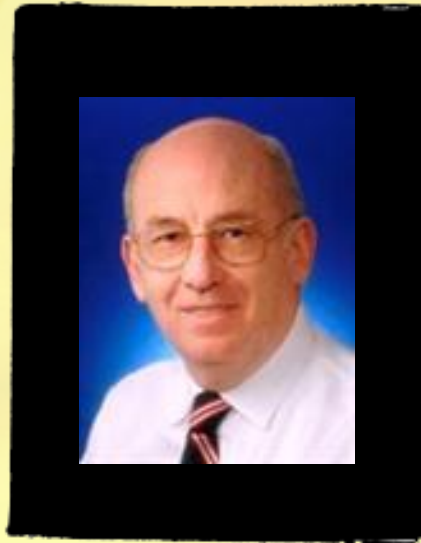




Safety – Too Much focus On OSHA

Recordable LTIR, TIRR vs. Larger Risks?

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GENERAL SESSION



REPOSITIONING THE PROJECTS BUSINESS IN A WORLD WITH CHANGING BOUNDARIES

Safety - Too Much focus On OSHA Recordable LTIR, TIRR vs. Larger Risks?

- There is little question in my opinion that most of us are overly focused and preoccupied with injury rates.
- It is a different question as to whether this preoccupation negatively impacts our ability to control larger risks any more than it does smaller risks.
- We will come back to this main question later but first let's explore the general subject of over focusing on the numbers.
- The more enlightened companies realize the benefits of focusing on leading indicators vs. just injury rates and they manage their safety programs from that perspective.
- This tends to eliminate injuries in general as well as the larger risks but the data suggests more serious injuries are not improved at the same rate.

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**How many of you believe that we are
overly focused on injury rates?**

What's your Paradigm?

You may agree we collectively are overly focused on injury rates but disagree that you personally are overly focused.

Well let's take a test and see.

What is your initial reaction when you hear of an injury?

In which direction do your thoughts initially travel?



Injury!

- Is this a recordable?
- What does this do to our metrics?
- Who do we punish?

OR

1

2

- Are we taking care of the injured?
- What is the root cause of the incident?
- How do we prevent this from re-occurring?

If 1 is your first thought, you are overly focused on the numbers along with most of the rest of us.

Leading Metrics

- While using leading metrics, as the basis for our safety programs is proving to be a good management approach, we are not going to eliminate the use of OSHA TRIR and LTIR metrics.
- OSHA's trailing metrics are:
 - ✓ Here to stay,
 - ✓ Not going away,
 - ✓ And for good reason.
- These metrics are well defined and understood throughout the industry, and provide the only widely accepted basis to compare performance across projects and companies.
- For better or worse they are the industry benchmark for safety performance.

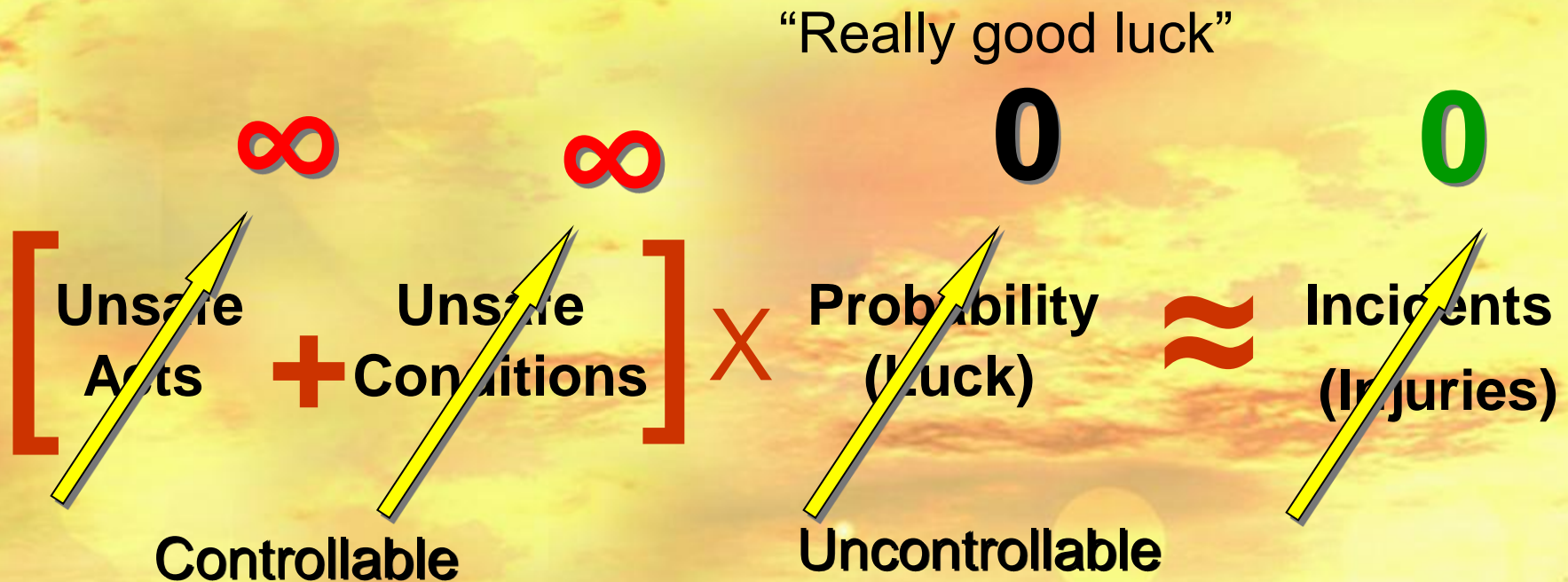
Leading Metrics, continued

- There are a number of reasons for our preoccupation with TRIR and TLIR metrics but an important one is their use in the prequalification process.
- Until we as owners find a better commonly accepted approach to judge the quality of a company's safety program and likely safety performance, progress on de-emphasizing trailing metrics will be slow at best.
- There is hope however and it is the greater use of leading metrics:
 - ❑ CII currently has a research team working on Leading metrics.
 - ❑ Bob Brooks from the Shaw Group showed me how they have implemented an extensive leading metrics program at the project level.
 - ❑ Garrett Burke from Harvard has a comprehensive evaluation process for prequalification of contractors.
 - ❑ Many others have recognized the value of a leading metrics approach and are instituting their own leading metrics programs.
- Unfortunately we are going to have to live with trailing metrics for some time to come, **but having them as a report card is far different than having them drive our safety programs.**

The Engineer's Approach to Safety Management



The Engineer's Approach to Safety Management



We (Zero injuries does not always equate to a good safety program.

Safety - Too Much focus On OSHA Recordable LTIR, TIRR vs. Larger Risks?

We will need to look at this question from four related but different aspects.

1. Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

2. **Let's return to the original question.**

3. Economic losses (loss of assets and of business interruption) from catastrophic events even when there is no injuries?

4. Serious incidents and catastrophic events are often the result of substandard engineering and or a lack of operating discipline.

#1 Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

- OSHA data shows that we would need to reduce by only a **<1%**, the average Construction industry TRIR to eliminate the same number of injuries as caused by all the serious events combined. (OSHA defines a Serious Event as the hospitalization of three or more people)
- The effort to accomplish a **<1%** reduction in the average TRIR is surely far less than the effort required to eliminate all of the serious events in our industry.
- So, one might conclude that more focus on the larger risks at the expense of focusing on personal injuries in general is not warranted.
- However this would only be the case if most serious injuries occurred from what OSHA defines as Serious Events and this is clearly not the case.

#1 Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

- The OSHA definition of a Serious Event being the hospitalization of three or more people captures very few injuries.
- Even serious injuries tend to be one off incidents and not associated with the hospitalization of three or more people.
- So, we need to look elsewhere to answer our basic question.
- In a December 2008 Professional Safety publication by Fred Manuele, Mr. Manuele provides data from the U.S. Bureau of Labor Statistics(BLS) that challenges the widely held belief that if injuries in general are reduced then serious injuries will correspondingly be reduced.

#1 Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

- While the BLS data indicates all injury rates have been trending down for some time, the reduction in serious injuries is not nearly as dramatic as for the less severe injuries.
- We are all familiar with the safety pyramid with fatalities at the apex and observed unsafe acts and unsafe conditions at the base. This popular depiction of the relationship between serious injuries and the not so serious suggests the relationship is linear when in fact the BLS data indicated it is not. In fact it is not even close to being linear.
- This data suggests the need to develop safety management systems that specifically target serious injury potential.

#1 Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

- It is not within the scope of this forum to go into the details of a safety management system targeted at serious injury deduction but it is clear these systems are needed and here are a few suggestions.
 - Pre-planning is critical for any successful program.
 - Management participation.
 - Engagement of the workforce in the identifying hazards, unsafe conditions and mitigating strategies.
 - Proper training.
 - Project specific safety orientations that addresses the unique hazards of the construction site.

#1 Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

- So, what is the answer to the question:
Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?
- As already stated de-emphasizing our preoccupation with injury rates being used as our “Report Card” regarding safety performance is not going to happen anytime soon.
- However, it is clear that the use of injury rates as a foundation for our safety management systems does need to be de-emphasized.

#1 Can we eliminate more injuries by shifting our preoccupation with injury rates to more focus on eliminating larger risks?

- I believe we need to separate the metrics used for our “Report Card” from the metrics used for safety management systems.
- We are and must continue to move toward a greater use of Leading Metrics in our safety management systems.
- We also need to develop commonly accepted construction industry leading metrics that will allow the comparison of safety performance among companies.

#2 Do larger risks warrant additional focus because of the disproportionate negative impact on our companies' reputation resulting from multiple injuries?

- Clearly there is a multiplier effect to a company's reputation when multiple serious injuries occur simultaneously.
- In these cases the impact is more than the sum of the parts.
- These well known events are all examples:
 - ❑ The Gulf oil spill(2010),
 - ❑ New York Crane Incidents (2008),
 - ❑ Bhopal, India (1984)
 - ❑ Texas City Refinery Explosion (2005),
 - ❑ Flixborough, England (1974)

#2 Do larger risks warrant additional focus because of the disproportionate negative impact on our companies' reputation resulting from multiple injuries?

Yes.

Increased effort and focus is warranted to reduce our exposure to multiple injuries.

#3 Is increased focus on larger risks warranted because of possible economic losses (loss of assets and or business interruption) from catastrophic events?

- **We normally think of injuries when we talk about safety and accident prevention but catastrophic losses can occur without injuries yet still have a devastating impact on a company to operate or even survive.**
- **One example: Dubai Construction Flood.**

#3 Is increased focus on larger risks warranted because of possible economic losses (loss of assets and or business interruption) from catastrophic events?

Yes.

Increased effort and focus is warranted to reduce our exposure to the loss of assets and business interruption, even when injuries may not be involved.

#4 Serious incidents and catastrophic events are often the result of substandard engineering and or a lack of operating discipline.

- **Examples of substandard engineering and or lack of operating discipline.**
 - ❑ **Shanghai, China building collapse,**
 - ❑ **Hyatt Regency walkway collapse, 114 killed (1981),**
 - ❑ **Willow Island, WV Cooling Tower Scaffold Collapse, 51 Killed (1978)**

#4 Serious incidents and catastrophic events are often the result of substandard engineering and or a lack of operating discipline.

Yes.

Increased effort and focus is warranted to improve both engineering and our operating discipline

Summary

- We are overly focused on injury rates.
- We need to move more to a focus on leading metrics.
- However OSHA TRIR and TLIR metrics are and will remain our report card for the foreseeable future.
- Owner Pre-qualification processes will continue to emphasis trailing metrics until our industry comes together around a common set of leading metrics.
- The disproportionate negative impact to a company's reputation from serious incidents and catastrophes warrants an increased focus on their prevention but not at the expense of our focus on general safety.
- The potential economic loss to a company from poor engineering and operating discipline in the form of lost assets and business disruption from a catastrophe also warrants increased focus on their prevention, but again not at the expense of our focus on general safety.
- When overall safety improves, everything improves so improving personal safety in general will reduce the serious incidents and catastrophes as well, however as the BLS data demonstrated not nearly at the same rate.
- Serious injury reduction programs need to be developed and implemented.