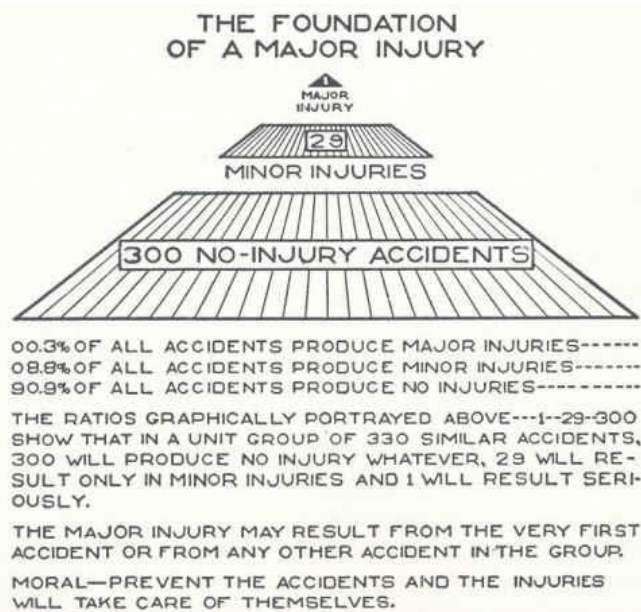


Near misses – origins, triangles and challenges

Carsten Busch 14.04.2021



SAFETY CULTURE

Why minor accidents DON'T predict major ones

Over the last two decades, safety improvements across a number of industries largely flatlined (as measured in fatalities and serious injury rates, for instance) despite a vast expansion of safety investment, compliance and paperwork.

The cost of compliance and bureaucratic accountability demands are mind-boggling with every employee working on average eight weeks per year just to be compliant.

It has also stopped progressing safety.

The case for doing Safety Differently



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Wow, dude, this could have been much worse...



MIND THE RISK

Origins

- One of Heinrich's main (original) contributions to safety
- An “incidental” to research into “hidden costs”
- A few others mentioned it, but did not follow through

Minor and "Near" Accidents

By A. S. Richardson

Bureau of Safety, Anaconda Copper Company

IN the whole field of accident prevention work there is probably no source of information which can be of greater use to "Safety First" men and workmen in general than the lessons that may be drawn from the observation or study of the causes of minor or "near" accidents. They are so frequent that nearly everyone has personal knowledge of some such occurrences almost daily or weekly, but because of the trivial consequences, little or no attention is paid to them. Actually each minor or "near" accident contains just as important a lesson as may be drawn from those having more serious results.

Here then is a subject worthy the attention of every man who is anxious to prevent injury by accident to himself or others.

To The Man On The Job the lesson will be contained in many occurrences when escape and information and consequences

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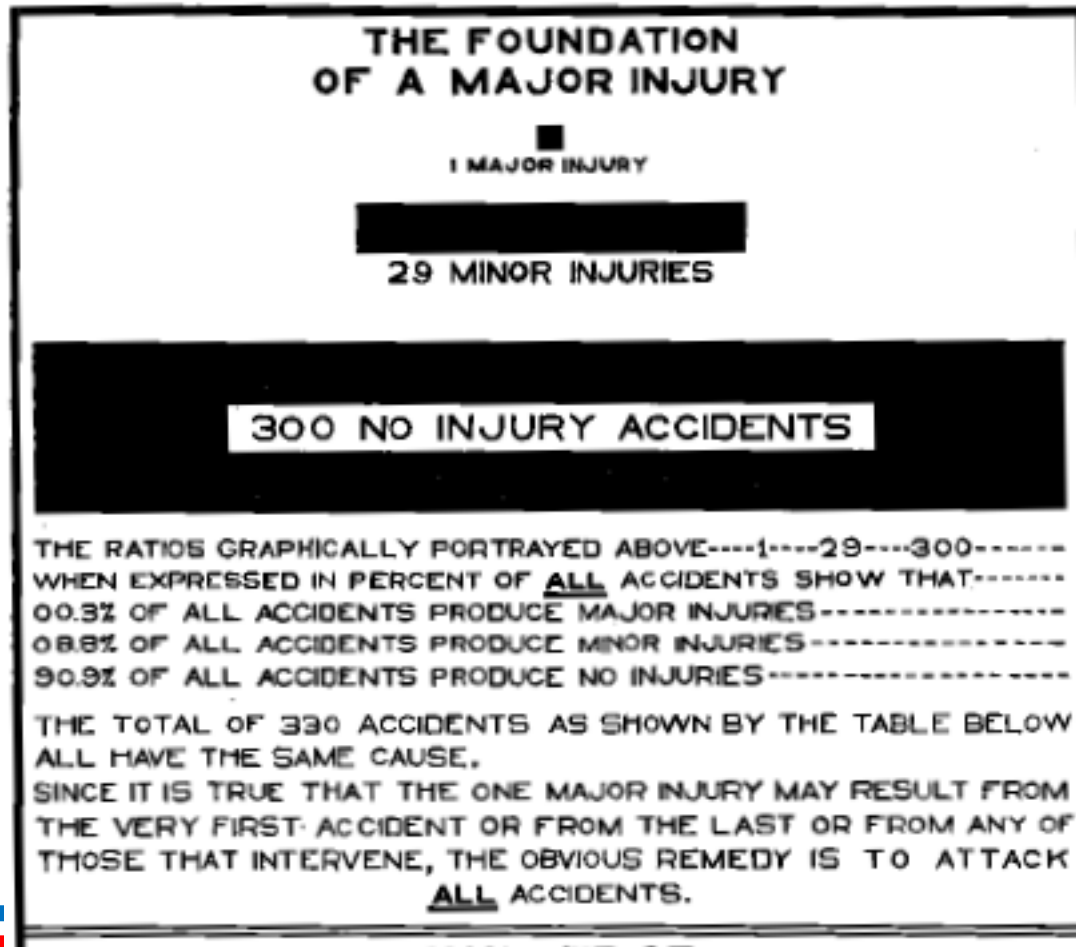
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To the foreman or those immediately in authority, information regarding the occurrence of minor or "near" accidents may come from direct observation or indirectly from the men concerned. The general tendency is to pass over the oc-



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Heinrich's Triangle



- “For every actual injury that occurs there are several ‘near accidents’ resulting in property damage, spoilage, lost time and other costs, difficult to calculate with exactness.” (1927, p.231)
- Went through several developments
- *NOT going to discuss the research, underlying principles and ways to read the triangle.*

(The first graphic representation – 1929)

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The Triangle's main messages (1)



- “The importance of any individual accident in prevention work lies in the **potential** power to create injury and not in the fact that it actually does or does not so result”. (1929b, p.10)
- Outcome = $f(s, E, R)$

The Triangle's main messages (2)

- “In view of these facts, it should be obvious that present day accident-prevention work is **misdirected**, because it is based largely upon the analysis of one major injury – the 29 minor injuries are recorded (but seldom analysed) and the 300 other occurrences are, to a greater extent ignored.” (1929a, p.5)
- “...a splendid **opportunity** to discover and correct accident-producing conditions long before an injury actually happens” (1929b, p.10)

Misunderstandings and misapplications

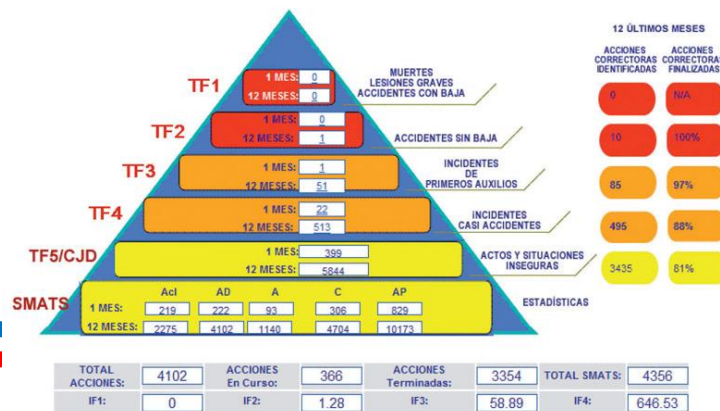
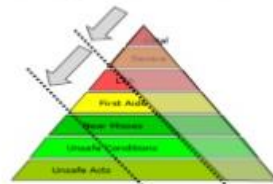
Il Safety Pillar è il Pilastro tecnico del WCM inerente la Sicurezza.

Esso si propone di soddisfare le esigenze degli addetti, assicurando il **miglioramento continuo** della sicurezza nell'ambiente di lavoro con l'obiettivo di eliminare le condizioni che potrebbero generare incidenti e infortuni.

Gli obiettivi primari del Safety Pillar sono:

- ✓ La riduzione drastica degli incidenti
- ✓ Lo sviluppo di una cultura della prevenzione degli incidenti
- ✓ Il miglioramento continuo dell'ergonomia del posto di lavoro
- ✓ Lo sviluppo di competenze professionali specifiche

L'Obiettivo finale è di azzerare gli infortuni e le medicazioni!!



MIND THE RISK

Weak signals: challenges and limitations

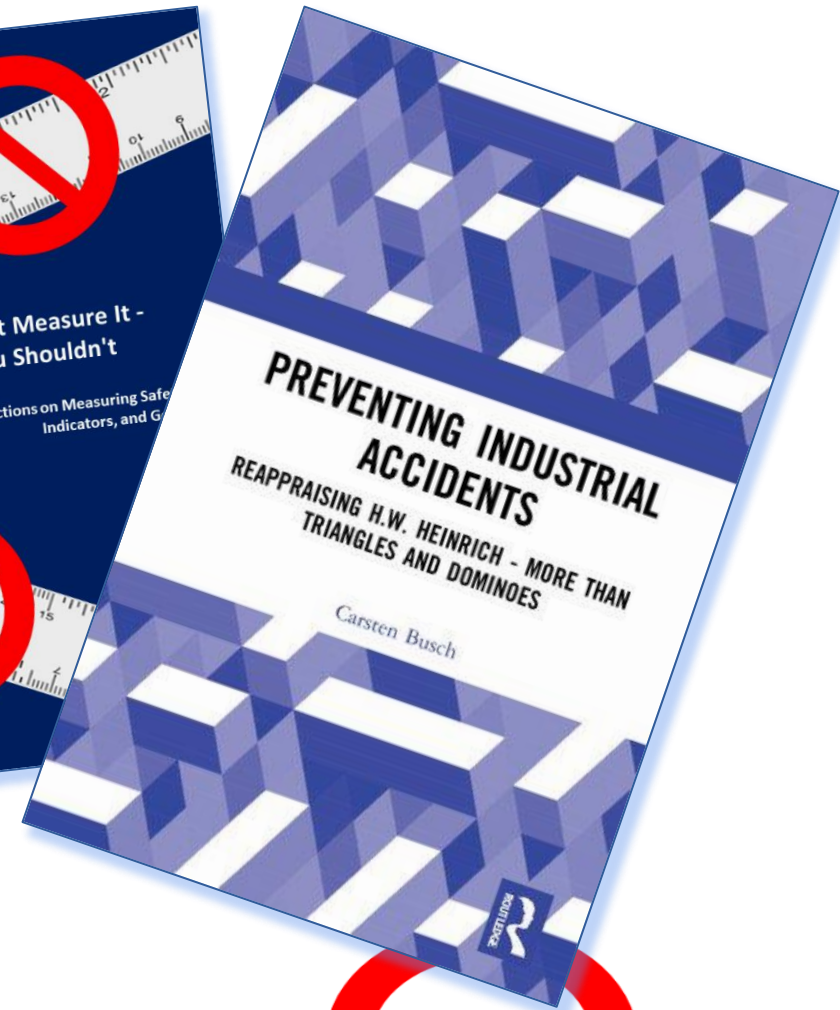
- Recognition and identification
 - Easiest to see in hindsight, eye of the beholder
 - Transmission, interpretation
 - Mixed signals, even an indication of things going well
- Prioritization
 - Signal, noise, decoys
 - Low hanging – high potential
 - Swamping the system?
Overreporting vs. underreporting
- Effectiveness
 - Consequences of action vs. consequences of inaction
 - Side effects of actions
 - Overreaction
- Applicability
 - Similarity of scenarios
 - Linear – complex (patterns instead of precursors?)

And so...



- Remember: **opportunities**
 - learning, improving, ...
- Beware of challenges and limitations
- Use things within their limitations
 - “All models are wrong, but some are useful.” (Box, 1976)

Questions? - Discussion!



www.mindtherisk.com