HUMAN FACTORS · SAFETY · ORGANISATIONAL EXCELLENCE

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John's Story

The dirty dozen was an early attempt to identify contributing factors to safety and performance, which were first used in the Canadian transport sector. We've adapted those 12 factors for the construction industry below.

The construction Industry is a high-risk industry that takes safety very seriously. However, awareness of these dirty dozen isn't enough; systemic issues that produce them often go unnoticed and serious accidents continue to occur.



John

is an apprentice on a understaffed construction site that is requiring him to work consecutive

overtime shifts. John also has a newborn baby at home that keeps him up at night. Dave, John's foreman, told John they are under pressure to get all the steel beams in for the second story framing. While Dave is showing John how to strap the beams to the crane, he tells him he does not need to strap it all the way

down, just enough to where it seems it won't go anywhere.

And to just try stay clear from standing underneath while the beam is being moved. These shortcuts often need to be made to get everything finished in time. John is standing under some scaffolding, which is yet to be secured to the building. When the scaffolding is struck by a beam that fell out of loose straps,

the scaffolding falls on John, who is seriously injured.













Skilled Labor Shortage

Fear of Speaking Up



raining

Understaffed •

Rushed & Missing Training





"Failures are like mosquitoes. They can be swatted one by one, but they keep coming. The best remedies are ... to drain the swamps in which they breed"

(Reason, 2000, p.669).

SWAMP



In this case, the swamps are the **7 systemic issues** above that remain in the organisation to impact future builds and sub-contractors, even after the person who made the error is re-trained or redeployed.

OPTION 1: SWAT MOSQUITOES

- Design a new lock mechanism on straps that forces secure closure but is difficult and time-consuming to employ.
- Retrain both John and Dave, then redeploy onto builds and work not requiring cranes.

These options can be tempting, and in some instances, required. However, they often do little to address the underlying conditions that allowed the failures to manifest. Those conditions will remain and likely allow other failures on future builds.

OPTION 2: DRAIN THE SWAMP



Conduct initial Human Factors risk assessments on all projects focussing on bespoke/new methods and requirements.

Provide Threat & Error Management training to address the perceived need to rush.

Develop and sustain a just culture where people feel safe to speak up.

Only bid on projects with realistic deadlines.

Identify risk-based skill shortages and address with training before project start.

Identify build/project-specific rules around min-max shifts and staff numbers.

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