 level course three times prior to initiating this research. The first time was in November of 2006, the second time was in January of 2008, and the third in April of 2009.

Because I was collecting the data from these experiences retroactively, I filtered my recollections through my conceptual framework and merely made note of what I could remember in relation to *Concepts, Authentic Activity, Culture*, and specific to *Culture, Language, Stories, Symbols and Tools*, and *Rites and Ceremonies*. These memories are captured and documented in Appendix A.

## Chapter 3

### FINDINGS

*“In a riot, you don’t have time to fill out boxes.”*

– Participant in ICS 300 course

The last chapter detailed the processes I used to extract the data from the sources and then extract the findings from the data. In this chapter, I first discuss the findings from the original concepts I applied in the deductive analysis (*Concepts, Activity, and Culture*) – the pillars of the Situated Cognition theory. In the second part of the chapter, I detail the emergent themes that developed out of the inductive analysis (*Personal Experience, Lack of Understanding, Obstacles, and Facilitators*) and how they developed into significant discoveries.

### 3.1 Original Concepts

#### 3.1.1 *Concepts*

*Concepts* appeared throughout the data in all courses, materials, interviews, and across all the cultural expressions identified for this study. The *type* of *Concepts* varied, however. This ubiquity of *Concepts* is likely in part because *Concepts* are easy to identify and observe. Some *Concepts* were consistent throughout the data corpus, like “incident commander (or IC),” “chain of command,” and “common terminology

(or clear text)” while some *Concepts* only showed up in certain courses, such as the “Planning P” that is shown later in this section.

The course materials in particular were *Concept* saturated, as could be expected – a teaching tool would not be of much use without the pertinent information! Page 2.5 of the ICS-400 manual contains a list of “The 14 essential ICS features.” Each “feature” (as characterized in the material) receives a multiple line description explaining what each is and how it is used. For example,

**Unified Command:** In incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, Unified Command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency, authority, responsibility, or accountability. (2011)

These 14 “features,” or *Concepts*, are present in every set of course materials except for the student manual for the wildfire training courses. The latter contained some of the same *Concepts*, such as “incident commander,” “clear text/plain speak,” or “unity of command,” but these were not identified as “features” and there were not 14.

Additionally, this was the only ICS manual of the ten that was not published by FEMA – it was published by the National Wildfire Coordination Group. The wildfire manual contained mostly *Concepts* specific to firefighting and just six short pages were dedicated to ICS *Concepts*. Even within this brief section, firefighting *Concepts* were embedded throughout.

Only four of the *Concepts* present in the 400-level manuals are present in the lower level manuals: “chain of command,” “span of control,” “modular organization,” and “common terminology” (though “common terminology” is referred to as “clear text” in the wildfire manual). All ten manuals were over a hundred pages long.

For the most part, the FEMA-published documents are ICS specific, but I noted several instances in each FEMA course manual of what bordered on first-responder ICS *Concepts* instead of general ICS *Concepts*; that is *Concepts* that applied more to professional first-responders than to the general subject of ICS. For instance, the *Concept* of “demobilization” is found in every FEMA student manual I acquired. “Demobilization” is a formal process that a person who has been operating in the ICS structure must undergo to be officially “released” from the scene of an incident. In wildfire, we referred to this as “demobed” and we only ever needed to undergo this process when we were part of a large wildfire operation, or whenever anyone else was processing our timesheets besides our crew boss. Considering that many of the people reading the manuals are not first-responders, nor would they likely be considered a “mobilized resource”, the *Concept* of “demobilization” seems inappropriate for a wide audience.

Essentially, what I noted was that FEMA-issued student manuals focus mostly on ICS *Concepts* with the influence of first-responder *Concepts*, and wildfire ICS student manuals are rich in *Concepts* specific to wildfire beyond ICS. Though we are discussing *Concepts* and not *Culture* yet, the differences here suggest that ICS is an



integrated part of the wildfire culture and while the culture of the FEMA ICS courses are intended to be generalized, they are influenced by the first-responder cultures.

In all cases but one, these training manuals guided the course discussions and thus the *Concepts* in class lectures and discussions tended to be first-responder heavy as well. In the one exception, however, the instructor focused on the *Concepts* specific to ICS.

While most instructors followed along with the book, taking page by page and reviewing the material on each, this instructor simply skipped through the FEMA issued slides until he reached the part of the presentation he wanted to review. He explained that ICS trainings are often referred to as “death by PowerPoint” and that the slides would be a supplemental tool only; an instructing style different from any of the other courses, including the wildfire courses. Using this strategy, he managed to cover all the pertinent material and meet all of the objectives set out in each section. He guided the class through the *Concepts* by asking questions from the participants and demonstrated the *Concepts* by using the answers provided by the students to illustrate. On the second day, I documented this process in my notes:

8:20 p.m. – Instructor asks local police person to discuss resources that would be available for a plane crash. Most of the class becomes involved in the activity. Instructor asks for him to provide #'s of responders. Again, class becomes involved. Gives scenario for plane crash. [Draws ICs chart on whiteboard.] Asks class to “fill in boxes.” [Determine which agencies will fill which ICS roles represented by the boxes.] Class begins determining who would fill what role. Instructor asked the class to fill to Branch/Division [level]. Then asked if there was one agency/box to point to get the job done. “If not, then did not do good job of “opening up boxes’.” [Instructor asks class] Is it realistic that the OEM will be there

w/in 30 mins? “Are there span of control issues?” “6 branches under Ops. This may be realistic but not optimum.” (Observation 6 hand notes)

Here, the instructor asked the class to walk through a plane crash in their jurisdiction. (All of the participants in this particular course were from the same jurisdiction.) By asking such questions (albeit, “dichotomous response questions” per Patton [2002, pg. 354]), the instructor was able to verbally demonstrate, or rather, have the participants verbally demonstrate *Concepts*, such as “span of control,” “command,” and ICS positions. Throughout the demonstration, the instructor kept the focus on *Concepts* specific to ICS and did not turn to first-responder jargon in doing so.

Some *Concepts* taught in the courses were level specific. The best example is that of the “Planning P.” This process is illustrated in the graphic below.



Figure 1. The Planning “P”

Because this *Concept* is taught in the more advanced courses, it is intended for advanced ICS users, namely those who would be developing objectives and making resourcing decisions. As you can see, the “Planning P” is a process. It is labeled here as “initial” response but this process does not actually stand up in an ICS implementation until a large system is put in place. Here however, it serves as a level-specific *Concept*.

Until now, I have made little mention of the online courses. I explained in an earlier section that for my online observations I chose profession-specific courses in attempts to sample as wide of a variety of courses as possible. ICS-100 and 200 are the only FEMA courses available online; ICS-300 and 400 must be taken in-class. For the 100 course, I observed the “ICS for Schools” course and for the 200 course, I observed the “Applying ICS to Healthcare Organizations.”

One of the first notes I made about the “for Schools” course was the glossary presented shortly into the class. Of particular interest were some of the first terms included in the list: “Air Operations Branch,” “Allocated Resources,” “Area Command (Unified Area Command),” “Clear Text,” “Demobilization,” “Dispatch Center.” Because these terms seemed out of context with the course I was taking, I later reviewed the course print-outs for the “ICS for Healthcare Organizations.” While I did not find a glossary of terms, some *Concepts* seemed out of place, such as “Incident Typing,” “Resource Kinds and Types,” and “Operational Period Briefing.” All of these *Concepts* stood out because they, too, seemed more applicable to first-responder professions.

The interviews revealed less usage of ICS *Concepts*. However, some interviews also revealed a strong influence from organization/profession-specific *Concepts*.

For instance, “Honor,” “Integrity,” and “Loyalty,” were the most pervasive *Concepts* throughout these interviews. These only came up during the law enforcement interviews, and they likely showed up frequently because I interviewed

more law enforcement professionals than any other profession, but these terms showed up in *every* law enforcement interview I conducted. The following are the related excerpts from the data:

“Yeah. Ethics was something that you heard over and over in the core values that we have – honesty, integrity, quality service, uh, those were being echoed over and over again. That’s kind of, when I look back, that’s one thing that I remember . . .” – Participant 1

“Our conference room actually has our mission statement, you know, I think that, that’s the most prominent area where you can get a feel of what’s goin’ on with our department and what we believe in, what we subscribe to. . .it’s actually it’s right here. It talks about—the acronym’s PRIDE—which is professionalism, responsibility, integrity, dedication, and excellence.” – Participant 2

“Well, it’s always integrity, honesty.” – Participant 3 [when asked about something that was stressed at the start of her career]

“We have water bottles which they use as our gun and we have hats which we carry with us and you have an honor card: it’s got honor, integrity, loyalty, discipline and it’s basically got the definitions on it and you have to carry these three things with you everywhere you go.” – Participant 4

“Yeah, they’re honor, integrity, courage, loyalty, attitude, discipline, and service. And the core value cards have like a specific definition listed and you have to know. . .” – Participant 5 [when asked about “core values”]

“We have our ‘hiclad’ card, which is an acronym. It stands for honor, integrity, courage, loyalty, attitude, discipline, and service and each one of those definitions. . .” – Participant 6

For these *Concepts* to show up so regularly with law enforcement personnel and not anywhere else indicated to me that there was a robust and unique culture

within the law enforcement profession. Additionally, despite the first-responder influence on the ICS courses, none of these *Concepts* appeared in the course data set, unless it was in relation to law enforcement.

Ultimately, it seemed to me that students of FEMA designed courses were inundated with *Concepts*, regardless of the class. One ICS 100 training manual in particular had 20 pages of terms in the glossary and ICS 100 is the most basic course. It can be argued that students of basic courses have the most to learn and therefore, it makes sense for the basic course to have the most *Concepts*, but many of these terms were only applicable for advanced courses.

Furthermore, many of these *Concepts* taught in the courses were very technical and specific to the operations section of ICS, and again, specifically to traditional first-responders. Though I would say most of the attendees to the classes could be considered first-responders (law enforcement, fire, EMS), there was at least one class where only education, transportation, and mental health care professionals attended. Even in the courses online specific to health care and education professionals, there were many terms that seemed technocratic and inapplicable to the audience.

Moreover, many of the *Concepts* presented in the courses were the focus for many of the activities in the courses. Theorists of Situated Cognition assert that *Concepts* are best taught during moments of *Authentic Activity*, however, as I explain in the next section, many of the activities were less than “authentic.”

### 3.1.2 *Authentic Activity*

*“People who use tools actively rather than just acquire them. . .build an increasingly rich, implicit understanding of the world in which they use the tools and of the tools themselves.” - (Brown, 1989, p. 33)*

*“Authentic activities then, are most simply defined as the ordinary practices of the culture.” (Brown, 1989, p. 34)*


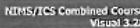
*Activities* were documented throughout the research process; from participants describing their daily routines, to tabletop discussions during classes to demonstrate an ICS *Concept*, to an in-class simulation of a disaster response.

All of the *Activities* documented for this study took place in FEMA courses as there were no *Activities* for the wildfire ICS course. All FEMA courses required final exams and a passing grade of 70% in order to receive a certificate. In-class FEMA courses contained some lecture and some sort of tabletop activity, whether large or small. Online courses involved *Activities* such as short quizzes. Most of the *Activities* were of the tabletop discussion variety; they usually came at the end of a section and took about 15 minutes. The instructor directed the participants to collaborate with the partners seated at their respective tables and work to meet the objective of the activity. Many of these *Activities* were similar to the one found on page 3.30 of the ICS-100 student manual (2011):

**Activity: Incident Action Plan**

**Instructions:** Working as a team . . .

1. Identify four items you would include in an IAP for the severe weather scenario in Unit 3.
2. Write these items on chart paper.
3. Select a spokesperson. Be prepared to present in 5 minutes.

 FEMA 

**Activity Purpose:** To illustrate how to develop an IAP.

**Instructions:** Working in groups:

1. Identify four items they would include in an Incident Action Plan.
2. Record the IAP elements on chart paper.
3. Select a spokesperson to report back to the group. Be prepared to share your answers in 5 minutes.

**Scenario:** An unexpected flash flood has struck a small community. Homes, schools, and the business district have been evacuated. Damage to critical infrastructure includes contamination of the water supply, downed power lines, and damaged roads.

**Scenario (Cont):** Continuing severe weather is causing widespread damage. 9-1-1 operators are receiving conflicting reports about life-safety needs, including a possible structural collapse of an assisted living facility.

**Identify four items you would include in an Incident Action Plan?**

Figure 2. Incident Action Plan Activity

Much like the previously mentioned instructor who walked his class through a scenario to demonstrate specific *Concepts*, these types of *Activities* ask that the



participant walk through identifying four items to include in an incident action plan (IAP) for the scenario. (The “elements”, as provided on the previous page to this activity, are ‘What do we want to do?’, ‘Who is responsible for doing it?’, ‘How do we communicate with each other?’, ‘What is the procedure if someone is injured?’) This same activity is included in the ICS-100 for Schools online (without the team collaboration).

What is curious about this particular activity and others like it is that this course is the “basic” ICS course intended for beginner level ICS users. Assuming that beginner ICS users are at the “bottom” of the infamous ICS organization chart and hold the least responsibility in the organization, these users are not likely to be creating IAP’s, thus the “authenticity” of this activity is in question.

In other *Activities*, we were provided maps and asked to determine where certain facilities like incident command posts, staging areas, and base camps, would be located on the map. Figure C. is an example of such a map.

# Emerald City Flood

Incident Map:

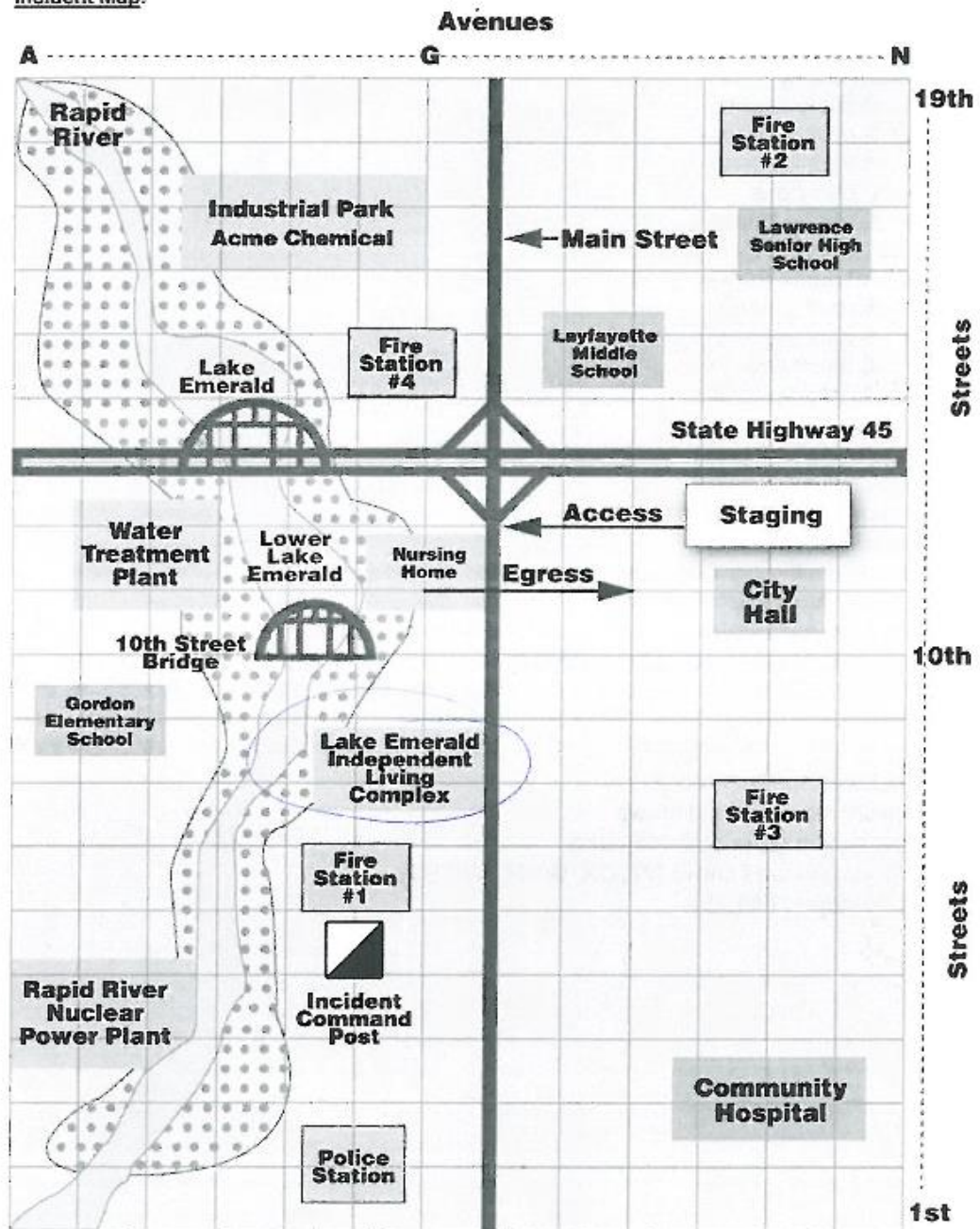


Figure 3. Activity Map

As we can see, this map already has the facility areas identified. The objective for the scenario to which this map belongs, was to understand what ICS facilities are located where and why. In another activity for which I do not have the map to show, we were provided a very similar map that had ICS facility symbols located throughout the map but these symbols were not labeled with words like the map above. The objective for this second activity was to listen to the disaster scenario and then determine where on the map certain facilities would be located. However, we had just completed the section on ICS facilities and had been given a universal ICS facility symbol key. In essence, we were being asked to label facilities on the map that had already been identified with the facility symbols, taking all of the guesswork and conceptual application out of the activity. By providing us the answers, were unable to actually apply in an *Activity* the *Concepts* that were just presented to us.

One *Activity* that did allow us to apply the *Concepts* from the class, and an activity that I found engaging, took place in the 300 level course presented by the state agency. This was a larger-scale tabletop that took place on the last day and lasted about four hours. This particular scenario focused on a fictitious flood that took place in the southern part of the state. The day prior we, the course participants, signed up for positions on an easel. I made note that at the moment it came time to sign up, there was a rush from the course participants to sign up for the “bottom” chart positions meaning the positions with the least responsibility, such as “Resource Unit Leader” (the role I chose) and “Document Unit Leader.”

This rush for lower level positions left the final open position, the “Operations Section Chief,” for the participant who decided to use the restroom while everyone else signed up! (The “Incident Commander” role was filled by one of the instructors.)

Over the course of the four hours, “Section Chiefs” met to receive briefings and develop incident objectives. I busied myself with determining what resources were available and which were needed, as indicated by the information fed to me by my section chief. The Logistics Section had working computers and copiers and simulated fax machines.

The main learning objective, as announced by the instructor the previous day, was to sufficiently put together an IAP. Therefore, all of the activities for each position were geared towards reaching this primary objective.

Speaking to the authenticity of this particular activity, it certainly went above and beyond all other activities I observed. As participants, we actually went through the motions of identifying information, validating the information provided to us, and working through the ICS forms to appropriately document said information. When a fellow participant crunched some numbers and discovered that the number of resources actually available was not the number “provided” in the scenario, he went through the motions of having another fellow participant validate it before he “took it to the Planning Section Chief.” Every time I received documents containing information about the status of resources, I copied the documents and provided a copy to the “Document Unit Leader.” During the course of the event, we practiced ICS *Concepts* such as “chain of command” and “unity of command” (having one boss) and

we even practiced a “working lunch” where we continued the scenario while we ate our meal; not an ICS *Concept*, but an action that brought *authenticity* to the activity.

However, this scenario was not entirely “authentic.” “Assumptions” had to be made about certain information or situations as we could not follow the situation out to resolve some discrepancies. People worked in roles they had never worked, nor were they likely to ever work in those roles in the future (as many of us had never had training for any of the specific roles in which we served.) There were a predetermined number of variables for the situation – problems or developments that manifested that were not anticipated by one of the instructors were merely dismissed as “non-issues.” For each problem that did manifest that was anticipated, there was more or less a “right way” to get to the solution.

As a class, however, we experienced a simplified process of putting together an IAP for one operational period for an incident. Though not altogether “authentic,” the experience allowed us to see first-hand some of the actions required to complete the IAP and this, ultimately, was the point of this exercise.

Indeed, several participants during interviews expressed appreciation and preference for the tabletop exercise. Below are quotes from such participants when asked why they preferred the 300 class to the others they had attended.

“ . . . And as operational section chief, you’re responsible for figuring out where everybody is, what they’re doing, and how they’re doing it, and then keep the whole thing together so you plan the continuity for the next group coming in. You know, when-when your 12-hour shift is done, you’ve got another crew coming in to replace you and you’ve got to have everything lined up and say ‘ok, this is the game plan for the next 12

hours.’ Whereas, when you’re looking at just the basics, you know, the public information officer does this, the finance person does this, the logistics person does this, planning does this, you know. And it’s, you know, you’re just looking at a static, pretty much of a static lay down. In the-in the 100, 200s [level courses], it’s basically is a static lay down. . .”  
– Participant 7

“I remember a lot more of it. It was, it was a little more interactive.”  
– Participant 8

“Just for the simple reason that you get to do hands on stuff and you get to interact with other people. The other ones we’ve taken have just been online courses. But with 300, you get to do it, actually, like I said communicate with other people. . .” – Participant 9

“I guess because it’s the most recent one that I recall and-and I like the fact that, it gives you identified positions. So again, as I mentioned before, you don’t want to get pigeonholed into a position, but if you know if everybody’s in place when an event is getting ready to take place, you’re going to be in-in the area you’ve trained on, I think that’s-that should help minimize some of your stress, because you’re going to say well, I’m in the command post, I understand what’s-what’s going to be required of me, I’ll generate the v-the virtual command center, I’ll make sure all of the stakeholders are in that, um, command post area to help make decisions, and then, and let the, you know, incident play out as it is. I mean, you’re not gonna know all the particulars, but as long as you have your resources and stakeholders in place, I think that will definitely help reduce some of the stresses that are havin’ a bunch of folks who are unfamiliar with the process.” – Participant 2

“I thought it was more where you could interact with the instructor, you got to hear other people’s views or experience and I liked the role play. . .Because you got to see what other people did. It wasn’t just about what you do. It was what everybody else’s functions were which I don’t know that. . . .because you know again it was the role playing, it’s really nothing you’re getting offline where you’re just trying to make sure you answer the questions correctly. And I will say, I’m a more visual learner.”  
– Participant 3

In contrast, participants did not seem to like the online courses. One participant who informed me that he had taken the 100 and 200 online stated initially that he preferred the lower-level (online) classes because he “use[d] it on a day-to-day basis” but then shortly afterwards expressed his dislike of the online venue:

“They’re easy but I don’t necessarily learn the best from them. More like a hands-on type person. That’s just me, I mean, I could look at a – I could look at a code book 1000 times but unless I actually arrest somebody for a specific violation, I won’t – I just won’t remember it. I won’t remember it.” – Participant 10

In the online courses, *Activities* are tests of knowledge, such as matching terms to definitions, or answering true/false questions. The participants who spoke about their ICS online course experience detailed similar experiences, such as simply “clicking through” the online course to get to the exam and using the course print outs to help them answer the questions (much like my third ICS-100 training experience, as referenced in Appendix A). If, like Participant 9 suggests, part of the advantage to the tabletop exercise is “you get to interact with other people,” then online courses seem to be at a serious disadvantage.

The irony in the online courses is that they attempt to “train” people individually on a system that requires people to collectively interact with each other to implement the system. As demonstrated in the data above, already the *Activities* in the in-class courses are abstract and simplified, but they do involve people interacting

with one another. Online courses seem to remove any semblance of any *Authentic Activity*.

This is where, as Situated Cognition theorists explain, the influence of *Culture* comes in. A component of having *Authentic Activity*, insofar as ICS is concerned, is the influence other people have on your practices and decision making. The next section takes a look at the findings concerning the four identified cultural indicators.

### **3.1.3 Culture**

This section explains my findings in relation to the concept of *Culture*. To help set parameters for what I defined as *Culture* I pinpointed some cultural indicators based on reading from Daft. I set out to examine these cultural components: *Symbols/Tools, Language, Stories, and Rites and Ceremonies*.

#### **3.1.3.1 Symbols and Tools**

*Symbols and Tools* were the single most coded items in of all items I coded; these codes appeared more frequently than the parent-code *Concepts*. Coded items included images used in the PowerPoint presentation, telephones, computers, and radios used daily by interview participants, company logos, cultural icons such as Smokey the Bear, people, buildings, trees, handguns, cleanliness (in terms of facilities), work trucks, county outlines and many others.

The omnipresent symbol throughout the data was the ICS organizational chart, seen below.



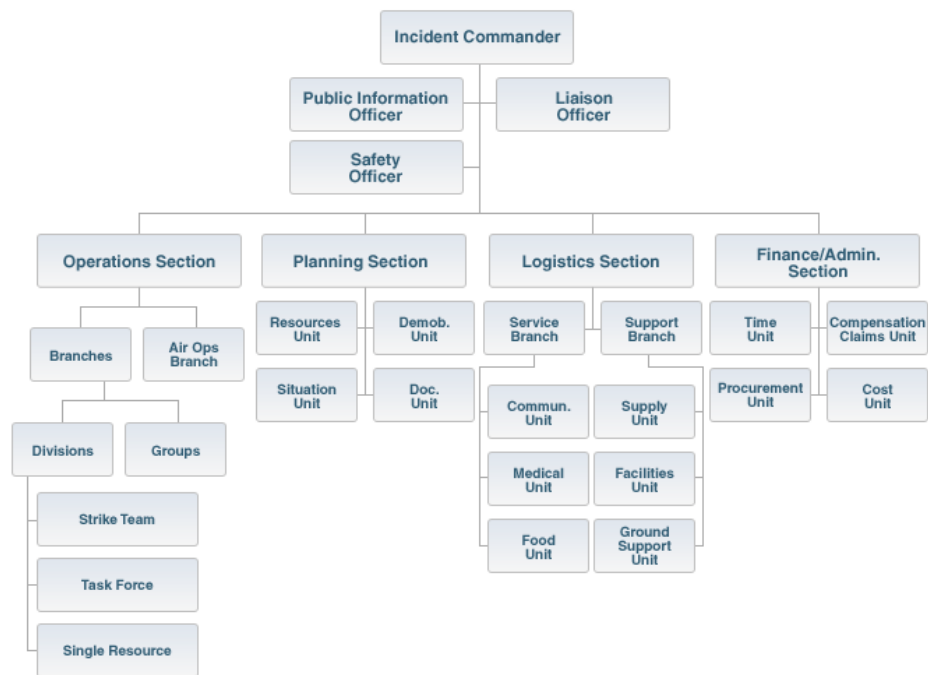


Figure 4. The ICS Organizational Chart

During one interview, the participant began drawing the chart to illustrate a point he was making. Another course participant in one of the 300 level courses considered “filling in the boxes” (of the org chart) as implementing ICS. Interestingly, this participant was not alone in this interpretation of ICS as it was presented on multiple occasions throughout this study by various participants.

The ICS chart appeared regularly throughout the courses and course materials; in any discussion about the chain of command, or position descriptions, or sections, branches or divisions, the “org” chart was the symbol of choice for illustration.

Other symbols that appeared regularly were images of firefighters, law enforcement personnel, emergency medical personnel, as well as search and rescue operations, emergency vehicles, people in uniforms, people carrying lots of technical

looking emergency response equipment, etc., – images representing the professions I refer to as “traditional first-responders.” See below:

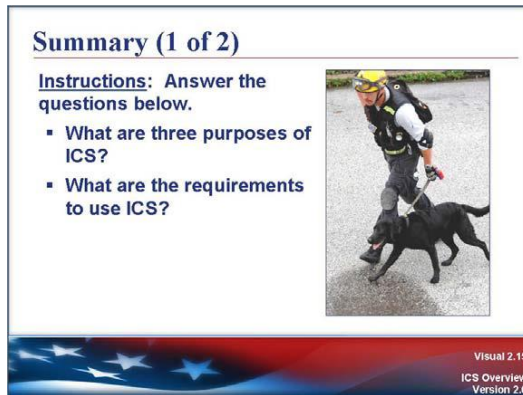


Figure 5. Search and Rescue – Traditional First-Responder

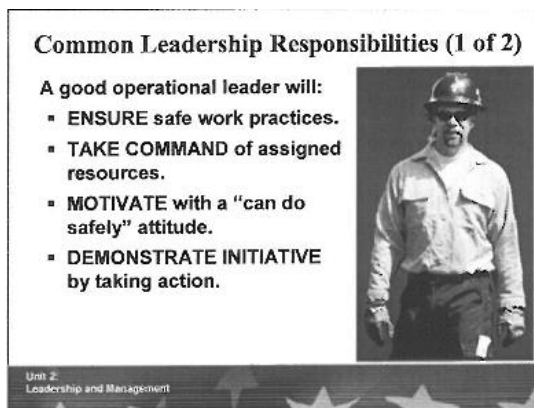


Figure 6. Firefighter – Traditional First-Responder



Figure 7. Unified Command of Traditional First-Responders



Figure 8. EMTs – Traditional First-Responders

These images were extracted from student manuals for courses 100 – 400, respectively. As shown, these images appear on slides to illustrate multiple *Concepts*, so they are not isolated any one lesson.

Other, more generic images were also used in the presentations – images that presumably were meant to be geared towards non-traditional first responders, like office employees,

## ICS-300 Course Objectives (2 of 2)

- **Implement the incident management process on a simulated expanding incident.**
- **Develop an Incident Action Plan for a simulated incident.**

This course is designed to enable personnel to operate efficiently during an incident or event using the Incident Command System. This course focuses on management of expanding incidents.



Visual 1.5

Unit 1: Course Overview  
Version 2.0

Figure 9. Office employees

or generic “every man” images, such as Figure I.

## Single Integrated Incident Organization

### In a Unified Command:

- Jurisdictions and/or agencies blend into an integrated, unified team.
- The mix of participants depends on location of the incident and kind of incident.
- The members must function together as a team.



Visual 3.16

Unified Command  
Version 2.0

Figure 10. “Every man” image

The profession-focused online courses even showed images specific to their respective professions.

## Unit 2: ICS Overview



FEMA

Figure 11. (ICS-100 for Schools)



Figure 12. (ISC-200 for Healthcare Organizations)

However, the overwhelming number of images displayed in the course materials, and thus in the FEMA issued presentations were first-responder specific.

During the wildfire ICS presentation, the only images portrayed were in the PowerPoint slides and the images in the presentation were all wildfire specific. The student manual contained no images – just text in the ICS chapter.

In the facility where the wildfire training was held, there were wildfire symbols, images and tools abound. A poster on the wall depicted people wearing firefighting outfits with a message overlaid on the image about “Seatbelts protect the people who protect us.” A slew of ICS and firefighting terms were scrawled on the whiteboard on the right-wall. Firefighting equipment hung from hooks on the opposite wall, and piled on tables against the wall. The building where the course was being held was in fact, a fire station facility.

Of the other course locations, only the state police academy exhibited symbols specific to the entities represented. The other facilities, a state emergency management agency facility, a small town community center, a fire house, and an emergency operations center, all were the venues of courses for participants of varying backgrounds.

In fact, the symbols for each profession were as distinct as the professions themselves. Law enforcement personnel were very equipment focused. Every one that I interviewed referenced their firearm and almost every one referenced their vehicle.

When asked the questions “When you think about what is important to your organization, what image comes to mind?” and “What image identifies your organization?” education professionals provided examples of symbols of their

respective communities, such as their school mascots, their school logo, the school principals or the kids themselves. Public works professionals chose agency specific items like their work truck and an outline of the county representing their jurisdiction. The wildfire professional I spoke with gave me symbols of nature, like the state tree, and Smokey the Bear. In the end, all of the professions identified profession-specific symbols.

There was one symbol, or set of symbols that did span all professions, however. Each profession expressed the importance of communication devices to both their daily functioning and their emergency operations. When asked such questions as “What is one item no one goes without during an emergency?,” and “What is one item everyone in your organization definitely has?,” almost everyone replied with an example of a communication device, such as a cellphone, a computer, a smart phone, or a radio and those who did not answer with these examples did at some point reference their communication devices during our conversation.

Yet, in none of the courses, outside of the ICS-300 practicum, were communication devices used. At the very least, this indicates a potentially missed opportunity to engage people in an *Authentic Activity* on “clear text” or “plain language” with tools that are critical elements of their cultures.

### **3.1.3.2 Language**

The *Language* code produced fewer findings than *Symbols and Tools*, though there was one similar finding: Each profession exhibited their own language. The other findings were that those who use ICS more frequently are more likely to use it in their vernacular and that those who have more technical/bureaucratic jobs tend to use jargon or acronyms more frequently.



Language in the FEMA course materials was ICS oriented with a heavy influence from first-responder cultures, as can be expected and thus, the language in the FEMA courses was ICS oriented with a heavy influence from first-responder cultures. Language in the wildfire course and course materials, however, were wildfire specific, with applied ICS *Concepts* included.

In the interviews, however, there were different findings. Most of the interview participants did not use ICS language except when I specifically asked them questions about their ICS training and implementation experience. Those that did use ICS language were firefighters and emergency management professionals, but specifically, emergency management professionals who had a firefighting background. This is not to say that they spoke solely in ICS terms, just that they incorporated ICS terms in our general conversations. Education professionals did not use ICS; neither did public health professionals or the professional of the rehabilitation facility. Law enforcement professionals mostly used their own jargon and technical language. Indeed, the more bureaucratized or skill-reliant their profession, the more jargon their language contained.

In general, there was a demonstrated disconnect in the FEMA ICS courses; from what being presented to the audience and what actually applied to the audience.

### **3.1.3.3 Stories**

*Yet another facet of this multidimensional approach to adult learning is the emergence of narrative learning as a way to theorize learning. Clark and Rossiter's chapter on this topic makes the observation that we "story" our lives to give meaning to our experiences. Learning can be construed as meaning making; therefore narrative is a form of learning. We learn through stories of others, but also "when we're learning something, what we're essentially doing is trying to make sense of it, discern its internal logic, and figure out how it's related to what we know already." We create a narrative, a story, about what we've learned. Narratives exist on many levels: the*

*individual, family, society, the workplace, and so on. One of postmodernism's tasks, according to Hill, is to take on and critique some of the "metanarratives" of adult learning. Metanarratives are "comprehensive ways to order and explain knowledge and experience"; they are stories about what we believe to be true.*

(Merriam, 2008, pg. 96)

According to Daft, an organization's *Stories* indicate what is important to the organizations culture (2008, pp. 364-365). For training cultures, the importance of stories is to illustrate concepts, or as Merriam so aptly put it above, to illustrate "what we believe to be true." The importance of *Stories* in organizational cultures during emergencies and day-to-day operations was more difficult to examine and the findings varied depending on the different professions.

In the FEMA course material, fictional stories were used in activities to provide participants with some context through which they could "learn" the particular set of information. In the two ICS-400 Complex Incidences courses, (both FEMA issued, though one was presented by the private contractor and the other was presented by a state agency), the story of the oil spills during Katrina was used to further illustrate the *Concept* of "area command." Understanding how "area command" applied to Hurricane Katrina response helped illuminate the function of the *Concept*.

This is how stories were used in all the courses: providing "real-life" examples to illustrate the *Concept* at hand. Though the wildfire course used no stories in its course materials, the course text was augmented with stories "from the line" told during the course by the instructor. Instructors for every class used this method almost as a default for illustrating a *Concept*. In some instances, the instructors invoked more than one story to help explain the *Concept* in its entirety.

Previously, I mentioned the instructor who demonstrated ICS implementation by guiding the class through a series of questions about a hypothetical plane crash. In

another example from the same class, the instructor followed a similar process for an active shooter scenario. Once he asked enough questions to lead the class to satisfactory answers, he revealed the scenario was extracted from the Columbine school shooting. Interestingly, once he revealed this detail, the reality of the scenario helped to illustrate to me as a participant the significance of the *Concepts* being taught, such as the difference between branches and divisions and strike teams and task forces. This use of “real-life examples” was a popular method of *Concept* illustration in all of the courses.

These examples, however, in all of the classes at all levels, were traditional first-responder heavy. Many of the participants for many of the courses were traditional first-responders, but not all. Even in the profession specific classes online, or in the classes where first-responders were not the majority of the participants, many of the examples were not specific to the disciplines represented as the stories focused first-responder experiences.

Despite this fact, interview participants showed a preference for this teaching tactic. Several interview participants stated explicitly that they either liked the “real-life examples” that were provided or they would have liked to see more of these in the courses.

Well from an instruction, they, they, they used their experiences, they tied it into what you were doing or could do and they actually made it so that they explained how it could be used, what it could be used for, rather than just saying here it is, this is kind of how you do it, go figure it out.

– Participant 11

It-it was just a run-of-the-mill PowerPoint, uh, that didn't give real world examples, and most of us are—I can speak for myself—me, I would have liked to see a real world example of the tiers in the program. If this

happened, this is what-this is what you might need. And that's-that's what happened with the 200 class was, it was real world examples throughout the day, both days, and you could actually see what-what you could pull in, and what you couldn't pull in, and that explains it a lot more than just a-just the basic PowerPoint with 'ok, this is commander, this is his goal. . .  
– Participant 12

I liked the stories the best, the thought process, the planning element, the real life experience. I mean the real life examples. – Participant 13

If I was teaching this class I would probably try to elongate it. I would cut down the sections to smaller sections and maybe practice each one smaller section. Or give a video or real-life scenario of that person doing that particular um, situation. . . And then maybe practice a brief tabletop operations, you know, as a group of people. . . So everyone would have a clear understanding of what they were supposed to do. They heard it not just by text and lecture, but they heard it first hand in their own words, from someone that's been there and done that. That is the most valuable bit of teaching ever. – Participant 8

What leads me to feel that way is there was phenomenal participation by the participants that showed that they grasped and understood the philosophy, the mindset, by real world examples. They were able to – with very little direction do application...  
– Participant 14, an instructor explaining the advantage of “real world examples”

As a final note about *Stories*, the only stories that provided clear indications as to what was important with their organization or agency came from first-responders. For each of these professions – fire, law enforcement, EMS – the fundamental message behind each story was safety, either of personnel or the public. This is perhaps because in each of these professions, stories of actual events or mishaps that

led to injury or death, are passed down and throughout their professions to emphasize the prime importance of safety.

#### **3.1.3.4 Rites and Ceremonies**

There were few findings for *Rites and Ceremonies*, and the primary finding echoed a similar finding from the other concepts: *Rites and Ceremonies* were unique to professions and oftentimes the organizations to which they belonged.

The more training or education required for a position in a profession (*Rite of Passage*), the more prevalent and prominent were *Rites and Ceremonies*. For example, law enforcement personnel undergo extensive background checks, personal interrogations, and an intense several-months-long-training-academy (*Rite of Renewal*) prior to hiring on to a law enforcement agency; they also have institutionalized awards ceremonies and memorial ceremonies for fallen officers (*Right of Enhancement*). In an alternate example, elaborate training and vetting processes were not required for town governments, as these entities had a simpler *Rite of Passage* process of running an ad in a local paper and interviewing applicants. Participants from organizations without intense vetting processes provided virtually no examples of *Rites and Ceremonies* or special events to distinguish themselves from other professions.

There was one interesting finding in the data when examining the *Rites and Ceremonies* code, however. Each identified profession talked about *food* at one point. In fact, there were 16 unique mentions of food out of 25 interviews. What's more is that in my observations, the only time I was able to converse and "get to know" people was during the lunch hour. From Christmas dinner parties to emergency snacks, "safety breakfasts," awards dinners, and catering during EOC activation, 16 people

referenced some type of food item or event. Especially when people thought about good times, and support and appreciation from their organization, they referenced food. What else was interesting was that in all of the government-taught classes, lunch was "on our own", and in the NGO classes, food was provided for us. Lunch was also the only time people let down their guards and were able to converse and get to know one another, and in general, I noticed people, myself included, had fewer harsh critiques of the NGO class than the government classes.

### **3.2 Emergent Concepts**

The last section on *Rites and Ceremonies* marked an end to the theory-inspired “predetermined” codes in the data set. This subsection and subsequent subsections describe themes that developed inductively from the data rather than deductively from the Situated Cognition pillars.

#### **3.2.1 Personal Experience**

*Personal experience* codes became an apparent theme in the final framework because evidence from this research suggests that a participant’s personal experience with ICS has a direct effect on their learning. For instance, all participants who had previous fire experience, either structural or wildland, expressed medium to high levels of confidence with the system when asked, and demonstrated a working knowledge of the system in their interview responses. Conversely, none of the education professionals – professionals with limited to no experience with ICS – with whom I spoke expressed more than a low level of confidence in their ability to use the system, even after taking the class. Furthermore, no education professional I interviewed could see how ICS applies directly to their job and no education

professional expressed having ever used the system to manage an emergency or having even been part of a system for a larger event. In fact, one elementary school principal explained to me that until the end of the course, she was expecting to develop an emergency plan for her school, as she thought ICS was specifically an emergency plan development tool. Additionally, the participant who worked for a rehabilitation clinic demonstrated confidence in her ability to apply the system as well as an understanding of the system by using ICS terms and referencing positions as they were taught in class without hesitation or second-guessing her use of the terms. She explained that she deals regularly in emergency situations and attempts to implement the system for each incident. Department of transportation participants expressed medium to high levels of confidence with the system and they also explained that they are almost always involved in any community or state-wide incident command structure. Meanwhile, the department of health participant understood the course material but did not express confidence in understanding how the system applies to his position or department.

These patterns indicate that the more a person has experience with the system, the more confidence they have with it and the more they can show that they understand it.

### **3.2.2 Lack of Understanding**

In contrast to participants' demonstrations of confidence and understanding of the system, the theme *Lack of Understanding* also emerged from the data. For this particular pattern, I noted 38 items that showed anything stated by interviewees or course participants that was incongruent, either with what was taught in the course they attended, or my own understanding of ICS based on my own training and

experience. For instance, multiple participants made similar statements that during an emergency, they “didn’t have time to fill out boxes,” indicating that their understanding of ICS was that to implement the system, they merely needed to “fill in” boxes with names of people who would fill the roles of an ICS organization chart. Actual ICS implementation is much more than simply “filling out boxes.” Several participants also stated that they had taken the ICS-700 and 800 courses, when neither of these are ICS courses, but prerequisites FEMA courses covering the National Incident Management System and the National Response Framework, respectively. Two of these participants also thought all FEMA online courses were ICS courses. Another participant referred to herself as the “incident command post” when asked what her standard role is in an ICS structure. Yet another participant could not tell me the words for which “ICS” stands.

In general, it seemed that much of the information presented to us was lost on us, myself included, despite the fact that I sat through the 10 classes. Though I could tell you the difference between a “strike team” and a “task force” I could not tell you which ICS positions get deputies or which get assistants. I primarily attribute this to the sheer volume of information presented to us in each class. Even for someone such as myself with ICS experience and training, I found the amount of information presented in the courses overwhelming. In the next section, “overwhelming amount of information” is included as an identified “learning obstacle.”

### **3.2.3 Obstacles**

During the course of the study, some pieces of data pertaining to “learning” obstacles stood out even before the analysis began. Adult learning literature pointed to some likely inhibitors and I directed some of my interview questions towards these



to see if they were also present in this study. For instance, I asked participants specifically about applicability of ICS to their current positions because adult learning literature, including literature on Situated Cognition, suggested that adult learners are less likely to absorb information if it does not apply to them. However, in many instances, people offered their own ideas before prompted – and many of these coincided with notes I took during the courses.

For instance, the most reoccurring *Obstacle* identified by participants pertained to a lack of engagement during the course. Simply put, people were bored; either because the participants felt the information did not apply to them, or the information was not presented in ways that interested participants. One participant remarked that the ICS-300 class he attended “seemed bland” while another stated of the two ICS courses he had attended “both were pretty dry.” Another participant stated that he found “some parts very boring” and when I asked him specifically which parts were boring, he replied with “I think most of the lectures.” To be clear, all of the in-class courses involved lecture at least half the time, meaning that this participant was not engaged for at least half of the class.

In my observation notes, I attempted to acknowledge each time I noticed my own lack of engagement or difficulty focusing on the subject matter at hand. Many times, these notes appeared consistently after the lunch break (as every in-class course had a lunch break, though I was not present for the wildfire training break), though the notes appeared randomly throughout the days as well.

During the courses, especially the courses that lasted more than one day, I noticed my attention started to wane during the lecture portions of the class. Most of

these sections were dense with information and after a while of listening attentively and taking notes, I felt I could no longer absorb the information provided.

The second *Obstacle* code pertained to the applicability the participants felt the information or the class had to their own job. As discussed earlier, this is consistent theme in adult learning literature. Specifically, the literature points to the importance of relevancy of information to the learner – if adult learners do not feel that the information applies to them or their situation, then are less likely to absorb the information. For this reason, I asked interview participants which courses or *Concepts* they liked or did not like, or which courses they did or did not feel applied to them. Generally, participants did not feel that ICS applied to them or their job, though some could see it as a potentially valuable tool. One participant stated of her ICS-100 course:

How it would apply to the [this organization] was more difficult, and what facilities' role was in that, or would be, and-and how this football game operation, this whatever they call the thing they do during football games-that did not seem at all to fit this training, you know, that did not seem to be anything that the training said 'this is how you run an emergency operations center.' That did not seem to match what we do for the-for the football games, in terms of even standing up an EOC for planned events, which obviously football games are planned events, and the way we actually deal with the football games-from the facilities perspective. It seemed very well suited for first-responders, and still-still haven't figured out how exactly facilities really fits into that, other than obviously being available to provide something if somebody asks for or information about a building, or wants somebody to turn a valve, or do something like that, I clearly get that, and that's the way-the mode we've been in.  
– Participant 15

Here, the participant indicates she has even been involved in ICS-like structured events and despite the class she attended (though she does admit in the interview that she missed part of a day of the ICS training), the applicability of the system to her organization or her role still eluded her.

Similarly, I asked participants if there were any classes or specific lessons that were difficult for them to understand. Three responses occurred most regularly: “chain of command,” “positions and roles,” and “terminology.” The former two seemed related as most of the confusion linked to “who was in charge”; specifically, who would be their immediate supervisor in an incident and who would be in charge over the entire operation. In more than one observation, I noted confusion on the part of participants over the “unified command” *Concept*. Unified command is an ICS organization that requires more than one “Incident Commander,” because of the involvement of multiple agencies, multiple jurisdictions, or both. In a unified command, more than two or more incident commanders make collective decisions for the ICS organization as a whole, though there may be a chosen spokesperson for the unified command unit. In each noted observation, it took multiple times of explaining that there is not one person “in charge” in a unified command but, instead there is more than one person that makes democratic decisions for the entire ICS structure. Participants had a hard time getting past the idea that there is not “one person in charge.”

The third component participants found difficult to understand was “terminology.” This identified *Obstacle* referred to two different ideas related to “terminology”: the general terminology of ICS and the reasoning behind the ICS tenet

“common terminology.” This tenet is also referred to as “plain speak,” “plain English,” or “clear text” and exemplifies the confusion for general ICS terminology.

During my first observation – a 200 level class – the instructor was at one point teaching the section on “position and roles,” and he began having to review the information several times as participants expressed their confusion on the difference between the lead roles and how those would apply to their respective agencies. At one point, one participant seemingly frustrated with the idea of his lieutenant being referred to as a “unit leader” huffed the question, “If we’re supposed to be using ‘plain English’ or ‘common terminology,’ why are we trying to call different positions by different names just for ICS?” This was a very valid question, especially considering the subject matter we were covering and it gave the instructor a moment of pause. What this example shows is not only a lack of clarity on the subject of positions and roles, but also on the multi-agency coordination function of ICS.

Some of the participants in my interviews were ICS instructors. When I asked them which classes or *Concepts* were most difficult for their class participants to grasp, their responses concurred with the class participants: “chain of command,” “positions and roles,” and “terminology” were often where most participants required additional clarification. When asked which groups, if any, tended to have the most difficulty in the classes, almost all of the instructors stated that participants who had never used the system or had no frame-of-reference for the system. One instructor stated that participants who have been in their positions for several years, and to whom ICS is new have the most difficulty understanding the system. In either case, the answer points to someone who is new to the system.

When asked about online courses, interview participants from all course levels, professions, experience-levels stated that the online courses were not conducive to them understanding the course material. Most people who had taken the courses online indicated that they merely clicked through the courses to get to the test and did not absorb the information presented.

#### **3.2.4 Facilitators**

On the flip side, participants also offered suggestions on ways classes could be improved or components of classes they found particularly helpful. General comments for "facilitators" of the trainings span a range of ideas. "Good instructors" came up several times across four of the five professions in this study. "Good" was generally qualified as someone who understood the material as well as someone who had lots of experience or could cite personal experiences for examples. Other general comments of what was "good" about the class were that ICS gives a broad overview of what the intent of NIMS is, ICS is a good tool, the classes build on each other, ICS is similar to the chain of command system used in schools, and one person stated that the "Planning P" is a good facilitator to learning ICS.

When it came to courses that participants liked the most, or considered most applicable to their job, participants favored the 300 level course over any of the others. The state agency-delivered-300-level-course is the only course that included a tabletop activity that attempted to simulate a real event. In general, participants favored the most advanced course that they had attended with the exception of two participants who preferred the 100 level course and considered it more applicable to their respective jobs.

Participants varied on the *Concepts* they found most easy to understand. Two people specifically stated that the organizational structure was an easy *Concept* to teach people while one said the “chain of command” and “unity of command” and another said “span of control.” These as a whole suggest that the structure of the system is the easiest to understand by participants, as opposed to the *Concept* of “common terminology” as suggested by another interview participant. One comment by an interviewed instructor was that participants seem to understand that "everyone has a job."

Many of the interview participants provided suggestions for how to improve the class, which I noted as “potential facilitators.” Two more participants suggested refresher trainings after the initial course so the information is reinforced. One interviewed instructor mentioned that organization expectations need to be clearer, although this is more of an organizational issue than a systems issue. Another participant suggested that the EOP be disseminated and explained throughout the ICS structure; again, this is more of an organizational issue as well. Another instructor interviewed suggested that ICS training levels need to correspond with the level at which the participant will be operating in the system. This particular instructor believed that many people are “over-trained” for their positions and even for any positions they might hold in their career. Of the interviewees from the police academy, one suggested that the ICS course should be administered later in the academy because they would have a frame of reference, whereas as recruits, only some have experience first-hand. Two people specifically stated that more "hands-on" activities would improve the class and one stated that "not sitting there for 8 hours a day" would greatly improve the efficacy of the training.

Along with these facilitators of the ICS trainings observed in this study, this chapter identifies some potentially important contributing factors to the ICS learning experience.

In the next and final chapter, I discuss these findings and what they mean for this study. Additionally, I discuss some areas for future research based on the limitations of this study, and some of the implications for the future of ICS training and learning.

## **Chapter 4**

### **DISCUSSION**

This research endeavor began by questioning how closely ICS implementation relates to ICS effectiveness. It is generally agreed that ICS does not work as well in emergency management as it does in its wildfire management (Dynes, 1994; Quarantelli, 1996; Wenger, 1990). Because my time as a wildland firefighter demonstrated to me that ICS can be an effective and efficient response tool, I became curious as to what differences existed between its implementation in wildland fire management and its implementation in all-hazards emergency management. Though there are many components to ICS implementation, I chose to start from the beginning and look at how ICS is taught and *learned*.

Throughout this study, I compared my wildland fire ICS learning experience to my general emergency management ICS learning experience. This juxtaposition helped me to illuminate some similarities and differences between the two types of experience. In the remainder of this thesis, I explain my findings and show how these answer the four questions that drove this study. I then explain my limitations and assumptions and I show how these create pathways for future research. Lastly, I identify what this could mean for the future of ICS learning and training.

As a reminder of the four driving questions, they were

- 1) What kind of cultural variations exists within ICS trainings?



- 2) What influence does that culture have on learning?
- 3) How does the culture of the temporary training settings resemble or differ from the context in which the users implement the ICS tool?
- 4) What are the characteristics of the contexts where users are implementing the ICS tool during emergencies?

By reviewing the seven themes that arose from the data (*Concepts, Activity, Culture, Personal Experience, Lack of Understanding, Obstacles* and *Facilitators*), and explaining my findings for each, I answer these questions, beginning with the significance of *Concepts*.

Each of the ICS courses presented a plethora of *Concepts*. There was a notable difference in the presentation of *Concepts*, however, between the wildland fire ICS course and the generic ICS courses.

In the wildland fire course, the *Concepts* presented related specifically to wildland fire management. Among these wildfire-specific terms were ICS *Concepts*, but the ICS *Concepts* were components of the broader wildfire management context being presented.

Conversely, the ICS *Concepts* were the *focus* for the FEMA courses and were largely sterilized and free of organizational context. When the FEMA course *Concepts* were presented in context, that context was usually that of traditional first-responder professions. This was so even in the online courses designed specifically for education and health care professions. Even if all participants of a course fell under the general description of “traditional first-responders,” (which none of them

did) this “first responder bias” applied to firefighters, EMS personnel and law enforcement personnel – each of whom work in unique professions that enlist their own specialized set of *Concepts*. We learned from the Situated Cognition theory that if *Concepts* are presented to learners so that they can apply them in a way that is meaningful to them (such as to their own positions or professions), not only are they more likely to understand the terms, but they are more likely to be engaged in the learning process. By this reasoning, the participants of the wildfire ICS course were more likely than the participants of the generalized FEMA courses to understand the *Concepts* presented in their class because they could apply them to the context of their respective professions.

*Activities* are another way to allow students to apply *Concepts* and gain understanding. Each FEMA course included multiple activities per day, of various types, whereas the one observed wildfire course had none. (At an hour and a half in length, the wildfire course left no time for activities!) However, Situated Cognition theory states that it is *Authentic Activity*, the everyday tasks of an organization, that truly allow the learner to apply and understand the *Concepts*.

In the 13 times I have taken an ICS course, only twice did I have the opportunity to practice implementing the system in an authentic context: my first wildfire ICS-100 experience involving a prescribed fire (detailed in Appendix A.) and the other was the ICS-300 level tabletop flood response simulation.

Of the two experiences, the wildland fire activity applied more to me as I was operating in a role that more closely resembled the role I would be operating in,

performing tasks I would normally perform and the activity was designed to provide us with experience operating in a likely role performing likely tasks. The second activity, the tabletop simulation in the 300-level course, was designed to provide us the experience of putting together an IAP. What our usual roles and tasks would be was irrelevant for this event, as we self-selected into a pre-determined number of pre-identified roles. Both experiences were valuable, but one was significantly more authentic, and thus more valuable as a learning tool for understanding ICS *Concepts*.

That being the case, I only participated in one authentic experience in all four of the wildland fire ICS courses that I attended. Moreover, in the third course I attended (detailed in Appendix A), the instructor flew through the material and at the end told the class “You’ll learn it all out there” meaning “You’ll learn it when you do it.”

However, the lack of *Authentic Activity* likely plays a different role for wildfire ICS course participants than it does for participants of generic ICS courses. The difference between the “you’ll learn it when you do it” in a wildland fire context and “you’ll learn it when you do it” in a general emergency management context is that wildland firefighters end up using the system every day because it is integrated into everything wildland firefighters do. Conversely, education professionals, department of health employees, and even law enforcement and emergency management professionals (all examples of professions of people who attended the courses I observed) do not use the system on a daily basis and thus have fewer opportunities to

“practice” the system. Thus, the old adage “use it or lose it” is the reality for many ICS learners.

However, the 300 level course presented by the contracted instructors provided an interesting alternative to a physical activity where participants act out certain roles. Instead, he used a mental activity by engaging the course participants in the hypothetical response to a plane crash scenario. Though the participants did not receive the opportunity to engage in any “ordinary practices” of their cultures, by presenting a scenario and guiding the participants through by asking questions, the participants were able to build a mental model of what ICS implementation would look like for them in such a scenario. Though this *Activity* is less *authentic* than the prescribed fire *Activity*, or the tabletop simulation, it was *more authentic* than the other abstract *Activities* involving hypothetical players and jurisdictions.

As a final note on *Authentic Activity*, across the board, online courses were regarded by interview participants as the least effective way for individuals to learn ICS. These online sessions are viewed as good ways for ICS users to become aware of the tool and its working parts, but not as a way for learning the tool. This is perhaps because this was the least *authentic* venue for learning ICS of all the venues. Not only were the courses full of abstract *Concepts* and unfamiliar activities, they are presented in an abstract setting, to a single user for a system usually requiring more than one person, with little to no context for the user.

*Context*, as the evidence suggests, is important when it comes to adult learning.

For this study, I examined three specific cultural contexts: 1) the temporary culture that emerges in ICS trainings, 2) the expression of an organization's culture during day-to-day operations, and 3) the expression of an organization's culture during emergency operations. Essentially, I wanted to see if ICS training cultures matched the cultures of the organizations represented in the courses during times of emergency, and what influence the day-to-day culture of an organization had on the emergency culture or the learning of ICS.

Ultimately, I found that aside from my wildland fire ICS courses, the *Culture* of the ICS classrooms resembled ICS implementation *Culture* (organizations in emergencies) barely or not at all. When applying the four cultural indicators to the courses, *Symbols and Tools*, *Language*, *Rites and Ceremonies*, and *Stories*, the only course of the FEMA designed courses that even came close to resembling a similar context of ICS implementation was ICS-400 Introduction to Area Command. In these two courses, most of the people attending were upper-level management or were key decision makers for their organizations. In these courses, the implementation of the system focused on objective setting, decision making, working with a variety of organizations, and other managerial tasks, which would apply to their positions if they found themselves implementing area command. Additionally, these courses took place in facilities representative of facilities in which these participants would likely be working in an area command situation, such as an emergency operations center or standard office space.

However, these participants did not use any of the tools they would have normally used in an area command implementation, such as computers, cell phones, radios or other communication devices and all of the scenarios for the activities were for made-up jurisdictions, not a jurisdiction that would apply to them directly. Yet, this was still the closest any of the courses came to representing an actual *Culture* of ICS implementation.

In attempting to understand the key differences between the expressions of organizational culture during emergency operations and the day-to-day culture, I asked participants to tell me what the biggest difference was for them between these two instances. For the majority of participants, the biggest differences between two are the amount of time and the level of uncertainty. In this respect, the culture of the ICS courses I observed – including the wildfire course – more closely resembled day-to-day operations, because there were no real time constraints on the classes and the only uncertainty anyone seemed to have was about their own knowledge and ability in regards to the system. However, the pace of ICS classes might be an advantage when considering the introduction of new information, especially the amount of information that is presented in these courses.

FEMA-issued courses, however, are not designed to teach people how to function in their own organizations on a day-to-day basis; wildland fire courses do, inasmuch as ICS principles are used on a daily basis in wildland firefighting.

Moreover, there seems to be the pervasive thought with FEMA-designed ICS classes, that if courses are presented generically enough that they will apply to

everyone in the class. The evidence presented here suggests it is likely more the opposite -- generic ICS courses are abstracted too much for the information to be applicable to the general user.

The four themes that emerged out of the data analysis did not specifically relate to the Situated Cognition theory, but they seemed to play important roles in an ICS learner's experience.

For example, whether or not a person had experience with ICS prior to attending a course seemed to play a large role in a participant's understanding of the system. If participants had previous experience with the system, they seemed more capable of grasping the subject matter. This is likely due to being able to apply the *Concepts* and terms to the context where they used the system.

In connection, a participant's confusion or "lack of understanding" of subject matter impacted their learning experience. Invariably, this related to a basic component of the system or a misunderstanding that could have easily been addressed in the courses. Yet, in the interviews, where most of this was noted, participants either bluntly stated that they did not understand part or all of the system, or they misused or misrepresented one of the ICS *Concepts*. If participants are attending these courses to learn the tool, but are coming away from the courses not understanding some of the basic principles, then it stands to reason that there are learning inhibitors during the participant's course experience.

These inhibitors were ultimately relabeled *Obstacles* and they centered on two foci – *applicability* and the participants feeling *engaged*, and it is likely the former

affected the latter. The findings in this study indicated that if the participants do not feel that the information applies to them, they are less likely to be engaged by the course, and less likely to learn the information that is being presented to them. I have already addressed the importance of *applicability* to the ICS learner's experience, but because it is indicated as such a crucial element, it merits another mention. As a further indicator, the overarching theme to what participants said *facilitated* their learning was applicability. The participants cited activities and first-hand accounts or real-life stories as the primary tools that helped them understand ICS.

#### **4.1 Conclusion**

So, what does all of this mean for the general ICS learning experience? First, let me be clear that this thesis is not intended as an indictment against FEMA's training program. There has undoubtedly been a great deal of effort and thought put into ICS student needs, as is evidenced by the scaffolding teaching strategies intended to bolster student confidence in their own understanding and mastery of the ICS tool. What this thesis *is* intended to do is provide ICS trainers ideas for creating more robust and effective trainings for their students, regardless of profession, organizational position, or experience level.

With that being stated, consider the first of the four original questions: **What kind of cultural variations exists within ICS trainings?** When it came to the FEMA-designed ICS trainings, few variations existed, regardless of venue, course level or presenting agency. There were certainly differences in training styles between the



instructors and the information changed slightly between course levels, but the training materials contained all of the same pictures (*Symbols*), the slide presentations looked almost exactly the same (*Tools*), the scenarios we walked through were very similar and heavily first-responder influenced (*Activities*) and there were many redundant *Concepts* that were taught throughout the courses, regardless of course level.

The wildfire courses I have attended, including the one in this study, also were very similar to each other as well. They were all taught from the same student manual edition, which meant they also adhered to teaching the same *Concepts*. However, the differences between the FEMA training *Culture* and the wildfire training *Culture* were many. FEMA courses attempted to be general and applicable to all-hazards, organizations, management levels and positions. This in itself presents issues given the importance of applicability to a learner's experience.

Despite their efforts to generalize the class, however, the courses were heavily influenced by first-responder cultures (even the online courses intended for healthcare organizations and education professionals), thus making them more applicable to first-responders, (though not to any particular first-responder culture). In contrast, the wildfire ICS course units taught basic wildfire management *Concepts* within the specific context of wildland fire management. Both courses were, for all intents and purposes, generalized, but the FEMA courses were generalized more broadly to encompass all professions, in contrast to the wildfire courses, which generalized to the wildfire profession.

Then, *what influence does culture have on learning?* Evidence here suggests that *Culture* is indeed important to the learning process. Much like in the wildfire training courses, participants who learn within the context of their own organizational *Culture* are able to relate the information to their own position and roles. This *applicability* was a strong theme throughout this study.

*How does the culture of the temporary training settings resemble or differ from the context in which the users will be implementing the ICS tool?* For all of the FEMA courses, except for the ICS-300 class that included a tabletop exercise, the cultures of the training settings are abstracted from any real context where users would actually apply the system. Based on the interviews I conducted, it seemed some of the ICS terms may be the same from class to a participant's organization, but that is about the extent of the similarities. None of the tools would be the same nor any of the *Activities*, nor most of the language. Neither *Rites and Ceremonies* nor *Stories* really applied to such temporary contexts. Wildfire courses are abstracted as well, but the language in the courses, the *Concepts*, as well as some of the tools are all generally the same as what firefighters would use in the field.

The final question posed a mostly fruitless endeavor. *What are the characteristics of the contexts where users are implementing the ICS tool during emergencies?* The one important finding for this question was that in every interview, the person indicated that their communication tools were critical to their daily operations as well as their emergency operations. However, in none of the classes, (with the exclusion of the pretend fax machines in the practicum of the 300 level class

and a field exercise in my first wildfire ICS training where we used two-way radios) were two-way communication tools used. However, communication was probably emphasized more than any other concept in this entire study.

In reviewing this information, I have drawn three conclusions: 1.) Generalized ICS trainings are not useful to students because students cannot apply the information they are attempting to learn to their actual positions, 2.) ICS training may be more effective if participants were able to perform the same or similar tasks in the courses as they would in the context in which they would actually implement the tool, meaning performing the tasks they would actually perform in their own organizations and, 3.) Online courses are likely only useful at raising awareness about ICS and its components, not for teaching, training, or certification purposes.

#### **4.2 Limitations and Assumptions**

The first limitation of this study is the assumption that ICS learning affects (negatively) ICS implementation. Currently, only one study has been conducted that links training and implementation (and only very recently and only after the conclusion of this study), though it is believed that more research related to this notion are in progress (Wang *et al*, 2012). Should future research invalidate this assumption, it will invalidate most of this study.

The second limitation is the assumption that people are not learning the material. Though my personal encounters with practitioners suggests that this is likely an issue, no scientific evidence exists to refute or support this information.

Additionally, the sources for this study were limited. The courses observed for this study, which ultimately determined the all of my sources, were almost entirely of FEMA courses, with the exception of one wildland fire course. This undoubtedly biased the sources for this study, as all the course materials were from one primary source and all the interview participants belonged to organizations that outsourced their ICS trainings. As one of the major conclusions from this study suggests that ICS trainings may be more effective if they are taught “in-house,” I only have data from one organization to point to and say that this may be an effective method.

#### **4.3 Future Research**

Upon reviewing the limitations and assumptions of this study, future research should look at:

- a.) Whether ICS students are learning ICS or not, and why or why not
- b.) Whether ICS learning affects implementation, and if so, how
- c.) An extension of this study on a more comprehensive scale to include ICS trainings from a wider variety of training programs throughout the U.S.

A study such as this last would include trainings from a broader range of issuing organizations, such as hospitals, railroad companies, hazardous material companies, Red Cross chapters, etc. In one of the ICS-400 courses that I have taken, a participant who worked at an oil refinery explained that they had their own ICS training courses (though the program did not include ICS-400) and this would be another excellent data source. It is likely that a study including these additional training programs would provide additional insights to ICS learning and trainings.

In fact, since 2012, two studies akin to the one I conducted here have been published. One article is titled *Application of incident command system in emergency response* in which the authors address ICS implementation and training (Wang *et al*, 2012). The second article is titled *Cultural Influence on the Implementation of Incident Command System for Emergency Management of Natural Disasters* (Tsai and Chi, 2012) which examines the *cultures* in which ICS is implemented. These further indicate that *Culture* may play an important role in ICS learning and that ICS trainings deserve a closer look.

A less obvious channel for future research that I recommend stems from a set of questions that continuously emerged throughout this study, but did not fit in the scope of this study:

- 1) What is the difference between *learning* and *training*?
- 2) How do these differences apply to ICS courses, if at all?
- 3) What are the components of ICS that need to be *learned* and what components need to be *trained*?

Participants of my study underwent training for their positions anywhere from one to 28 weeks. A preliminary review of adult learning literature suggests that they probably underwent both “training” and “learning” activities and that the two are considered separate processes; training is considered “single-loop,” or the learning of a behavior, while the accumulation of knowledge for the sake of understanding is considered “double-loop” learning (Argyris, 1977; Argyris, 1982; Schon, 1987; Swanson and Holton, 2001). The former requires less real-time mental processing and

is ideal when an automatic behavior is desired of an individual and the latter is an accumulation of knowledge so the individual has an understanding of the subject matter.

Even if future research produces insignificant findings for the first three recommended studies, identifying ways to improve the current system offers only beneficial implications.

#### **4.4 Implications**

For years, critics have said that ICS is an inappropriate tool for general emergency management. They reject the assertion that because the system works in wildfire management, it can work in emergency management, too. Certainly, they have grounds to argue that it has not been met with the success that it has in wildfire management.

Two things implored me to produce this study: 1) A conviction based on my wildfire experience that ICS could very well work as successfully for emergency management as it does in wildfire management and 2) Donald Moynihan's charge that those who believe in the system should understand what makes ICS work and under what conditions.

Therefore, I suggest that what is needed is not a generalizing of ICS, but a tailored application of the system in the context of the organization applying it. Plainly put, organizations need to have ICS trainings in-house so that the users learn how to use the tool in the context that is most applicable to them. Emergency managers and

organization leaders should attend “Train the Trainer” courses in order to learn how to train the system at a FEMA standard level, and then take what they learn and apply it to their own organizations. While designing the course to fit their organizational needs, they should ask such questions as “Who will serve as incident commander? Who will serve in logistics? In order to adapt the ICS system to the training and the organization, what “units” already exist within the organization that will work as ICS structure units? Do these units fit the “span of control” principal and if not, what common-sense adaptations could be constructed so maximize efficiency? Additionally, trainings should take place in the locations where the tool will be applied. In some situations, this will be easier to determine than other. However, the closer the training context is to the context in which the user applies the tool to their day-to-day functions, or functions with which they are most familiar, the more easily the user will be able to apply the tool. ICS students should train with the actual tools that they will be using in a real event, most importantly the communication devices they will be using. Based on my evidence, I believe this is particularly crucial. If communication is a paramount concept for emergency management and ICS, and communication devices are necessary tools in ICS users’ day-to-day and emergency operations, then having ICS users train with their communication devices to gain comfort and familiarity essential. First responders may be very familiar with radios, but education professionals or public health professionals may use cell phones instead. If the results of this study imply anything, it is that for the ICS tool to make sense to users, it must adapt its function to its users need, not the other way around.

However, a typical one-dimensional training program would not suffice, especially if organizations determine that the usage of ICS will extend beyond managing their own incidents. Though evidence here suggests that users must first understand how to apply the tool within the context of their own organization, users must also train in the context of large exercises with multiple players in order to understand how to apply the tool when working with multiple organizations. In these training exercises, too, first responders may use radios and education professional may use cell phones, but what if these two entities need to speak to each other? ICS is designed to be flexible so that it pertains to singular incidents, such as a small incident with just one organization, or plural incidents involving multiple organizations. However, this means for the user that to understand how to apply the tool in both contexts, they need to practice the usage in both contexts.

As Strambler and Barbera showed us in their historical review of the system, ICS was designed to apply to more than one organization. Indeed, various railroad companies, hospitals, oil refineries, and hazardous material units have used the system within the context of their own organizations for years. The issue is no longer the breadth of ICS in our country, but instead the quality of use and the depth

In many cases, organizations are already implementing such training strategies as ICS is being adapted to planned events, which are perfect non-emergency training opportunities. For instance, the University of Delaware uses ICS to manage the influx of people and increased traffic for football games and Dover Downs racetrack in



Delaware uses this tool to manage race days. Perhaps this is one tactic for organizations to implement their own organizationally-tailored training opportunities.

Whatever the strategy for training the system, some questions should be considered prior to administering a course: What are the most important ICS elements to be conveyed at each level? Which of these elements need to be *trained* and which ones need to be *taught*? To expand, what are the parts of ICS that require automatic behaviors and what parts require information processing and analysis? Additionally, is the intent of teaching ICS so that individuals or organizations can operate in an ICS structure? Or is the intent to teach organizations how to apply the system to their own emergencies? I encountered these questions continuously throughout this study and if ICS instructors can answer them, then perhaps it will make it easier to design the course to better fit the audience.

For certain, Donald Moynihan is right in asserting that ICS is here to stay. Now, as the next generation of emergency managers, our task is to find what makes ICS work and under what conditions. I believe this study helps us do just that.

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## **Appendix A**

### **WILDFIRE ICE LEARNING EXPERIENCES**

My first wildland fire ICS learning experience took place during a five day wildfire training weeks I underwent as an AmeriCorps service member. There were about 20 people in the class and only a few were not members of my group. The atmosphere of the class was relatively relaxed; there were no dress requirements except for the last day (unlike a course described below), our three instructors -- all employees of the state forest service presenting the course -- answered questions with humorous quips and anecdotes to illustrate their responses, poked fun at each other during their presentations, offered genuine personal accounts for “how it really was on a fire,” and tolerated the occasional outburst of energy that comes with a room of mostly 20-something’s. The facility was a state forest service multi-purpose building with wood-paneled-walls, sparsely populated with posters of Smokey the Bear, firefighting information and wildlife charts picture different species of fish and flowers. The instructors covered a great deal of technical wildland firefighting information and jargon; only a fraction of which was ICS-related. During that small part, I remember seeing the ubiquitous organizational chart that seems to accompany every training, discussion of, or reference to the incident command system. The instructors covered the “chain-of-command” and the responsibilities of each role and their relation to the role we would be serving in were we to ever get on a fire. What I

remember most about that particular training are the “in-the-field-exercises” that came at the end of the week.

The first exercise lasted approximately a half-hour and was designed to demonstrate the act of “gridding”: a fire team lines up equidistant from one another at one edge of a section of land that has burned and as a unit, combs the section in attempt to find any remaining hot or burning fuel. However, for the sake of demonstration, our class lined up along a roped-off section of unburned forest and scanned the leaf-litter for pre-placed orange-wedge candies. Though the design of this exercise was fire-specific, we were required to practice some ICS tenets during the course of the exercise such as “common terminology” and “chain of command.”

The entirety of the last day of the first course was taken up by the final exercise. Our instructors set up a small prescribed burn for our class to practice our newly acquired skills. On this last day, we were required to wear the appropriate personal protective equipment (PPE) which included fire-resistant clothing, leather boots eight-inches-high with Vibram soles, a hard hat, a wildfire specific backpack, a fire shelter, an MRE and gallon of water in that backpack, eye protection, leather gloves, a fire tool, and a 174-megahertz-two-way radio. Our class was divided into three separate, 5-7 person groups or “squads” (in accordance with the “span of control” tenet) and I had been assigned as one of the “Squad Boss” positions. Our first task was to create what most people would consider a foot-trail around a small section of forest, about a half-acre in size, to create a barrier around the identified plot of land. We then positioned ourselves evenly around the perimeter of the fire. Then, the

instructors ignited the plot with a with a slow-moving, low-intensity fire and we were simply to watch it and make sure it did not get outside the “fire line.” During the exercise, my classmates and I once again practiced ICS tenets like “common terminology,” “unity of command” and “chain of command” as messages and information were passed up to the instructors, or “Crew Bosses” and “Incident Commander” and instructions of or tasks were passed down from them to me and from me to the members of my squad. At the time, these terms, “Crew Boss,” “Incident Commander” and such were merely jargon and catch phrases used to fit in to this new culture of which I was suddenly a part. I was learning to use the system, and indeed, I was *using* the system, but was unaware of using it. ICS to me then was not separate from firefighting – it was *how* firefighting was conducted. Even as I practiced “common terminology,” or maintained awareness of my “span of control” as “squad boss,” I was not cognizant that I was actually implementing a tool of any sort – I merely was performing as I had been instructed to do -- I was being trained on ICS.

The instructors of my 2008 course had intended to do a similar exercise to this, but canceled the activity due to inclement weather. Otherwise, this class was similar in many ways: I was an AmeriCorps member (albeit of a different program in a different state) attending a five-day training week with other AmeriCorps members. The course was presented by three instructors who were employed with the presenting agency, the atmosphere was similarly relaxed, Smokey the Bear posters were hung on the walls of the agency-owned facility, and the course included a lot of wildfire technical information and jargon with a blip of information about ICS. In this class,



we learned different technical information, such as how to orient ourselves and subsequently how to determine the geographic location of a fire using a compass and a map. That and the lack of exercises were the primary differences I remember between the first course and the second. In truth, I likely remember fewer details of this course as I had been through it previously and because this was so, I probably paid less attention.

The last course I attended took place during my first week as a wildland firefighter for the U.S. Forest Service (USFS) and did not have the relaxed feeling of the first two courses. There was some general camaraderie amongst those of us who knew each other, but energetic outbursts were short-lived and not encouraged by the sole instructor. (Though, after getting to know him over the course of the season, this could have been because he was just as nervous as we were.) Of the 12 or so attendees of this course, we were all “new hires” in the beginning of being “whipped into shape” for the upcoming fire season. As I understand, once a wildfire fighter has attended the five-day training course once, they do not need to attend the entire course again, only a truncated refresher version on an annual basis to stay current on their certifications. This has not been my experience, however. Even after attending the course twice before, when I started with USFS there had been some concern about the legitimacy of my previous ICS training courses. My immediate supervisor (“squad boss”) considered it prudent to send me through the 100 level training to ensure that I was, indeed, up-to-date on my necessary certifications.

This training took place in a cramped room, approximately 10x10, that housed several filing cabinets along the right-hand wall, a bookshelf between two doors that led to two other offices along the back wall and a door to a garage on the left wall. On the front wall, where the instructor (who did not provide us with amusing anecdotes) stood hung a flat screen TV., and below it along the wall were more filing cabinets and a narrow table with various presentation equipment such as VHS and DVD player complete with various VHS tapes and DVD's, that stretched into a short hallway that led to a large bullpen office area. The walls bared only topographical maps of what I later came to learn were fuel observation sites. In the middle of the room in which we were training were us, the new hires, seated in folding chairs behind and aside two rows of tables that butted up against the right-side wall and had about 18 inches between them and 30 inches to the back office doors. We sat elbow to elbow. Those of us sitting on the inside seats, who needed to excuse ourselves to the restroom either held it or had to displace four people when we left and returned– to say the least, we were crowded. Because every other room in the building was blatantly more spacious than the room we were in, one could surmise that the comfort level of the attendees during the training presentations was not a high priority.

I remember less about the content of the trainings as they came bundled with several other trainings that we as the “new hires” just needed to “get through”: sexual harassment training, personal protective gear lecture, diversity appreciation informational, information security trainings, safe-driver trainings, fire safety trainings, and in the same vein as ICS, National Incident Management System training

– these were just the ones I can remember four years later. Couple the information inundation with the anxiety of being a petite, “rookie” female, in a class with several “rookie” but burly, young men, all of whom were entering in a profession brimming with burly, vetted, not-so-young men, and it was the best I could do to not shrink into my fire-resistant pants (which were daily-required PPE), much less remember anything from any of the trainings. The first of only two distinct memories I have of that week is of our instructor clicking through the slides of the FEMA IS-100 online training course in about ten minutes, when the course was supposed to take four hours, according to a statement on about slide two. The second memory is of the fear that pierced my heart when he finished with “You’ll learn it all [the material] out there [in the field], anyway.”

Looking back now, that fear sprang from a lack of context. Though I had received wildland fire training on two occasions previously, and had implementing firefighting tactics (including ICS) previously, I was nervous that somehow this new experience would depart sharply from any similar previous experience. And it did. We *did* learn what we needed to know “in the field”, through “on-the-job” training; more often from one of our peers or senior crew members rather than from our supervisors. Anytime a crewmember failed to follow an ICS tenet or failed to practice safe firefighting tactics, there always seemed to be another crew member, usually a senior crewmember, who would remind us (usually not-so-gently) why we follow the rules that we do – to ensure the safety of the crew and crewmembers.

In truth, I do not ever remember specifically *learning* ICS, I just remember *knowing* how to implement the tool. Thus, when speaking with other practitioners who have taken ICS courses and are supposed to “know” the system, either they do and don’t understand what is so hard about it or they do not know it and don’t see the point in learning it. This contrast in experiences is exactly what prompted this study and why I chose participant observations of other ICS courses as a means of data collection.

## Appendix B

### OBSERVATION GUIDE

Eva Wilson Master's Thesis  
ICS Training and Learning  
University of Delaware

#### Observation Guide

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##### **Log:**

Date: \_\_\_\_\_

Location: \_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

Nature of Notes: \_\_\_\_\_

##### Observation Foci:

- Rites and Ceremonies
  - Symbols
  - Stories
  - Language
- 

ICS Class attended: \_\_\_\_\_

Number of Instructors: \_\_\_\_\_

Number of Trainees: \_\_\_\_\_

Agency/Organization Conducting Training: \_\_\_\_\_

Agency/Organization Receiving Training: \_\_\_\_\_

---

Orienting Concepts:

- Obstacles to Learner Comprehension
- Obstacles to Learner Interest
- Practices for overcoming Obstacles

Course Format: \_\_\_\_\_

Number and Type of Media Used: \_\_\_\_\_

\_\_\_\_\_

Course Activities: \_\_\_\_\_

\_\_\_\_\_

Notes:

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## Appendix C

### INTERVIEW GUIDE

Eva Wilson Master's Thesis  
ICS Training and Learning  
University of Delaware

#### Interview Guide

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#### **Log:**

Date: \_\_\_\_\_

Location: \_\_\_\_\_

\_\_\_\_\_

Start Time: \_\_\_\_\_

End Time: \_\_\_\_\_

Nature of Notes: \_\_\_\_\_

---

#### **Introduction:**

- Thanks for time
- Explanation of project – ICS will refer to the Incident Command System
- Assurance of confidentiality, request for informed consent for interviewing and taping
- Any Questions?

#### **Questions:**

1. For a reference point, I'd like to know more about your current occupation. What is your employment position and/or title?
2. Describe to me the duties of your position.
  - a. What is your role in an emergency/disaster situation?

**Experience:**

3. What is your experience with ICS in your current position?
  - a. Please provide me with a standard example of you using ICS in your position.
  - b. How often do you use ICS?
  - c. How long have you been using it?
- d. What is your standard role in the system? (Task Force, Squad Boss, Incident Commander, Crew Member)
4. Please describe your level of comfort with ICS.
5. Before we move on to questions about ICS training, is there anything else you'd like to tell me about how ICS relates to your position?

**Training:**

Instructor/Supervisors: (If not an instructor or supervisor, skip to next section.)

Now that you've told me about your professional experience with ICS, I'd like to talk about your training experience.

6. As an ICS instructor or if not an instructor, as a supervisor having to teach the system to your subordinates, what are the difficulties in teaching the system?
  - a. Who has the hardest time learning the system?
  - b. What principles are most difficult for people to grasp?
  - c. Why do you think this is particularly difficult?
7. What practices/tactics do you take in overcoming these difficulties?
  - a. What teaching/training methods do you use?
  - b. How do you relate this to their job or task at hand?
8. What are the easiest ICS concepts for people to grasp?
  - a. Why do you think that is?



Trainees/Non-Supervisory ICS User:

Now for these next set of questions, I'd like you to answer from your perspective of learning ICS.

9. What ICS trainings have you attended?
  - a. What level(s)? (such as course numbers or basic, mid-level, advanced.)
  - b. What was/were the specific subject(s) of the class(es)?
10. Was this/Which of these were required for your position?
11. Of the ICS classes that you've taken, which of them have you found to be the most applicable to your position?
12. Now think of an ICS training that you've had that you liked the most. Tell me what you liked about it.
  - a. What was the venue of the class? (classroom, online)
  - b. What was the format? (lecture, conversational, peer taught)
  - c. What forms of media were used during the course? (books, videos, audios, computer programs, etc.)
  - d. How familiar was the instructor with the subject matter?
  - e. How did the instructor relate the information being presented to your specific occupation or position?
  - f. How often do you use the information presented in this course in your occupation?
13. In contrast, tell me about an ICS training that you did not like.
  - a. What was the venue of the class? (classroom, online)
  - b. What was the format? (lecture, conversational, peer taught)

- c. What forms of media were used during the course? (books, videos, audios, computer programs, etc.)
  - d. How familiar was the instructor with the subject matter?
  - e. How did this shape your opinion on the applicability of ICS to your position?
14. Tell me about anything, such as an entire class or a simple concept that you felt was particularly difficult to learn?
- a. Why was it difficult?
  - b. What was the course?
  - c. What was the course venue?
  - d. Who were the trainers for the course?
  - e. What was the class format?
  - f. How early in your career was this particular training?
15. What steps, if any, did the instructor take to try to relate the subject matter so you could understand it?
16. What steps, if any, did you take to try to understand the subject matter more clearly?
17. Stepping away from ICS and thinking about learning in general, what are best practices for you personally to learn new material?
- a. From whom do you learn best?
  - b. What is the best learning venue?
  - c. How do you most like to receive the material? (Book form, from an instructor, multimedia)
18. Please think about a time either in ICS training or not, when you had a difficult time at first understanding new subject matter but then something “clicked” and you understood what you had not understood previously? Please tell me about that.
- a. What was the something that helped you to understand the information?

### Understanding of ICS

19. In an effort to understand how effective your trainings and experiences have been in helping you learn ICS, please tell me: what is ICS to you? Again, this is not a grading of your knowledge but an effort to understand where training may fall short.
- a. Who uses it?
  - b. What are the principles of the system?
  - c. When do you use it?
  - d. Why is the system used?
  - e. Where is the system implemented?
  - f. How is the system implemented?

### Day-To-Day Operations

20. Think about what it is like to be a member of your organization?
- a. What was the process to becoming a new employee?
  - b. What trainings do people have to attend in order to work at your organization?
  - c. Think about something you heard regularly as a new member, or something you tell new members to indicate what is important in your line of work. What is that?
  - d. What are day-to-day items used in your organization?
  - e. What is an item that everyone in your organization definitely has? That no one goes without.
  - f. In general, I'd like to understand what an average day is for an average employee at your organization. Tell me about that please.
21. What are some special events or occasions where people in your organization come together to have a good time or to celebrate being a part of your organization?
22. When you were learning the "lingo" of your organization, how did you do that?

23. If I were to walk around your place of work, what is something that I would see wherever I looked? This could be a logo, or a symbol, a photograph, types of photographs, a person, a device.
24. Similarly, when you think about what is important to your organization, what is the first image that pops into your mind?
25. Now I want to ask you about an image that identifies your organization. It can be either one of the two images you just mentioned, but specifically, I would like to know what image, object, symbol, or concept you would say identifies your organization.

### **Emergency Operations**

26. Now, I'm going to ask you about emergency operations within your organization. When I mention to you "emergency" in the context of your organization, what image pops into your mind?
27. What are some trainings or skill sets people in your organization need before they can work during an emergency?
28. What is the biggest difference between your organization's day-to-day operations and emergency operations?
29. If I were a new employee at your organization, what are some stories that I would hear about your organization during an emergency?
30. What are items or what is the one item that no one in your organization does without during an emergency?
31. What, if anything, does your organization do in an emergency to provide support for its members?
  - a. What does it do to motivate people?
32. Think about a time when you were working during an emergency and you felt relieved in some way. Either you felt relaxed, or calmed down, or even stronger – what was it in that moment that helped you feel that way?
33. Think about the last time your organization experienced an emergency. Tell me about that event.
34. We've reached the end of the questions but before we go, is there anything I did not ask about that I should have in relation to ICS learning or training ICS?
35. Is there anything else you would like to tell me?

## **Appendix D**

### **INFORMED CONSENT FORM**

#### **Statement of Informed Consent**

##### **Purpose/Description of Research**

This interview is for research purposes only. The researcher, Eva Wilson is conducting the research in pursuit of her Master's Thesis at the University of Delaware. The study she is conducting focuses on the obstacles people may encounter when attempting to learn and use the Incident Command System (ICS), an emergency management system now federally mandated by the National Incident Management System. The researcher is in no way conducting this research in conjunction with or for the federal government and her sole purpose for conducting the interview is to collect data to support her master's thesis. You have been selected because you are either the participant of an observed ICS class by the researcher, or you have been identified as someone with experience or familiarity with ICS. The length of the interview may vary but the estimated time for one interview will be 45-60 minutes. The interview will cover topics ranging from your personal experience in the classroom or with ICS in your job, your professional background as is relevant to ICS, your opinion of ICS trainings or experiences, and your knowledge of ICS. This project will include interviews of approximately 10-20 participants.

##### **Conditions of Your Participation**

The researcher will maintain confidentiality of any personally identifying information obtained during the course of the interview, unless you expressly give the researcher permission to use any or all of the information in her thesis paper. If permission is granted, the researcher may or may not choose to use the information in her thesis paper. If you give the researcher permission to use your information, please initial below and indicate which information you authorize to be used:

\_\_\_\_\_ YES, I agree. The researcher may use the following information as marked below: (Please check all that you consent to.)

\_\_\_\_\_Your name      \_\_\_\_\_Your professional title

\_\_\_\_\_The agency/organization/entity you work for

\_\_\_\_\_NO, the researcher may not use any personally identifiable information in her thesis paper.

This interview will be audio-recorded and the content of the recording will be transcribed and saved on an office computer for analysis. If you agree to be audio taped, please agree indicate below:

\_\_\_\_\_YES, I agree to allow the interview to be audio-recorded.

\_\_\_\_\_NO, I do not agree to allow the interview to be audio-recorded.

Once the information is no longer needed for this study or thesis, then all personally identifiable information will be removed from the interview contents and the information will be archived at the Disaster Research Center. All the information will be deleted from any other device (such as flash drives or audio recorders) in efforts to maintain the highest level of confidentiality possible. This consent form will be stored with other consent forms in a locked filing cabinet in a locked room for at least three years and after three years, the consent forms will be cross-cut shredded. If at any time during the course of the interview, you do not wish to continue, you may end the interview at any time and are not required to provide a reason for doing so and there will be no consequences to you as the participant. The only consequences of a participant choosing not to proceed with an interview will be those experienced by the researcher due to incomplete or insufficient data. If the information you provide in the interview is found to be significant for any reason, or if clarification on any of the information is needed about any of the information you provide, the researcher may wish to contact you in the future to discuss this information further. You, as the participant, have the right to agree to or refuse to participate in this interview or any follow-up interview. Your participation in this interview and any follow-up interviews is strictly voluntary. If you agree to be contacted for follow-up interviews, please indicate below:

\_\_\_\_\_YES, I agree to be contacted by the researcher for any follow-up interviews.

\_\_\_\_\_NO, I do not agree to be contacted by the researcher for any follow-up interviews.

Furthermore, as a participant of this study, you have the right to know the outcomes of this study (not including any information provided to the researcher by other participants) and you may request this information at any time. See contact information below.

### **Participant Risks and Benefits**

There are minimal risks associated with the interview. Because we will be discussing your personal, professional, and educational experience with ICS, you may find some of the questions uncomfortable as these questions may ask you about your

opinions or feelings about yourself, your peers, your trainers, your place of employment, or your subordinates as related to ICS. Because of the nature of these questions, there is considered to be minimal social and/or professional risk. Furthermore, there are no known direct benefits to you as a participant by agreeing to participate in this interview. You, as the participant, will be receiving no compensation for participating in this interview and all costs associated with your participation (for example, travel to or from interview site) will be your responsibility. However, the information you provide in the interview may be valuable in enhancing or improving ICS training/learning procedures and thus, may also improve future ICS implementation.

### **Contact Information**

If you at any time have any questions, please contact the researcher, Eva Wilson by phone at her office at 302-831-6618 or email at [ekwilson@udel.edu](mailto:ekwilson@udel.edu).

If you wish to ask questions about the interview, the study, follow-up interviews or anything else related to your participation in this study, please contact the researcher's thesis committee chair, Dr. Joseph Trainor by phone at 302-831-6618 or by email at [Jtrainor@udel.edu](mailto:Jtrainor@udel.edu). If you have questions about your rights as a participant in this research project and do not wish to contact the researcher, you should contact the Institutional Review Board at the University of Delaware by phone at 302-831-2137.

### **Signature**

By signing below, you indicate that you have read the above information, understand the information contained in this document and your rights as explained in this document, and are agreeing to participate. You also indicate that you have been provided a copy of this form for your personal records.

---

Name (please print)

---

Date

---

Signature



## RESEARCH OFFICE

210 Hulihan Hall  
University of Delaware  
Newark, Delaware 19716-1551  
Ph: 302/831-2136  
Fax: 302/831-2828

DATE: December 17, 2012

TO: Eva Wilson  
FROM: University of Delaware IRB

STUDY TITLE: [300428-2] Incident Command System Learning and Training

SUBMISSION TYPE: Continuing Review/Progress Report

ACTION: APPROVED  
APPROVAL DATE: December 17, 2012  
EXPIRATION DATE: January 15, 2014  
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of Continuing Review/Progress Report materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.



If you have any questions, please contact Jody-Lynn Berg at (302) 831-1119 or [jlberg@udel.edu](mailto:jlberg@udel.edu). Please include your study title and reference number in all correspondence with this office.



## RESEARCH OFFICE

210 HULLIHEN HALL  
UNIVERSITY OF DELAWARE  
NEWARK, DELAWARE 19716-1551  
Ph: 302/831-2136  
Fax: 302/831-2828

DATE: January 16, 2012

TO: Eva Wilson  
FROM: University of Delaware IRB

STUDY TITLE: [300428-1] Incident Command System Learning and Training

SUBMISSION TYPE: New Project

ACTION: APPROVED  
APPROVAL DATE: January 16, 2012  
EXPIRATION DATE: January 15, 2013  
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

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