Human and Organizational Performance - *Safety Evolution*

Continuing Care Safety Assn.

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ENERGY SAFETY CANADA

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Energy Safety Canada

National, not-for-profit serving the Energy Industry

Offices in British Columbia, Alberta, Saskatchewan

Training providers across Canada (BC to NFLD)

Stakeholder driven, supported by industry

Service-focused to meet stakeholders diverse health and safety needs

Reducing Serious Injuries and Fatalities is our priority!

TODAY'S PRESENTATION FOCUS

- Cover definitions
- Case for change, evolving safety
- Assessing current safety programs
- Human and Organizational Performance Principles
- Learning from Normal Work
- Assessing Critical Risk
- Error Modes and Workplace Complexity
- Organizational Learning
- Take Aways

Setting the Stage

SAFETY TERMS DEFINED

HP - Human Performance
A series of behaviours executed to accomplish specific tasks. Often focused prevention/management of human error.

HF: Human Factors
The study of how human beings function within various work environments as they interact with equipment and systems in performance of tasks.

Safety II and Resilience Engineering
Learning from what goes well and normal work (98-99% successful). Identifying and then enhancing the positive capabilities of people and organizations that allow them to adapt effectively and safety under varying circumstances.

Safety Differently
Safety is not the absence of accidents; safety is the presence of capacity. Ask what is needed instead of telling. Workers are not the problem; they are the problem solvers. Safety is not an administrative task, it's an ethical responsibility.

HRO: High Reliability Organizations
Preoccupation with failure, Reluctance to simplify.., Sensitivity to operations, Commitment to resilience, Deference to expertise

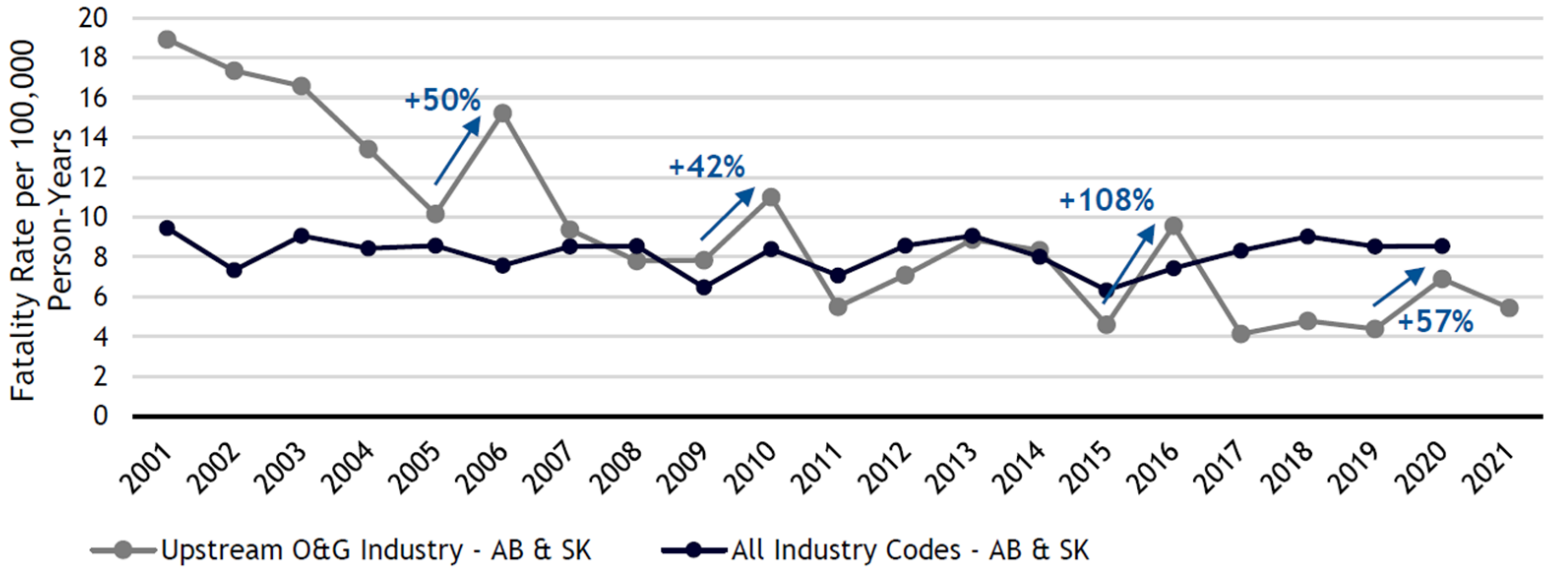
HOP - Human and Organizational Performance
A science-based approach to build systems that are more error tolerant. Interaction of humans, business processes, technology, environment.

New View = HP / HOP / Safety II / Safety Differently combined.

[Foundations of Safety Science- Sidney Dekker]

OUR OPPORTUNITY

FIG 1: OCCUPATIONAL FATALITY RATE TREND IN ALBERTA AND SASKATCHEWAN



MOVING BEYOND TRADITIONAL SAFETY

- **Safety I** – The traditional view of safety has been defined by the absence of accidents and incidents, or as the 'freedom from unacceptable risk. A 'find and fix' focus. Avoiding the negative, eliminating the negative.
- **Safety II** - In contrast to the traditional view, resilience engineering maintains that 'things go wrong' and 'things go right' for the same basic reasons.

CHANGING OUR PERSPECTIVE

Traditional	New View or Human and Organizational Performance View
Worker breaks a rule. Often the employer's response is to make an example/punish the worker.	Worker breaks a rule. Response is to inquire, to understand the context (back story). Have a conversation.
A PSIF occurs. Response is to review procedure, write or update procedure, retrain a worker.	A PSIF occurs. Response is to understand not only the human contributions, but the system and organizational factors that are in play.
A safe company is a company with no incidents! Low TRIF, no OHS violations	A safe company is a company with capacity to fail safely.
Workers who make errors need to pay attention, focus, and care more. Follow the rules as written.	Workers making errors are to be anticipated. Plan for the inevitable. Set the worker up for success.

WHY EVOLVE?

- Safety performance flatlined
- Complexity and state of workforce
- Critical risk management and SIF
- To get a different result, we need a different approach
- Consider human error focus while anticipating brittle organizational systems
- Improve our understanding of successful work

SAFETY CLUTTER

CURRENT STATE TO DISTRUPT

- "The accumulation and persistence of safety rules, procedures and practices that do not contribute to the safety of work".

Forge Works (Dave Provan- CEO)

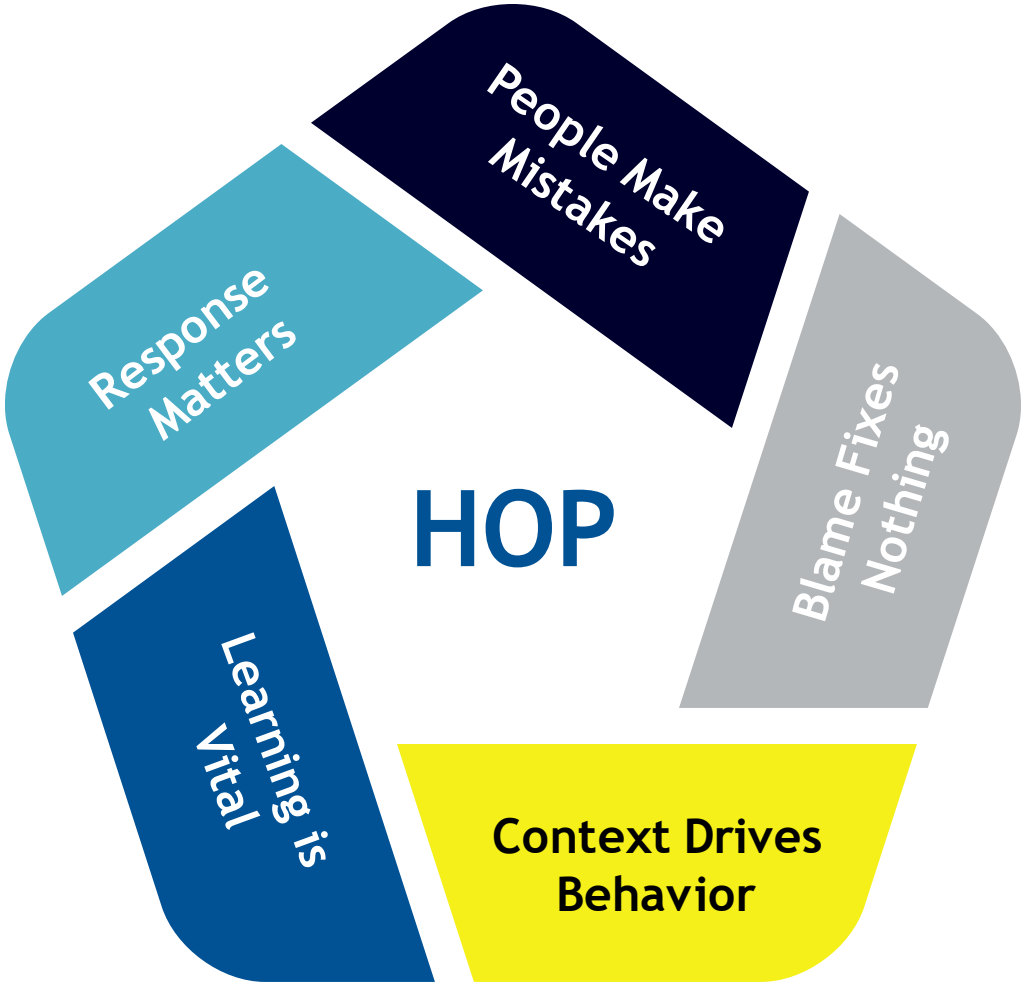
- Focus on the **Safety of Work**, vs the **Work of Safety**
- What we are trying to achieve is:
  - Successful Work = Safe work
  - Well planned, well managed, well resourced = safe outcomes

A Different Lens: Human and Organizational Performance

What is HOP?

- Is a philosophical shift in thinking
- Is a journey that takes time
- Redefines safety… not the absence of incidents, but the presence of safeguards (capacity)
- Expands our thinking from “why” to include “how”
- Builds error tolerant defenses and systems
- Builds on our Operational Excellence success and targets serious incident reduction and fatality prevention

THE FIVE PRINCIPLES OF HOP



People make errors and mistakes

- Error is an unintentional deviation from an expected outcome. We all make them!
- Error exists in success as well as failure

Context drives behavior

A few key messages:

- Workers do what they do for a reason, and that reason makes sense to them at the time. They adapt!
- Decisions are not made without significant system influence

Blame fixes nothing

Key messages

- Blame makes error look like a choice
- Workers are not the problem, they are the problem solvers
- Blame gets in the way of learning the “how”

Learning is vital

Key messages

- Without learning we are limited to past results and responses and are unable to cope with the normal variability of work

Work is dynamic!

Response matters

Key messages

- If we react negatively when mistakes happen, our workforce will likely stop reporting them and opportunities to learn will be lost
- We shape how the organization learns by our reaction to failure and success

PREPARING TO EVOLVE

- Creating Psychological Safety
  - Listening and acting on shared concerns
- Leadership Support
  - Preparing leaders, welcoming bad news as well as good
- Organizational Culture
  - What drives your business? Safe work is an outcome of…
- Change Champions
  - Connecting from the C-Suite to Frontline

Action: Learning from Normal Work

OPPORTUNITIES

- Everyday work is 99% positive, so what can we learn?
  - Most safety metrics include some aspect of failure or deficiency (e.g., an injury, illness, fatality, unsafe act).
  - We should also measure safety by what goes right.

  Dr. Eric Hollnagel

FRONTLINE LEARNING

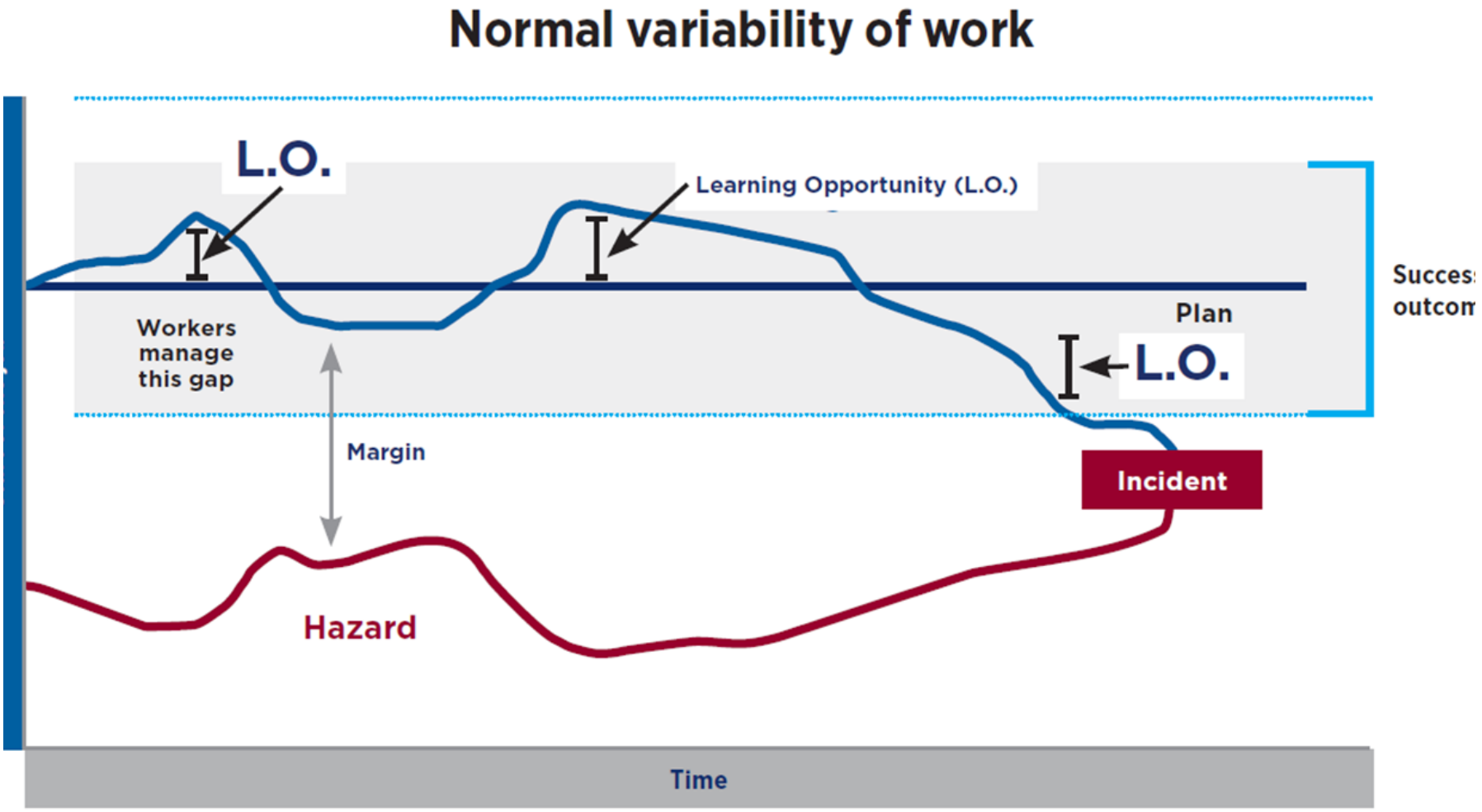
- Perspective shift from:

"Workers are the problem to be solved."

to

"Workers are the problem solvers."

WAI VS WAD



CHEVRON Human and Organizational Performance Field Guide

Assessing Critical Risk

MANAGING CRITICAL RISK

- **Critical Risks**
  - "Focus on the prevention of serious injuries and fatalities and in some cases can include other unwanted material events (UME's) relating to significant financial loss or business disruption to an organization."

- Australian Mine Safety Journal

- **Critical Steps**
  - A human action that will trigger, immediate, irreversible, intolerable harm to an asset (if that action or a preceding RIA is performed improperly).
    - Discharging a firearm
    - Jumping from an aircraft

- Tony Muschara - Critical Steps and Risk Based Thinking
http://www.muschara.com/

CONTROLS ASSURANCE

- Are your controls as solid as imagined?
- Have you conducted an audit of critical controls?
- Has your company completed an assessment of critical activities

(*those activities that can cause SIFs or upset your business*)

COMPETENCY

Variability vs Competency

- Is your workforce prepared/equipped to manage critical steps?
- Are your people able to recognize organizational drift and respond?
- What guidance/criteria is used to manage risk in dynamic environments? (WAI vs WAD)
- Who makes the call to pause work?

Error Modes and Workplace Complexity

PREPARING FOR THE INEVITABLE

- Even our best laid plans to conduct work will result in some level of upset
- Humans are prone to error. Error has and will contribute to events
- Accepting that humans are fallible helps us to focus where humans are most exposed, most likely to err
- Our goal is to understand our work systems and processes and anticipate weak points (Brittle points)
- Workers have varying levels of risk awareness and tolerance

ERROR MODES

Error: An action or inaction that unintentionally;

- Results in an undesirable or unwanted condition.
- Leads a task or system outside of the limits.
- Deviates from a rule, standard, or expectation.

- Mistake: Intentional action, results in unintended outcome (often at job planning stage)

Rob Fisher - Understanding Mental Models

PERFORMANCE ERROR MODES

Baseline error rates (validated by research)

- Skill-Based Performance Error Mode

  =1:1000

- Rule Based Performance Error Mode

  = 1:100

- Knowledge Based Performance Error Mode

  = 1:2 – 1:10

BUILDING CAPACITY

- Anticipating surprises
  - Look for the weak points, test the system, identify single point failures
- Identifying and strengthening 'Brittle Systems'
- Seek out operating systems with minimal layers of controls should a problem occur, focus on direct controls, human interface

Organizational Learning

METHODOLOGIES

- Single root cause
  - Traditional investigation models focuses heavily on finding a "root cause", often the human
  - As models progressed, investigations improved, more professional models
- Multi-factor/causal
  - New View perspective focuses on organizational factors that contribute to an event. Curiosity to understand context. Simple is not sufficient.

ORGANIZATIONAL LEARNING

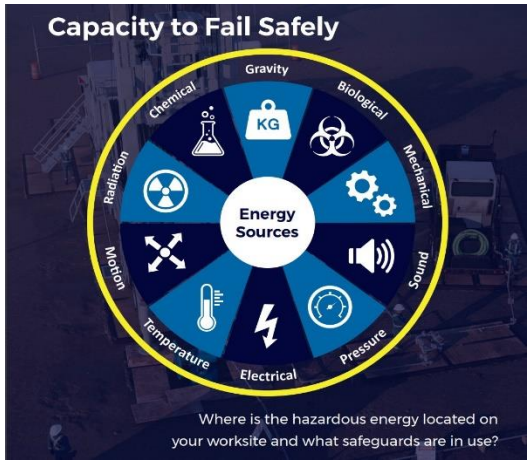
- Learning from experiences
- Sharing results (audits, inspections)
- Making changes
- Learning across the organization

"I have no special talents. I am only passionately curious."
– Albert Einstein

"By being curious, we learn. By being passionately curious, we continue to learn, and become even more curious."
- Philosiblog on 14 March 2012

FIELD-READY ACTIVITIES

- Learning Teams (how work actually happens)
- After Action Reviews (learning from success)
- The 4 Ds (Dumb, Dangerous, Difficult, Different)
- STKY Conversations (stuff that kills you)
- Advancing Incident Investigations (Casual Reasoning)
- The Energy Wheel



CONCLUSION

Key Themes for Evolving Safety

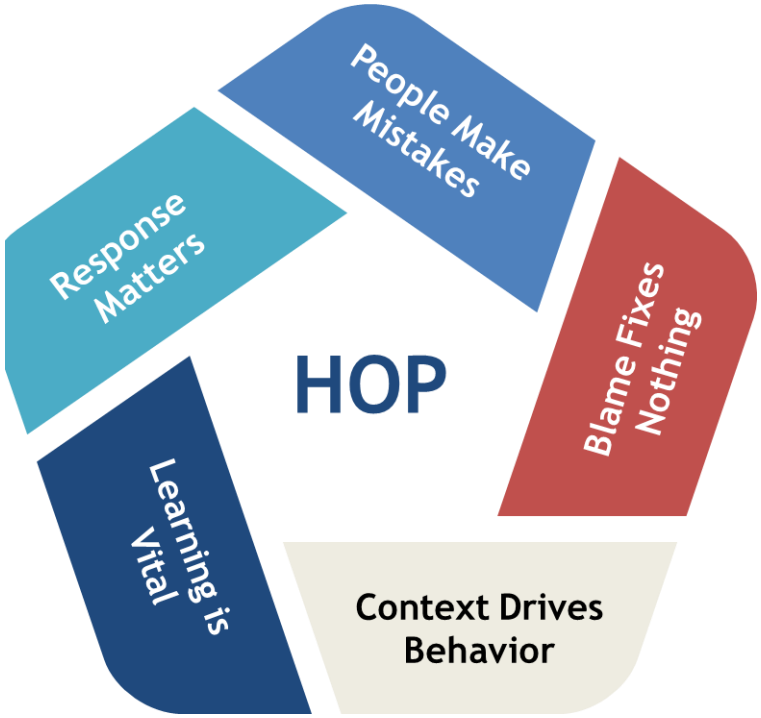
KEY THEMES

- Review the 5 Principles of HOP often
- Focus on the expertise of the people carrying out your business
- Pay attention to high-risk activities with potential for SIFs and Operational Upset
- Learn from failures as well as normal, everyday, successful work
- Redefine what to measure and report (The Work of Safety)

RESOURCES

- ESC - Human and Organizational Performance
- HOP Community of Practice
- HOP - The Five Principles in Action Video
- Building Capacity to Manage Pressure Video & Course
- ESC Energy Wheel Awareness Video
- ESC Line of Fire - Energy Wheel Video
- Safety Evolution Workshop
- Conferences and Industry Support
- gordon.walsh@energysafetycanda.com
- energysafetycanada.com

THANK YOU


People Make Mistakes
Blame Fixes Nothing
Context Drives Behavior
Learning is Vital
Response Matters
HOP