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Near-Miss Reporting:
The Missing Link of Safety Culture Revolution

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Introduction

Culture is often described simply as "the way it is around here." When few near-misses are reported and acted upon in an organization, it indicates something about the relative health of the safety culture. Can it be considered safe and healthy or does this indicate something else, something much less positive? Too many organizations fall into the comfortable trap that comes by believing the former and do so at their own peril. Robust near-miss reporting processes that engage employees to identify and permanently solve hundreds of potential injury-causing situations that they are tired of living, with is crucial to healthy safety cultures.

Near-miss reporting is a tool that has been around for a long time. Many organizations struggle to get any effective, sustainable results from a near-miss program. This presentation documents a fresh approach used by a major utility, a heavy equipment dealer, a global construction company and a manufacturing facility, among others. Each of these firms engaged their employees and managers to develop a solution set that fit their unique safety and operations cultures. Each came away with a near-miss system and process that has their workface employee teams:

- Identifying 100's of items that could cause injuries and should be addressed
- Developing employee-driven solutions to well over 95% of the issues
- Implementing solutions to these 100's of potential injury causations; most within three to five days
- Developing and tracking the near-miss metrics that make a difference
- Communicating the successes to other work units
- Celebrating and reinforcing the victories
- Working virtually injury free as a result of their efforts
- Owning solutions and process; including designing forms, flow charts, and delivering peer training

This paper will present an approach that works throughout various industries and engages the employees that are at risk in identifying and resolving the many potential causes of injury, as

well as delivering an accountability process that keeps this new type of near-miss process sustainable.

Is Your Current Approach Working?

There are numerous studies that can provide insight as to whether your near-miss reporting program is working. Let's look at a few.

The Accident Triangle developed in the 1930's gave us one of the first glimpses into accident probabilities. H.W. Heinrich noted in his book, *Industrial Accident Prevention*, that for every major injury, there were 29 minor injuries and 300 no-injury incidents (near-misses).

In 1969, Frank Bird, Jr. completed a study to determine accident ratios as they occur in a variety of industries. His analysis of 1.75 million incident reports within 297 organizations and 21 different industries revealed that for every serious or major accident, there were 10 minor injuries, 30 property damage events, and 600 no-loss incidents.

In 1993, in a study published by the Health and Safety Executive Group of the British Government titled the "Cost of Accidents at Work"; the authors concluded that for every lost-time injury (over three days in length), there were 7 minor injuries (first-aid only in these cases) and 189 non-injury accidents.

These studies are meant to provide general guidelines and probability estimates for risk potential, and the numbers will likely vary within individual organizations. Regardless of which of these studies you look at, however, it is quite disturbing that anywhere from 189 to 600 near-misses occur per every significant injury! Management's understanding of the message in the data: that hundreds of opportunities to improve organizational safety performance are being lost.

So why do many organizations struggle with making near-miss reporting a successful part of their culture? Let's examine some barriers more closely.

Barriers to Near-Miss Reporting:

After looking at the data for evidence that near-misses are being under-reported, the next logical question is… why? For this, the reasons can be endless. Several broad categories are listed and described:

The Status Quo Factor

In his book, *Leading Change*, John Kotter talks about eight barriers that prevent organizational change. These barriers ring true for building or changing organizational safety culture. One such barrier refers to organizational status quo and how organizations grow comfortable with the way things are. Why is this often true for near-misses?

By definition, near-misses leave no injuries, no property or equipment damage…or evidence that they even occurred. As such, it is easy and often *desirable* to ignore them.

Definitions

What is a near-miss anyway? It may surprise you as to just what personnel believe a near-miss event actually is and, more importantly, how these misunderstandings can significantly reduce near-miss reporting.

The point is to identify things that make the workplace safer, period! As such, the broad definition chosen for a near-miss should be simple. For example, why not simply allow any situation, be it an unsafe act, unsafe condition, or anything else that any employee believes is unsafe, to be reported as a near-miss?

Forms – The five L's

Literacy – Are forms easy to read and understand?
Language – Are forms available in multiple languages if necessary?
Length – Are forms short and to the point?
Location – Are forms easily accessible to facilitate worker participation?
Logistics – Do forms promote employee generated-solutions or concrete-ankle-protector solutions (those generated by others and "forced" on the worker)?

Fear of Punishment, Retaliation

The fear of punishment and retaliation is very real and often overwhelming in its subtlety. We know from the data that near-misses are occurring much more frequently than reported. Why? Management often fails to create a culture that expects supervisor safety performance, including capturing, resolving and rewarding near-misses. Supervisors, like employees, are led to believe that near-misses are signs of incompetent supervision. Why report something no one knows about and risk trouble? Why report issues that result in more short-term work when no one measures or recognizes this effort? Measuring near-miss reporting performance forces supervisors to create a more cooperative environment and enables intervention when they are struggling to do so.

Lack of Recognition/Feedback

When participating in any event (such as reporting near-misses), human nature is to ask oneself a relatively simple question. By taking this action, what happens to me that is good and what happens to me that is bad? Will this action result in something positive, or something negative? Is this action worth the effort? Management must take purposeful, intentional, and visible actions that demonstrate and prove that good things happen when near-misses are reported. Nothing is more frustrating than to be told something is important only to find out later that you get no response or feedback for your efforts.

Peer Pressure

Maybe even worse than lack of recognition is negative peer pressure. Leadership, defined simply as "influence" by John Maxwell, can be used to make this peer pressure positive. An example describing the influence of employee peer pressure might look this:

Today, each person in the training is hearing about near-misses, about what they are and why reporting them is important. You are learning about how this program makes it less likely for you to be hurt while working. Some of you might even be starting to believe and are anxious to

participate. Some of you, however, think this is bull and cannot wait to get out of here today. Tomorrow, one of you on the crew, the one who is excited about improving safety, is going to see and report a near-miss. You are going to get one of the forms in the project bulletin boards and fill it out, maybe even in front of your peers. When you do, you will get a reaction from your peers, and that reaction will go a long way in determining if you (or anyone else present) will ever report a near-miss again. So the question to the peers is, What is that reaction going to look like? Are you going to be excited and encourage the report? Are you going to help find potential solutions? Or, are you and the majority going to stick to the status quo? Are you going to make fun of the peer reporting the near-miss, maybe tell him/her how big of a suck-up he/she is? The choice, ladies and gentlemen, is yours to make.

Concern about Record and Reputation

As noted earlier, supervisors and managers often (correctly) perceive that near-misses are negative events that will be used against them (in performance reviews, etc.) as an indication of their management inadequacy. Hourly employees often fear supervisor retaliation, and other negative consequences (such as getting to take a drug test for reporting an event that no one would have known about if they hadn't spoken up) for reporting near-misses.

Desire to Avoid Work Interruption

Be honest. You and others are busy and have deadlines to meet. You see an unsafe situation or near-miss and make a decision based on whether or not the perceived risk can wait, or whether or not immediate attention is warranted. All of this is logical. We all make value and priority decisions. The challenge is to encourage action. Not reporting these types of issues could result in failure to uncover root causes of missing tool guards, such as purchasing low quality tools or poor tool maintenance processes.

Desire to Avoid Red Tape

What red tape will entangle me if I turn in this near-miss report? Will the form take four days to complete or can I do it in less than a few minutes? Will I be called before the site "grand jury" and be grilled and questioned, or will my team be able to take steps to lessen risk and be asked by management if they can provide further support? Will unreasonable solutions be forced upon me or will I have a significant say in my safety? Tuning into the employee radio station "WIIFM" or what's in it for me" is a critical component of eliminating red tape.

Fault-Finding Mindset

Whose fault was it? How often have you heard that question asked when someone gets hurt? When incidents occur, does the organizational investigation system uncover and remove root causes in the management system, or, does it let the employee take the heat, while nothing else changes? Is disciplinary action an overwhelming outcome of investigations? If so, give me one good reason why an employee should openly participate in the witch-hunt? Are leaders disciplined as well?

If the above system sounds remotely like yours, look out for this barrier. It is unlikely you are getting truth even for the incidents that cannot be buried due to their severity. Your chance for getting to truth with near-misses is negligible. While coaching and discipline are necessary, why after the fact? Why after this same scenario probably occurred multiple times and was deemed

okay as long as production needs were met? To change this mindset, actions must be taken to steer employees toward desired actions by clearly defining what is expected; then intentionally looking to catch them "doing what is correct."

Five Fatal Flaws

Five flaws that often unwittingly establish cultures that enable these barriers to live are described briefly:

Upper Management – This group believes in and verbally supports near-miss reporting. They likely are even willing to provide financial support. Unfortunately they are often not VISIBLY engaged and don't know how to be.

Safety Professionals have the knowledge and the technology to be successful yet struggle to teach the organization what, to them, is obvious and elementary.

Supervisors who don't want their people to get hurt but are overburdened and do not what more non-value added (questionable worth) work shoved down their throat.

Hourly employees who are willing to be safer yet wonder "what's in it for me" for turning in a near-miss report--besides concrete-ankle-protector solutions, drug tests, and kangaroo courts.

Data management becomes the red herring. When there is no reporting, there is no data and the fatal flaws only SEEM to be resolved. The reality is often a non-solution that is only deepening the problem.

Overcoming the Barriers

To overcome these barriers, let's look at some additional research. First, Dr. Dan Petersen's six criteria of safety excellence were used as a filter to determine the appropriateness of action. These six criteria of safety excellence must be in place in order to achieve safety success. They are:

1. Top Management is Visibly Committed
2. Middle Management is Actively Involved
3. Supervisor Performance is Focused
4. Hourly employees are actively participating
5. System is flexible to accommodate site culture
6. System is perceived as positive by the hourly workforce

Second, the concepts of the safety accountability cycle were built into the near-miss reporting program.

Specifically:

1. Defined expectations. What must be done at every level of the organization to ensure satisfactory near-miss reporting?
2. What training is necessary to enable performance of these expectations?
3. How will performance be measured? How does the organization know, by affected individual and or crew, if expectations are being met?
4. How would successful performance be rewarded in a way that is meaningful to those whose actions the organization is trying to motivate?

The Solution

Following is an outline of how the barriers and fatal flaws listed above were overcome in a variety of industries.

Kicking the Canned Approach

Capturing the hearts and minds of the workface employee requires us to change the traditional problem solving approach – where someone (usually the safety professional) seeks out and develops a solution…then presents said solution to the workforce and expects them to use it.

The approach presented here follows a continuous improvement model that utilizes cross functional teams and non math problem solving tools to develop solutions in a little as a week.

After a team is formed and provided with a day of basic training, they can get to work bullet proofing the process being addressed. The following description is not meant to be inclusive of all possible team outcomes. Presented are sample deliverables developed by continuous improvement teams. The results rocked the cultures of the organizations the teams worked within.

Developing a Team with POP

A team with POP has a specific Purpose, Outcome, and Process (POP) statement that allows the team to stay on task. An example looks like the following:

Purpose:

Improve our safety culture by involving all employees in reporting, analyzing and communicating lessons learned from near-miss reporting.

Outcomes (Deliverables):

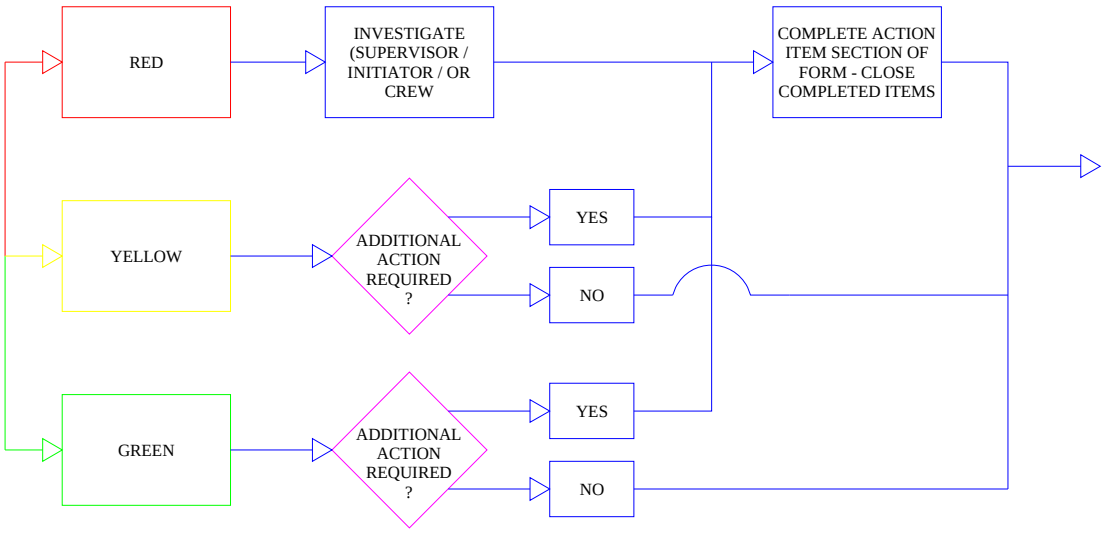
- Process Flow Chart
- Define accountabilities of each process
- Determine measures for each
- Determine rewards and/or recognition methods
- Overcome fear of discipline
- Forms – KISS; Minimize paper
- Communication
- Training and Implementation Plan

Process:

Develop the near-miss process using a 5-day Kaizen Blitz where the team meets all day.

The Process Map

A process map is a critical link towards ensuring the process is described and seen by all in a similar manner. Combined with a few other techniques that analyze each process step to determine what must happen for success, what can go wrong, and what solutions must be in place to minimize process errors; the team can proceed with confidence. This step seems to be where the "lights come on" and the team take ownership. A simplified example of a process map follows:



The completed process map starts to make clear the need for action, including clear accountabilities that describe who must do what to enable success, what forms may be needed, necessary training and planning, and measures among other things listed as team outcomes such as risk ranking, root cause analysis methods, discipline, and recognition.

Accountabilities

Part of day-one team training includes the concept of proactive accountability. The four step model discussed above is taught. This model is applied across the entire organization and filtered through six criteria of success (also described above) to ensure these accountabilities deliver results:

Some sample accountabilities may look like this:

Department Managers (Middle):

- Develop Action Plan to address open SAR; sponsor those sent to safety team (affecting their department)
- React to "Red" SAR as appropriate with supervisor review; minimally review the completed 5 why within 24 hours.
- Recognize, with face to face one on one communication, at least three employees for their reported SAR

Supervisors:

- Contact department leader on all red SAR
- Review reported SAR forms with employee, to include completeness, Risk Rank, 5 whys if red. Enter work request if necessary
- Enter for into database
- Recognize, with face to face one on one communication, at least three employees for their reported SAR

Measurement

Another critical task is measuring the completion of accountabilities and other indicators of actions completed. This is a key component to overcoming the cultural barriers and complacencies as described above. Data that is lacking information as to who is and who is not performing is generally meaningless. Some sample near-miss process measures may include:

- Total Number
- Number per employee
- Number Open/Closed
- Percent closed in 10 days
- Percent Red, Yellow, Green
- Percent of 5 whys completed on Red's
- Conditions or Behavior

Tracking methods must also be developed. One team's initial approach was a simple spreadsheet, while another team chose to develop an internal access database. Samples include:

Excel:

		Open/Closed / Level (R,Y,G)									
		Closed				Closed Total	Open			Open Total	Grand Total
Department	Data	Green	Red	Red/Yellow	Yellow		Green	Red	Yellow		
Component Shop	Count of Level (R,Y,G)	2	5		8	15					15
	Count of Open/Closed	2	5		8	15					15
Field Service	Count of Level (R,Y,G)	1	2			3					3
	Count of Open/Closed	1	2			3					3
Hydr. Shop	Count of Level (R,Y,G)				1	1					1
	Count of Open/Closed				1	1					1
Main Shop	Count of Level (R,Y,G)	7	20		40	67			1	1	68
	Count of Open/Closed	7	20		40	67			1	1	68
Parts Dept	Count of Level (R,Y,G)	4	6		9	19					19
	Count of Open/Closed	4	6		9	19					19
Power Systems	Count of Level (R,Y,G)		1		2	3	2		3	5	8
	Count of Open/Closed		1		2	3	2		3	5	8
Spec Shop	Count of Level (R,Y,G)				1	1					1
	Count of Open/Closed				1	1					1
Truck Shop	Count of Level (R,Y,G)				2	2	2	1	3	6	8
	Count of Open/Closed				2	2	2	1	3	6	8
UR	Count of Level (R,Y,G)	34	21	1	80	136		2	2	4	140
	Count of Open/Closed	34	21	1	80	136		2	2	4	140
UR	Count of Level (R,Y,G)				1	1					1
	Count of Open/Closed				1	1					1
Yard	Count of Level (R,Y,G)	2			4	6					6
	Count of Open/Closed	2			4	6					6
Total Count of Level (R,Y,G)		50	55	1	148	254	4	3	9	16	270
Total Count of Open/Closed		50	55	1	148	254	4	3	9	16	270

Database:

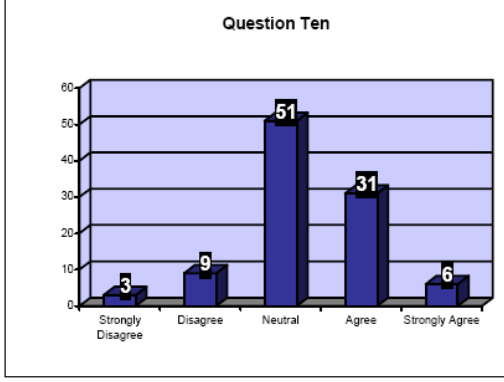
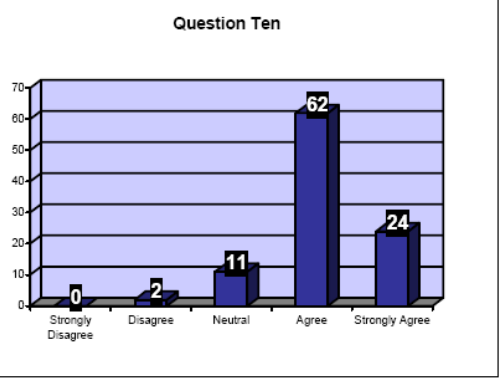
Average Days to Close

NM Colour(Que	NM Create Mon	NM Create Year	NM Avg Days t
Red	November	2009	0.02
	January	2010	4.20
	February	2010	1.86
	March	2010	9.82
	April	2010	0.02
Red		30	5.75
Yellow	August	2009	0.02
	September	2009	2.21
	November	2009	8.01
	December	2009	48.86
	January	2010	6.98
	February	2010	2.31
	March	2010	3.46
	April	2010	1.48
Yellow		201	3.67
Green	August	2009	0.02
	October	2009	199.32
	November	2009	29.63
	December	2009	0.46
	January	2010	12.54
	February	2010	2.62
	March	2010	1.75
	April	2010	2.32
	May	2010	0.47
Green		229	4.18

Piloting implementation

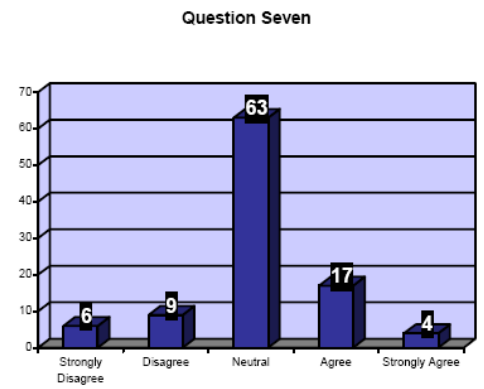
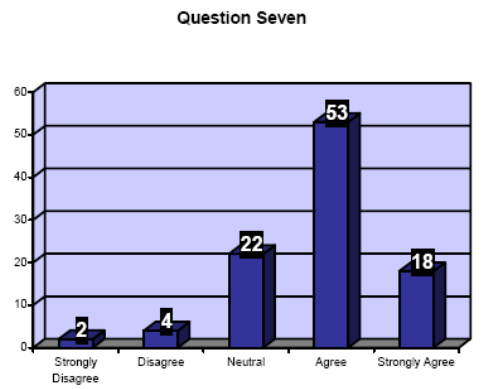
Is the developed process ready for success? How does the team know? Several organizations develop test pilots that ran for 3-6 months. In addition to the measures listed above, other indicators were measured. The 10-12 most common included the following:

"Is Near Miss Reporting a positive experience?"

Pre Survey in %	Post Survey in %
	

Solutions to near misses are identified and implemented in a timely manner.

	Pre- Survey	Post Survey
Range	1-5	1-5
Average score	3.04	4

Pre Survey in %	Post Survey in %
	

Outstanding Results and On-Going Success:

Over the last few years, numerous organizations have gotten and continue to get similarly remarkable results when taking this approach to near-miss reporting and other safety or loss control processes. Most started with virtually no near-misses being reported. The average start point was about 0.05 near-misses reported per employee per year to a minimal 10 fold increase of about 0.50 near-misses reported per year. Some went as high as an expected 2 per employee per year.

Other significant indicators of success included things like:

- 90% of reported issues closed within days. Most with employee-generated solutions.
- Nearly all high-risk near-misses being investigated with the designated root cause analysis method within the time frame expected.
- Communication in the work groups improved significantly and staff personnel were seen to be providing more positive recognition for performance.

In summary, unleashing the workface employees to generate and implement process solutions is key to long term culture improvement. Starting with or addressing near-misses is a great place to find and correct the missing link of the safety culture revolution as it provides daily

opportunities to build trust and visibly demonstrate efforts underway to remove the cultural barriers that cripple our efforts.

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