INVESTIGATIONS DIFFERENTLY

A Safety II approach to investigations

February 2021

INVESTIGATIONS
DIFFERENTLY

- Stopped on a ramp.
- Driver exited vehicle.
- Vehicle rolled down ramp and hit a shotcrete rig.

Worker failed to follow procedure.

Worker received a written warning.

Operator retrained in operating light vehicles.

Saying an event was caused by error or not following procedure is like saying an object fell due to gravity:

it's always true,

it just doesn't teach us anything

Conklin, 2018

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• Stopped on a ramp.
• Driver exited vehicle.
• Vehicle rolled down ramp and hit a wall.

Resource constraints

Production Pressure

Normalised deviation

Trade offs

No field leadership

Time constraints

Change Management

Incident Investigations

Shortcuts

Risk Assessment

Parking area insufficient

Supervision

TRADITIONAL APPROACH

Why

Why

Why

Root Cause

The problem is, the failure probably was not linear . . .

. . . and there almost NEVER is one root cause.

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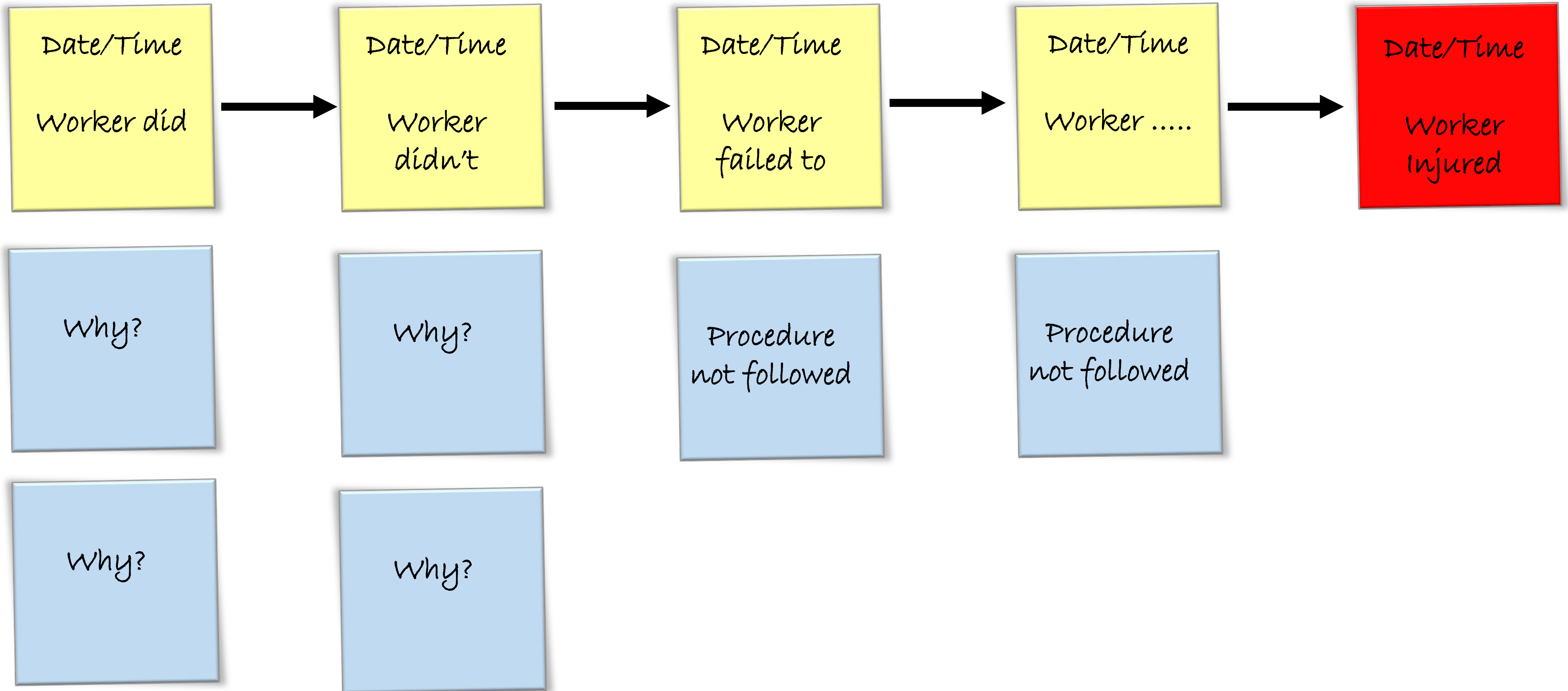
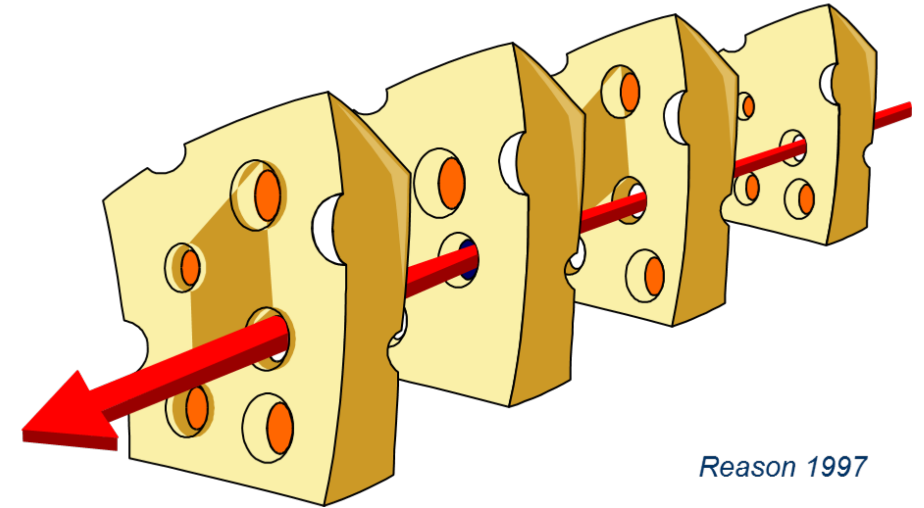
Traditional Timeline



"what you look for is what you find. If your incident investigation cause or categorization tool……if it's looking for these types of things, then you'll find them if you want to find them."

Provan 2020



Reason 1997

The Swiss Cheese Model

- Directs investigation to only the issues 'causing' the event.
- Does not identify or fix other issues identified.
- Does not assist in identifying work as normal.
- Limited application of discovering what works well.
- Discredited by Reason as an investigation model. (Reason Et Al. 2006)

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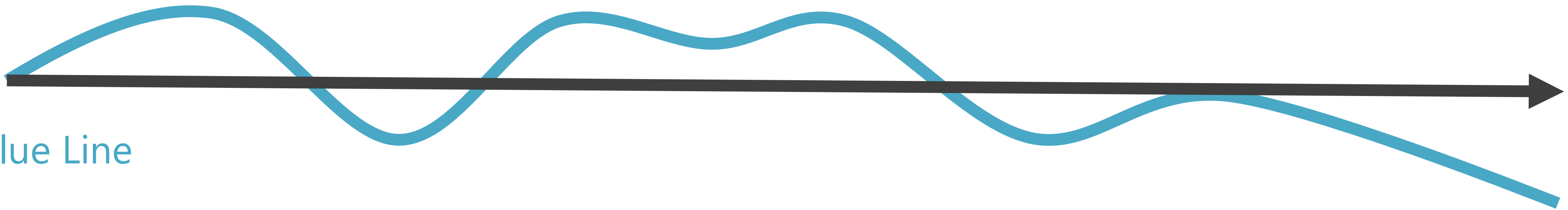
The right information is the key

Lets talk about work



(Conklin/Edwards/Baker/Howe)

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Weak signals

Production pressure

Latent conditions

Errors

Unclear signals

Adaptation

Fear of reporting

System strengths

Resource constraints

System weaknesses

Local factors

Change in plans

Design shortcomings

Poor communication

Personal factors

Surprises

Normal variability

Goal conflict

Tradeoffs

Data

Past success

Incomplete procedures

Near misses

(Conklin/Edwards/Baker/Howe)

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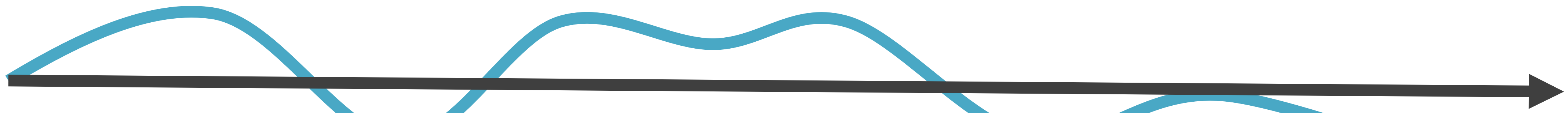
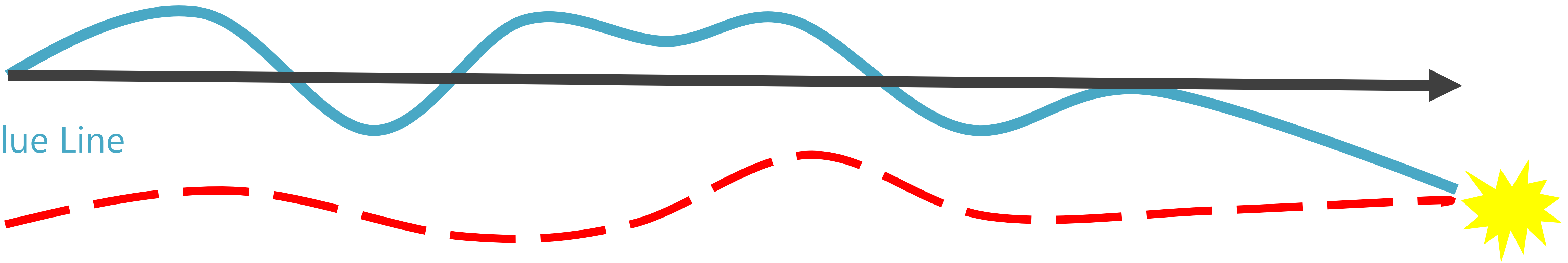
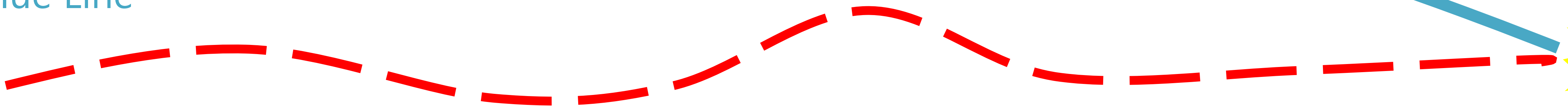
Black Line





Blue Line



Hazard

(Conklin/Edwards/Baker/Howe)

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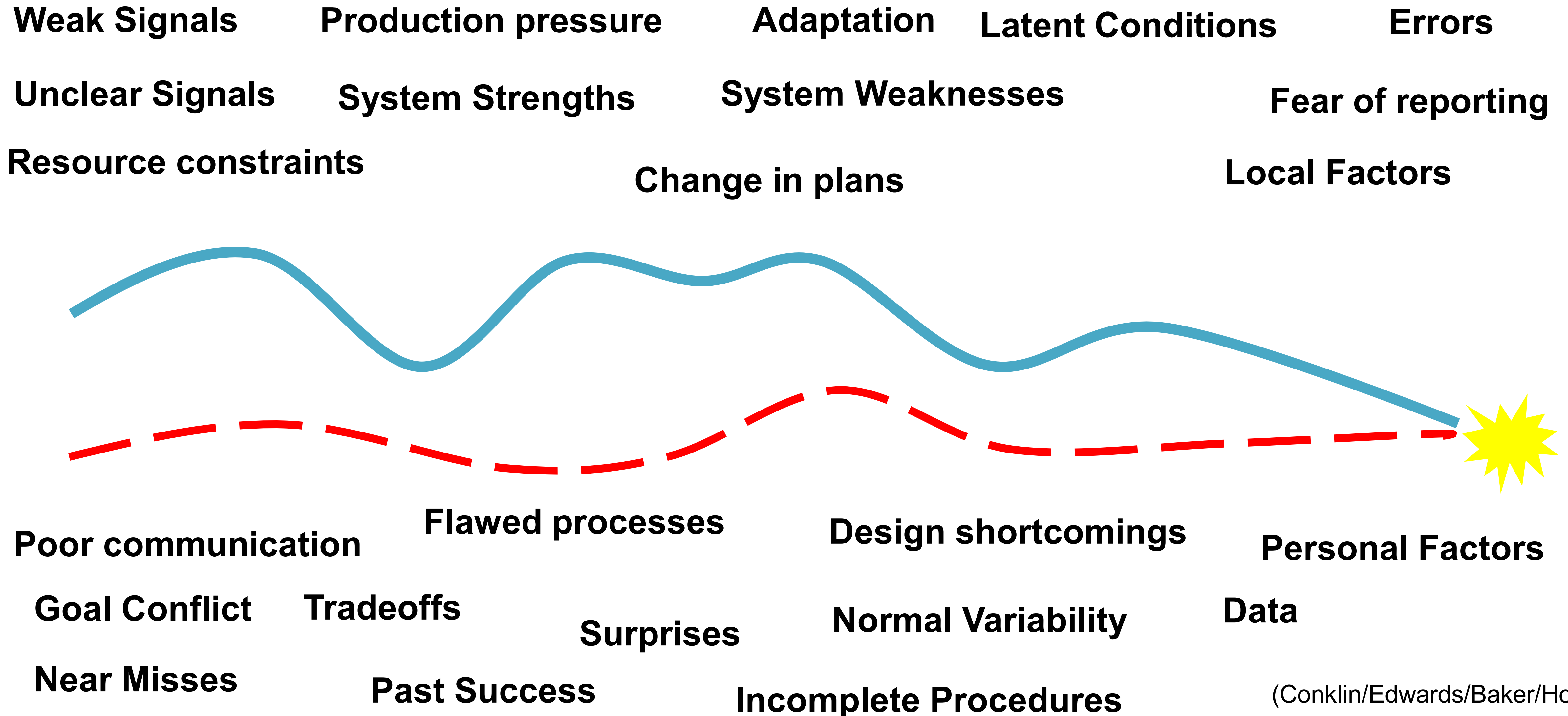

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Normal work

- Focuses only on the task
- Rest of the team
- Other teams
- Other sites
- Night shift
- The messy story

Work as Normal

- The messy story, the context.
- Focuses on the actual task/work.
- The day-to-day of how work gets done.
- When things go well or not so well.
- How workers cope with variability.
- When work is completed according to plan.
- What is hard/easy of the task.
- Their challenges.
- Their successes.

It is not about procedures or polices

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Work as Normal

- Conversations
- Learning Teams
- Observing work being completed
- Records of field leadership
- Previous incidents

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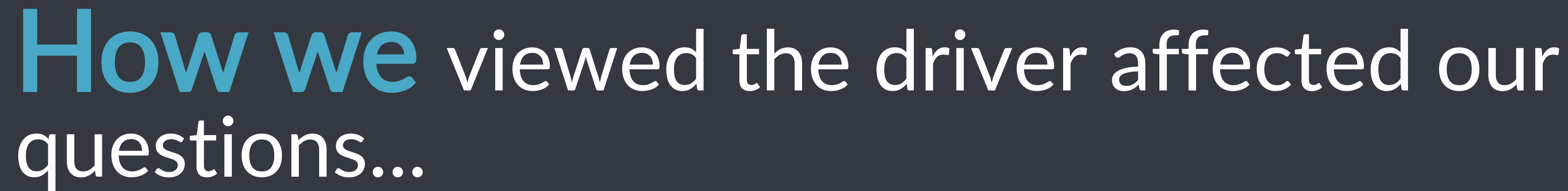

How we viewed the driver affected our questions…

…**our questions** affected our solutions…

…and **our solutions** affected the probability of other people being hurt

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Shift your thinking from "Who Failed" to "What Failed"

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COLLECT INFORMATION

Work As Done	Work As Intended	Work As Normal
Sequence of Events	Procedures Work Instruction Training Policies	How the work is normally done by the work force

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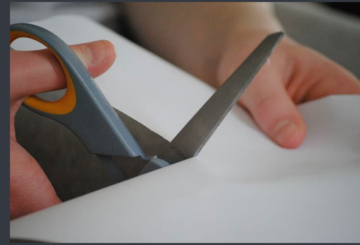
SEQUENCE OF EVENTS

Work As Intended



Work As Normal

Work As Done

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IDENTIFY THE GAPS

Work As Intended

Work As Normal

Work As Done

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Investigate the Gaps

Work as Intended

Work as Normal

Find the context surrounding the gap?

- Conditions
- Restraints
- Trade offs
- Resources

Do this for each gap identified

Investigate the Gaps

Work as Intended

Work as Normal

Find the context surrounding the gap?

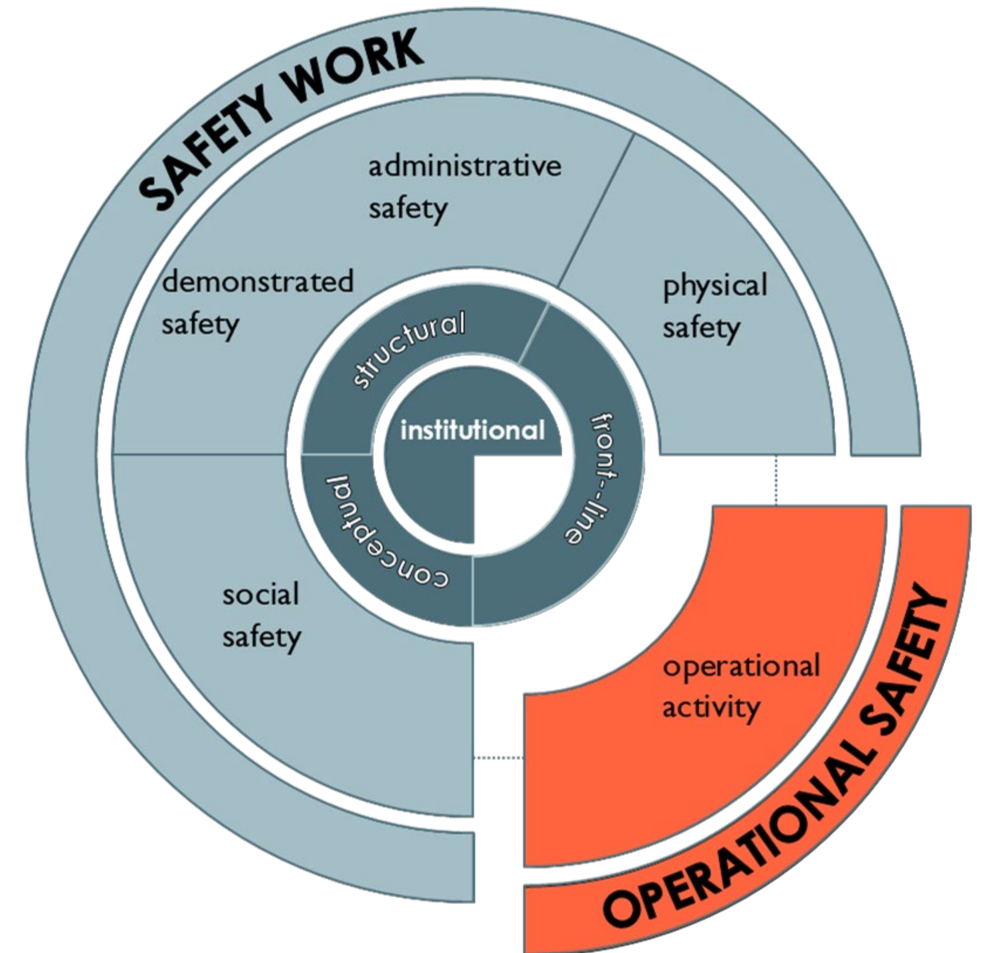
- No scissors
- Box cutter is more efficient
- No PPE provided
- Task requirements changed
- No change management
- Personnel unaware of MOC requirements
- Not considered a management priority

Pre-Event | Event | Post-Event | Issue of concern

Enter Date and Time	07-Oct-20	7.00am - 7 Oct 2020	7.03am - 7 Oct 2020	7.10am - 7 Oct 2020	7.10am - 7 Oct 2020	7.30am - 7 Oct 2020	8.00am - 7 Oct 2020	8.10am - 7 Oct 2020
Work as Intended	Operator to complete Take 5 prior to task	Set up hose and take it up to platform. Turn hose on at tap.		Stand on access platform.	Hose out belt press to remove waste		Report to supervisor	Injuries receive medial treatment
Work as Normal	Operators do not complete a Take 5 for cleaning out belt press	Operator set up hoseand took it up to platform. Turn hose on at tap.	Remove guarding from belt press	Climb up on top rail of hand rail.	Hose out belt press to remove waste		Reports to supervisor	Injuries receive medial treatment
Work as Done	Operator did not complete a Take 5 for task	Operator set up hoseand took it up to platform. Turn hose on at tap.	Operator removed guarding around belt press	Climbed up on top rail of hand rail	Commenced hosing out of belt press to remove waste	Operator slipped off hand rail and fractured ankle	Reported to supervisor	Taken to hospital and received medical treatment
Condition	Simple task completed daily. No change in hazards.		The hose can not clean through the guarding.	Can not get the angle required to properly clean the belt press.	Water pressure from hose is weak.	Fell about 90cm	Operator could not walk and had to wait for another operator to get help	
Condition	Take 5 seen as tick and flick		Guarding added after instalation to protect against entanglement	Platform not high enough. Can not get the angle required.			Supervisor was not contactable immediately	
Condition	Operators see it as a numbers game		No risk assessment or changement completed for change to guarding	Water pressure from hose is weak.			Supervisor was in a meeting	

CORRECTIVE ACTIONS

- Focus on Operational Safety.
- Priority of action based on risk
- *Reasonably Practicable* and reflect the risk of the issues identified
- Test the actions



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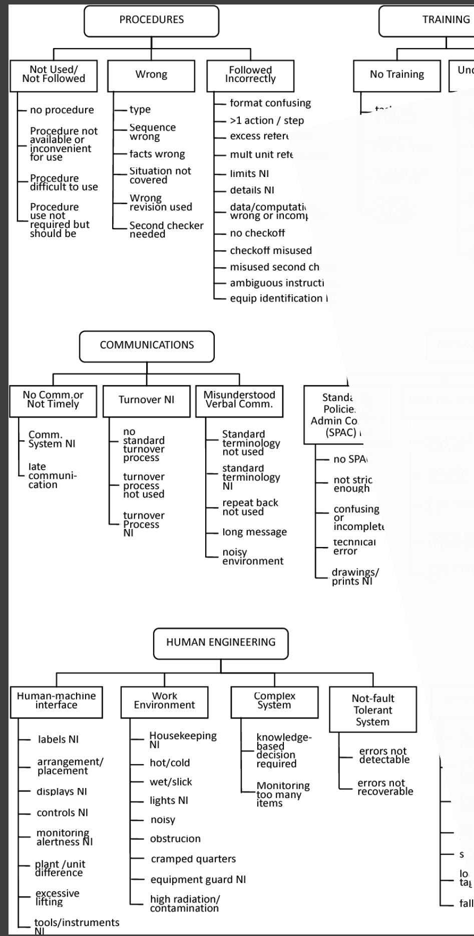
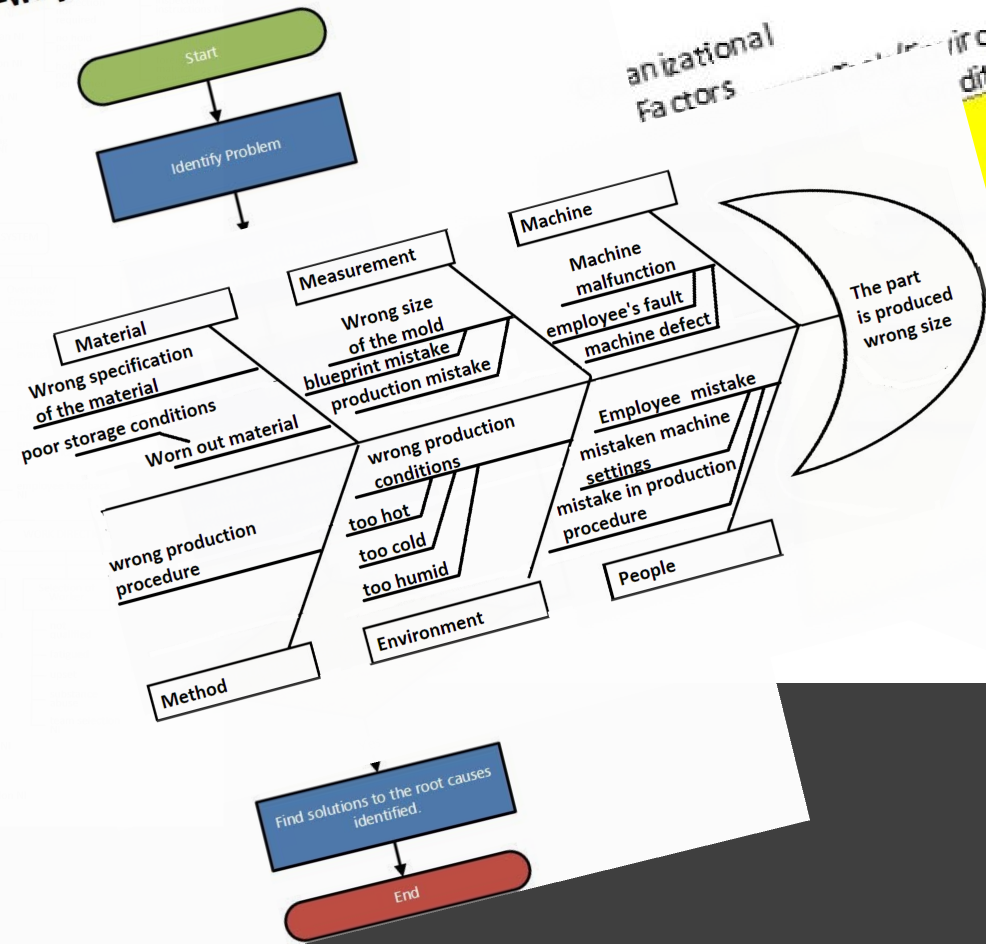
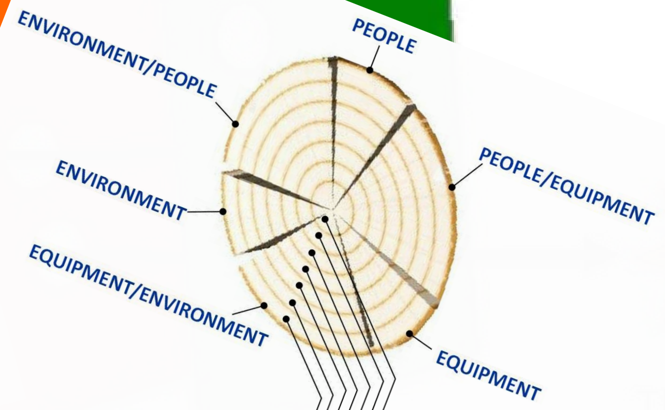
Plug it into your model







Visit our website to download a free copy of our Investigation Timeline Tool.

THANK YOU.

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