Simplifying Safety in a Complex Environment – Building Organizational Accountability Whilst Maintaining Standardization

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Approved for public release Distribution Statement A: distribution is unlimited. 412TW-PA-21245

Importance of Test Safety

What is the ultimate goal of the test safety process?

Prevent Mishaps

Why do we do that?

Readiness

How are we currently preventing mishaps?

Core of Test Safety

Objective:

Mishap Prevention ← **This is NOT negotiable**

Process:

1. **Culture/expertise/ownership**
2. **Hazard Analysis**
3. **Forced Pause**
4. **Safety Review**

} **"HOW" we do this is negotiable**

Useful definitions:

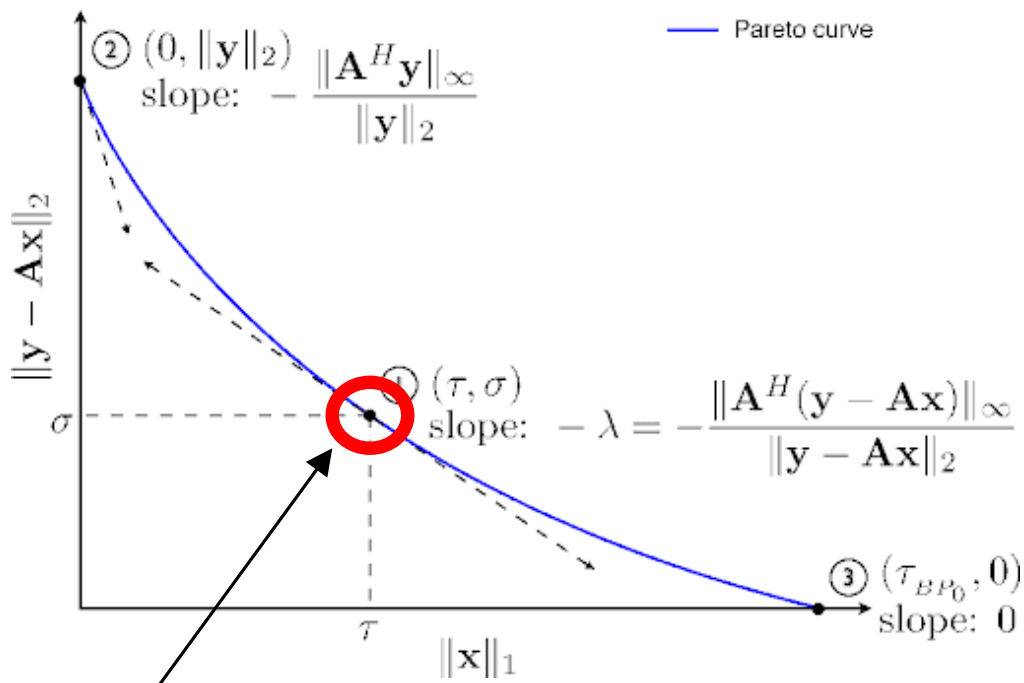
CTF = Combined Test Force – executing organizations/working level

Wing = Edwards-level – approving level

2-levels above CTFs

Test Safety Complexity – Responsiveness Relationship

Responsiveness



Complexity/
robustness

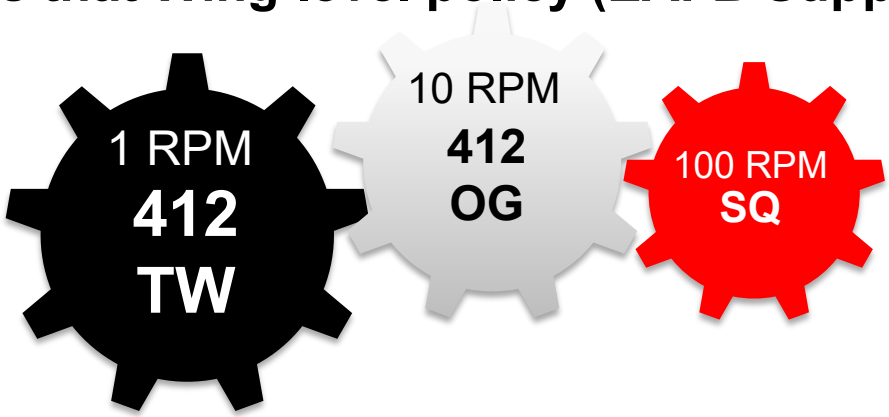
It is imperative to the wing's mission that we find this point!
Efficiency vs effectiveness

Where were we?

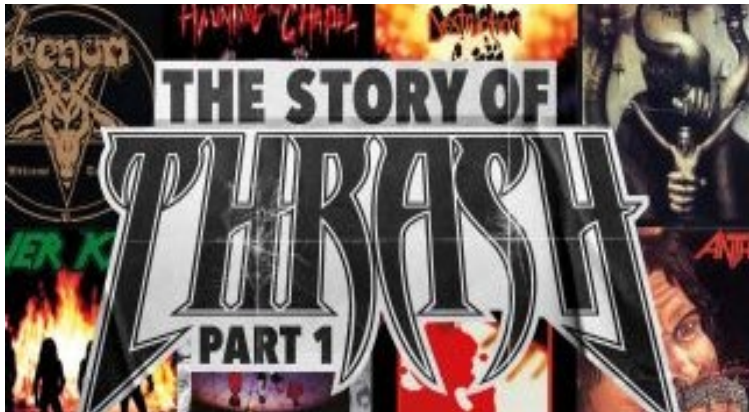
- High standardization via Wing-level policy supplement
- Ownership mainly at Wing level
- Minimal decision making authority granted at the CTF level
- Reduced CTF responsiveness, ownership, and authority
- Frequent Wing-level involvement in CTF day-to-day operations

Process Improvement Experiment: Improve Responsiveness, Ownership, Align Authority

- **Hypothesis that Wing-level policy (EAFB Supp) was problematic**



- **Supp was rescinded in response**
- **Intent was to create a forcing-function for change**
- **Numerous lessons learned as a result**



Impacts to Responsiveness, Ownership, Authority, & Unintended Consequences

- **Major workload increase for all due to lack of standardization**
  - Increased time spent mentoring at all levels
  - Increased decision making requirements at all levels
  - Increased Wing involvement in organizational level translation of policy
  - Increased time spent on tactical activities, less time for strategic activities
- **Consistency of Test Safety application impacted**
- **Some increased ownership**
- **Trust in 412TW/SET declined (Edwards test safety office)**
- **No unique/ innovative CTF level changes generated as a result**
- **Center-level policy changes actually drove biggest responsiveness value**
- **Catalyst for fresh look at old policy**

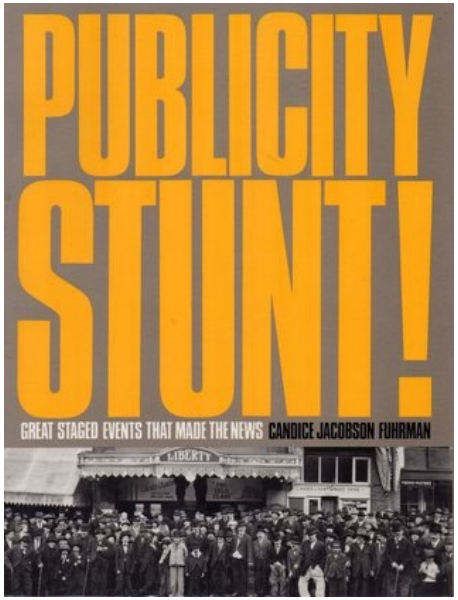
Impacts: Responsiveness

- **AFTCI 91-202 (Test Safety Policy) changes drove biggest responsiveness value**
  - The Supp was a local 'how-to' of 91-202; functional implementation
- **Decreased responsiveness due to confusion**
- **No unique CTF level innovations resulted to increase responsiveness**
- **Increased wing test safety office workload, less ability to quick turn items**
- **General degraded ability from all levels to focus on critical items**

Removing the Supp created confusion, made previously simple processes and decisions complex, and led to inconsistency in implementation.

Impacts: Ownership

- The shock of the Supp removal drove involvement, engagement
- Not having guidance forced thought
- No CTFs created unique local guidance
- Most personnel wanted the Supp back



Removing the Supp made a statement. Personnel involved in test safety planning became more engaged, invested since.

Impacts: Authority

- **AFTCI 91-202 changes (not supp removal) drove biggest CTF authority alignment**
  - Enhanced ability for CCs to accomplish the mission from a tactical level was not achieved
- **More engagement in safety culture from some CCs**
- **Other actions, such as removal of coordination signatures and delegated minor changes provided more effective alignment of authority**

Removing the Supp did not provide value for aligning authority.

Impacts: Unintended Consequences

- **Trust in 412TW/SET declined**
- **Increased frustration from those in the test safety process**
- **Engagement and interest/concern did increase**
- **Benefits of standardization were clear**
  - Fresh look of policy v. guidance

Negative consequences did result from this experiment, but it also served as a catalyst for positive change

What did we Learn?

- Buy-in is essential to disruptive wholesale changes
- Communication up and down the leadership chain is key
- Impact of high-impact changes can be smoothed out via thorough communication
- Analogy: Good intelligence helps you identify the correct targets to attack and vice versa

VS

Implemented Improvements

- **Revised Supp & Handbook**
  - ‘Protecting with paperwork’ v. focusing on what REALLY matters
- **Creating and solidifying communication channels**
  - Safety Professional Working Groups, digital/virtual communication channels
  - Huge engagement and communication improvements
- **Mentorship culture at multiple organizational levels**
- **Decisions not made in a vacuum**

Areas for Future Improvements

- **Large cultural changes may take a while to see**
- **Two big areas for future long term focus:**
  - Metrics
  - Ownership

Areas for Future Improvements: Metrics

- The data that drove the Supp change were inadequate
- We tend to measure what is easy to measure
- Leading v. lagging indicators of safety
- Measuring safety culture
- Investment in good tools

As the center of the aerospace universe, technical rigor should be applied to all metrics. Decisions should be objective & data driven.

Areas for Future Improvements: Ownership

- Invest and enrich test safety training (Wing and CTF levels)
- Leadership sets the tone for safety culture
- Additional duty v. dedicated position/ high value position
- Mentorship programs
- Time & space at all levels to invest and innovate for safety
- Better metrics can help focus areas of squadron level need
- Education programs for non-test safety personnel

Improved ownership and improved metrics go hand and hand. Let's improve both of these aspects at all levels!

Safety Cultural Pitfalls

"Safety is slowing me down."

"Safety rules won't let me do what I want."

"I'll do whatever gets through Safety."

"Just tell me what to write to make Safety happy."

"I don't need to be good, the Safety Review Board will fix it."

The Antidote to Bolster Safety Culture

Strong Cultural Norms to Foster

“Safety is part of the engineering process.”

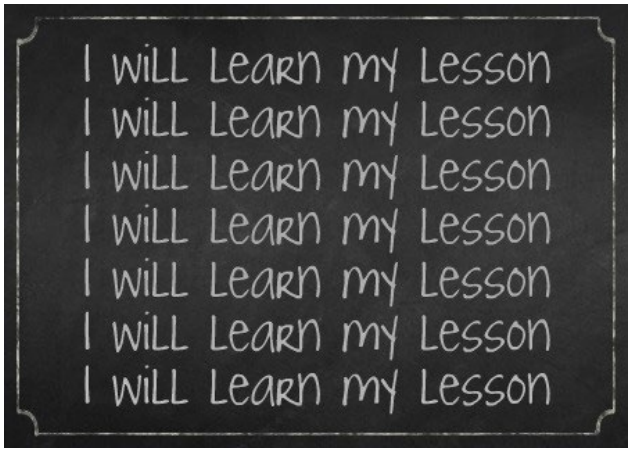
“Safety rules enable critical thinking for safe testing.”

“Safety enables me to do my job – to flight test safely.”

“I am the expert, and I will propose the best solutions.”

“I will present an impeccable product to the SRB.”

Conclusion

We need to hold our innovations accountable and not just accept them for Innovation's sake. – Us, last year

- **The policy situation was tough, but produced hard-earned value**
- **Standardization is the baseline from which we innovate**
  - Test plan author's guide, technical reporting, flight cards, etc.
- **Communication, trust, and well-informed decision making are key**
- **How else can we grow?**