For Reference of NECA 2017 Seattle Attendees Only
Learning Objectives

• Identify the current safety programs available to employers
• Understand the principles of Human Performance
• Identify common traps that are a result of Human Performance
• Learn how to use tools to manage Human Performance in the workplace

Agenda

• Managing Workplace Safety
• Principles of Human Performance
• Common Human Performance Traps
• Tools for Managing Human Performance
• Integrating Steps for Optimization
Every organization is perfectly aligned (perfectly tuned) to get the results it is getting.

History of Safety

- Experience
- Education
- Engineering
- Enforcement
  - Motivational
  - De-motivators

“Good judgement is the result of experience and experience the result of bad judgement.”

Mark Twain
Compliance

- Federal Acts
- Regulations
  - OSHA, DOE,
- Standards (Consensus)
  - NFPA (70, 70E, 101), A-10, Z-10
- State and Local Codes and Requirements

Safety Management Systems

- OSHA’s 18001 (2007)
- ANSI Z-10 (2012)
- ISO 45001, 9001, 14001
- OSHA VPP Star (1989)
- OSHA Recommended Practices (2016)
- NSC Journey to Safety Excellence (2013)

Invent Your Own!
Safety Management Systems

- Management, Leadership and Policies
- Planning, Assessments and Identification
- Hazard Prevention and Implementation
- Safety and Health Training
- Evaluation and Improvement
- Coordination and Communication
  – Multi-employers, (Host, Contractor, Employee)

Safety Management Systems

- Clear defined Policies
- Clear Roles & Responsibilities
- Job Planning and Job Hazard Analysis
- Safety Committees
  – Labor/Management
  – Union/Employers
- Incident Investigation and Accountability
Common Reasons for Incidents/Accidents

- Hurrying through the task
- Frustration
- Exhaustion
- Complacency
- Lack of training and experience
- New processes and techniques

Human Performance Principles

- People are fallible
- Error-likely situations are predictable
- Individual behaviors are influenced
- Operational upsets can be avoided
- People’s achievements are based on encouragement and reinforcement
- Events (incidents) “Are” avoidable
Individual

*People are fallible and even the best make mistakes*

Predictability

*Error prone situations are predictable, can be managed and ultimately prevented*
Individual Behavior

*Individual behavior is influenced by organizational processes and values*

Human Error Origins

- **Operational Error**
  - 90% Human Error
  - 10% Equipment Error

- **Human Error**
  - 70% System Induced
  - 30% Slip, trip or lapse of concentration
Errors Occurs When Barriers and Frontline Protections Fail

Human Performance Errors

What is correct?
1) Accidents are caused by human error
2) Human error is a sign of system failure
Human Performance Errors

What is correct?
1) Investigations must seek human failure in order to explain outcome
2) Do not try to explain failure by finding fault with individuals, look for root cause and other contributing factors

Human Performance Errors

What is correct?
1) It was the person’s inaccurate assessment and bad decision that lead to the undesirable outcome.
2) The person acted on the best of his ability, knowledge and experience given the circumstances
Human Errors

- Errors are mistakes – “Unintentional”
- Violation – Deliberate and intentional
- Incident Investigations
  - Biased
  - Incomplete
  - Inaccurate
- Reaction is Key – Determines Outcome
- Instrumental in Learning

Behavior Based Safety

Activator

*Conditions that affect*

Person

Behavior

*What is normal?*

Consequence

*Results*
Behavior Based Safety

• Activators
  – What side of the bed did you get up on today?
  – Are you running late?
  – What is the weather today?
  – How is traffic?
  – Who are you with?
  – How is your health?
  – What is going on personally and professionally?

• Behaviors
  – Irritable, tired
  – Happy go lucky
  – Distracted
  – Rushing/Speeding
  – Reckless
  – Focused
  – Attentive
Behavior Based Safety

• Consequences

<table>
<thead>
<tr>
<th>Undesirable</th>
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<tr>
<td>– Speeding</td>
<td>– Safe travel</td>
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<tr>
<td>– Ticket</td>
<td>– Arrive on time</td>
</tr>
<tr>
<td>– Accident</td>
<td>– Productive</td>
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<tr>
<td>– Outside Influences</td>
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Behavior Based Safety

• What activators controlled your behavior today that impacted your consequence of being here this morning?
  – Missed wake up call, overslept?
  – Missed transportation or bus was crowded?
  – Missed your morning cup of Coffee?
  – Woke up on time, enjoyed coffee and quiet time, had breakfast, arrived early to get the seat in the back of the room!
Behavior Based Safety

What are you going to change for tomorrow?

Safety Climate/Safety Culture

• Defined

  “The safety culture of an organization is the product of the individual and group with respects to the values, attitudes, competencies and patterns of behavior that determine the commitment to and the style and proficiency of an organization’s health and safety programs.”
Safety Climate/Safety Culture

• Top Down Safety Leadership
  – Chief Executives
• Employee Involvement and Commitment
  – Their value and buy in to the organization
• Clear Communication and Clear Objectives
  – Two-way communication
  – Defined goals
• Mutual respect and appreciation

Safety Climate/Safety Culture

• What can we do to improve the safety climate and safety culture of our places of employment?

• Do we have the right approach and ability to question how we do things with the intent of improving safety, health and productivity?
Human Performance

- Path of least resistance
- Normalization of deviance
- Obstacles
  - Coaching
  - Barriers, (Communication, Experience, Cultural, Education)
  - Safety versus Productivity
- Organizational Weakness
- Implementation of change

Path of Least Resistance

- Do we cut across the grass or do we stay on the sidewalk to the corner?
- Do we make two trips carrying material or do we overload ourselves to make it in one?
- Is it easier to ask forgiveness than permission?
Normalization of Deviance

- How did things get like this?
  Because we let them?
  “Things are the way they are because they got that way” – Gerald Weinberg

- Do we acknowledge trouble alarms and not investigate them?

Normalization of Deviance

- Defined
  “The gradual process through which unacceptable practice or standards become acceptable. As the deviant behavior is repeated without catastrophic results, it becomes the social norm for the organization.”

- BP Texas City Plant Explosion (2005)
### Normalization of Deviance

- Time Constraints
- Distractions
- Complacency
- Overconfidence
- Incomplete Instructions
- Change in Conditions
- Peer Pressure
- Change in Schedule
- Personal Stress
- Lack of proper tools
- Limited resources
- Mental block
- Inability to recognize limitations
- Lack of Focus
- Fatigue

### Famous Last Words

“I’ve done it this way a 1000 times, trust me!”  
*(Anonymous)*

- Remember – it only takes less than a second for an incident/accident to occur!
What are some of the ways we can avoid these traps?

What tools can we use?

Fundamental Tools

- Pre-Job Briefings
- Situational Awareness
- Self-Checking
- Proper Procedures and Compliance
- Proper Communication
  - Sender and Receiver
- Accountability
Fundamental Tools

- Job-Briefing

A pre-job meeting of workers and/or supervision conducted before the performance of a job to discuss the tasks involved, hazards and related safety precautions.

Fundamental Tools – JSA/JHA

- **EXPLORE**
  Explore the work area. Look for potential hazards and identify whether conditions are what is expected.

- **TALK**
  Talk with team members about the work, potential hazards and steps to mitigate the hazards.

- **ELIMINATE**
  Eliminate the hazards. Install appropriate defenses or develop plans before proceeding.
Fundamental Tools

- **S.A.F.E.**
  - Safety Analysis and Functional Evaluation (Oil and Gas Industry)
- **S.T.A.R.**
  - Stop, Think, Act, Review
- **S.A.F.E.R.**
  - Summarize, Anticipate, Foresee, Evaluate, Review

Effective Communication

- Three Way Communication – Verbal and Non-Verbal
  - Sender sends message
  - Receiver listens and repeats message to sender
  - Sender acknowledges or corrects
- Phonetic Alphabet
- Phonetic Numbers
Phonetic Alphabet and Numbering

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<th>Phonetic Alphabet</th>
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<th>Spoken As</th>
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<td>M - mike</td>
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Accountability

- Signatures
  - Verify
  - Sign
  - Write
Bad Attitudes and Attributes

- Pride – “I know what I am doing!”
- “Superman” – “I will do whatever it takes”
- Denial – “It will never happen to me”
- Fatalistic – “Why bother, it won’t change”

Nothing ever goes wrong!

Human Performance Action Items

- Communicate to Executives
- Understand Human Performance Issues
- Educate Workforce on Human Performance
- Adopt Practices and Procedures
- Utilize Human Performance Tools
- Drive Accountability Where Possible
- Implement Quality Control and Verification
It doesn’t matter how many resources you have...

If you don’t know how to use them, it will never be enough.

Every organization is perfectly aligned (perfectly tuned) to get the results it is getting.
References

- Todd Conklin – PhD,
  - Human Performance Association
  - Los Alamos National Laboratory
- Bill Whelan – CIH, CSP
  - Principles of Human Performance
  - UtiliCon Solutions Ltd.
- INPO, Excellence in Human Performance. 1997

Questions?

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Don’t forget…
- 10:15 am – 11:30 am – General Session with Jim Donald
- 11:30 am – 4:00 pm – NECA Show Hours