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## I. INTRODUCTION:

In the Fireline Factors Seminars, we approach Human Factors with the questions “How do we work?” and “Why do we sometimes go wrong?” The material was developed from the insights of experienced firefighters and academic psychologists. These insights were coordinated into big-picture models and tools that firefighters can use to address the questions for themselves and develop effective practical solutions.

## II. BACKGROUND:

### Education:

B.A., Classical Greek, University of Arizona, 2002

### Fire Experience:

U.S. Forest Service Firefighter 2002-2006 (the last 4 years were with the Los Padres Hot Shots)

### Key Accomplishments in Human Factors:

- 1-Contributed proposal to add Human Factors pages to 2006 *IRPG* (pp. x-xi)
- 2-Article “A Human Factors Tool for Wildland Firefighters” in: *Butler, B.W and Alexander, M.E. Eds. 2005. Eighth International Wildland Firefighter Safety Summit: Human Factors - 10 Years Later*; April 26-28, 2005 Missoula, MT. The International Association of Wildland Fire, Hot Springs, SD. A revised version of this article is available at [www.firelinefactors.com](http://www.firelinefactors.com).
- 3-The 2&7 Tool was featured in the 2006 *BLM Annual Refresher Video* (in Module 9, “Innovations”)

I've shared the material and gathered feedback in the following venues:

Local Crews (eg. Los Padres Hot Shots, H-527, H-528, E-41,42,46,47)

California Hotshot Superintendents and Captains Workshop

(Reno, NV; 2005 and 2007)

Int'l Assoc. Of Wildland Firefighters Annual Safety Summit

(Missoula, MT; 2005)

Bakersfield Innovation Conference (Bakersfield, CA; 2005)

Regional Human Factors Conference

(Human Factors and Ergonomics Society, CalState Long Beach 2005)

### **III PROJECT OVERVIEW:**

#### **THE MISSION:**

Present tools and concepts that firefighters can use to improve their safety and effectiveness.

Present models of how our minds work and how we go wrong; these models are based on insights gathered from experienced firefighters and academic psychologists. Firefighters can use the models in two ways: First, to analyze and learn from past errors. Second, to sharpen their awareness of how their own minds work. By developing a clear understanding of how they are wired and how errors arise, firefighters will be better equipped to develop solutions that work for them.

#### **THE MODELS:**

##### **The 2&7 Tool:**

This is an analysis tool designed to accompany case studies. It covers two fundamental decision errors that underlie burn-overs and seven barriers to situational awareness and decision-making.

##### **The Fireline Mind:**

This is a model of how our mind works. It is a conceptual tool for describing the dynamics of four mental processes involved in decision-making: Attention, Perception, Prioritization, and Action. This model provides the overall framework for the seminars.

##### **The Fireline Mind 4x4:**

This is a self-awareness tool. Rather than explaining any concepts, the FLM 4x4 simply points to the four key mental processes of the Fireline Mind and gives the user four questions that he can use to sharpen his familiarity with how his mind works and develop his own insights. This tool is a *method*, and can be used with minimal background in the concepts of the Fireline Mind.

#### **THE SEMINARS:**

The standard Fireline Factors Seminar is a day-long presentation of the 2&7 Tool, the Fireline Mind and the FLM 4x4. By the end of the seminar, firefighters have learned key psychological concepts relevant to our profession; they have gained three tools they can use for analyzing past mistakes and building their self-awareness; and they have started developing practical steps that they can immediately implement to increase their effectiveness.

The material can also be broken down into modules, which can be presented in series or as stand-alone classes.

#### IV. FAQ's:

##### Why the emphasis on understanding how our minds work?

Because as we understand more about our minds, we're better equipped to

- 1-Understand how and why people make tragic decisions
- 2-Recognize when a situation is degrading
- 3-Get the most out of the practical tools we already have (eg. Trigger Points, 10's&18's, Risk Management Process)
- 4-Develop our own solutions for improving situational awareness and decision-making

The intent is to equip firefighters to practice the leadership principle, "Know yourself and seek improvement."

##### For Example:

Attention is one of the key mental processes covered. If we understand how Attention works, we're better equipped to

- 1-Understand how and why people fail to notice Watch Outs
- 2-Recognize when our situational awareness is declining at the moment
- 3-See why Trigger Points, Communication, etc., are such useful tools, and then use them more effectively
- 4-Come up with our own techniques for improving our Situational Awareness

##### How does this fit in with the training already available?

Wildland training has traditionally emphasized Fire Behavior and Tactics. For the past decade, the agencies have increasingly recognized and trained in the importance of Human Factors. There are two ways to approach the issue:

- 1-Training in skills: ie. giving specific, practical steps to improve performance. This is what the L-series courses focus on.
- 2-Offering a big-picture conceptual background: ie. addressing how we work and why things go wrong. This establishes a basis for developing practical solutions in the future. This is what the Fireline Factors Seminars emphasize.

These approaches reinforce one another: Participants tell me that one of the benefits of the seminars is getting more out of the L-series training they've received.

##### Who benefits from the seminars?

The material was originally developed within the context of wildland fire, yet it applies to any situation that involves making decisions. These concepts are useful whether you're responding to a wildfire, a medical call or even a non-emergency situation. Firefighters with a broad range of responsibilities and experience levels tell me they find the seminars useful.