Resilience in the Human Machine: Preparing for the human aspects of an increasingly dynamic wildfire environment

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Content objectives

• Characteristics of Resilience
• Modern challenges in wildfire management
• Techniques to build resilient people
• Leadership and through crisis management
What characterises a resilient person?

• Resilient people have ability to experience both negative and positive emotions even in difficult or painful situations.
• They mourn losses and endure frustrations, but they also find redeeming potential or value in most challenges (Fredrickson, 2009)
• A person can become more resilient (Jackson, Firtko & Edenborough, 2007)
• Resilience is not easy
Day in the life on the fireline 2001
Day in the life on the fireline 2016
Web of different social, economic, and ecological demands
Urban sprawl, and the rise of high-impact and complex incidents
Wildfires are getting bigger

**Acres per wildfire, yearly average**

**Total acres per year, decade average**
Increasingly litigious society
High rates of employee turnover resulting in less experienced staff base
Risk management, cost recovery and emphasis on fire investigations
Higher administrative load

<table>
<thead>
<tr>
<th>May 29, 2001</th>
<th>May 29, 2016</th>
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<tbody>
<tr>
<td>Initial Fire Report</td>
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<td>One page Fire Report</td>
<td>5 page Electronic Fire report</td>
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<td>Simple Time Diary</td>
<td>Field Safety Plan</td>
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<td>Origin and Cause 3 Investigation</td>
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<td>Weather Readings</td>
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<td>Comprehensive IC Notes</td>
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<td>Crew Tracker</td>
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<td>Record of Expenditures</td>
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<td>5 day Faller Inspections</td>
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<td>Vehicle Checklist</td>
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<td>Flight Manifests</td>
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<td>Danger Tree Assessment Cards</td>
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<td>Documented Falling Plan</td>
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<td>Convoluted Time Diary</td>
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<td>FS17 Gear Tracking Forms</td>
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<td>Daily Estimated Costs</td>
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These trends place higher stressors and cognitive demands on crews, emergency management teams and leaders (Owen, 2014)
Resilience with first responders

- Pietrantoni & Prati research project with emergency workers in Italy
- Compared to the public, most first responders not very adversely affected by traumatic stress or burnout syndrome
- Concluded there is a protective role of self-efficacy, collective efficacy and sense of community in emergency rescue work
- Results consistent with other studies and literature (Bromet et al 2016, Owen 2014)

Building resilience in a nation at war

• Churchill’s “Be Ye Men of Valour,”
• A calculated call to bolster bull-dog spirit in the face of extreme odds
• The resilient British survived on rations, ran factories, prepared a home army and helped in hospitals
• Production levels in 1940 doubled

Source: The war effort (2012).
What is the biggest drain on resilience at work?

Human Factors Class in BCWS
New Recruit Boot Camps

- Physically challenging and mentally stressful experiences in a controlled environment
- Common fire-line tasks with unrealistic timeframes
- Instructors purposely give limited direction and add extra pressure
- Recruits fully debriefed
- Taught both theory and tools to understand and mitigate human factors, and bolster resilience

Other common wildfire training: L380, L381, Crew Resource Management, and Crew Leader Camp
Penn Resilience Program

• The US Army has incorporated resilience development into all officer training
• Teaches personnel skills and tools to cope with emotional and mental stressors, both for battle preparation and everyday life.
• Case study on making a significant culture change.
• PRP has been evaluated with positive results (Brunwasser, Gillham, & Kim 2015).

Source: Reivich, Seligman & McBride (2011)
When challenge fosters growth and resilience

The Human Function Curve (Yerkes-Dobson, 1979)
Compassionate Leadership

Supervisors who lead with compassion;
• Communicate openly and transparently
• Are flexible and adaptable
• Express their emotions freely and openly
• Lead by example, rather than by direction
• Remove judgment and criticism of others as a motivational strategy
• Manage their emotions productively and positively
• Are mindful to the effect of their words and actions

Source: Dutton, 2002
Compassionate Leadership bolsters resilience

Benefits:

- Increases staffs capacity for empathy and compassion
- Promotes positive relationships
- Decreases the prevalence of toxic viral negative emotions and behavior
- Increases optimism and hope
- Counteracts the negative effects of judgment and bias.

- **Builds resilience and energy levels**

Source: Dutton, 2002
Summary:
How to forge resilience in your team

1. Encourage teams to gel and grow together
2. Provide training and tools to bolster resilience
3. Be a flexible organisation
4. Look at extreme challenges as an opportunity to learn
5. Encourage a culture of compassion and caring
6. Develop and support leaders in difficult times
7. Support staff after a critical event
References

- Judge, M., (1999) Office Space, 20th Century Fox, USA