

Are There Gaps in Your Safety Systems?



Safety-DOC.com

© 2017 Timothy Ludwig

Copyright

Copyright © 2018, Timothy D. Ludwig. All rights reserved.

Timothy Ludwig owns all rights, including the rights to copyright of these materials. No rights to reproduce, transfer, assign, or create derivative works based on these materials are granted without written permission of Timothy Ludwig, Ph.D.

To use any of the materials within, please direct inquiries to:

Timothy D. Ludwig

4064 Shulls Mill Road

Blowing Rock, NC 28605

Cell: 828.773.0986

Email: TimLudwig@Safety-Doc.com

Website: <http://Safety-Doc.com>

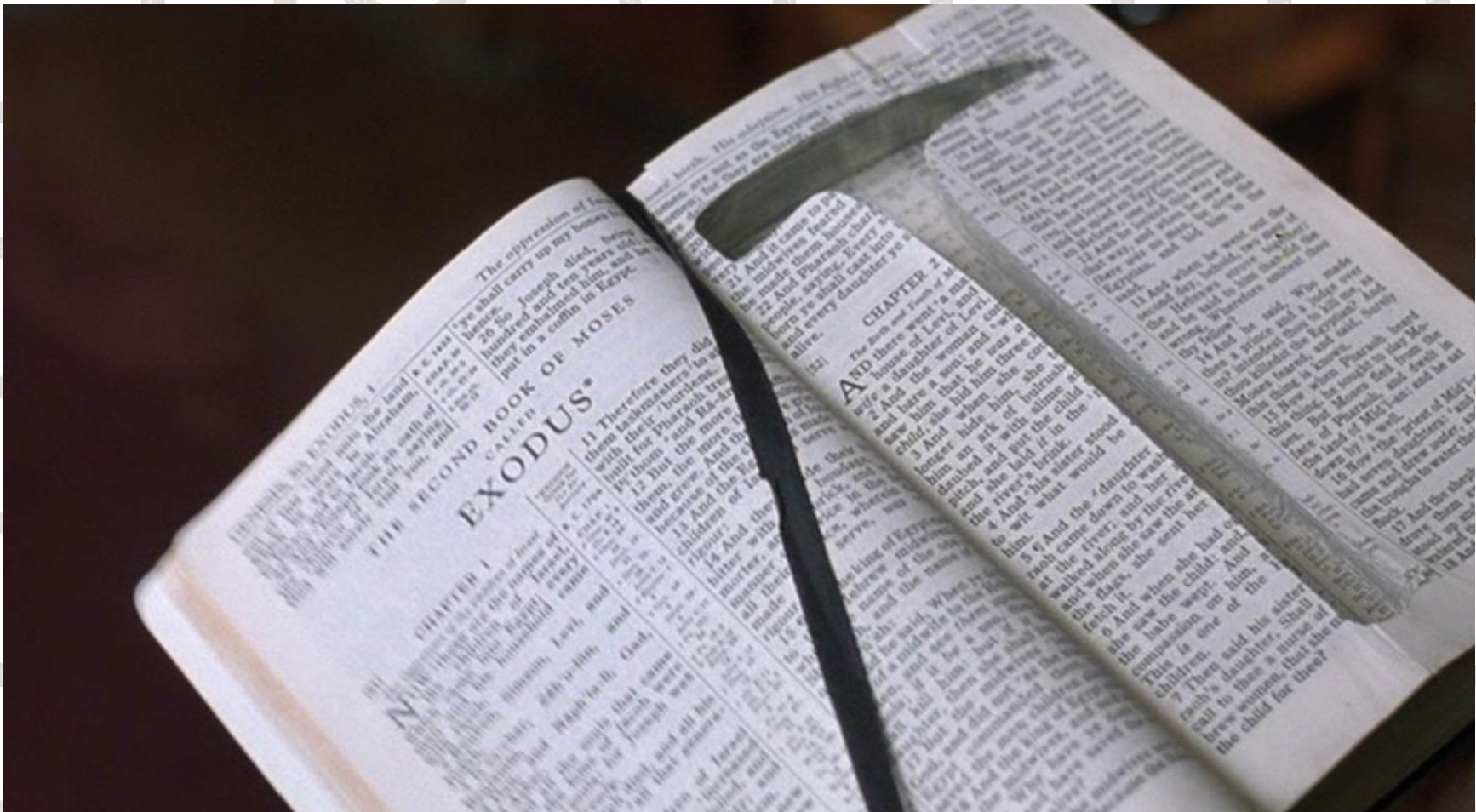


THE
SHAWSHANK
REDEMPTION

Andy Dufresne



Andy, who had been an amateur geologist before being jailed, asks Red to get him a rock hammer for shaping rocks he collects from the exercise yard into small sculptures.





One of the next items he orders from Red is a large poster of Rita Hayworth

Andy used his rock hammer not just to shape rocks, but also to carve a hole through the wall over the past several decades.

Once through the wall, he broke into a sewage pipe, crawled through it, emerged into a field beyond the prison's outer perimeter, and vanished.



Clinton Correctional Facility in upstate New York



David Sweat & Richard Matt



incarcerated for the murder
of a deputy sheriff



It took months for Mr. Sweat to saw through the back of his cell and ultimately into an outbound pipe in the depths of the prison to escape.

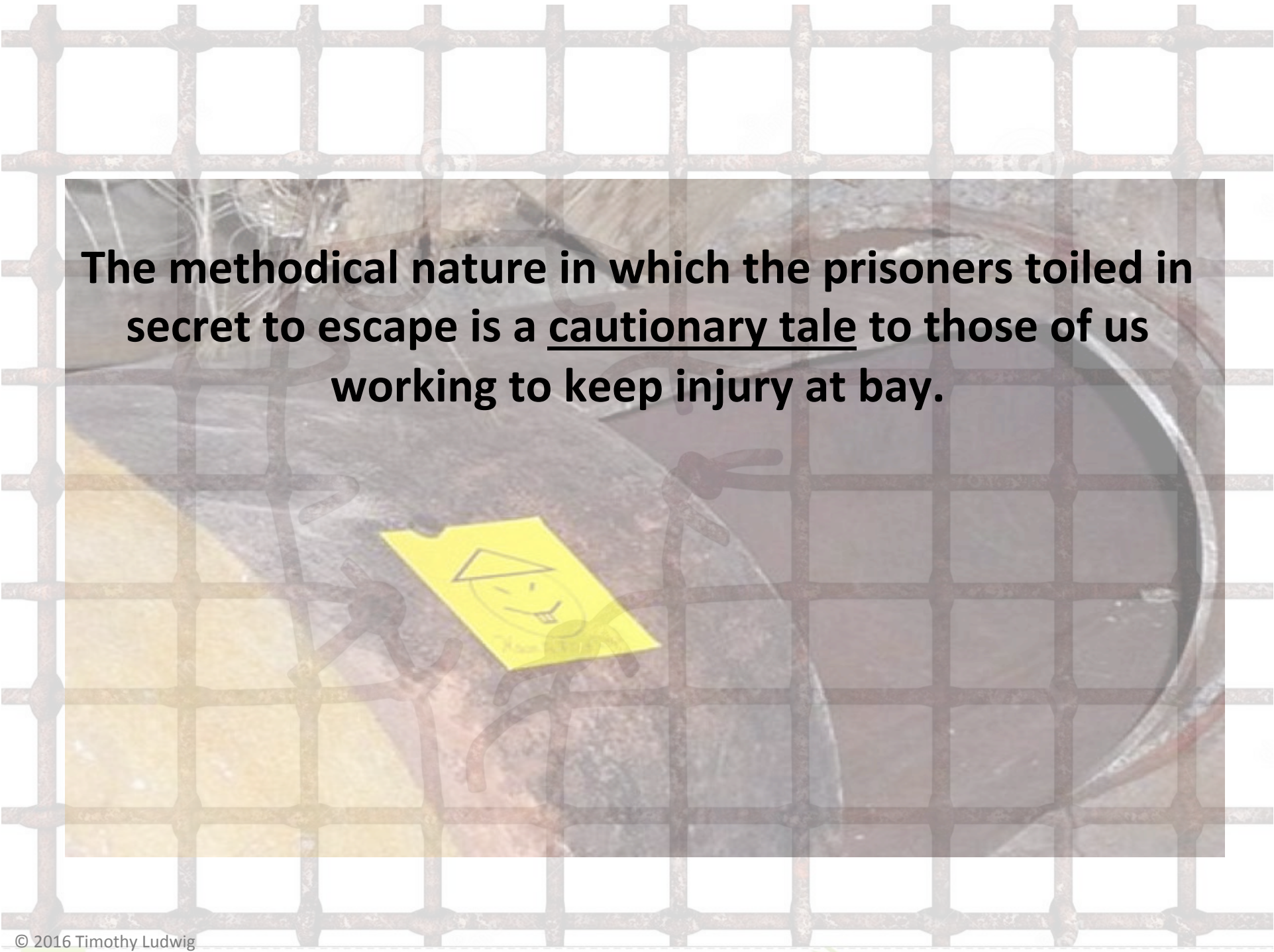
The Facts

- David worked at night
- He had an accomplice
- He camouflaged the hole in the back of his cell
- He walked catwalks behind the wall to find paths to underground service pipes out of the prison
- He had his dirty clothes every morning

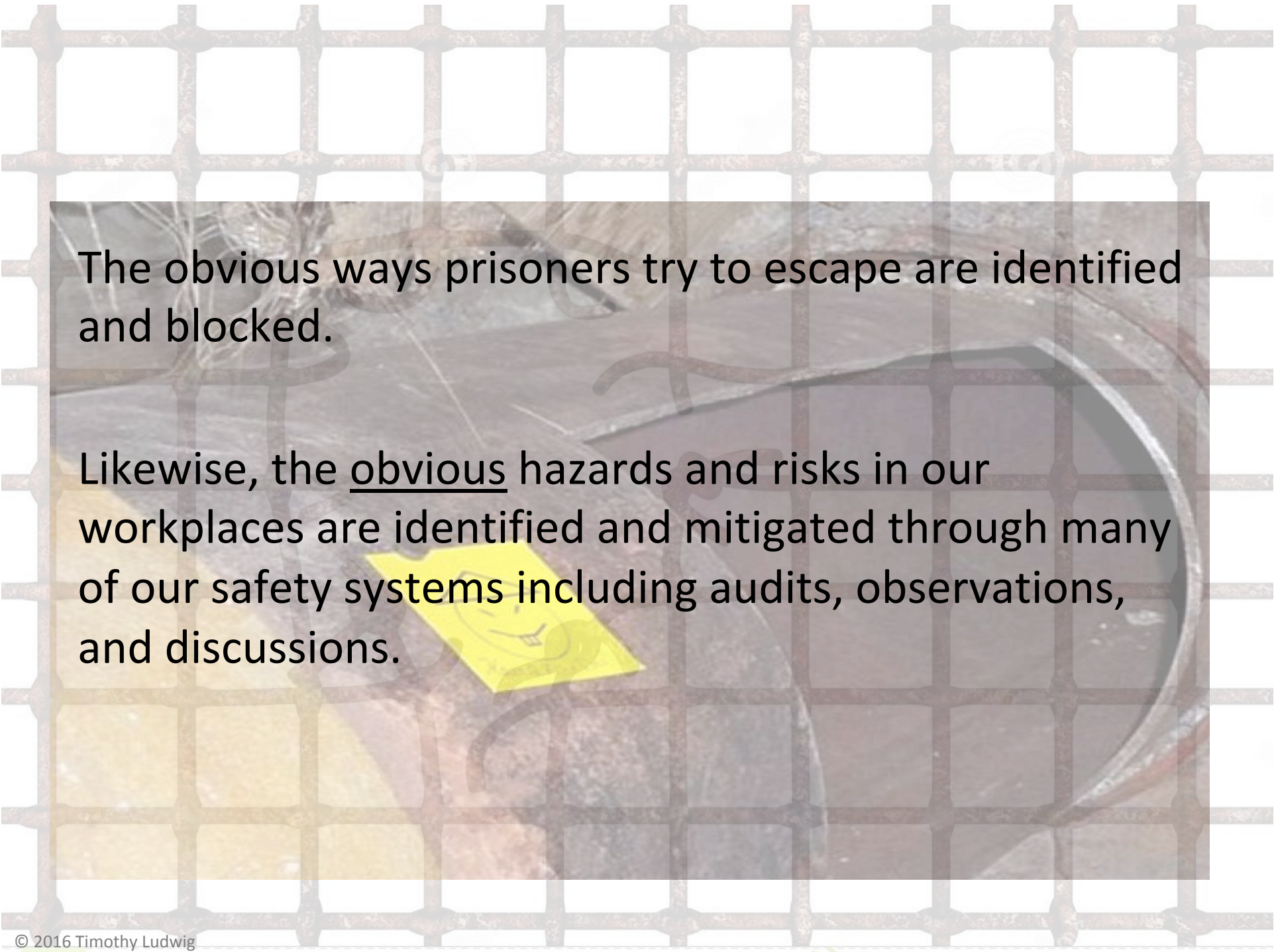


Ultimately escaping





The methodical nature in which the prisoners toiled in secret to escape is a cautionary tale to those of us working to keep injury at bay.



The obvious ways prisoners try to escape are identified and blocked.

Likewise, the obvious hazards and risks in our workplaces are identified and mitigated through many of our safety systems including audits, observations, and discussions.

And what if our Safety Systems let us down?

“...a story of neglect by those who were supposed to keep Mr. Sweat behind bars; of rules and procedures ignored; and of a culture of complacency among some prison guards, employees and their supervisors, whose laziness and apparent inaction — and, in at least one instance, complicity — made the escape possible.”

New York Times, July 20, 2015

More Facts



- Guards slept during the night shift
- No bed checks were performed
- The catwalks hadn't been patrolled in years even though it was policy to do so 3x a month. One guard even provided a guided tour of the catwalk as a "reward".
- Mr. Sweat got tools by getting access to contractor's tool boxes
- At least one prison employee was complicit providing heavier tools like hacksaws and chisels packaged in frozen ground beef

We need to resist the urge to over-engineer the solution

Extra layers of PPE, rules, and cumbersome processes required after identifying a problem often doesn't solve the problem.

Mr. Sweat was in a prison cell with concrete 5 inches thick...

While sawing away at a wall behind complacent guards and complicit enablers

One prisoner joked

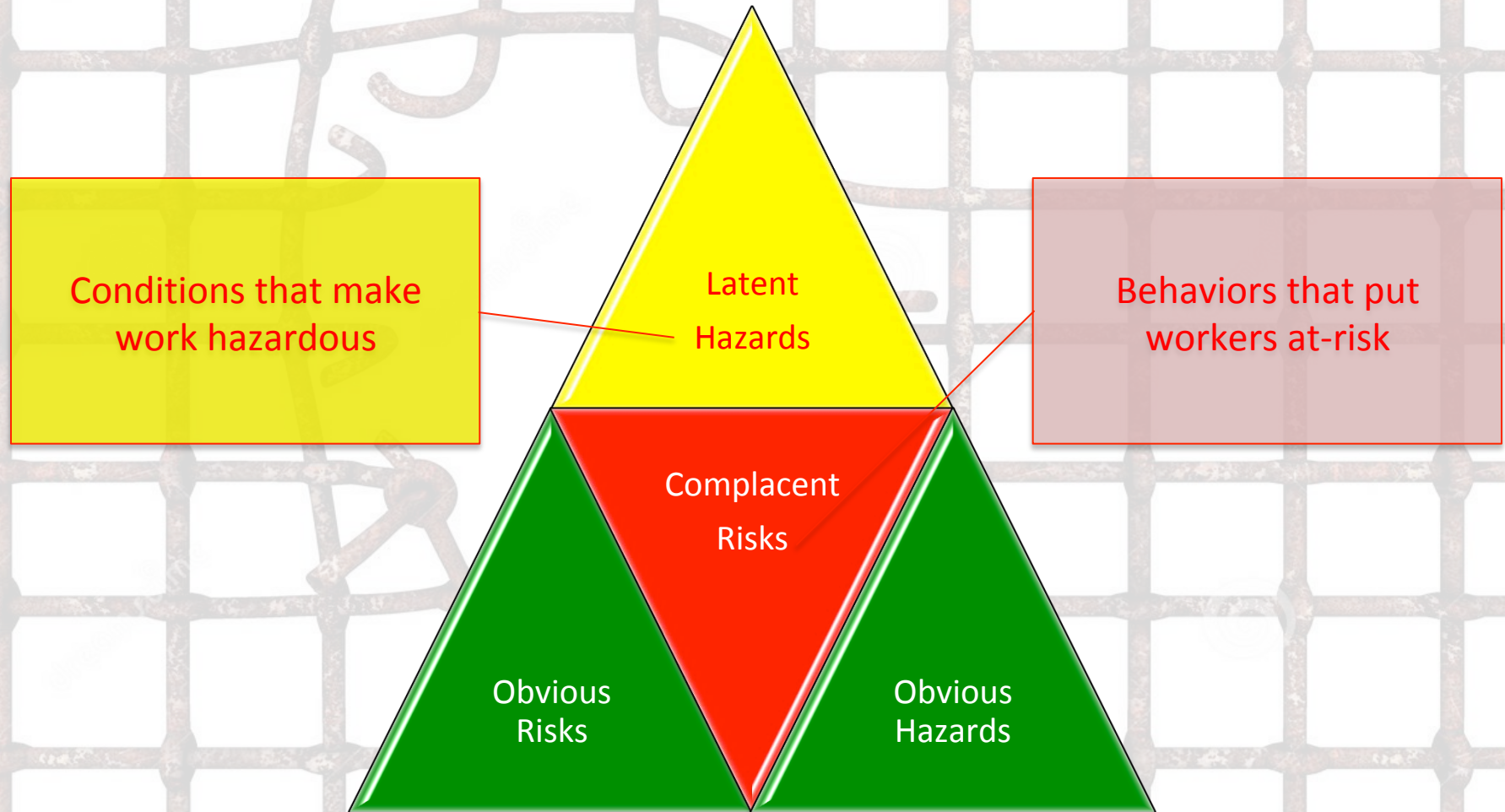
“the only thing walking the cellblocks on the overnight shift were the cockroaches.”

Yes, the very systems you put in place such as tools, equipment, processes, policies, supervision, can, at times, actually be complicit in increasing the hazards and risks you are trying to keep at bay.

So...

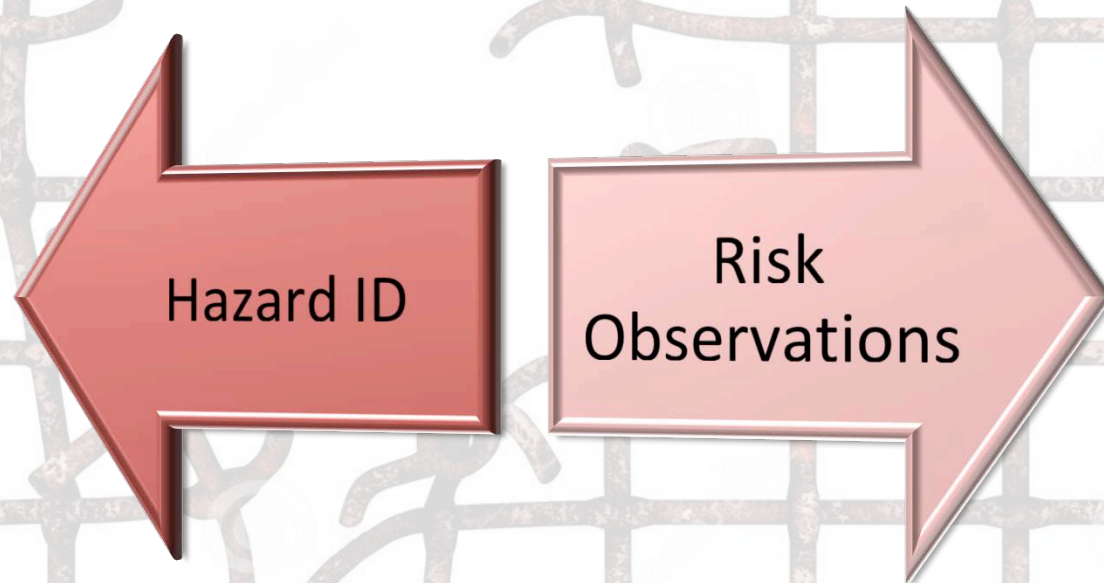
**How do we deal with the
latent
hazards and risks that our safety
systems are unequipped to identify?**

What are we not considering?



Problems to overcome

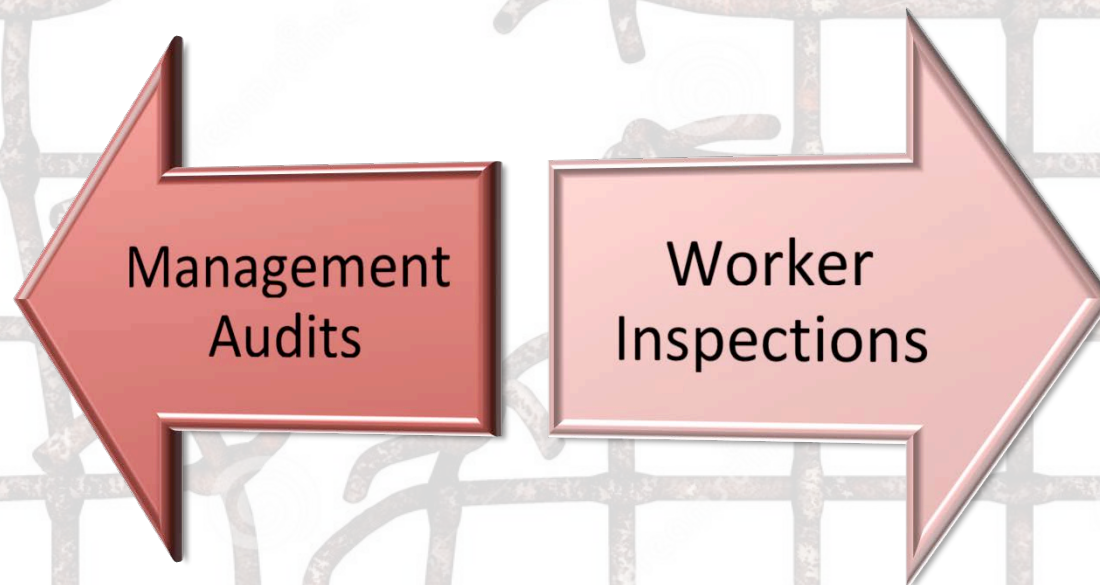
- Hazard Identification and Behavioral Observation for Risks are often separate systems



- While Risks are taken in the face of Hazards

Problems to overcome

- Management and Workers are often asked to assess safety apart from each other



- While different eyes see different things

Problems to overcome

- Behavioral Safety (BBS) becomes a static process only finding obvious Risks



- While the workplace is dynamic and the things that can get you hurt are Latent

Problems to overcome

- Pre-Task briefs and Job Safety Audits (JSAs) do not discriminate the behaviors necessary to perform high-risk tasks safely.

Job Safety Analysis Form

Note: This JSA is valid only for the work, date, and time specified. This JSA shall be posted at the work site during the work activity. If the terms noted change, work must be stopped and the JSA reissued. Fire and/or Emergency Alarm automatically invalidate the JSA. When the work is completed or the JSA expires, return the JSA to the Project Manager marked "Complete".

Project Name and Number: _____ Date: _____
Location: _____ Supervision: _____ Beginning Time: _____ Expiration Time: _____
Crew Names: _____
Description of Work: _____
Name of Standby Person (if required): _____ Name of Fire Watch (if required): _____
Competent Persons (if required): _____

A. Atmosphere Monitoring Required: Yes No N/A
If Yes, how often?
Comb. Gas / Flamm. Vapor Test Reading: _____
Oxygen Concentration Reading: _____
Hazardous / Toxic Gas Test Reading: _____

B. Emergency Assembly Point:
Primary: _____
Secondary: _____
Wind Direction: _____

C. Safety Checklist Requirements: (See Page 2 for items checked below.)
Access Yes No
Electrical Yes No
Excavation Yes No
Emergency Equipment Locations Yes No
Hazards (body) Yes No
New Worker Yes No
Pipeline Yes No
Hazards (environmental) Yes No
Equipment / Lifting Yes No
Overhead Work Yes No
Process / Equipment Yes No
Tools Yes No
Personal Protective equipment Yes No
Stand-By Person Yes No
Welding / Burning Yes No
Hazards Yes No

D. Permits Required (displayed and properly signed):
Hot Work Yes No
Excavation Yes No
Lockout / Tagout Yes No
Confined Space Yes No
Line Breaking Yes No
Hot Work Yes No
Other (specify): _____

E. Work Plan / Order of Work / Assignments: Safest Plan? _____

F. Training: _____

G. Potential Hazards: _____

H. Actions Taken to Eliminate Hazards: _____

I. Tools, Materials, and Safety Equipment Required: _____

J. Other Special Precautions: _____

K. Signatures showing acceptance of this safe job plan:
Foreman: _____
Crew: _____

- Typically only prompting or assessing compliance for engineered solutions.

Job Safety Analysis Form

Note: This JSA is valid only for the work, date, and time specified. This JSA shall be posted at the work site during the work activity. If the terms noted change, work must be stopped and the JSA reissued. Fire and/or Emergency Alarm automatically invalidate the JSA. When the work is completed or the JSA expires, return the JSA to the Project Manager marked "Complete".

JSA's are good for assessing compliance to Engineered Controls

Description of Work: _____

Name of Standby Person (if required): _____ Name of Fire Watch (if required): _____

Competent Persons (if required): _____

A. Atmosphere Monitoring Required: Yes No N/A

If Yes, how often? _____

Comb. Gas / Flamm. Vapor Test Reading: _____

Oxygen Concentration Reading: _____

Hazardous / Toxic Gas Test Reading: _____

B. Emergency Assembly Point:

Primary: _____

Secondary: _____

Wind Direction: _____

C. Safety Checklist Requirements: (See Page 2 for items checked below.)

Access Yes No

Electrical Yes No

Excavation Yes No

Emergency Equipment Locations Yes No

Hazards (body) Yes No

New Worker Yes No

Pipeline Yes No

Hazards (environmental) Yes No

Equipment / Lifting Yes No

Overhead Work Yes No

Process / Equipment Yes No

Tools Yes No

Personal Protective equipment Yes No

D. Permits Required (displayed and properly signed):

Unit Work Yes No Excavation Yes No

Lockout / Tagout Yes No Confined Space Yes No

Line Breaking Yes No Hot Work Yes No

Other (specify): _____

E. Work Plan / Order of Work / Assignments: Safest Plan? _____

F. Training: _____

G. Potential Hazards: _____

H. Actions Taken to Eliminate Hazards: _____

I. Tools, Materials, and Safety Equipment Required: _____

J. Other Special Precautions: _____

K. Signatures showing acceptance of this safe job plan: _____

JSA's often fail to detail the specific behaviors needed to do the task safely in the midst of hazards.

Excavations SHE-T-437

Form Reference

Owned By

Date

Status

Location

Risk Monitoring assessing compliance to Engineered Controls

Conducted by

Date

Work area monitored

Contractors observed

Risk based monitoring

Check Item	Status	Comments and actions
1 Have all excavations been identified?	Compliant	1 nr open excavation to be used as foundation for encapsulation structure
2 Is there suitable RAMS in place, approved and briefed for excavations works?	Compliant	Keltbray and MHI RAMS in place
3 Has the excavation got any temporary works e.g. shoring? Consider temporary works inspection	Compliant	
4 Has the excavation been checked as a confined space? Consider confined space checklist	Compliant	Controlled access (Permits to enter in place)
5 Is there evidence of suitable controls for prevention of collapse?	Compliant	MGF propping in place with sheet piles
6 Is there safe access/ egress, are any ladders being used adequate? (Length, condition, tied, footed, angle)	N/A	no work within trial hole over past 2 months
7 Are the Emergency Procedures available suitable to the excavations and briefed?	Compliant	Included in the RAMS
8 Is the excavation regularly inspected by a competent person and the appropriate inspection forms completed?	Compliant	TWS inspected
Have all exposed services been adequately supported/ protected? (Not used as hand/ footholds)	N/A	No exposed services within excavation
10 Is the access and edge protection around the excavation been planned? (Consider access for pedestrians, vehicle stop boards), position of plant and spoil, potential for dropped objects)	Compliant	
11 Could the excavation affect any neighbouring structures/services? Are suitable measures in place if applicable? Consider weather conditions	N/A	
12 Is the excavation free from water? Are pumps discharging a sufficient distance from the excavation. Is there a discharge consent? Consider dewatering checklist	N/A	excavation base is blinded - water will be pumped into blinded spoil heap before breaking out
13 If a trench or excavation is to be used as a landing platform		

Still fail to detail the specific behaviors needed to do the task Safely in the midst of hazards.

How to plug the gaps

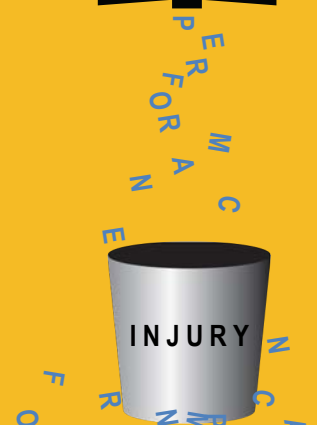
- Identify where variance is
 - As a team
- Identify the sources of variance
 - In conditions
 - In behavior
- Pinpoint behaviors in context
- Fix the systems causing risk
- Observe, Shape, Move On
- Repeat

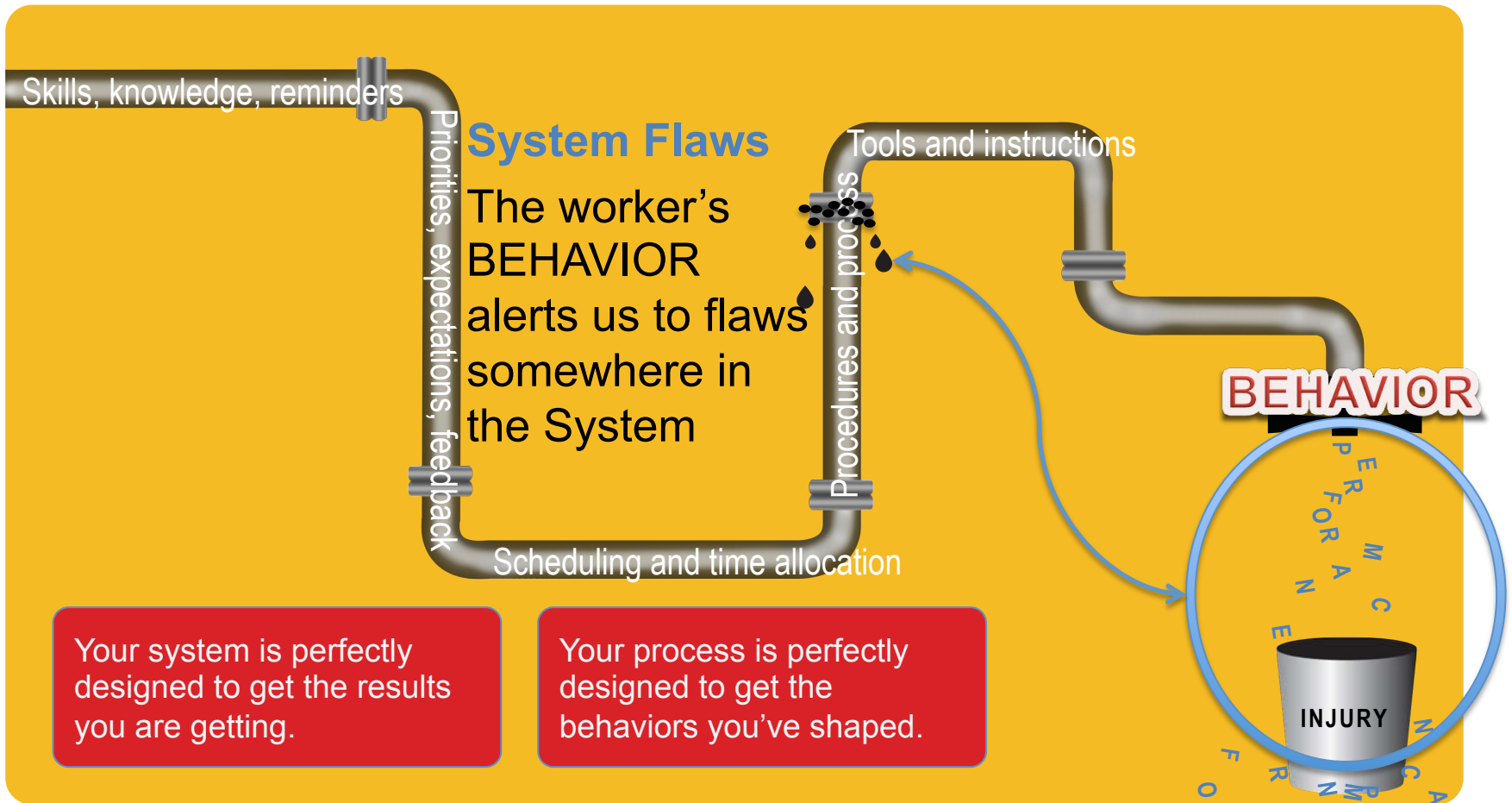


Safety Flaws — The worker is blamed because their BEHAVIOR was associated with the risk



BEHAVIOR



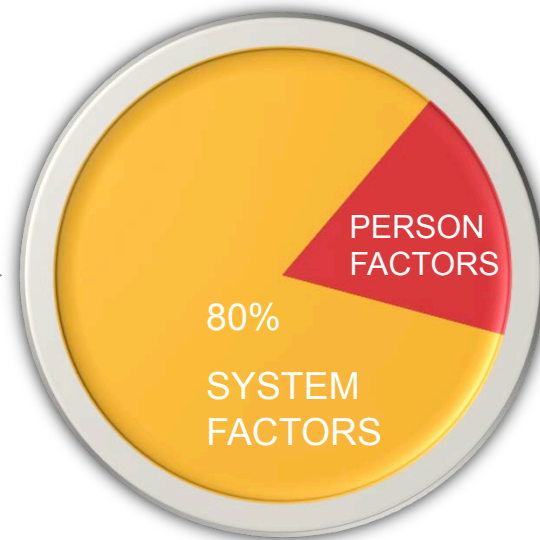


Blaming the worker is not the root cause of variance

Causes of Errors

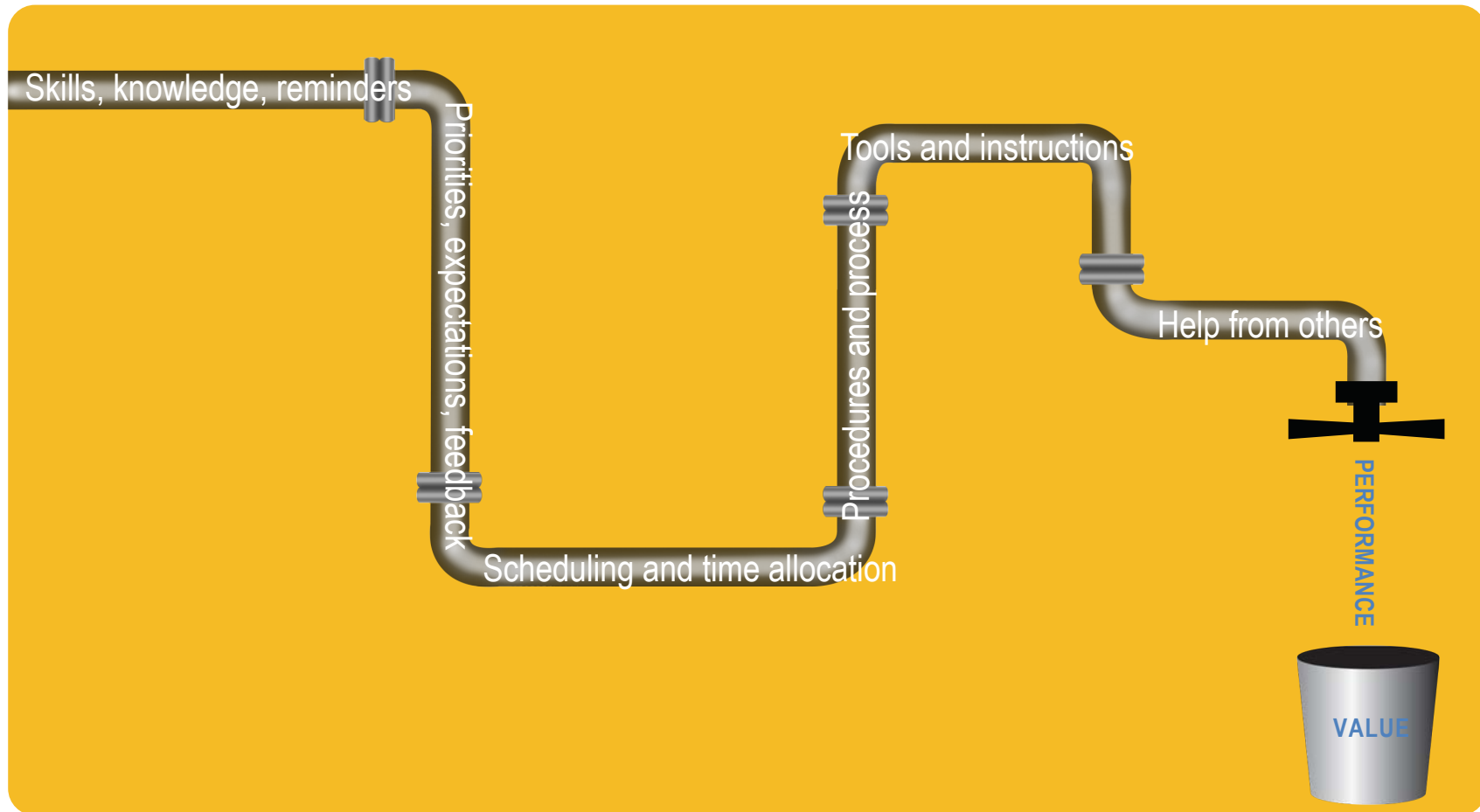


Causes of Behavior



- Find system causes that generate the behavior you observe.
- Don't leave 80% cause on the table

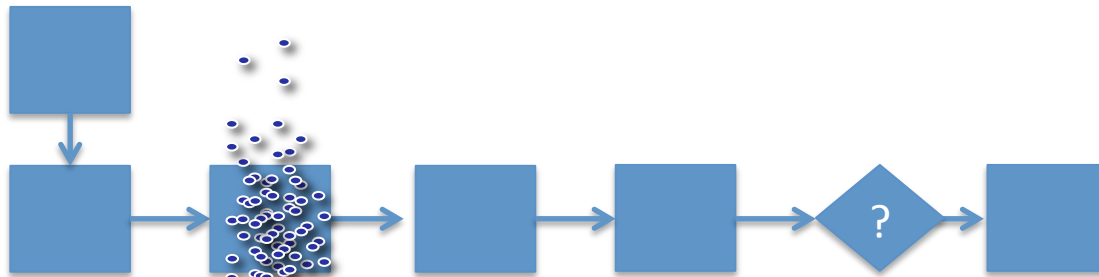
Performance must be supported by flawless systems



Find the Variance

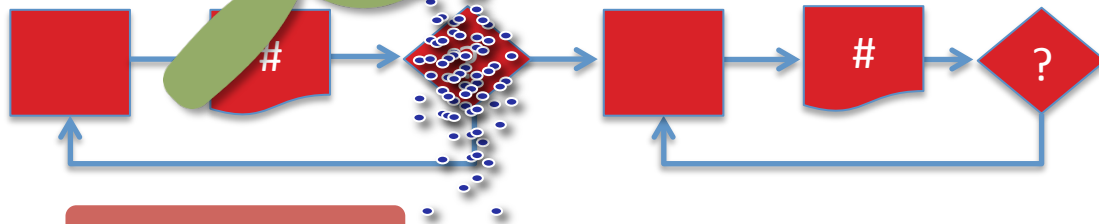
Manual Task

- Manual Tasks are made up mostly of observable actions (Squares)



Thought Task

- Thought Tasks are made up mostly of analyzing documents and data (Cut Squares) and making decisions (Diamonds)



Find the Variance

Behaviors vary because:

Lack of discrimination



Didn't know:

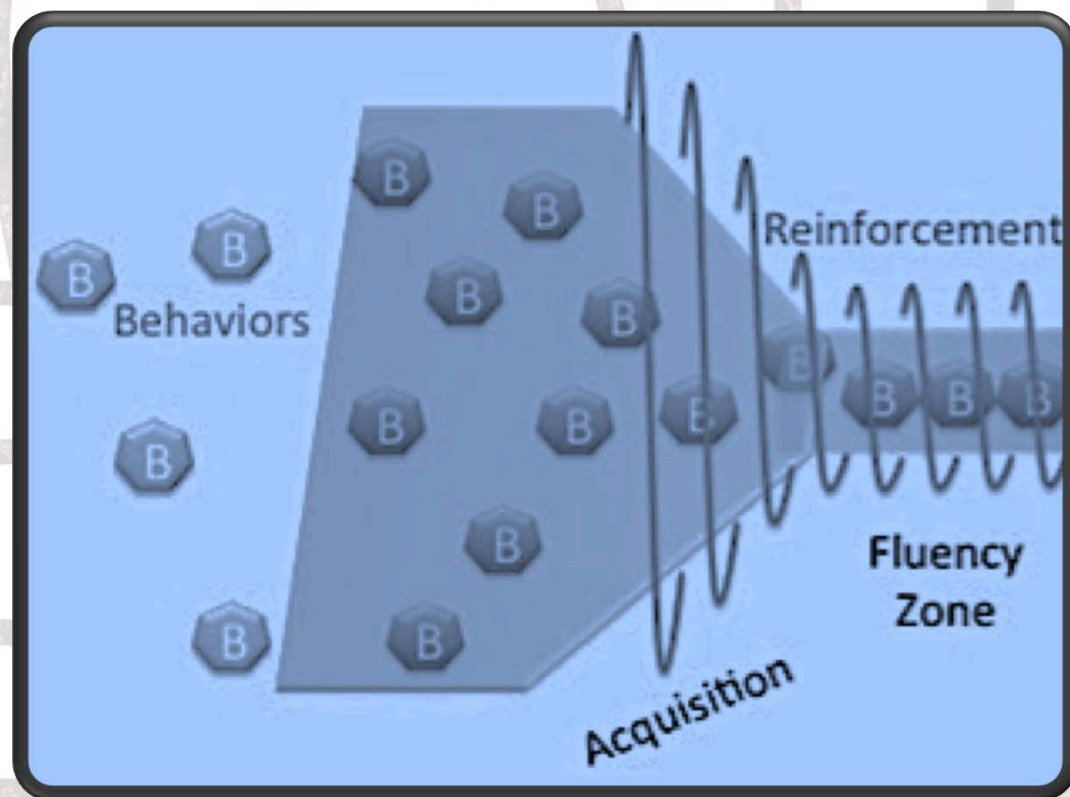
What to do,
When to do it,
or
Why to do it

"I didn't know"

Discrimination is the key to reducing variance.

Behaviors seek Reinforcement

When Behaviors acquire reinforcement they lock in and become “Fluent”



Behaviors vary because:

Extinction



"I forgot to"

Extinction is caused by:

Lack of Reinforcement

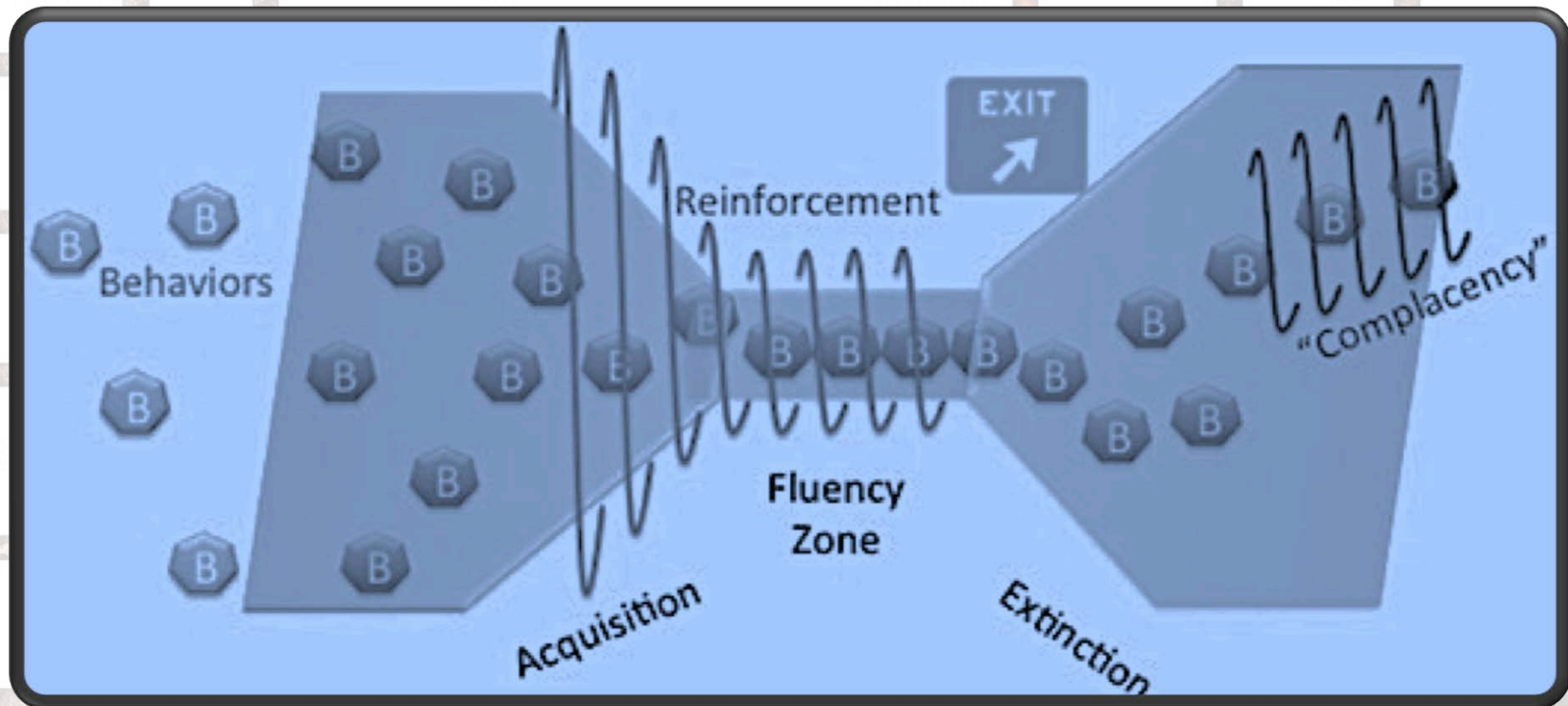
Fatigue

Small variations that stick

Normalization of Deviance

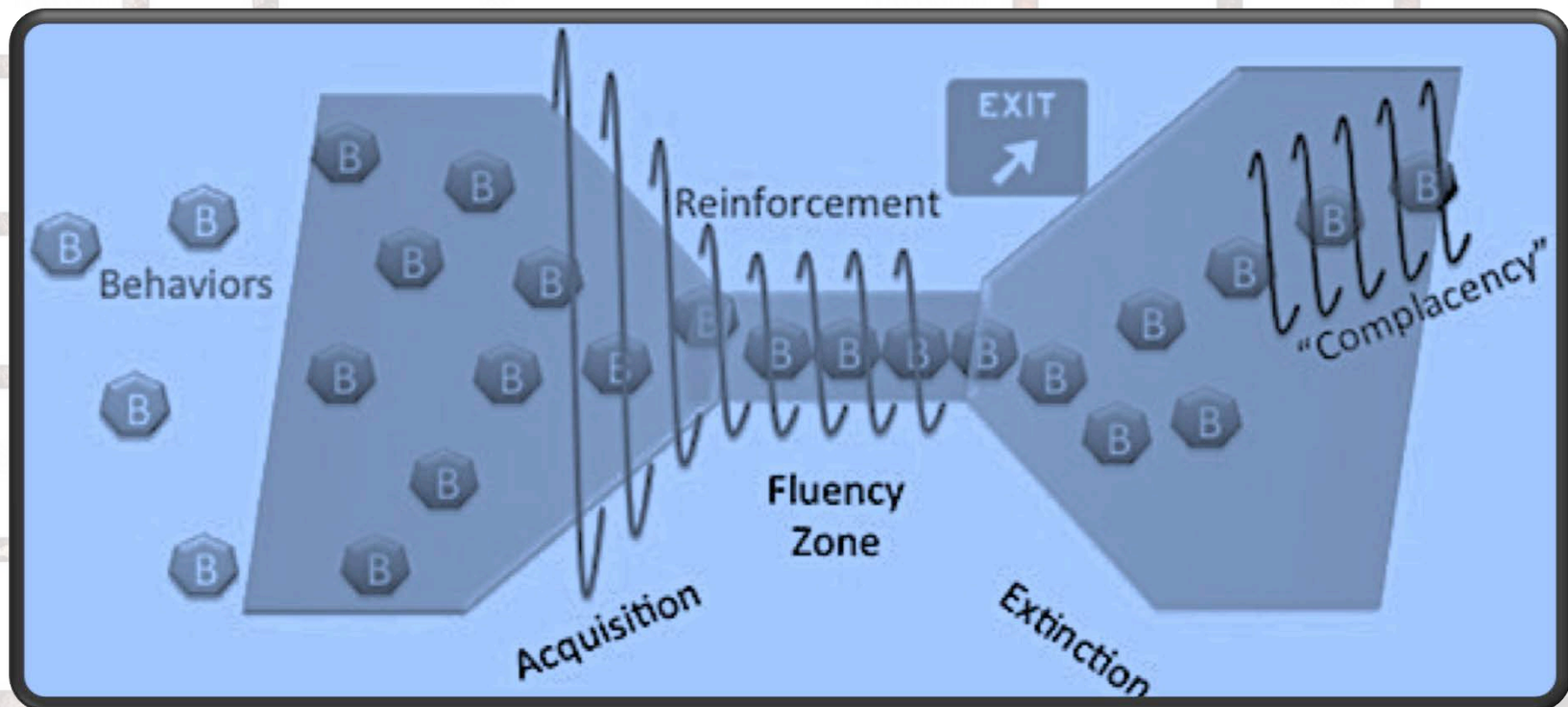
Extinction is often called **complacency** in the safety world

When Reinforcement stops, behaviors begin to vary as they seek out reinforcement again



New Discriminations create “Normalization of Deviance”

Behavior finds new sources of Reinforcement
which pull performance out of spec.



Behaviors vary because:

Competing Behaviors



"I did this instead"

The alternative is:

Easier, Faster,
Less Cumbersome

or...

More fun (interesting, social)

or...

Something the boss
told you was a priority

Behaviors vary because:

Reactive Behaviors



Using behavior to:

Get back at someone,

Prove a point,

Resist against new rules

or

To show off

“I’ll show him”

Behaviors vary because:



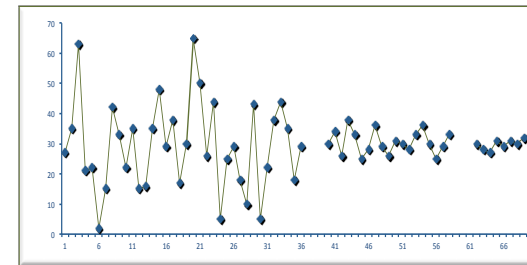
The system was
designed perfectly
to LET THEM.

Make biggest impact on safety by selecting high-risk tasks with high-variance



Risk =

- Hazards in the work environment
- Behaviors can help someone stay safe
- Behaviors can cause someone be at-risk



Variance =

- Different workers do it differently
- Same worker does it differently across time
- Low consistency

Identify where you want to reduce variance or increase variance to reduce risk



Fixed: Points in task that need to be done consistently to reduce risk of injuries.

Goal: Reduce variance.



Flex: Points in the task where employees situational awareness and decision making will reduce risk of injuries.

Goal: Increase variance through situational decision making.

Behaviors vary because:

Discretionary Behaviors



Using behavior to:

- Do a better, safer job
- Coach a peer
- Report (Observation)
- Suggest improvements
- Take initiative to
make change

"I'll go above and beyond"

And when peers frequently observe behavior and give feedback...

- They find the Variance
- And provide Reinforcement to prevent extinction



Bringing it all together in a tool

BBS PLUGIN

Identify a high risk/high variance task



During Meetings

Review BBS and other Data soliciting input from Managers & Operators

Target High Risk/High Variance Task

↑Risk/↑Variance

Task name: Changing Motor in Plant 7

Personal Safety Concerns:
Tipping, Twist/Turn, Body Mechanics, Thermal Burns

Process Safety Concerns:
Leaks, H2S Release, explosion

	Task Steps	Hazardous Conditions	Behaviors that we do to keep	How can we help?
Pre-Work & Preparation				
PPE and Tools				
Communication				
Doing the Work				
Post Work				
Other			<input type="checkbox"/>	

Team identifies High Risk / High Variance Task

Task name: Changing Motor in Plant 7

Personal Safety Concerns:

Tipping, Twist/Turn, Body Mechanics, Thermal Burns

Process Safety Concerns:

Leaks, H2S Release, explosion

	Task Steps	Hazardous Conditions	Behavior that we do to keep	How can we help?
Pre-Work & Preparation				
PPE and Tools				
Communication				
Doing the Work				
Post Work				
Other			<input type="checkbox"/>	

Team identifies Personal and Process safety Concerns

Which must be addressed in the Card

How to plug the gaps

- Identify where variance is
 - As a team
- Identify the sources of variance
 - In conditions
 - In behavior
- **Pinpoint behaviors in context**
- Fix the systems causing risk
- Observe, Shape, Move On
- Repeat



Create the task observation



Out in the Field

Employees do targeted task talking through what behaviors they engage in to be safe

FLEX



Other employees observe and create the TO Card

Task name: Changing Motor in Plant 7

Personal Safety Concerns:

Tipping, Twist/Turn, Body Mechanics, Thermal Burns

Process Safety Concerns:

Leaks, H2S Release, explosion

	Task Steps	Hazardous Conditions	Behaviors that we do to keep us safe.	How can we help?
Pre-Work & Preparation	Get Permit LOTO	Distractions		
PPE and Tools	Class C Knife, Cart, Ladder	Knife blades cutting through Class C gloves		
Communication	JSA Review Alert operator	Distractions		
Doing the Work	Cut tape with knife Unwire Motor Unbolt Motor Remove Motor Replace new Motor Bolt new Motor Wire new Motor Transport old motor to dip tank Activate lines, look for leaks Turn on motor, test performance levels	Knife blades Live wires causing electrical exposure Motor and Base location causing Pinch Points Placement of heavy motor causing Sprain/Strain Leaking connections causing acid exposure Hot environment causing prolonged heat exposure		
Post Work	Post JSA Decontaminate self, PPE, and tools Return Permit			
Other			<input type="checkbox"/>	

Use SOPs/JHAs to list Task Steps and identify Hazards

But use this as an opportunity to identify new hazards

Task name: Changing Motor in Plant

Personal Safety Concerns:

Tipping, Twist/Turn, Body Mechanics, Theft

Safety Concerns:

Slip, trip, fall, explosion

Or discuss if the task is not scheduled

Facilitators watch associates doing a task

Associates "Talk out loud" the steps they do to be safe

	Task Steps	Hazardous Conditions	Controls to keep	How can we help?
Pre-Work & Preparation	Get Permit	Distractions	<input type="checkbox"/> Have team member confirm LOTO <input type="checkbox"/>	
PPE and Tools			<input type="checkbox"/> Have team member confirm PPE <input type="checkbox"/> Check condition of tools <input type="checkbox"/> Discuss need for cart and ladder	
Communication	JSA Alert of		<input type="checkbox"/> FLEX - when reviewing JSA <input type="checkbox"/> FLEX - Ask operator about plant conditions	
Doing the Work	Cut to remove knife Unwire motor Unwire Motor Remove Motor Replace new Motor Bolt new Motor Wire new Motor Transport old motor to dip tank Activate lines, look for leaks Turn on motor, test performance levels	Knife blades Live wires causing electrical exposure Motor and Base location causing Pinch Points Placement of heavy motor causing Sprain/Strain Leaking connections causing acid exposure Hot environment causing prolonged heat exposure	<input type="checkbox"/> Cut away from body, guide knife with thumb on back side of blade; Lower tape first, put away knife, pull tape off toward body <input type="checkbox"/> Confirm LOTO tag before unwiring <input type="checkbox"/> Use longer wrench to get hands away when unbolting/bolting <input type="checkbox"/> FLEX - Remove trip hazards <input type="checkbox"/> Remove motor with three people equally distributed around motor <input type="checkbox"/> Use cart to transfer motor <input type="checkbox"/> FLEX - Self check for fatigue/heat <input type="checkbox"/> Install motor with three people equally distributed around motor <input type="checkbox"/> Put down face shield when testing for leaks <input type="checkbox"/> Run motor for a full 15 minutes until at maximum temperature	
Post Work	Post JSA Decontaminate self, PPE, and tools Return Permit		<input type="checkbox"/> Review decontamination procedure to undress and decontaminate in proper order <input type="checkbox"/> FLEX - Report any irregularities	
Other			<input type="checkbox"/>	

Task name: Changing Motor in Plant 7

Personal Safety Concerns:

Tipping, Twist/Turn, Body Mechanics, Thermal Burns

Process Safety Concerns:

Leaks, H2S Release, explosion

	Task Steps	Hazardous Conditions	Behaviors that we do to keep us safe.	How can we help?
Pre-Work & Preparation	Get Permit LOTO	Distractions	<input type="checkbox"/> Have team member confirm LOTO <input type="checkbox"/>	
PPE and Tools	Class C Knife, Cart, Ladder	Knife blades cutting through Class C gloves	<input type="checkbox"/> Have team member confirm PPE <input type="checkbox"/> Check condition of tools <input type="checkbox"/> Discuss need for cart and ladder	
Communication	JSA Review Alert operator	Distractions	<input type="checkbox"/> FLEX - when reviewing JSA <input type="checkbox"/> FLEX - Ask operator about plant conditions	
Doing the Work	Cut tape with knife Unwire Motor Unbolt Motor Remove Motor Performance levels	Knife blades Live wires causing electrical exposure and Base location causing Points Point of heavy causing /Strain connections ing acid ure not environment causing prolonged heat exposure	<input type="checkbox"/> Cut away from body, guide knife with thumb on back side of blade first, put away knife from body <input type="checkbox"/> Confirm LOTO <input type="checkbox"/> Use longer wrench for unbolting/bolting <input type="checkbox"/> FLEX - Remove trip wires <input type="checkbox"/> Remove motor with three people equally distributed around motor <input type="checkbox"/> Use cart to transfer motor <input type="checkbox"/> FLEX - Self check for fatigue/heat <input type="checkbox"/> Install motor with three people equally distributed around motor <input type="checkbox"/> Put down face shield when testing for leaks <input type="checkbox"/> Run motor for a full 15 minutes until at maximum temperature	
Post Work	Post JSA Decontaminate self, PPE, and tools Return Permit		<input type="checkbox"/> Review decontamination procedure to undress and decontaminate in proper order <input type="checkbox"/> FLEX - Report any irregularities	
Other			<input type="checkbox"/>	

Check to see if Concerns and Hazards have been addressed

List, in order, the Behaviors in the task that will keep associates safe

Task name: Changing Motor in Plant 7

Personal Safety Concerns:

Tipping, Twist/Turn, Body Mechanics, Thermal Burns

Process Safety Concerns:

Leaks, H2S Release, explosion

	Task Steps	Hazardous Conditions	Behaviors that we do to keep us safe.	How can we help?
Pre-Work & Preparation	Get Permit LOTO	Distractions	<input type="checkbox"/> Have team member confirm LOTO <input type="checkbox"/>	
PPE			<input type="checkbox"/> Have team member confirm PPE <input type="checkbox"/> Check condition of tools <input type="checkbox"/> Discuss need for cart and ladder	
Comm	Alert operator		<input type="checkbox"/> FLEX - when reviewing JSA <input type="checkbox"/> FLEX - Ask operator about plant conditions	
Doing the Work	Cut tape with knife Unwire Motor Unbolt Motor Remove Motor Replace new Motor Bolt new Motor Wire new Motor Transport old motor to dip tank Activate lines, look for leaks Turn on motor, test performance levels	Live wires electric shock Motor and Base location causing Pinch Points Placement of heavy motor causing Sprain/Strain Leaking connections causing acid exposure Hot environment causing heat exposure	<input type="checkbox"/> Cut away from body, guide knife with thumb on back side of blade; Lower tape first, put away knife, pull tape off toward body <input type="checkbox"/> Confirm LOTO tag before unwiring <input type="checkbox"/> Use longer wrench to get hands away when unbolting/bolting <input type="checkbox"/> FLEX - Remove trip hazards <input type="checkbox"/> Remove motor with three people equally distributed around motor <input type="checkbox"/> Use cart to transfer motor <input type="checkbox"/> FLEX - Self check for fatigue/heat <input type="checkbox"/> Install motor with three people equally distributed around motor <input type="checkbox"/> Put down face shield when testing for leaks <input type="checkbox"/> Run motor for a full 15 minutes until at maximum temperature	
Post			<input type="checkbox"/> Review decontamination procedure to undress and decontaminate in proper order <input type="checkbox"/> FLEX - Report any irregularities	
Other			<input type="checkbox"/>	

Making sure there are FLEX Behaviors encouraging SITUATIONAL AWARENESS

Challenge each other to come up with safe behaviors beyond what is in the operating procedures

How to plug the gaps

- Identify where variance is
 - As a team
- Identify the sources of variance
 - In conditions
 - In behavior
- Pinpoint behaviors in context
- **Fix the systems causing risk**
- Observe, Shape, Move On
- Repeat



Create the Task Observation Tool (T.O.T.)



Out in the Field

Employees do targeted task talking through what behaviors they engage in to be safe

Employees describe “how we can help” them perform the job safer

“WE” is

Level 1: Employees

Level 2: Foremen & Safety

Level 3: Staff

FLEX

Facilitator creates a draft Plugin card

“how we can help” items are passed on to Management



Task name: Changing Motor in Plant 7

Personal Safety Concerns:

Tipping, Twist/Turn, Body Mechanics, Thermal Burns

Process Safety Concerns:

Leaks, H2S Release, explosion

	Task Steps	Hazardous Conditions	Behaviors that we do to keep us safe.	How can we help?
Pre-Work & Preparation	Get Permit LOTO	Distractions	<input type="checkbox"/> Have team member confirm <input type="checkbox"/>	
PPE and Tools	Class C Knife, Cart, Ladder	Knife blades cutting	<input type="checkbox"/> Have team member confirm PPE <input type="checkbox"/> Use ladder	Replace scratched face shields Find cut & acid resistant gloves - Change PPE on permit
Communication	JSA Review Alert operator		SA ut plant conditions	
Doing the Work	Cut tape with Unwire Motor Unbolt Motor Remove Motor Replace new Motor Bolt new Motor Wire new Motor Transport old motor to dip tank Activate Leaks Turn on perform	Live wires causing electrical exposure Motor and Base Location causing Pinch Points Placement of heavy motor causing Sprain/Strain	first, put away knife, pull tape off toward body <input type="checkbox"/> Confirm LOTO tag before unwiring <input type="checkbox"/> Use longer wrench to get hands away when unbolting/bolting <input type="checkbox"/> FLEX - Remove trip hazards <input type="checkbox"/> Remove motor with three people equally distributed around motor <input type="checkbox"/> Use cart to transfer motor <input type="checkbox"/> FLEX - Self check for fatigue/heat <input type="checkbox"/> Install mot	Engineer a replacement for the tape so we don't have to use a knife Find better electrical connectors than Level 2 Consider hoists in motor room
Post Work	Post JSA Decontam PPE, and Return P		<input type="checkbox"/> Review decontamination procedure to undress and decontaminate in proper order <input type="checkbox"/> FLEX - Report any irregularities	
Other			<input type="checkbox"/>	

Ask Associates to think through how the task can be made more reinforcing

Consider the key performance support for work behaviors

- Help from others
- Tools and instructions
- Procedures and process
- Scheduling and time allocation
- Priorities, expectations, feedback
- Skills, knowledge and reminders

Task name: Changing Motor in Plant 7

Personal Safety:
Tipping, Twist/Turn

CONCERN:
Body Mechanics, Thermal Burns

PROCESS Safety:
Leaks, H2S Release,

ACCIDENT:
Lossion

Reduce the Variance here

Working on these
How can we help?

	Task Steps	Hazardous Conditions	Behaviors that we do to keep us safe.	
Pre-Work & Preparation	Get Permit LOTO	Distractions	<input type="checkbox"/> Have team member confirm LOTO <input type="checkbox"/>	
PPE and Tools	Class C Knife, Cart, Ladder	Knife blades cutting through Class C gloves	<input type="checkbox"/> Have team member confirm PPE <input type="checkbox"/> Check condition of tools <input type="checkbox"/> Discuss need for cart and ladder	Replace scratched face shields Find cut & acid resistant gloves - Change PPE on permit
Communication	JSA Review Alert operator	Distractions	<input type="checkbox"/> FLEX - when reviewing JSA <input type="checkbox"/> FLEX - Ask operator about plant conditions	
Doing the Work	Cut tape with knife Unwire Motor Unbolt Motor Remove Motor Replace new Motor Bolt new Motor Wire new Motor Transport old motor to dip tank Activate lines, look for leaks Turn on motor, test performance levels	Knife blades Live wires causing electrical exposure Motor and Base location causing Pinch Points Placement of heavy motor causing Sprain/Strain Leaking connections causing acid exposure Hot environment causing prolonged heat exposure	<input type="checkbox"/> Cut away from body, guide knife with thumb on back side of blade; Lower tape first, put away knife, pull tape off toward body <input type="checkbox"/> Confirm LOTO tag before unwiring <input type="checkbox"/> Use longer wrench to get hands away when unbolting/bolting <input type="checkbox"/> FLEX - Remove trip hazards <input type="checkbox"/> Remove motor with three people equally distributed around motor <input type="checkbox"/> Use cart to transport <input type="checkbox"/> FLEX - Self care for fatigue/heat <input type="checkbox"/> Install with three people equally distributed around motor <input type="checkbox"/> Wear face shield when testing for	Engineer a replacement for the tape so we don't have to use a knife Find better electrical connectors than Level 2 Consider hoists in motor room
Post Work			<input type="checkbox"/> Use for a full 15 minutes until at temperature	Contamination procedure to decontaminate in proper order Report any irregularities
Other				

Create a system where these "Help Issues" are passed on to the appropriate level (employees, supervision, leadership) and acted on

Assign System Help Items



Team assigns a Level for Help Items

Data-based Follow Ups...
to right level

LEVEL 1
Empowered
Employees



LEVEL 2
Supportive
Foremen, Front line
Supervisors & Safety



LEVEL 3
Dedicated
Staff



How to plug the gaps

- Identify where variance is
 - As a team
- Identify the sources of variance
 - In conditions
 - In behavior
- Pinpoint behaviors in context
- Fix the systems causing risk
- **Observe, Shape, Move On**
- **Repeat**



Behaviors that we do to keep us safe.
<input type="checkbox"/> Have team member confirm LOTO <input type="checkbox"/>
<input type="checkbox"/> Have team member confirm PPE <input checked="" type="checkbox"/> Check condition of tools <input checked="" type="checkbox"/> Discuss need for cart and ladder
<input checked="" type="checkbox"/> FLEX - when reviewing 20 <input type="checkbox"/> FLEX - Ask operator about plant conditions
<input checked="" type="checkbox"/> Cut away from body, guide knife with thumb on back side of blade; lower tape first, put away knife, pull tape off toward body <input type="checkbox"/> Confirm LOTO tag before unwiring <input checked="" type="checkbox"/> Use longer wrench to get hands away when unbolting/bolting <input type="checkbox"/> FLEX - Remove trip hazards <input checked="" type="checkbox"/> Remove motor with three people equally distributed around motor <input checked="" type="checkbox"/> Use cart to transfer motor <input checked="" type="checkbox"/> FLEX - Self check for fatigue/heat <input checked="" type="checkbox"/> Install motor with three people equally distributed around motor <input checked="" type="checkbox"/> Put down face shield <input checked="" type="checkbox"/> Run motor for a full maximum temperature
<input type="checkbox"/> Review decontamination procedure to undress and decontaminate in proper order <input checked="" type="checkbox"/> FLEX - Report any irregularities

Do behavioral observations when the task is engaged



Employees do self-observations using the Task Observation Card

Feedback shapes the behaviors to fluency

SR+

Task name:

Personal Safety Concerns:

Process Safety Concerns:

	Task Steps	Hazardous Conditions	Behaviors that we do to keep us safe.	How can we help?
Pre-Work & Preparation	Antecedent		<input type="checkbox"/> Have team member confirm LOTO	Consequence
PPE				
Communication			<input type="checkbox"/> Have b <input type="checkbox"/> Check <input type="checkbox"/> Discus	
Doing the Work	<p>Provides the <u>context</u> for behavior</p> <p><i>"When I perform this step in the task..."</i></p> <p><i>"I know the hazard I need to avoid"</i></p>		<p><u>Discriminates</u> the safe behavior</p> <p><i>"This is what I need to do to avoid this hazard"</i></p>	<p>The <u>outcome</u> of behavior impacting future behavior</p> <p><i>"Peer feedback that helps me get better"</i></p> <p><i>"Things get fixed and my workplace is safer"</i></p>
Post Work			<input type="checkbox"/> FLEX - <input type="checkbox"/> FLEX - <input type="checkbox"/> Cut away from body, <input type="checkbox"/> with thumb on back side of blade; Lower tape <input type="checkbox"/> fir <input type="checkbox"/> bo <input type="checkbox"/> un <input type="checkbox"/> dis <input type="checkbox"/> dis <input type="checkbox"/> Leaks <input type="checkbox"/> Run motor for a full 15 minutes until at maximum temperature	
Other			<input type="checkbox"/> Review decontamination procedure to undress and decontaminate in proper order <input type="checkbox"/> FLEX - Report any irregularities	



LINK

Connecting Reinforcers
To LOCK IN Safety





LINK

The FUELS Steering Committee has been kind enough over the years to allow me to sit in on their meetings as a PSM representative.

I will take this opportunity to thank J.R. (a foreman) for taking the time to work with the committee on a recent "LINK Observation" activity concerning Coke cars.

The "LINK" technique is a methodology which leads to communication and ultimately understanding.

Activities such as this meeting will assure the success and safety of our workplace for years to come.

Just thought you might like to know, J (Process Safety Manager)

Guess where David Sweat is





Have A Nice Day!

INSPIRATION FOR YOUR SAFETY CULTURE

Blog

Podcast

Videos

Research



Safety-Doc.com

Dysfunctional Practices

That kill your Safety Culture
(and what to do about them)



Timothy D. Ludwig, Ph.D.
Safety-Doc.com

