ARE WE TOUCHING EVERYONE WHO TOUCHES THE GRID?

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REDUCING THE FREQUENCY and LOWERING THE SEVERITY of HUMAN ERROR
Opportunities to more deeply integrate human performance into the EMS/SCADA/CIP/IT world...
Clear that great gains could be made by strengthening human performance and reducing errors.
While hardware and software failures are often the final manifestations, causes were described as:
"the operator inadvertently…", or "misapplication of rule change", or "operators were not trained to…", or "circumstances negatively affected the ability to make decisions" that point to human interface issues, driven by organizational/systems weaknesses.
Review of the Events Database bears this out as well.
Most attendees had little to no exposure or understanding of human performance, and how it could greatly help their missions.
There is a great need within the IT arena for human performance improvement.
There is a strong focus on hardware and software, but…
"Who designs, builds, installs, maintains, and makes changes to hardware and software…?"
Symptoms are misleading

- Mistakes
- Violations
- Injuries
- Near-Hits
- High potentials
- Waste
- Inefficiency
- Reliability
- Outage
- Lost income

OP focuses on Causes

- Situational Traps
- Drift Traps
- Leadership
- Culture
- Job Scoping
- Ineffective use of Tools
## Optimize Performance Error Review (OPER) Form

<table>
<thead>
<tr>
<th>General</th>
<th>Reviewer:</th>
<th>Date:</th>
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<tbody>
<tr>
<td>Person(s) interviewed:</td>
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<td>Brief description of incident:</td>
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### Situational Traps

Which OP **Situational Traps** were present? (Check all that apply)

- Distractions / Interruptions
- Overconfidence
- Time Pressure
- Scope Change
- Vague Guidance
- Physical Environment
- Peer Pressure
- First Shift/Late Shift
- Mental Stress

### OP Error Prevention Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Used effectively?</th>
<th>Used, but not effectively?</th>
<th>Not used, but were needed?</th>
<th>Not applicable?</th>
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<tbody>
<tr>
<td>Questioning Attitude</td>
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<td>Self Checking</td>
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<td>Pre-Task Review</td>
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<td>Place Keeping</td>
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<td>Procedure Usage</td>
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<td>Peer Check</td>
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<td>Post-Job Review</td>
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<td>Effective Communication</td>
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<td>Turnover</td>
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<td>Coaching</td>
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</tbody>
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### Normalized Drift Traps

Which OP **Normalized Drift Traps** were identified? (Check all that apply)

- Ineffective Training
- Conflicting Values
- Flawed Procedures
- Faulty Equipment
- Bad Habits
- Technology
- Vague Policies
- Lack of Accountability
- Condoning
- Design/Engineering

### Description of ND Traps:

- Yes
- No

### Are ND Traps applicable to other business units?

- Skill based
- Rule based
- Knowledge based

### CAs

Have corrective actions been initiated?

- Yes
- No

### Notes

- Form: "Opportunity for Personal Growth and Development"
- Date: "June 1, 2023"
- Person(s) interviewed: "John Doe, Jane Smith"
- Description: "Incident occurred during shift change, caused by fatigue and poor communication."
DECISION-MAKING

- Perceptions of Risk/Risk Taking/Risk Aversion
- Task Design/Management of Change
- Empowerment/Autonomy/Authority
- Workgroup Dynamics – Participation/Peer Pressure/Conflict Resolution

FACTORS

- Interpersonal Dynamics – Heredity/Culture/Personality/Attitudes/Habits
- Communication
- Leadership
- Accountability/Expectations/Performance Criteria
- Mental and Emotional State/Consciousness/Situational Awareness

Organizational Culture – Integrity/Ethics/Value of Safety
Education/Training/Aptitude
NORMALIZED DRIFT

When variations in accepted standards, processes, and practices don’t result in serious consequences and, over time, become the new norm, allowing risk to increase.

Examples Defined

- Individual – Group – Systemic
- “Temporary” becomes long-term
- Short Cuts
- Extend PM to cut costs
- “Learn to live with it”
- Condoning

Unacceptable risks become acceptable, over time
- Hard to find, easy to ignore
- Growing tolerance for things that are not right
- Under the radar of audits
The distinction between “likelihood” and “consequences”

How do you make decisions?

Drift and Risk grow proportionately.
Acceptable Risks?
Traps in the form of weakness and breakdowns in organizational and personal defenses that become accepted over time, resulting in substandard performance, increased risks, and adverse events.

1. **Conflicting Values** – when stated organizational principles and values do not match actual performance
2. **Condoning** – tacit approval of unacceptable deviations
3. **Bad Habits** – short cuts, complacency, wrong perceptions of risk, thrill seeking
4. **Vague Policies** – misunderstood and inconsistently applied
5. **Ineffective Training** – improved job performance not realized
Traps in the form of weakness and breakdowns in organizational and personal defenses that become accepted over time, resulting in substandard performance, increased risks, and adverse events.

6. **Flawed Procedures** – needed but missing, incorrect, unclear

7. **Faulty Equipment** – broken, out of date, inaccurate

8. **Technology** – failure to take advantage of technology

9. **Design/Engineering** – inaccurate drawings, component labeling, unapproved modifications

10. **Lack of Accountability** – Focus is on results rather than how achieved; expectations not clear
Where are you... DRIFTING to DISTASTER?
Who Else Have We Missed?

Contractors

Pretenders, Fakers, Make-believers

Overconfident & Delusional

Those who didn’t get it... for whatever reason
What Else is **Critical**?

**Accountability**
- Weak Links
- Bad Apples
- Uncontrolled Risks
What Else is Critical?

Super Coaching

5 Pillars of Super Coaching

SAFE PRODUCTION

1. COURAGEOUS
   LEADERSHIP

2. SITUATIONAL AWARENESS

3. EXCELLENCE
   MODEL

4. CHANGE MASTER

5. TEAM BUILDER

HUMAN PERFORMANCE
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