Training to Failure and Other Unlikely and Highly Effective Training Strategies

WRMC 2018

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Agenda

1. Varied vs. Specific safety performance
2. Schema and sensemaking
3. Training principles for building competency fast:
   varied and specific
Bottom line:

• Varied safety performance needs varied training / specific S.perf. needs specific training

• Spending training time in ‘normal’ in no way prepares one for non-normal

• Safe failure over fail safe operations
COLD
COLDER
NOTHING
Pair/Share Question:

• What is your biggest challenge in training staff? (2 minutes per partner)
Pair/Share Question:

• What is your biggest challenge in training staff?  
(2 minutes per partner)

4:30 to go
Introduce and get going!
Partner 1 share

4:00 to go
Partner 1 share

3:00 to go
Partner 1 share

2:00 to go
Partner 2 share

1:00 to go!
Partner 2 share
Time's up!!
Pair/Share Question:

• What is your biggest challenge in training staff?
Question: How do you train for safety critical skills?

Varied S.perf. needs varied training / specific S.perf. needs specific training
Safety critical skills

Varied Perf. Req’s:
Varied S.perf. needs varied training

Specific Perf. Req’s:
Specific S.perf. needs specific training
Safety critical skills

Varied Perf. Req’s:
1. Belay: “demonstrate appropriate behavioral reaction to a fall”
2. Limit exposure given present hazards
3. Swiftly intervene when necessary

Specific Perf. Req’s:
4. Safety briefing
5. Van / facility inspection
6. Waiver (RM?)
Agenda

1. Varied vs. Specific safety performance

2. Schema and sensemaking

3. Training principles for building competency fast: varied and specific
Conscious Mind, Choice

Unconscious Mind, Programming

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2 ways of thinking

Fast & slow
Intuitive & rational
System 1 & system 2
Varied v. specific performance
Schema

Using what I already know to help me understand new information

I know alligators live in swamps.
Schema

• template for recognizing a particular class of relevant environmental threats or opportunities

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Schema v. Sensemaking

• Schema:
  – Categories (of memory?)

• Sensemaking
  – Ongoing process to categorize ambiguous cues
Motivated Behaviour Model:

- Schema & sensemaking
- Mobilize response (authority and patterned)
- DM&J
- Skills (KSA)
- Motivated behaviour or action

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Can you find the mistake?
1 2 3 4 5 6 7 8 9
Motivated Behaviour Model:

Schema & sensemaking

Mobilize response (authority and patterned)

DM&J

Skills (KSA)

Motivated behaviour or action

Varied S.perf.

Specific S.perf.
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Experiments to improve performance creates 'Brownian movements'.

Gradient toward Least Effort

Management Pressure toward Efficiency

Boundary to Unacceptable Work Load

Space of Possibilities: Degrees of Freedom to be Resolved According to Subjective Preferences

Resulting perceived boundary of acceptable performance

Counter gradient from campaigns for 'safety culture'

Error margin

Boundary of functionally acceptable performance
“...rather than striving to control behaviour by fighting deviation...

Control behaviour by making the boundaries explicit and known and by giving opportunities to develop coping skills at boundaries.”

Rasmussen (1997)
Safety training priorities:
1. Coping skills at the boundaries
2. Meaningful interaction with inherent risk
3. Testing calibrates judgement
4. Make learning hard
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Normal vs Non Normal

Boundaries & interaction w inherent risk

Random events
Safety training priorities:
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Training for varied S.perf.

- Meaningful interaction w inherent risks
- Illuminate failure points
- Define boundaries

Normal via Non Normal
Coping skills at boundaries
Sensemaking
Multiple schema
Key ideas:

Varied S.perf. training priorities:

1. Coping skills at the boundaries
2. Meaningful interaction with inherent risk
3. Testing calibrates judgement
4. Make learning hard
Safety critical skills

Varied Perf. Req’s:
1. Belay: “demonstrate appropriate behavioral reaction to a fall”
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3. Swiftly intervene when necessary

Specific Perf. Req’s:
4. Safety briefing
5. Van / facility inspection
6. Waiver (RM?)
Specific S.perf.

Safety training priorities:
1. Role model & replicate
2. Checklists
3. Testing calibrates judgement
4. Make learning hard
Specific S.perf.

- Testing calibrates judgement
- Make learning hard
Key ideas:

Specific S.perf. training priorities:

1. Role model & replicate (R&R)
2. Checklists (or iAuditor app)
3. Testing calibrates judgement
4. Make learning hard
Kahoot!!!

• On phone or laptop
  – Network:
  – User:
  – Wifi password:
• Go to www.kahoot.it
• Game pin and name
Accelerated Training

- Situational awareness
- Recognize patterns
- Defined roles
- Empowerment to act

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Safety training priorities:
1. Role model & replicate
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Ends vs Means

• Structure meaningful interaction with inherent risks
  – Case study org IRF’s
  – Crux points on routes
  – Reasonably foreseeable hazards
Take away points:

1. Identify varied v. specific performance expectations
2. Multiple schema > a single durable
3. Define roles and authority to act
4. Meaningful interaction with inherent risk
5. Safe failure over fail safe


Managing Risk
Systems Planning for Outdoor Adventure Programs

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