“Fixing” the Human Error in Major Hazard Events (MHE)

How familiar, but short-sighted actions to target human error seriously miss the mark and why effective solutions reside much closer to the C-Suite

1) Introduction

In 2013, the UK commemorated 25 years since Piper Alpha and the tragic loss of 167 offshore workers. Following the public enquiry chaired by Lord Cullen, a broad range of commitments were agreed by the oil and gas industry to raise overall safety standards. However, much more recent (but equally well documented) serious safety events have served to question just how much real progress has been made since 1988 - especially in regard to managing the human error in Major Hazard Events (MHE). What has become evident, is that companies which fail to effectively manage human error are increasingly having a tough time predicting forward looking operating costs. Why? Because established and familiar operating risk assumptions (such as good personal safety must always carry over to good process safety) are not just being challenged, but often are being completely derailed precisely at a time when the margin for error has all but been cut to zero.

Incurring a serious safety event is never good news. Aside from the devastating personal consequences, it hits company scorecards, impacts revenue streams and for some, can be the single most important difference between contract renewal and contract release. Fortunately, for most companies, serious safety events are a relatively rare occurrence. But it’s precisely this infrequency that lulls organizations into a false sense of security and why the corrective actions designed to address the human error in Major Hazard Events (MHE) often fall short of anything that resembles a permanent “fix”.

2) Old thinking: Reacting to a few “bad apples”

If serious safety events only happen on a rare occasion, then corrective actions must be targeting the infrequent and isolated behaviors of just a few individuals. The assumption being that when people execute work, serious deviations from policies or procedures (i.e. human error) must *also* be a very rare occurrence. This line of reasoning - while palatable to senior managers and company leadership seeking reassurance that a repeat event isn’t imminent - may not necessarily reflect the true state of affairs. Unfortunately, the harsh reality might just be that while incurring serious safety *consequences* may indeed be a rare thing, unauthorized deviations from policies and procedures probably are not and are likely much more commonplace than companies would ever like to think.

To make matters worse, companies may be unknowingly fostering cultures that support “casual compliance”. How so? Because if there’s only something like a 5% chance of anything going seriously wrong when a risk or short cut is taken, (i.e. human error), then conversely, there must be a 95% chance of a much more favorable outcome. In other words, if risky behaviors result in saved time and money, then individuals are actually more likely to receive positive reinforcement and recognition for their efforts. The result? Individuals and teams will almost certainly repeat the same behaviors next time around.

So in other words, human error really isn’t an error at all. In most cases, it’s a deliberate and premeditated choice where individuals and teams willingly take short cuts and risks because ultimately, they sincerely believe this is what they’re being asked to deliver. A win-win situation. Good for the company and good for the employee.

When organizations implement corrective actions in response to equipment failures, downtime or even competence shortfalls they do so in the full knowledge that such corrective actions are well known, familiar and often easy to implement and close out. But finding effective corrective actions for something much less tangible like human error becomes tremendously frustrating to action orientated companies who are very well versed at reacting to specific and recognizable performance problems and who simply want to "get stuff done". It should come then as no surprise that when companies go about implementing corrective actions to "fix" human error, such corrective actions inevitably miss the mark. Why? Because the problem they're attempting to "fix" isn't just harder to define, but when most of the workforce exhibit the exact same behaviors (but simply haven't got caught out yet) the problem becomes much more systemic than dealing with one or two isolated behaviors.

But in their strong desire to stay with the known and the familiar, organizations tackle human error by only being willing to see isolated behaviors and consequently, they revert to same old tired formulas by blindly defaulting to one of two corrective actions:

1. Gain better compliance via more training, better prompts, procedures and / or rules:

This corrective action aims to achieve better compliance by serving as an educator, a reminder, a nudge to "tell them again" or make something much more explicit. This may involve training and / or revising, updating and / or modifying procedures, work instructions and / or Job Safety Analysis (JSA) - all very familiar and all designed to result in better understanding and work management practices.

2. Discipline individuals and / or teams directly involved:

This second corrective action defaults to the begrudging acceptance that perhaps knowledge wasn't the underlying issue, so the individual(s) in question simply need to take the bitter pill and be made examples of given that they deliberately didn't do what they should have done. This corrective action almost infers that the behaviors of the individuals(s) in question were almost insubordinate - which only serves to illustrate just how wide of the mark such corrective actions really are given that almost no employee deliberately sets out to cause harm or foul to the company.

And so unfortunately, while both of these types of corrective actions are very well known to organizations - and like all "preferred solutions" are relatively easy to implement and close out - they fail miserably in really tackling the underlying causes of human error and why people continue to do the things they do.

3) New thinking: Human Error is systematic, motivational and a product of the company culture

If the underlying causes of human error stem from incorrect motivation, i.e. given that when individuals take short cuts and risks they invariably end up getting positive recognition and reinforcement, then there is a direct correlation between human error and the overall operating culture of the company. So in other words, human error is a product of how certain behaviors are generally recognized and rewarded throughout the company - something that runs contrary to the idea that the problem is simply the result of one or two "bad apples".

And so if human error is both systemic and a motivational issue, this then infers that ANY corrective action(s) that are designed to address human error by solely focusing on the worksite are probably going to miss the mark given that the operating culture of the company isn't created by those individuals at the coalface, but more by those in top management and the C-Suite.

But while corrective actions that seek to achieve better compliance or hand out more discipline are easy to relate to, think for a moment how much more politically unpleasant (and possibly even career limiting!) it would be to develop corrective actions for a serious safety event that were somehow related to - or even a product of - the overall operating culture of the organization. At this point, effective corrective actions have to become more directed toward the C-suite. Yet, it is a very rare occurrence where corrective actions designed to "fix" human error start with the CEO of the company.

And therein lies a much more difficult challenge. Many companies advocate top management commitment toward their safety efforts, but the harsh reality again is that very few truly believe that their own actions from within the C-Suite have any direct correlation to someone filling out a permit correctly or taking the time to vent a tank prior to confined space entry. For example, if a serious safety event is the product of someone at the worksite not followed a recognized procedure that is known and understood, it's likely that some form of disciplinary action would be taken. However, if a *potential* serious safety event occurs, but where this results from the behaviors of a senior executive, such as speeding to get to the airport, it's unlikely that the *exact* the same type of disciplinary action would be administered.

Clearly then, if there's inconsistent application of the company's policies and procedures within the different levels of the organizations - again because of how performance is likely recognized and rewarded - then it should come as no surprise that what happens at the worksite is simply a mirror image of what happens elsewhere in the organization. Worse still, if disciplinary action for a senior manager is in any way less than that for someone closer to the front line exhibiting the exact same kind of behaviors (i.e. not adhering to a policy or procedure), then the very people accountable for shaping the operating culture aren't just not walking the talk, but worse still, are showing that double standards clearly exist regarding the disciplinary action taken for human error. And so to address this, it's necessary to keep moving up the organization until you find the source of why people do the things they do. Attempting to short circuit this process by demanding the strict adherence to company policies and procedures for one half of the organization without first requiring the exact same thing from the other half, is not only a little naive but it's a bit like asking an Olympic two man rowing team to win a gold medal when only one person is doing the rowing!

Therefore, before taking any corrective action designed to effectively tackle "human error" organizations have to be extremely confident that they know precisely the driver for the behavior. If, on the very rare occasion an employee really is deliberately and knowingly setting out to cause trouble, then discipline is ok. If employees genuinely lack skills or technical understanding, then more training and or better prompts / procedures may be needed. But if employees are circumventing a policy or procedure based on simply trying to do a good job and how they've previously been recognized and rewarded by their line supervisor, then neither of these corrective actions makes any sense as illustrated in Figure 1.

4) The "Fixes"

Having outlined some of the principal challenges in developing effective and sustainable corrective actions to "fix" human error, how do you make real progress? How do you start to really work on its causes and prevent its reoccurrence?

Well if employees are indirectly getting recognized and rewarded for taking risks and short cuts (because the likelihood and percentages for positive reinforcement simply favor this), then clearly the way to counter such behavior is to stop measuring performance by outcomes and begin to measure performance by execution - day-in, day-out.

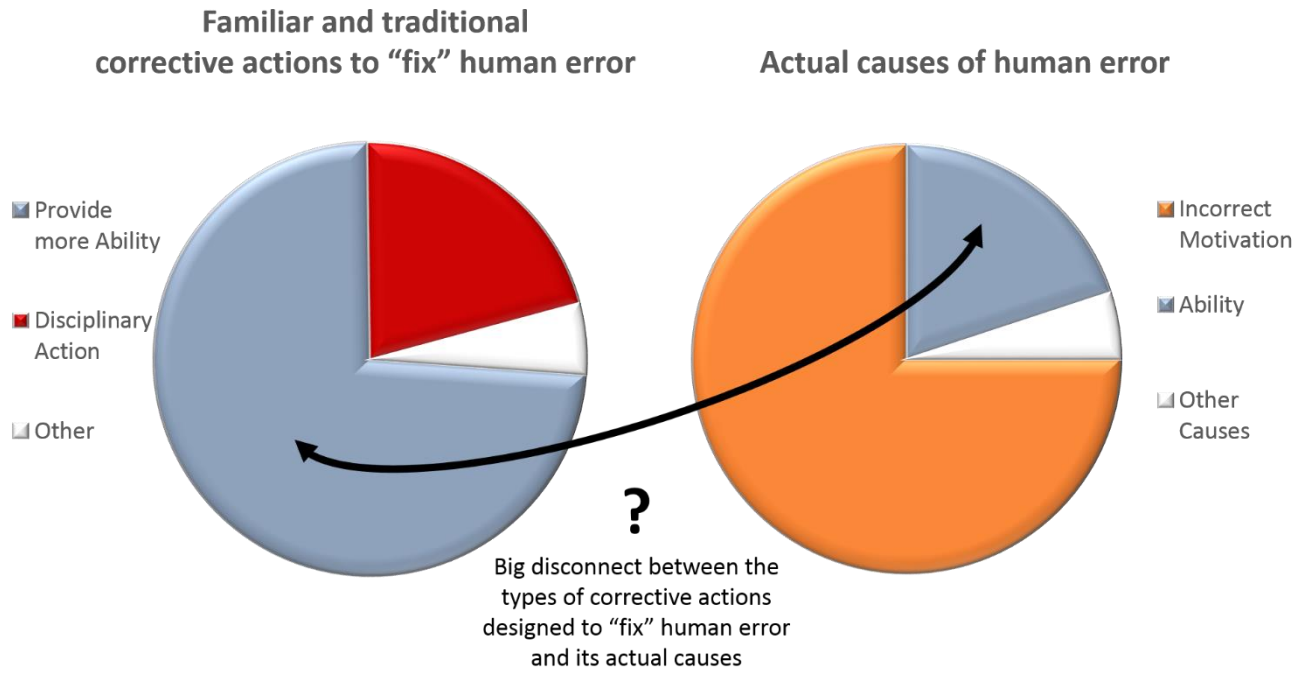

Figure 1: Typical (and familiar) corrective actions to "fix" human error vs. actual causes of human error

In short, if organizations are ever caught off guard and taken by surprise when a serious safety event occurs, then expect a disconnect between how work is expected to be performed and how it's actually performed. In other words, if human error is a systemic problem and seldom results in anything going wrong, then it's likely they've been on display for all to see for some time before culminating in a serious safety event with actual consequences.

So rather than implement familiar, but short sighted corrective actions such as rewriting a policy or procedure, what's needed (at least initially) are corrective actions that fundamentally change the way safety performance is recognized and rewarded. Corrective actions must be implemented that first begin to measure work execution so that the organization can move away from solely relying on outputs and often provide a distorted and incomplete picture of performance. In other words, never reward for time saving - especially when it pertains to maintaining a Major Hazard Event (MHE) barrier such as a fire and gas detection system - if a short cut was required to get there. As while organizations may get lucky with such behaviors today, tomorrow or even next year, sooner or later they finally catch up with you. And just as importantly, never punish an individual(s) when things take longer than expected if the procedure has actually been strictly adhered to.

This all sounds so basic and straightforward yet, the surprising fact is that many middle and senior managers working hard to impress their line reports in the C-suite focus almost predominantly on outputs such as time saved, financial targets met etc. In other words, as long as nothing "bad" has happened today, time and money inevitably float to the top of the agenda. These behaviors of both middle and senior managers are now so well ingrained that any genuine change or departure from this type of thinking - along with the culture that supports it - not only requires top management commitment, but requires top management leadership and engagement. In other words if you're really serious about "fixing" human error at the worksite, corrective actions must first "fix" the behaviors from the C-suite.

Company leadership must be active and visible in promoting behaviors that drive safe work execution - not those which simply result in no one getting hurt. Make clear what you want to see and then be consistent in promoting and rewarding it. The key is to become expert in measuring and responding to inputs and execution (i.e. risk) rather than waiting until something seriously goes wrong. Inquire frequently about how work is actually being executed to be sure that expectations are being met. Talk to middle managers regularly about your expectations for them and then inquire how these are being realized. Think about how you describe and paint a picture of "safe work" particularly in regard to the integrity and availability of the barriers to manage Major Hazard Events (MHE) and the safety critical actions required to support them. Then measure how often you really promote and talk about this compared with revenues, contracts and budgets.

To summarize, avoid falling into the old trap of believing that human error simply starts and ends with a few "bad apples". Willingly accept and swallow the bitter pill that when a serious safety event occurs, "fixing" human error may not be a simple matter of addressing a few isolated behaviors, but more likely, will have to start with a better understanding of how work is routinely executed across the whole organization. In other words, if oil and gas companies truly want to "fix" human error and in doing so, eliminate the likelihood for the next Major Hazard Event (MHE), then instead of heading straight to the worksite for the answers, it may time for top management and company leadership alike to start by leading with a few different behaviors of their own - by shifting their performance focus from consequences to execution and in turn, changing the behaviors that ultimately get recognized and rewarded.

Summary: Old Thinking vs. New Thinking

Old Thinking	**New Thinking**
We mostly react to the 5% of work that results in unplanned events carrying serious negative consequences.	*We are knowledgeable of how all work is executed and draw no distinction between "bad" behaviors that result in unplanned events and those that do not.*
We see the behaviors of a few "bad apples" as the start and end of the problem.	*We see the behaviors of individuals at the coalface as a direct reflection of the wider culture of the organization.*
Corrective Actions address "Human Error" by providing more ability and more discipline. We target those specific individuals directly involved in the unplanned event – we don't see a wider issue.	*Corrective Actions always target the owner of the root cause owner regardless of whether at the coalface or at the C-Suite. We are comfortable with either.*
Metrics are established to mostly measure work outputs.	*Metrics are established to equally measure work inputs, execution and outputs*
Short cuts are ok as long as no one gets hurt.	*Short cuts are never ok.*
It's ok to push people if they're taking too much time.	*Employees are always given sufficient time to strictly adhere to policy or procedure.*
Senior Management are simply too busy to make frequent site visits.	*Senior Management elect to make frequent site visits recognizing the value and necessity to better decision making.*
Working safe is established and known to the whole organization.	*Senior Management frequently communicate their expectations for safe work in terms of inputs, execution and outputs*
As long as no unplanned events have been incurred it's ok to focus on time, money and budgets.	*Senior management consistently talk about "safe" work in terms of inputs, execution and outputs and always as much as any focus on time, money and budgets.*