High Reliability Operations

What have we been learning
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Information Only – No Action Requested

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Big Ah Ha!

We aren't after a new program or something you buy……

…….We are after a mindset.

- *Quality is king!*
- *Getting it right above getting it done*
- *Chronic uneasiness*
- *Continuous improvement*
- *Learning as a way of life*
- *High personal discipline with humility*
- *Innovation focus*

Key Principles of Human Performance

1. People make errors
2. Our response to failure matters
3. Individual behaviors are influenced
4. Operational upsets can be avoided
5. Error-likely situations are predictable

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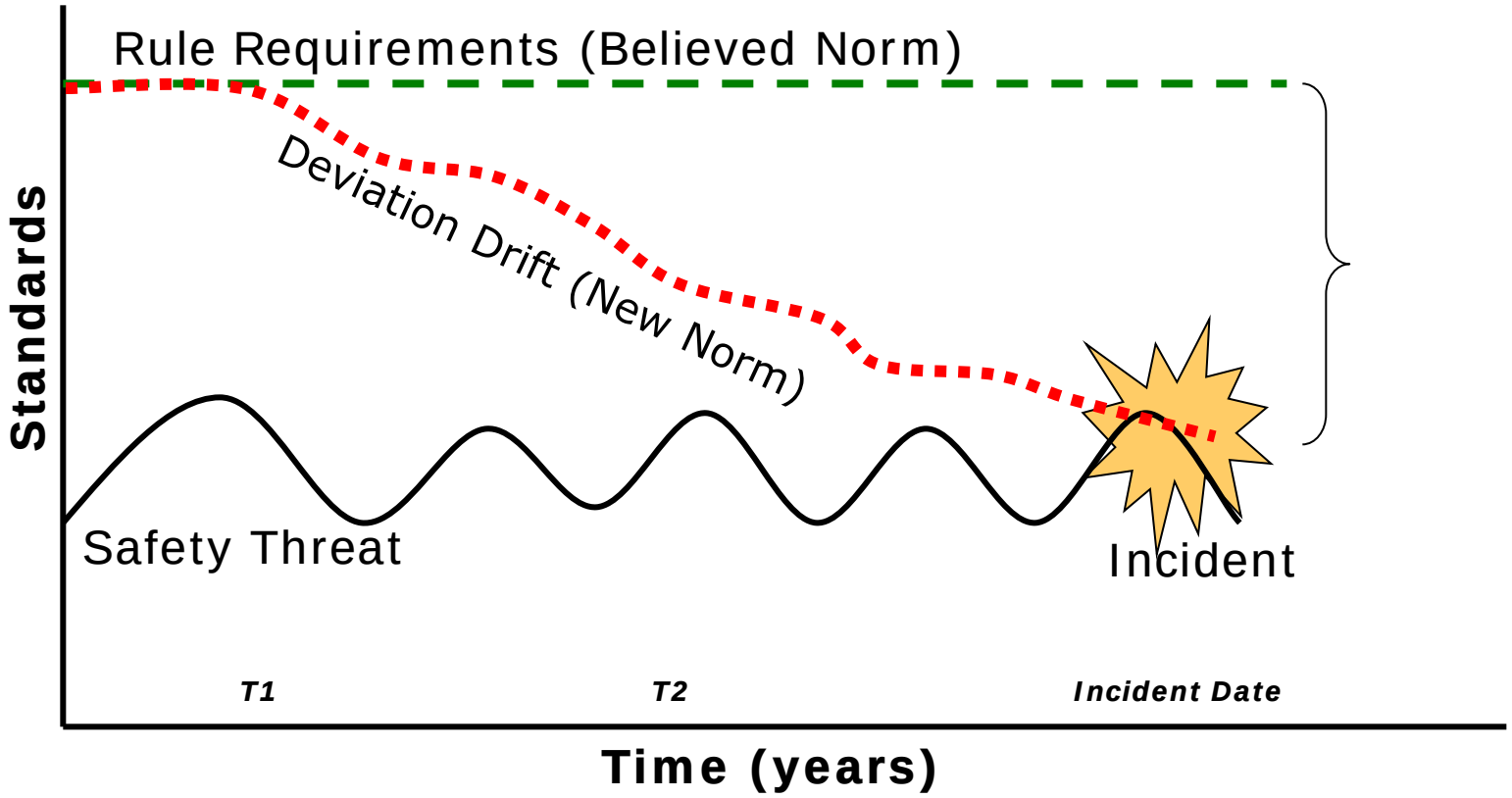
Recognize and reduce error precursors

Task Demands	Individual Capabilities
☐ Time Pressure (in a hurry)	☐ Unfamiliarity with task / First time
☐ High Workload (memory requirements)	☐ Lack of knowledge (mental model)
☐ Simultaneous, multiple tasks	☐ New technique not used before
☐ Repetitive actions, monotonous	☐ Imprecise communication habits
☐ Irrecoverable acts	☐ Lack of proficiency / Inexperience
☐ Interpretation requirements	☐ Indistinct problem-solving skills
☐ Unclear goals, roles & responsibilities	☐ "Unsafe" attitude for critical task
☐ Lack of, or unclear standards	☐ Illness / Fatigue
Work Environment	**Human Nature**
☐ Distractions / Interruptions	☐ Stress (limits attention)
☐ Changes / Departures from routine	☐ Habit patterns
☐ Confusing displays or controls	☐ Assumptions (inaccurate mental picture)
☐ Workarounds / OOS instruments	☐ Complacency / Overconfidence
☐ Hidden system response	☐ Mindset ("tuned" to see)
☐ Unexpected equipment conditions	☒ Inaccurate risk perception (Pollyanna)
☐ Lack of alternative indication	☐ Mental shortcuts (biases)
☐ Personality conflicts	☐ Limited short-term memory

High Reliability Operations Principles

1. **Sensitive to operations** - each employee pays close attention to operations and maintains awareness as to what is or isn't working. There are no assumptions.
2. **Reluctant to accept "simple" explanations for problems -** They ask more questions. They keep digging until find the specific source of the problem
3. **Preoccupation with Failure** - think of ways their work processes might break down
4. **Defer to Expertise** - listen to people who have the most developed knowledge of the task at hand
5. **Resilient -** prepared in how to respond to failures and continually find new solutions

Drift



Accident Systems Thinking

"Great performance is not the absence of errors. . .

. . . it's the presence of defenses."

Conklin, 2012

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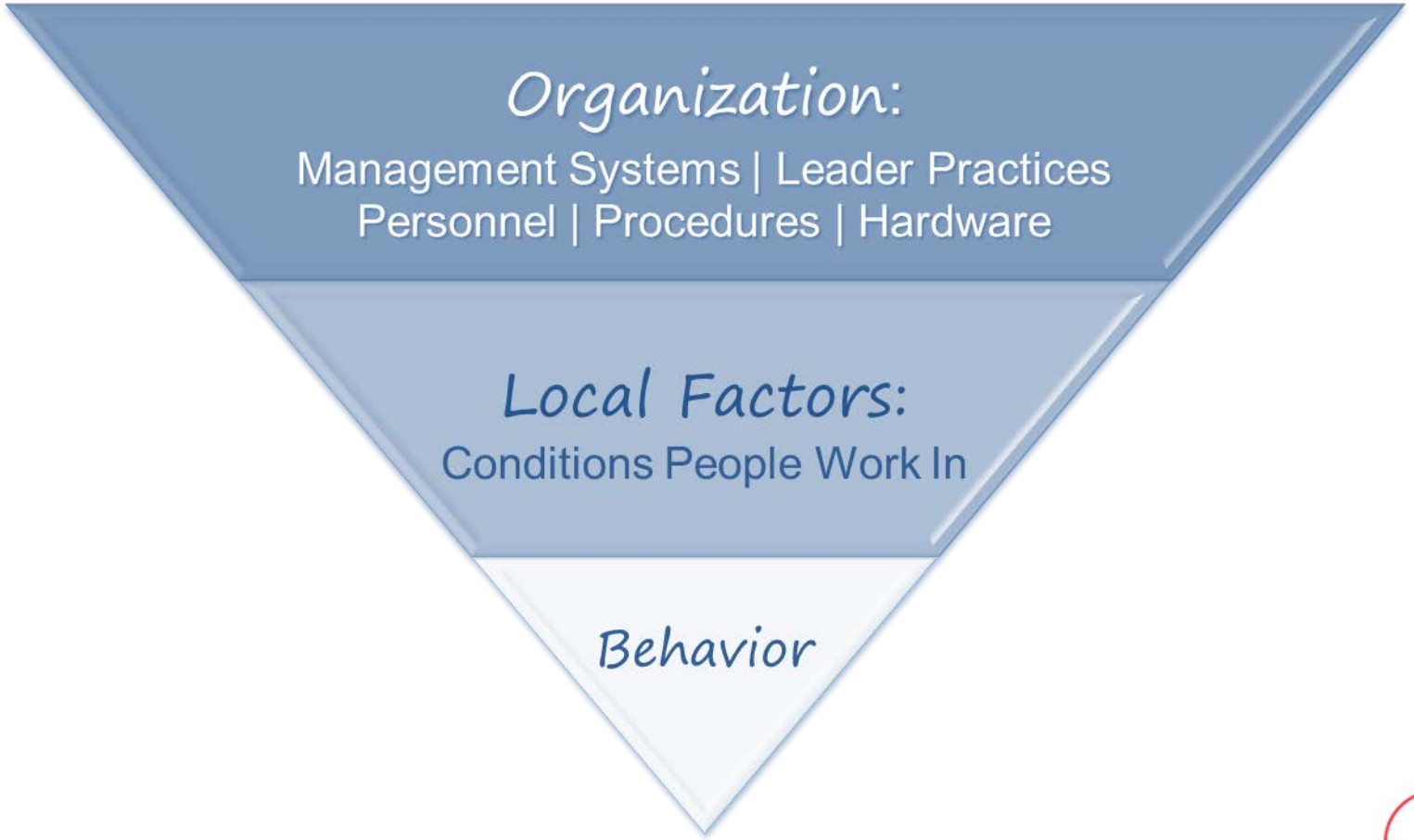
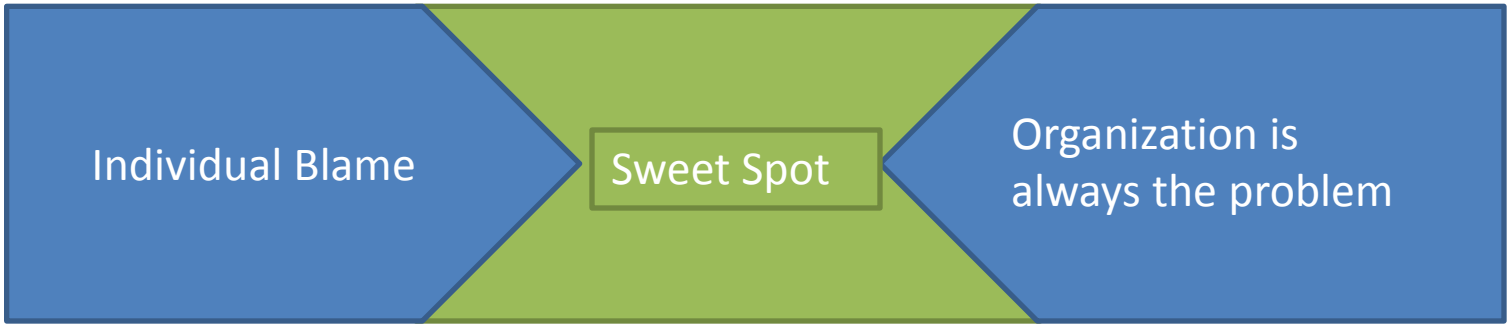
Systems Thinking



Just Culture



How to grow a new culture

- Plant some seeds
- Tend to the vine
- Root out problems
- Reap the Harvest

Next Steps

- Continue learning and participate in benchmarking
- Train all Supervisors in G&T by end of Q3
- Focused Improvements on Learning Teams and Pre-Task Planning

Questions