PERSPECTIVES ON ICS TRAINING FROM THE TRAINER’S POINT OF VIEW: STREAMLINING THE PROCESS

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ABSTRACT

The promulgation of Homeland Security Presidential Directive (HSPD-5) has resulted in a significant training mandate for the Department of Homeland Security and the Coast Guard. An outstanding effort has been put forth to roll out the current training regime. Since training is an iterative process of Analysis, Design, Development, Implementation and Evaluation (ADDIE), equal emphasis must be placed on all phases of the process, including analysis. In the haste to roll out training to meet an immediate need, little, if any analysis was conducted. The author suggests that the time may be right to conduct the analysis needed to streamline the current program and provide better training for Coast Guard personnel conducting contingency response operations.

The author proposes that this be done by:

1. Eliminating duplicative material and instructional goals. Conduct a quick review of instructional goals to identify areas of duplication and ensure alignment between the Coast Guard training and the National Standard Curriculum Training Development Guidance.

2. Conducting an in-depth learner analysis to ensure the right people are getting the right amount of training. Training is a costly venture, not only in creating and delivering it, but also the time students spend taking it. While making ICS training mandatory for all hands simplifies implementation, it also costs 56,000 man-hours of labor for every hour of mandatory training. The author proposes that such an investment is unnecessary given that many individuals will not deploy to a contingency response operation. Also, the Coast Guard uses a “train the trainer” approach to teach many ICS courses. This is costly given that it takes several weeks for each trainer to obtain the necessary qualifications. Contracted instructors may provide a more cost-effective solution.

3. Reinforce classroom training with job aids and a systematic exercise regime. Training is also perishable. Research shows that 90% of what is learned in the classroom is lost after one month unless it is reinforced with practice. A deliberate system of exercises should be in place to reinforce training. While exercises do occur, they do so in an ad-hoc manner. The author proposes a more systematic approach, similar to shipboard damage control drills should be considered. Further, the use of job aids would enhance performance on the job and lessen the need for classroom training.

Finally, the author notes that recommendations that can apply to industry as well as government.

The promulgation of Homeland Security Presidential Directive #5 (HSPD-5), which requires that all levels of the U.S. government to be able to work within the National Incident Management System Incident Command System (NIMS-ICS), has resulted in a significant training mandate for the Department of Homeland Security and the U.S. Coast Guard. An outstanding effort has been put forth to roll out the current training regime, and the current system for ICS training of U.S. Coast Guard personnel has been extremely successful in providing over 200,000 people in the Department of Homeland Security with the knowledge and skills needed to work within the Incident Command System. It has fostered a palpable and necessary shift in organizational culture by introducing the principals and constructs of ICS service-wide.

However, the current system for training U.S. Coast Guard personnel in ICS was implemented under significant time constraints in order to meet the presidential mandate, and as a result, no formal analysis was conducted to identify the appropriate training levels and delivery methods for the large and varied membership of the U.S. Coast Guard. Since training is an iterative process of Analysis, Design, Development, Implementation and Evaluation (ADDIE), equal emphasis must be placed on all phases of the process. The time may be right to conduct the analysis needed to streamline the current program and provide better training for U.S. Coast Guard personnel conducting emergency response operations.

This paper offers observations and recommendations for opportunities to streamline the current U.S. Coast Guard ICS training regime; from the perspective of a professional trainer and U.S. Coast Guard employee who has recently completing several ICS courses and manages the training for a workforce of approximately 300 people. The observations in this paper are not meant to criticize or demean the current system, but to build on initial successes and identify areas where improvements may be made to the ICS training curriculum by incorporating key principals of instructional design and analysis.

WHY CHANGE THE CURRENT SYSTEM?

There are two reasons for changing the current training regime. First, training is a process that seeks to continually improve the end product by responding to changing needs and other parameters. Second, the current system is expensive and significant cost savings could be realized by delivering training more efficiently.

The U.S. Coast Guard’s current ICS training system is a traditional subject-matter based training curriculum that is similar to most educational systems. These systems start with a certain topic or body of knowledge and seek to deliver that information directly to a student group in a classroom. Typically, the curriculum builds
from the general knowledge to more specific, task-related knowledge. The main drawback of using this type of a structure is that it takes a long time to teach the entire body of knowledge. Also, this system is inefficient because people generally forget most of what they learn in a classroom or virtual learning environment (e.g., e-learning or online courses) in a few weeks if classroom learning is not reinforced in a practical setting. The typical student will retain only 10-30% of the information delivered in a classroom with no additional reinforcement. Since the typical U.S. Coast Guard employee may not have the opportunity to apply their ICS training for long periods of time after their classroom training, the likelihood of them being able to apply their classroom training during an actual incident or exercise is low.

The subject matter based training system is also an expensive venture. It has many different types of costs. Some are easily identified, such as travel and lodging for students and instructors. Others are less obvious, such as the opportunity cost of missed work by the student body. While this cost is less visible, it is no less real and often resembles the portion of the iceberg that floats below the waterline. For example, the U.S. Coast Guard has 56,000 active duty, reserve and civilian employees. Any decision to impose a mandatory training requirement that everyone must meet has significant resource implications. If the work year is conservatively defined as 2,080 hours, then each hour of mandatory training costs nearly 27 annual Full Time Equivalent (FTE) positions. In addition to being significant resource decision, mandatory training is difficult to implement and requires commitment of further resources to manage (keeping track of who took what, when & who needs to take what to be qualified). Completion rates between 68-83 percent for mandatory U.S. Coast Guard ICS training reinforce the notion that full compliance is a challenge, even for a military organization.

One solution, then, is to morph the current ICS training regime from its knowledge-centric approach into one that is more performance-based.

WHAT IS PERFORMANCE-BASED TRAINING?

Performance-based training is designed solely on the basis of job requirements. It seeks to identify what it is that you want the learner to be able to do by analyzing the jobs and tasks that are required for a successful outcome. Typically, this analysis is conducted before design and development occurs, but it can be done at any time in the ADDIE process. Performance-based training has the following characteristics:

- It must have clearly stated learning objectives (i.e. what needs to be done, under what conditions it should be done and how well it must be done). A
- It meets the specific needs of learners by considering their background, education, preferences, and other general characteristics.
- The majority of training time should be spent in practice which replicates actual job conditions with the highest degree of fidelity possible.
- Learners should get immediate feedback on their performance.
- Every learner should be able to demonstrate competence before training ends.
- Training shouldn’t focus on rare behaviors or knowledge that isn’t essential to achieve a successful outcome. The material covered only includes only what is needed to perform to expectation.
- Background information that is “nice to know,” but not essential, should be eliminated from training.

Incorporating performance-based principles makes the training more efficient and effective. It also promotes the maximum retention of knowledge and skills. A great example of performance-based training is fire drills conducted on board U.S. Coast Guard cutters. These drills have clearly designed instructional objectives on which the firefighting teams are graded. Also, the training environment seeks to replicate conditions during an actual fire by using devices such as a smoke generator, which tests procedures for containing smoke and allows firefighting teams to operate in low to no visibility conditions. Participants put on firefighting equipment, wear a Self Contained Breathing Apparatus (SCBA) and handle charged fire hoses in confined spaces (a very challenging task requiring teamwork that should not be learned during a real fire). As a result of this hands-on training, personnel retain a much larger percentage of the knowledge they learn. Also, frequent repetition ensures personnel are proficient and ready to combat a real fire, which is an infrequent occurrence, similar to participating in a contingency response, but one with significant consequences if not performed correctly.

CREATING PERFORMANCE-BASED TRAINING.

Performance-based training represents a significant paradigm shift from the traditional subject-matter based training. It also requires a significant amount of foundational work to create. It is created by analyzing the accomplishments, jobs and tasks that need to be performed. While most people would rather move ahead and design training because they fear paralysis by analysis, the vast majority of training projects actually save time and money in the long run by making the necessary up-front investment in analysis. Analysis “demands study before recommendations, data before decisions and involvement before actions.”

Further, depending on the scope of the work, it can be done relatively quickly with the right approach. Analysis is required by U.S. Coast Guard policy before classroom or exportable training is developed.

For individual and work-group performance, the U.S. Coast Guard uses Dr. Joe Harless and Dr. Paul Elliotts’s Accomplishment Based Curriculum Development (ABCD) Process and methodology. It provides the foundation for the design and development of efficient and effective job aids and training. This process emphasizes use of job aids (storing information in the job aid vice storing information in the learner; which then deteriorates over time). It's a model that provides standardized methodology for gathering and analyzing data to describe new performance and diagnose existing performance problems. It is:

- Systematic – in that it is a data driven process that is repeatable, regardless of the analyst conducting the work;

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4 www.GAO.gov.
5 See ALCOST 418/06: FY07 INCIDENT COMMAND SYSTEM (ICS) TRAINING REQUIREMENTS
- **Systemic** – in that it examines the entire spectrum of influences on performance as depicted in figure 1. One of the most important aspects of this approach is that it is based on the fact that “behavior doesn’t exist in a vacuum” and it is predicated on the fact that there are MANY influences that affect performance. Training is the most commonly relied upon solution in business and industry; unfortunately it generally only solves approximately 15% of performance problems.

Analysis includes the review of extant data such as existing policy and procedures, and visits to work sites. Once the world of work is better understood, then data is captured from accomplished performers (i.e. “the best of the best”) to find out their secrets through observation and interview to learn why they are so proficient. It captures “tricks of the trade” that are transferred to all workers, enabling them to perform like the accomplished performer. The result is a shift in the performance curve. As the below graph indicates, the green area represents improved performance for the entire organization.

The analysis methodology described above includes algorithms for making train/no-train decisions and for determining whether tasks need to be trained to memory, job aided or using a job aid with extensive training. When training is found to be the most appropriate performance intervention, this rigorous analysis provides the foundation for well designed performance-based training.

Designing training to match the nature of the task(s) at hand is critical to maximizing proficiency of the students after they leave the classroom. Tasks can essentially be broken down into 3 categories: 1. **Normal**: regularly accomplished. 2. **Off-Normal**: Part of the job, but are not performed routinely. 3. **Emergency**: A sub-set of off-normal which carries severe consequences if not performed properly and rapidly.

Using classroom training for normal tasks is a good match because once a student learns a basic level of proficiency, they can get enough practice on the job to maintain or even increase proficiency. Training for off-normal and emergency tasks must take into account the fact that once the student leaves the classroom, there is a strong likelihood that they won’t get much practice until they are called upon to perform the task. In the case of ICS, that is often in an environment with high stakes consequences, so the job must be done correctly.

**RECOMMENDATIONS**

An analysis already conducted by the U. S. Coast Guard could be used to inform the improvement of the current ICS training system to make it more performance-based. In this study, ICS execution was studied as a subset of its Sector Logistics Officer analysis. It may also be prudent for the U.S. Coast Guard to consider incorporating ICS processes and procedures into everyday business practices, especially since they represent the best practices of industry. This would afford all personnel the opportunity to practice and learn on the job everyday and make transitioning to a contingency response seamless. Below is a list of other recommendations for improving the current ICS training regime.

**MEET THE NEEDS OF THE LEARNERS BY CONDUCTING AN IN-DEPTH LEARNER ANALYSIS TO ENSURE THE RIGHT PEOPLE ARE GETTING THE RIGHT AMOUNT OF TRAINING.**

In the instructional design process, analysis of the target population is a critical exercise because it ensures the right people are provided with the right level of instruction. One of the key aspects of this analysis is assessing academic motivation or relevance. If the material is not relevant to students, they will not learn it. Or, put another way, “if you spend even a tenth of the time thinking about and describing your students as you do thinking about your subject matter, you will develop a powerful tool for ensuring the effectiveness of your instruction.” This is where the currently mandated system of training has significant room for improvement. Key considerations here include assessing populations of potential learners for, among other things:

- Academic motivation (i.e. relevance to the workplace);
- Attitudes toward content and potential delivery system;
- Educational and ability levels; and

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10 Standard Operating Procedures for the US Coast Guard’s Training System: Volume 2: Analysis, p 29. This categorization is based on several criteria of a particular performance including speed, frequency, and complexity, consequence of error and probability of change of the task at hand.
12 Sector Logistics Officer Front End Analysis provided by Perot Govt Systems dtd October 2006.
• General learning preferences

Assessing these characteristics ensures that the right people receive the appropriate training and minimizes delivery of "nice to know" information that is related but not explicitly relevant to the task at hand.

To provide a concrete example, at the U.S. Coast Guard’s Integrated Support Command in Boston, there are 300 employees. Over a third of the workforce is made up of industrial workers, (i.e. welders, carpenters, pipe fitters etc). Training all of them in the most basic ICS courses (such as ICS-100, 200, 700 & 800) is not necessary. They will never participate in an incident command staff or assume ICS roles. Increased awareness about ICS principles provides no quantifiable improvement in their primary work assignments. Their contributions during Hurricane Katrina were as Emergency Repair Teams who rebuilt several U.S. Coast Guard facilities in Louisiana and Mississippi. These performances are exactly the same as their day to day jobs (including travel for most personnel). From their perspective, even their immediate reporting chain was unchanged during their response. While they functioned as part of the Operations Section for the Katrina response, their world of work remained, essentially, unchanged.

To further compound this problem, these skilled tradesmen often lack the most basic computer skills required for e-learning applications, which is the preferred medium for delivering the basic ICS courses they are required to take. Thus, while tremendously effective for most government workers, online training becomes an additional management burden when this workforce’s general education levels, attitudes towards computers and learning preferences are considered. It took a significant effort to run these individuals through the two separate online courses, taking many times the number of estimated hours expected for them to accomplish this training. In the end, we ended up expending a tremendous amount of effort to “educate” a group of individuals in the ICS who performed flawlessly during Katrina without this training. Eliminating the general training requirements listed above for these individuals would have had no impact on my unit’s ability to respond to an event but would saved hundreds or thousands of man-hours for my unit alone.

The U.S. Coast Guard has started down this path by matching its training program to the actual work environment. By identifying that 97% of incident responses are at the type 3, 4 and 5 levels, it relies heavily on special teams to be trained to respond to the more severe type 1 and 2 incidents. This strategy ensures properly focused, efficient training. The U.S. Coast Guard is also refining its requirements for personnel required to take ICS courses to ensure a more focused approach.

15 Dick & Carey, p90. Other factors cited include: Prior knowledge of the topic; entry behaviors; attitudes toward the organization and group characteristics.

16 U.S. Coast Guard Maintenance and Logistics Command Atlantic Contingency Support Plan 9730-06

17 Giordano, D et al: “NIMS/ICS Training” U.S. Coast Guard Proceedings: Winter 2006-07. Vol. 63: No.4. Incident types are defined by the U. S. Fire Administration to make decisions about resource requirements. Abbreviated descriptions of incidents are:

Type 1: Incident can be handled with 1-2 resources and up to six personnel and contained within 1 operational period.

Type 2: Several resources are required to mitigate incidents and limited to one operational period in the control phase.

Type 3: Resource demand exceeds initial response capabilities and the incident may extend into multiple operational periods.

Type 4: Resource demand exceeds may require regional and/or national assets with multiple operational periods. Total response personnel do not exceed 500.

Type 5: Most complex incident requiring national resources. Total response personnel exceed 1000.

18 U.S. Coast Guard COMDTPUB P3120.17A August 2006.

USE CONTRACTED INSTRUCTORS INSTEAD OF A “TRAIN THE TRAINER” APPROACH.

A “train the trainer” program is one that seeks to qualify volunteers within the workforce to become instructors to teach courses. Similar to the opportunity cost for conducting training, this approach is highly resource intensive because the instructors must dedicate a significant amount of time away from work to get qualified and then teach other classes. The qualification process takes more than six weeks for some courses such as ICS-300. When you add the additional time spent as an instructor (two are required to teach this class) and multiply that investment by the number of classes being taught, it quickly adds up to a significant resource drain in terms of lost productivity. Because labor is largely a sunk cost for U.S. government agencies, it is often not accounted for. At my workplace, one staff member underwent the qualification process and ended up teaching several courses. This cost my unit approximately $38,000 in labor costs and several important strategic planning projects were delayed. Contracting this workload will enable training to occur with precisely the correct level of instructor expertise at less of a cost in real assets.

CONCLUSION

These recommendations are offered to improve the efficiency of the ICS training offered by the Department of Homeland Security, based on generally accepted principles of instructional design. While the U.S. Coast Guard system has been used as an example here, these recommendations apply to all forms of training for industry as well as government.

BIOGRAPHY

Commander DeCola is currently serving as the Executive Officer of Coast Guard Integrated Support Command Boston. This command provides Coast Guard units and personnel in the Northeastern United States with logistical support for all Coast Guard missions.

In addition to several operational tours, previous assignments include serving as Commanding Officer, North Pacific Regional Fisheries Training Center in Kodiak, Alaska and Performance Consulting Division Chief, in the Office of Workforce Performance and Training at Coast Guard Headquarters.

Commander DeCola has Master’s Degrees in Instructional Design from the University of Massachusetts and in Marine Affairs from the University of Rhode Island.

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21 U.S. Coast Guard Fiscal Year 2007 Standard Personnel Costs.