

Improving Safety and Human Performance



We Need a Team Leader At Each Table Group

On the count of three,
point to someone
at your table who you want
to be the group leader.



Welcome to Safety and Human Performance

- The SafeStart concepts can be applied to reduce injuries everywhere – **At Work, At Home, and On the Road.**
- Over 3 million people at 3,000+ companies (10,000+ sites) in 60+ countries are using SafeStart – average injury reduction of 50% or more.
- The course is currently available in 32+ languages.
- SafeStart doesn't replace anything we are currently doing for safety, nor;
- Is it about rules, policies, procedures or discipline and;
- Is non-political and non-judgmental (everyone makes mistakes)
- ***The only goal of SafeStart is to help each of us prevent critical errors and decisions compromised by rushing, frustration, fatigue and complacency.***



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These four states...

- Rushing
- Frustration
- Fatigue
- Complacency

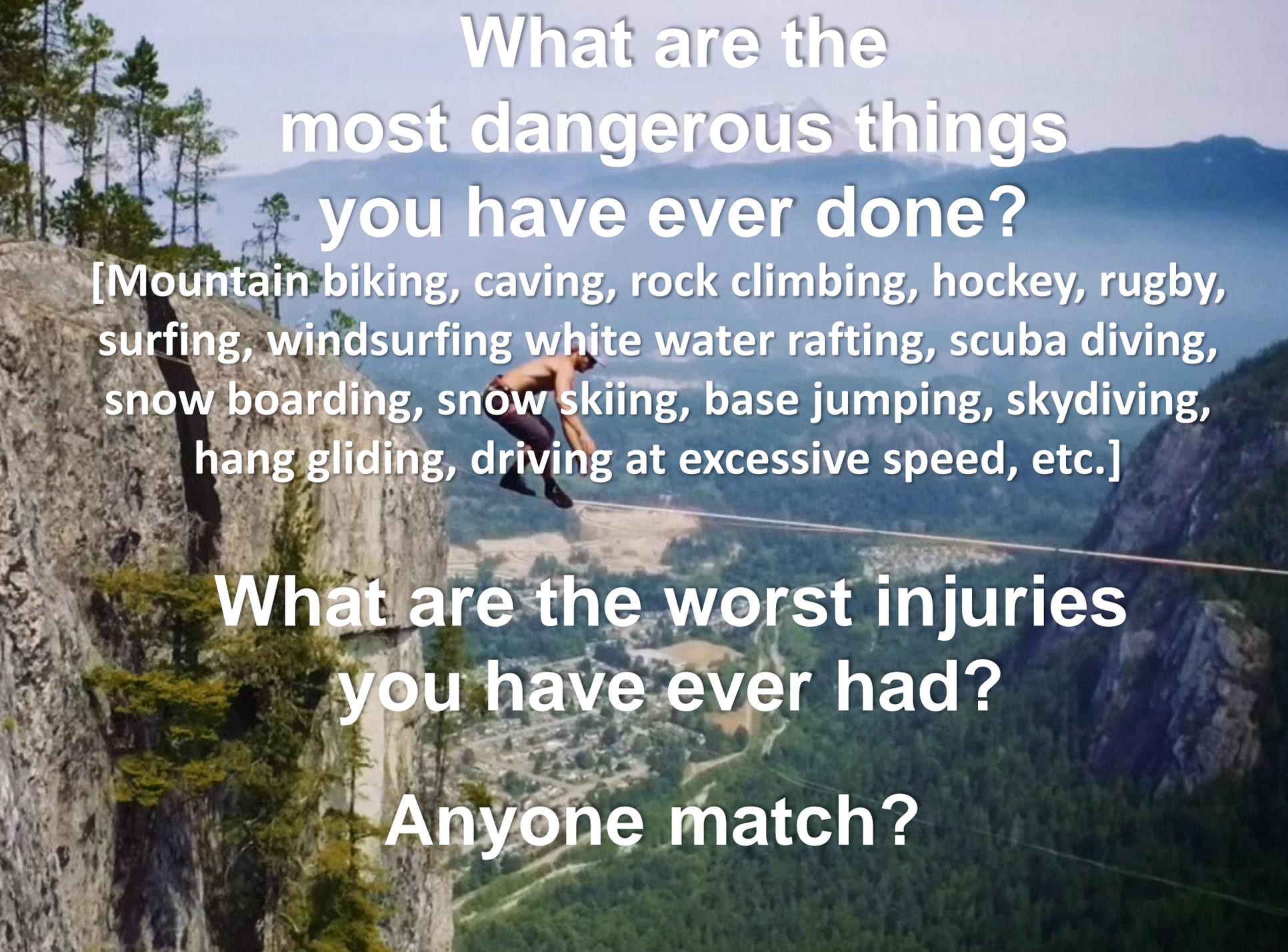
can cause or contribute to these critical errors...

- Eyes not on Task
- Mind not on Task
- Line-of-Fire
- Balance/Traction/Grip

...which increase the risk of injury.

Marine Corps History



A person is walking a tightrope across a deep valley. The person is shirtless and wearing dark pants. The valley below is filled with green trees and a small town. In the background, there are mountains under a clear sky. The text is overlaid on the image in white, bold font.

**What are the
most dangerous things
you have ever done?**

**[Mountain biking, caving, rock climbing, hockey, rugby,
surfing, windsurfing white water rafting, scuba diving,
snow boarding, snow skiing, base jumping, skydiving,
hang gliding, driving at excessive speed, etc.]**

**What are the worst injuries
you have ever had?**

Anyone match?

Industrial safety management has focused mostly on “deliberate risk”

Or the amount of hazardous energy



Do you think this was deliberate?



Is human error important?



First Paradigm Shift

We typically raise our awareness when we expose ourselves to the most dangerous things we do. Complacency and other states are a better predictor for Serious Injuries and Fatalities instead of the amount of Hazardous Energy.



Grab Your Card



These four states...

- Rushing
- Frustration
- Fatigue
- Complacency

*can cause or contribute to
these critical errors...*

Cover Up This Area

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Rushing



Another Form of Rushing...





Can you really effectively multi-task?

Rushing and/or Frustration?

- Could rushing and frustration cause a problem if they happened at the same time?



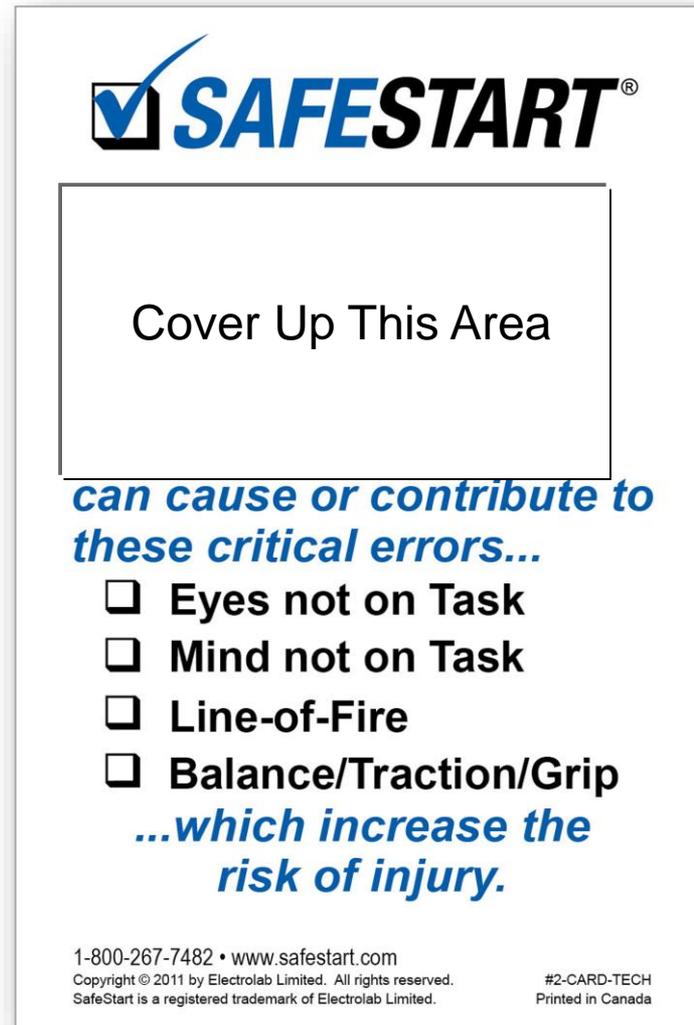
Fatigue



Complacency



Grab Your SafeStart Card



The image shows a SafeStart card with a white background and a thin black border. At the top is the SAFESTART logo. Below it is a large empty rectangular box with the text "Cover Up This Area" centered inside. Underneath the box is a list of four critical errors, each preceded by an unchecked checkbox. The text is in a mix of bold black and blue italicized fonts. At the bottom, there is contact information and a copyright notice on the left, and a card number and printing location on the right.

SAFESTART®

Cover Up This Area

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Identify the Critical Errors



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How Many Mistakes Have You Made?



SafeStart is about the accidental injuries that happen to all of us (and our friends & families)



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1. Banging your shin
2. Stubbing your toe
3. Dropping something on your foot
4. Falling down the stairs
5. Not seeing a stop sign or a red light
6. Falling asleep at the wheel (or almost)
7. Turning or bumping into something (standing up and banging head)
8. Hitting hand with hammer
9. Cutting yourself with a knife, scissors or razor
10. Burning hand, arm, wrist, etc.
11. Spraining ankle, knee, wrist or thumb
12. Straining back, neck, shoulder, etc.
13. Falling into or onto something hard or sharp

Watch and Consider

- Watch this video and identify the errors made.
- Also, what would you do in the traditional, industrial safety sense to prevent recurrence?



SHE Management Systems

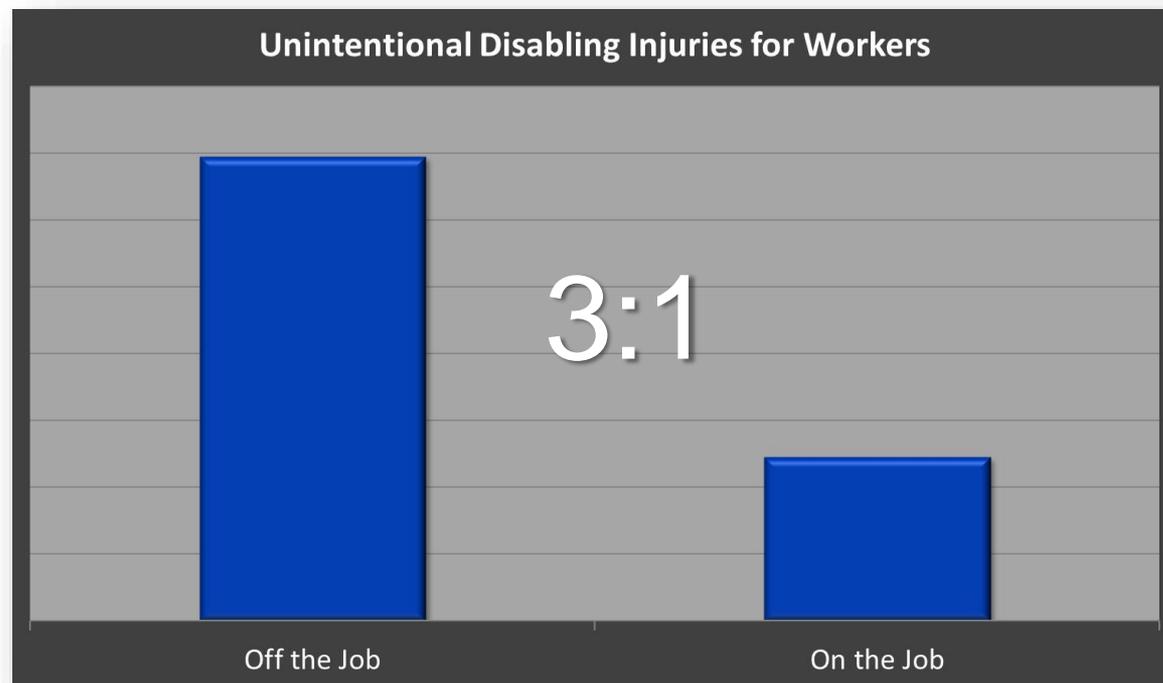


- Job safety analysis
- Accident /incident investigations
- Written procedures
- Pre-use equipment checklists/permits
- Training records
- PPE standards
- Hierarchy of Controls
- etc.



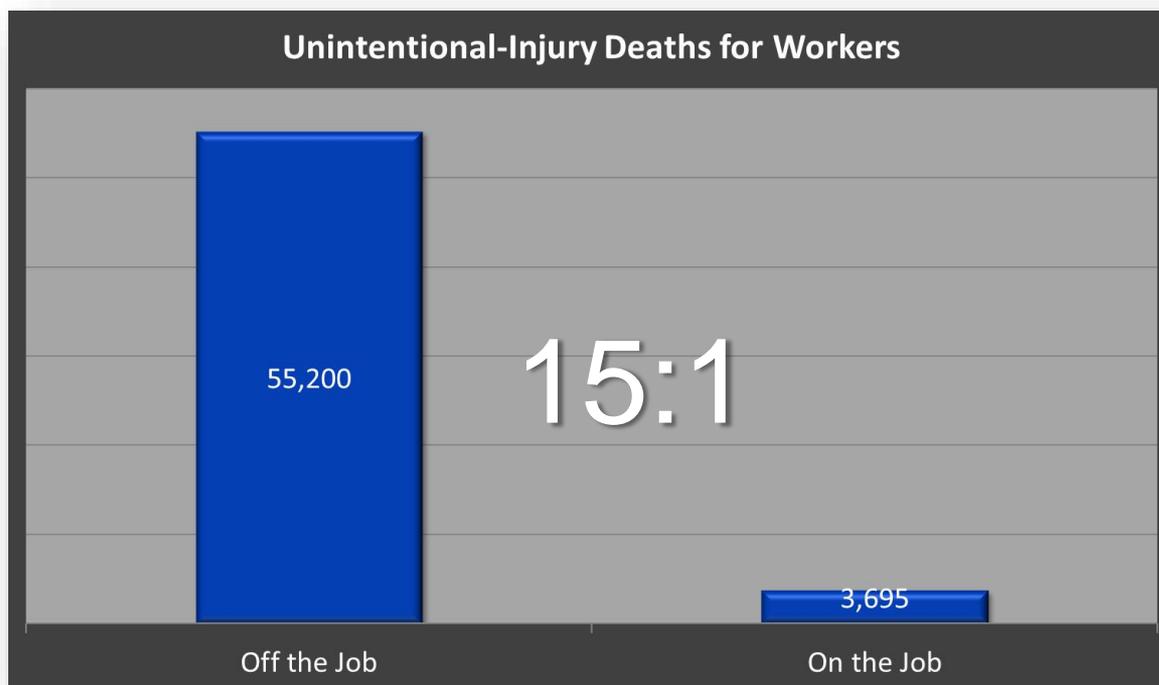
Work Is Just a Small Culprit

- There are **nearly three times** as many off-the-job injuries as there are on-the-job injuries.



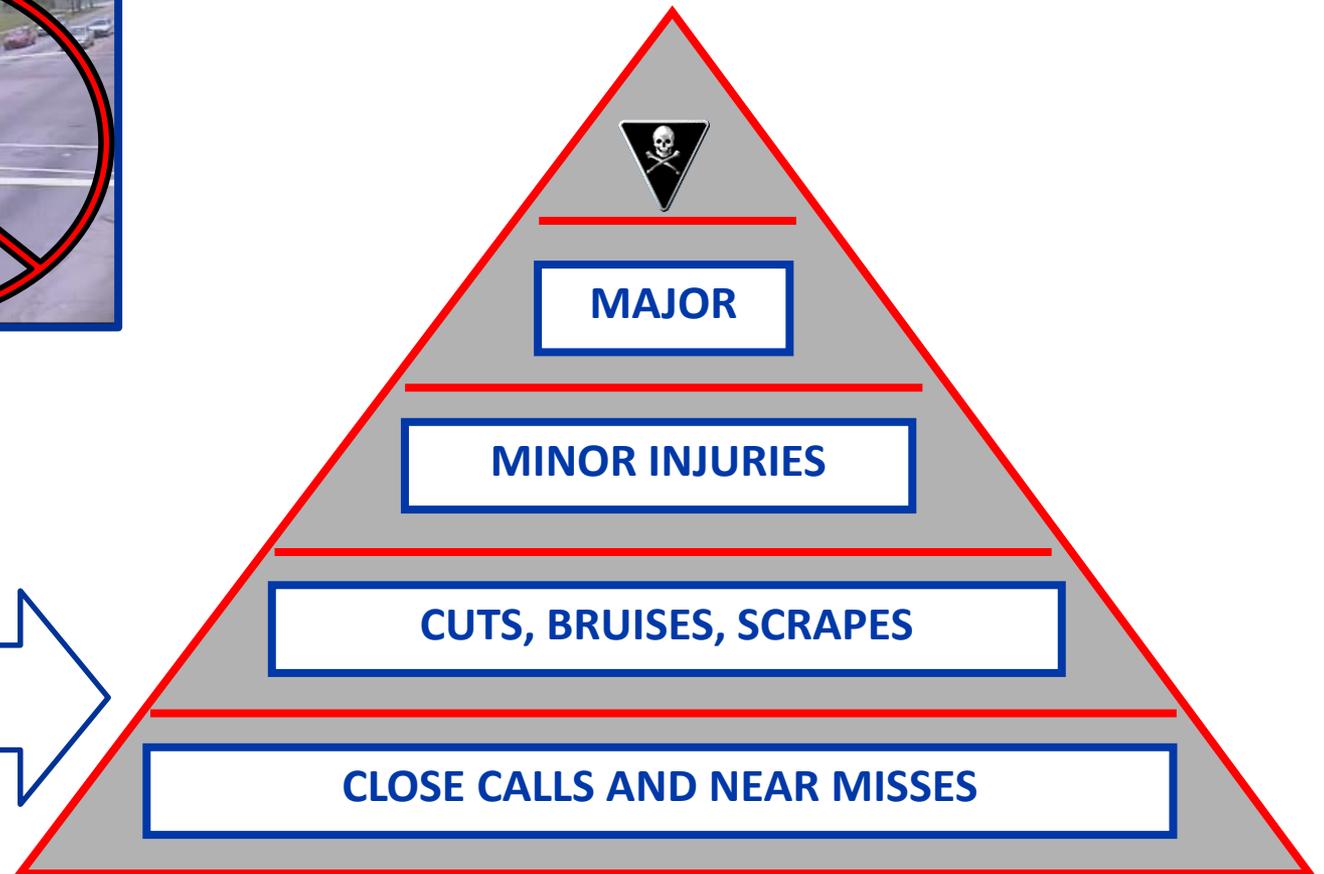
Off the Job vs. On the Job

- And that there are **nearly 15 times** as many off-the-job fatalities as on-the-job fatalities.



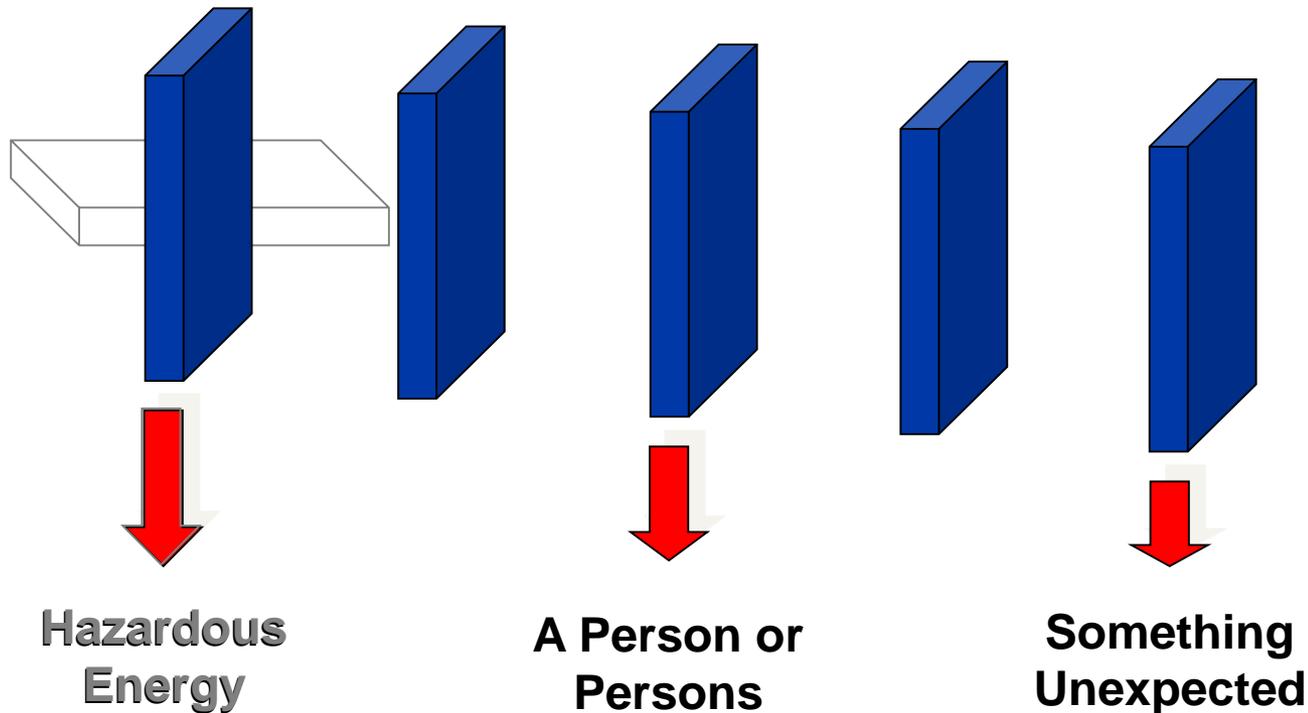
Source: NSC Injury Facts, 2014 Edition, page 63

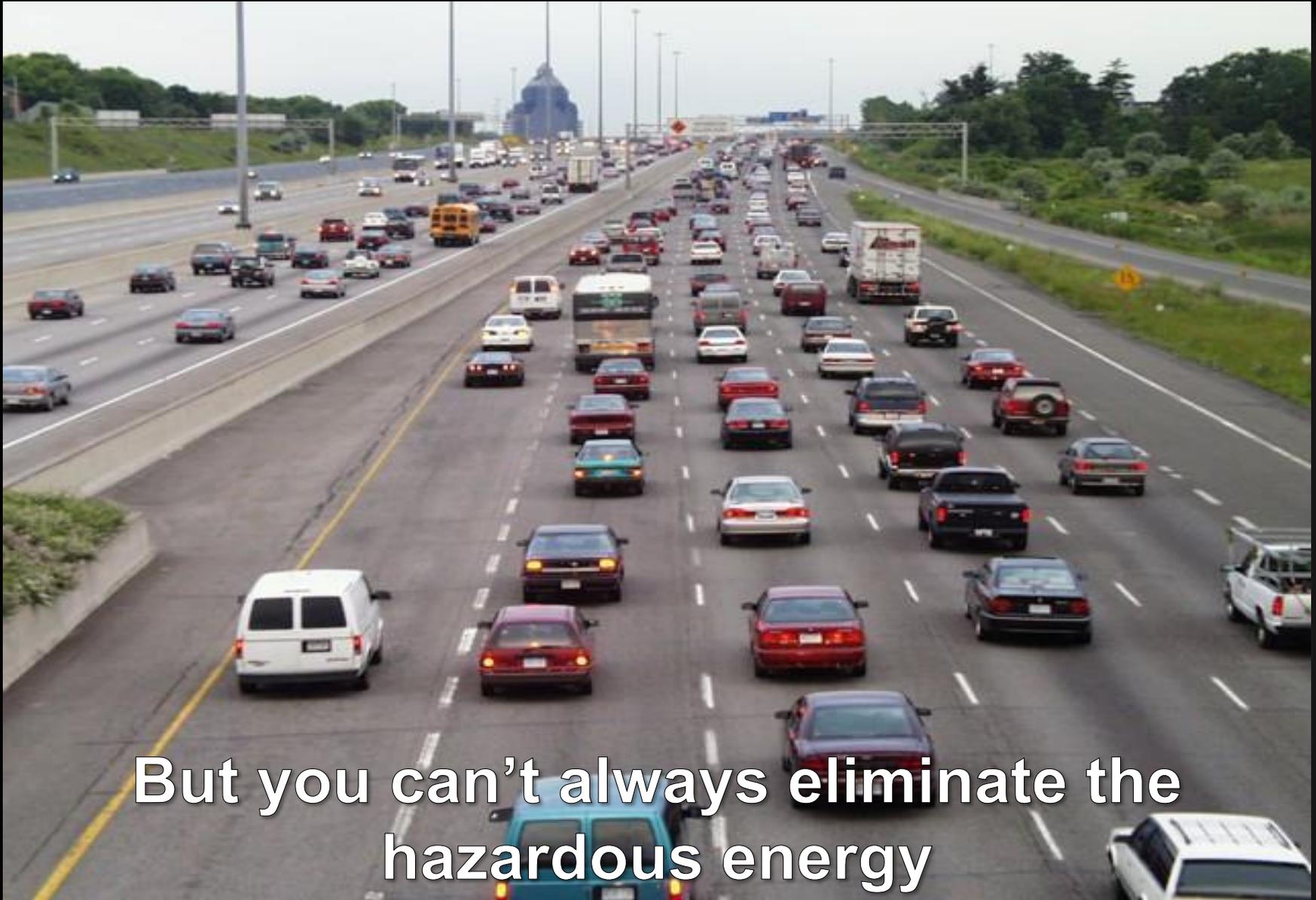




Where we end up is quite often a matter of "luck."

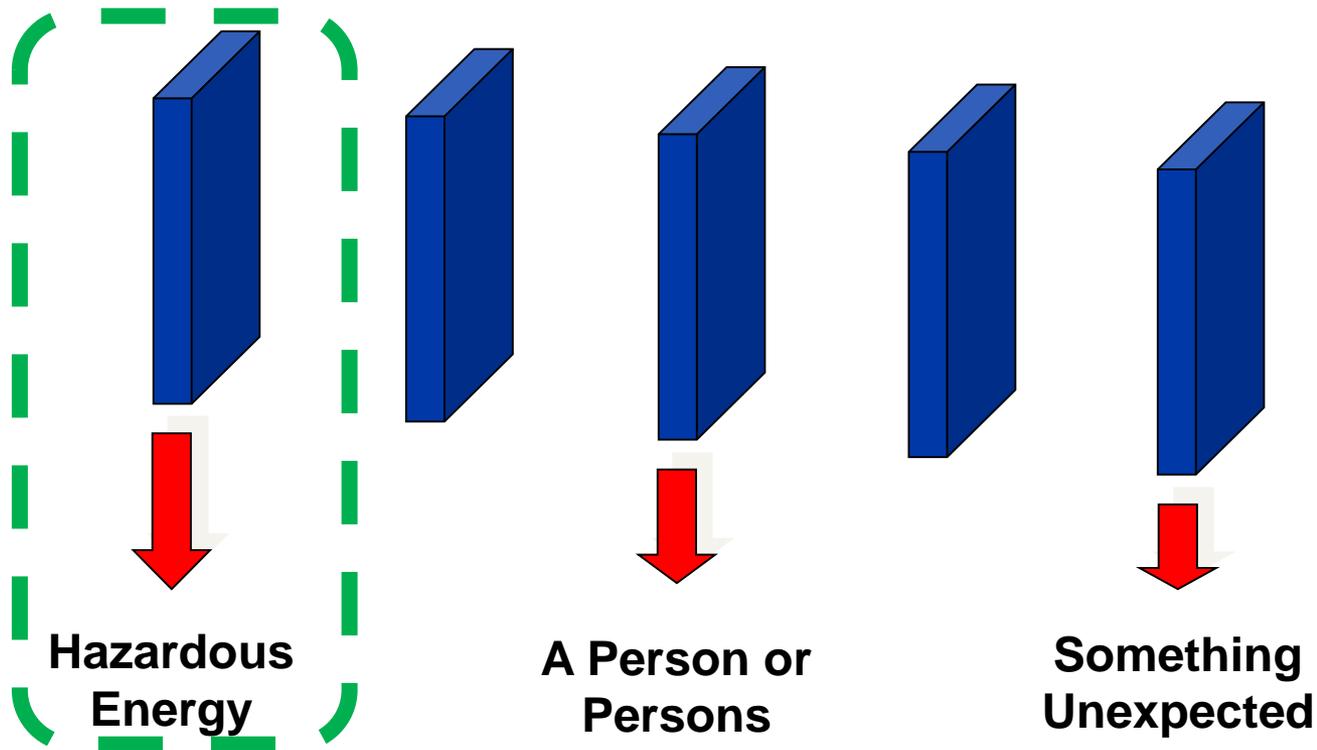
Most Accidents Have Many Contributing Factors





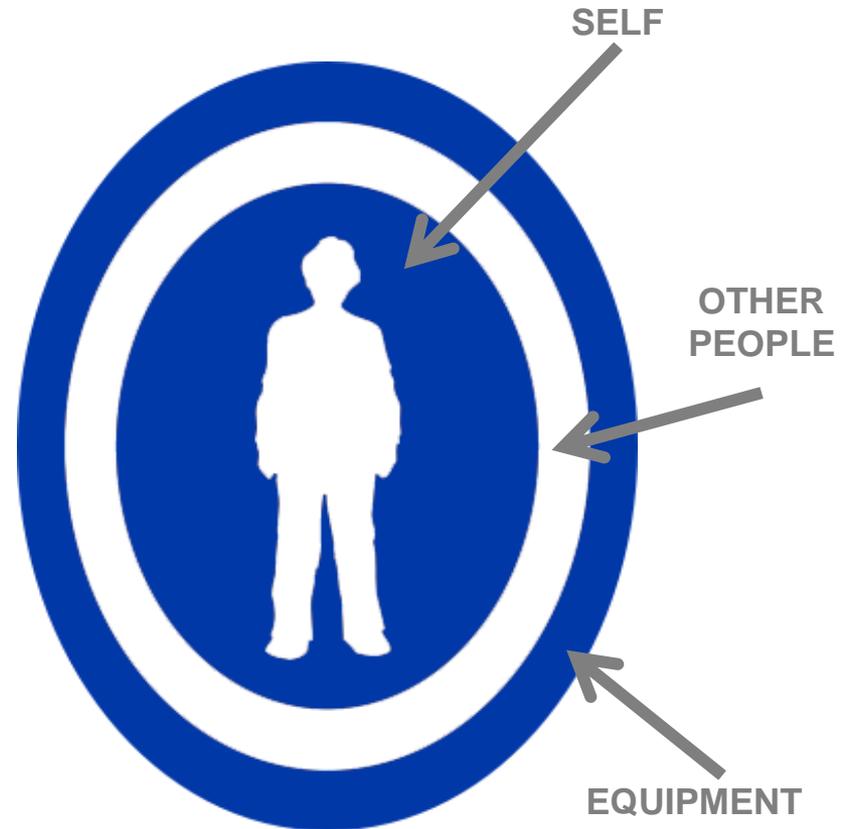
But you can't always eliminate the hazardous energy

There's only so much you can do
with the hazardous energy,
but what about the sources of unexpected?



Three Sources of Unexpected

1. You do something unexpectedly that gets you hurt
2. Someone else does something unexpectedly that gets you hurt
3. The equipment, tools or machinery you're working with does something unexpectedly that gets you hurt



Defective Equipment

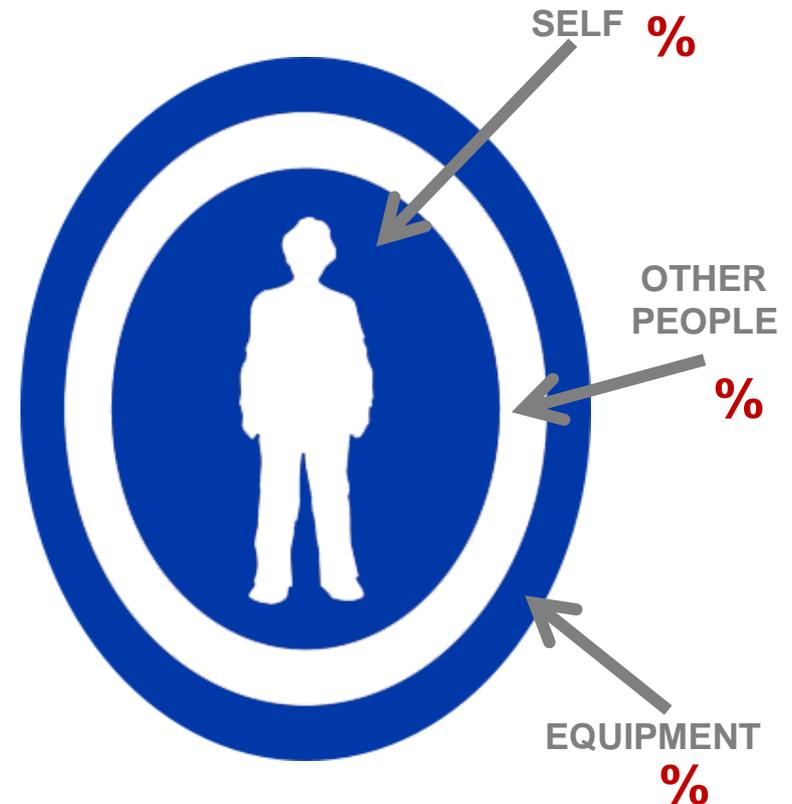


**What about
other sources,
such as
farm animals or
weather related?**

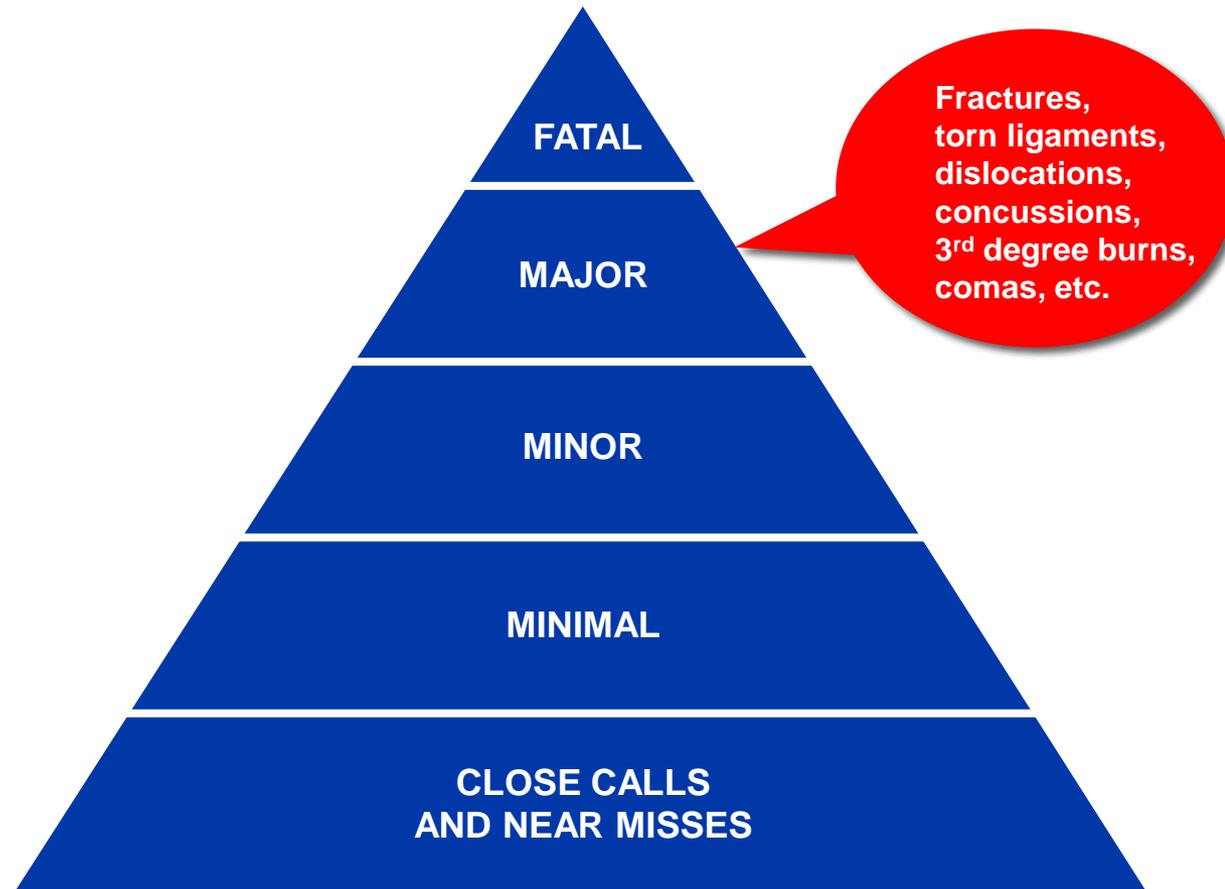


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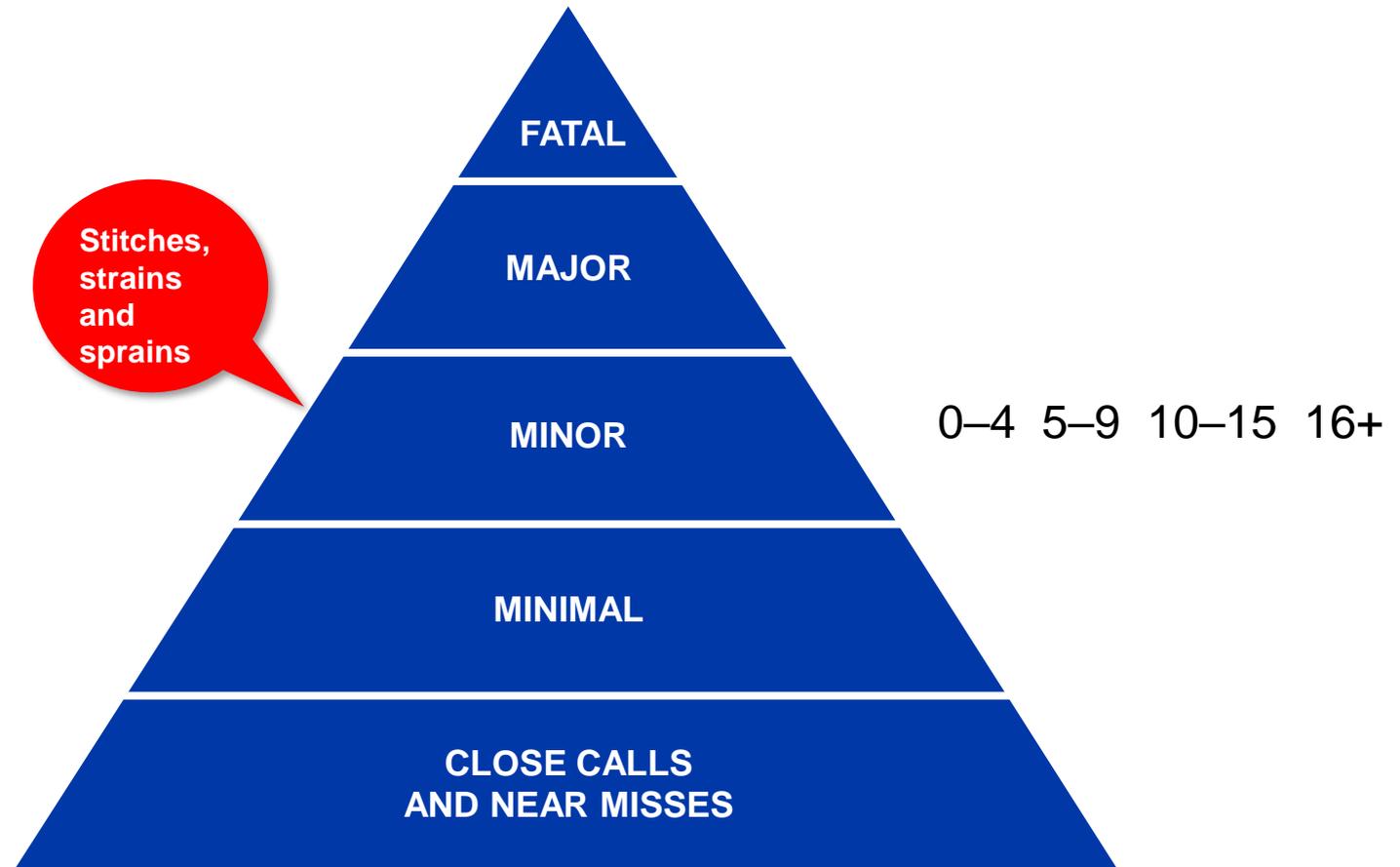
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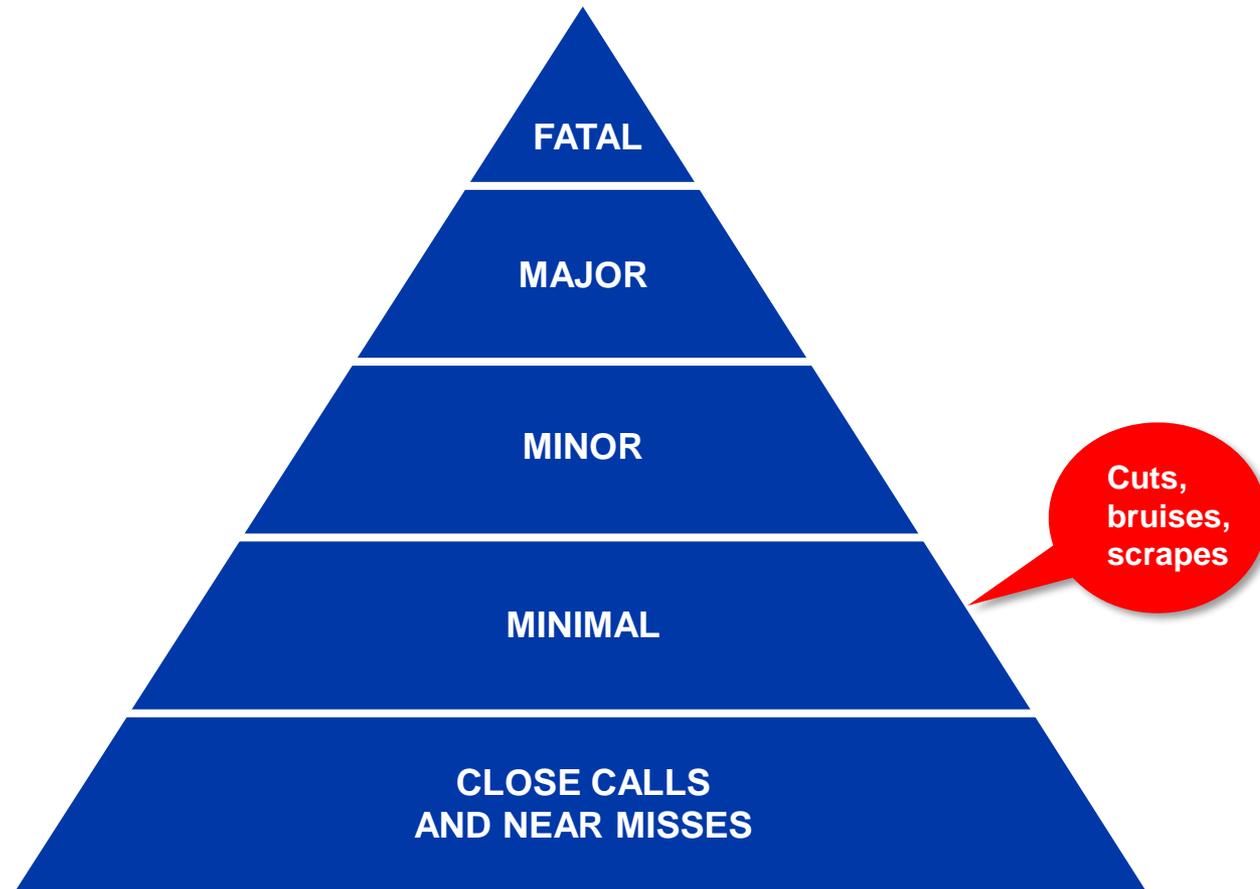
Personal Risk Pyramid



Personal Risk Pyramid



Personal Risk Pyramid



Cuts, Bruises, Bumps and Scrapes

What about when you were young?

















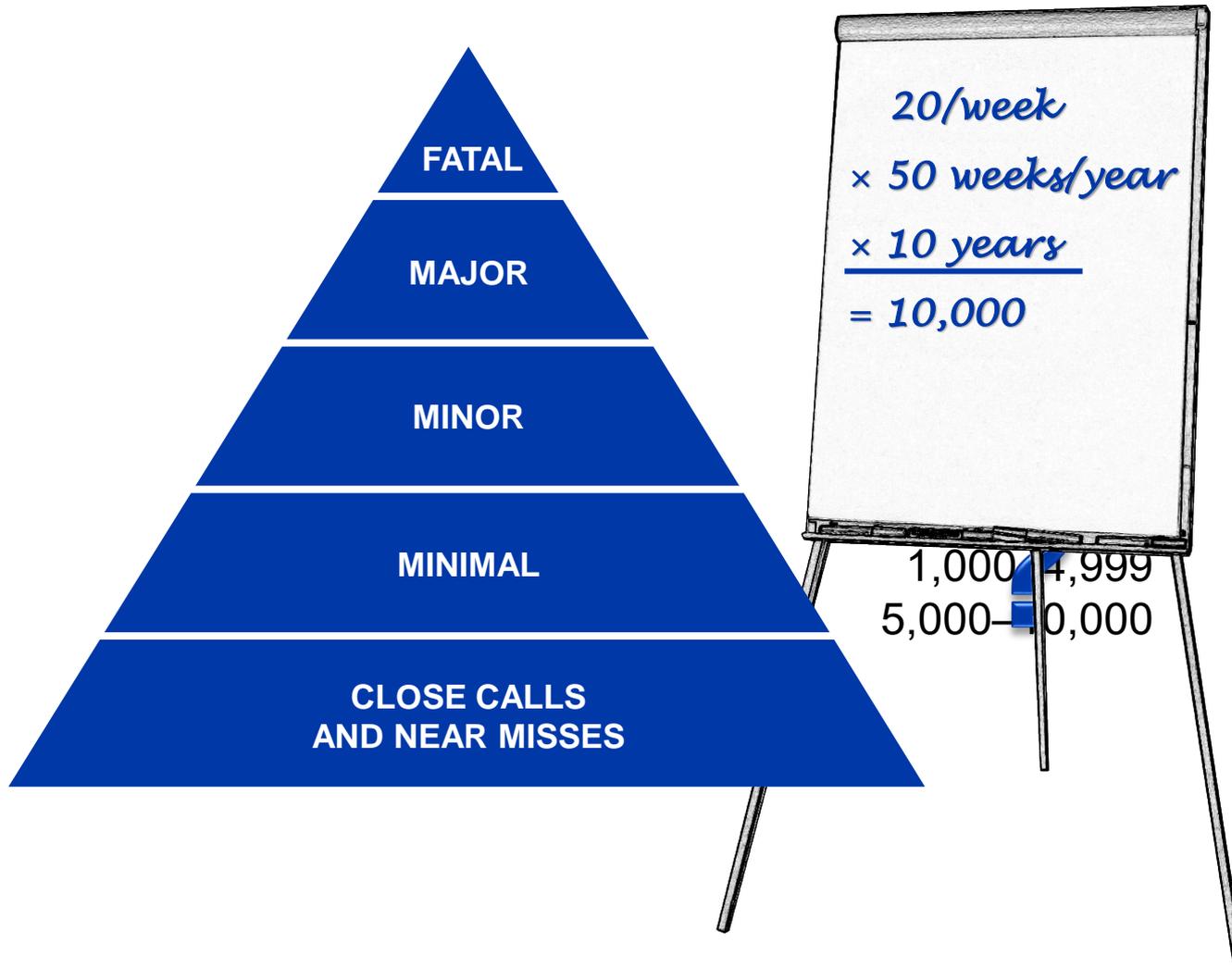




- The math behind the number of bumps, bruises and scrapes kids get is pretty easy.

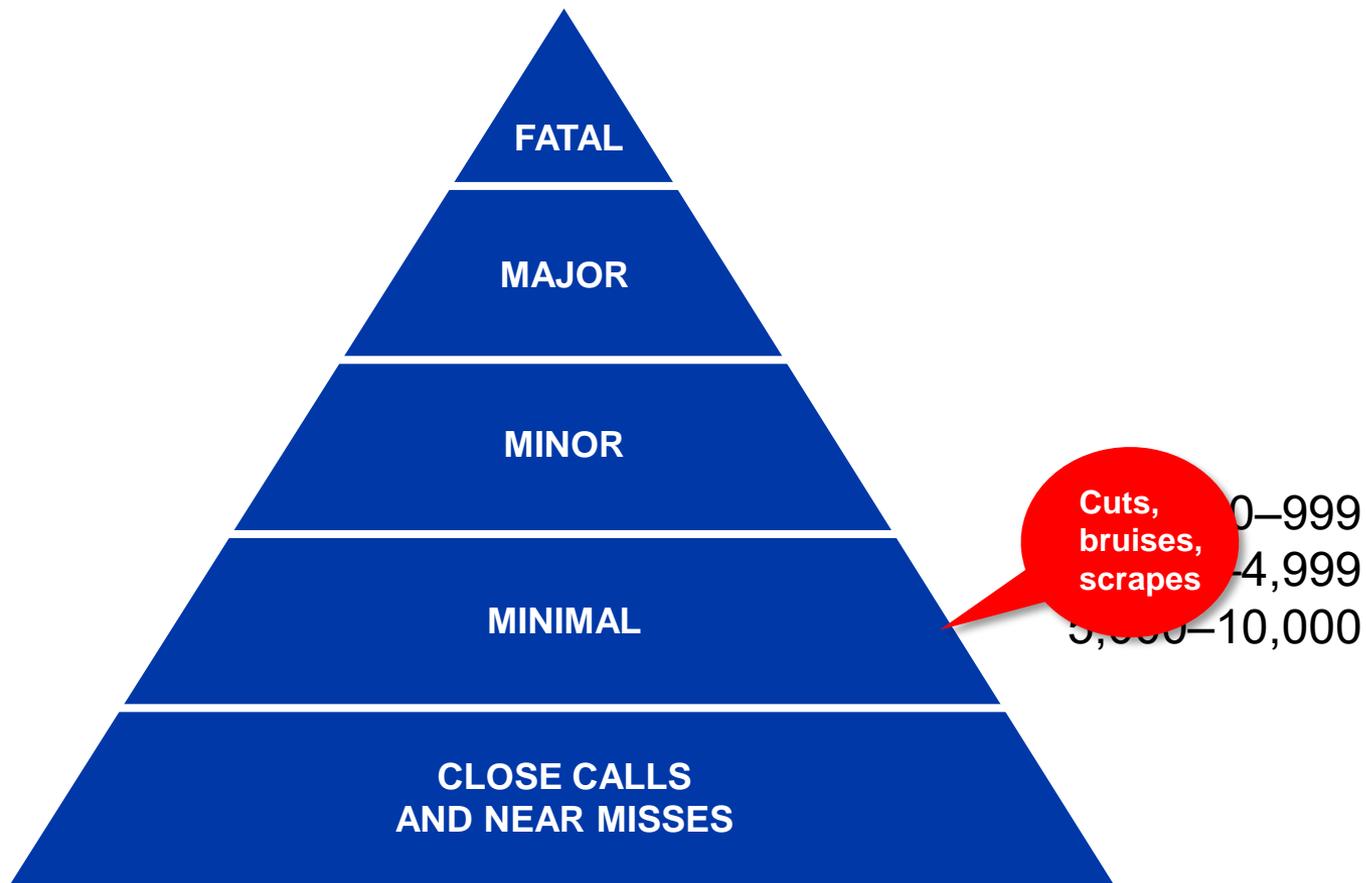


Personal Risk Pyramid

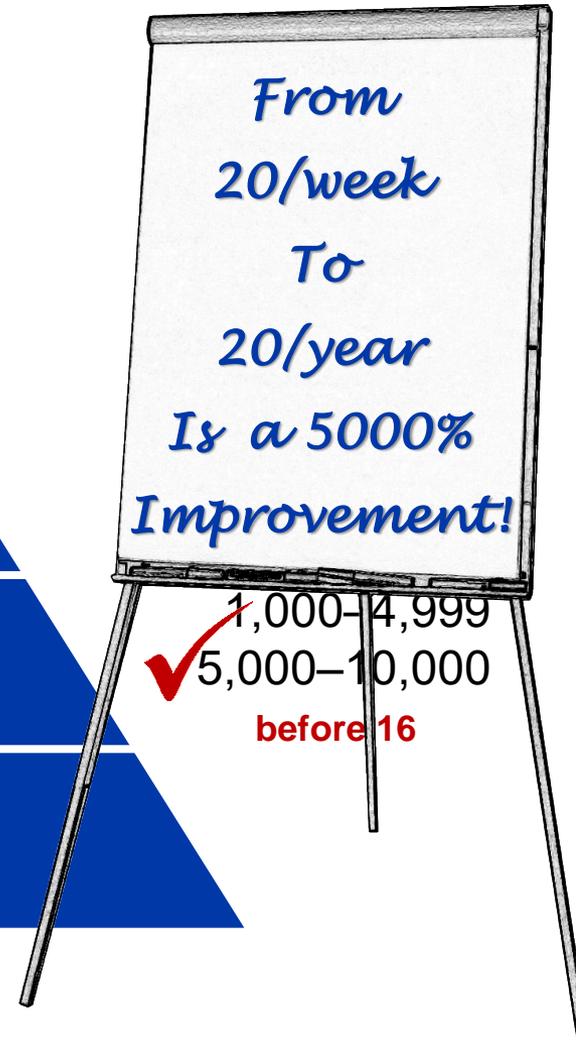
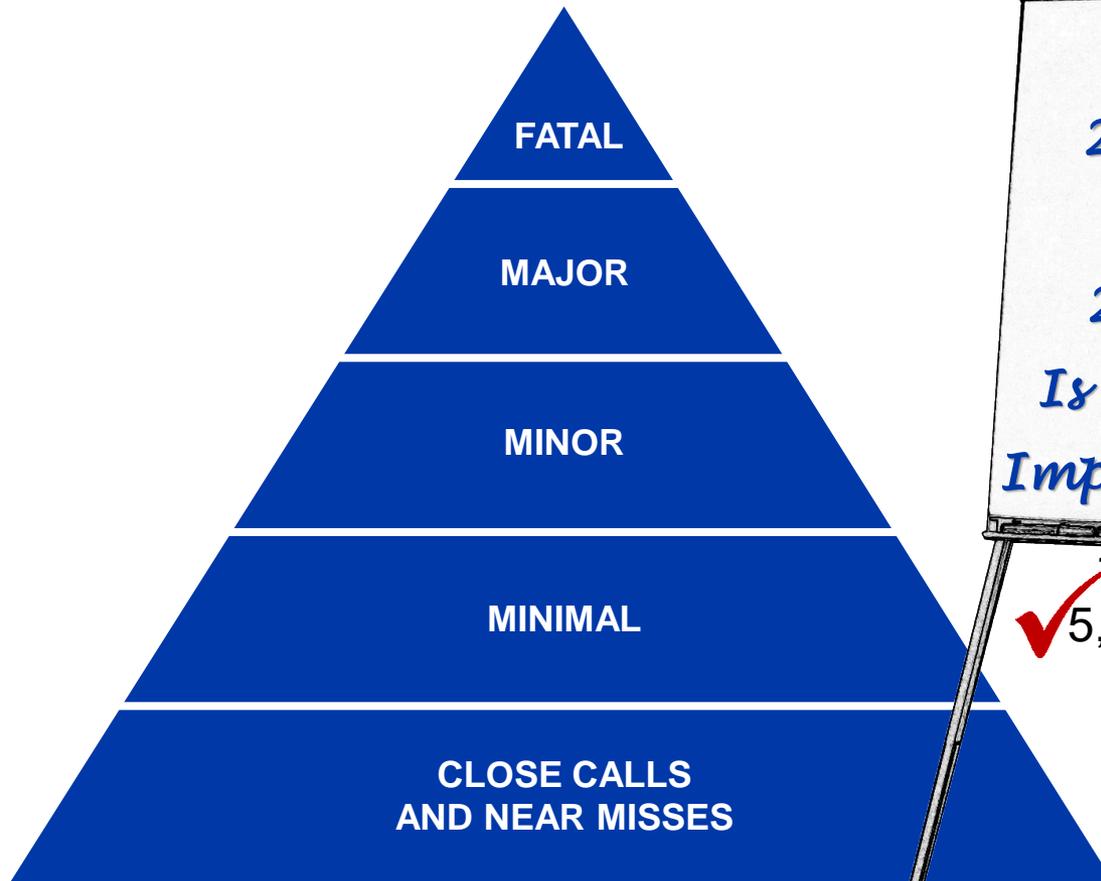




Personal Risk Pyramid



Personal Risk Pyramid



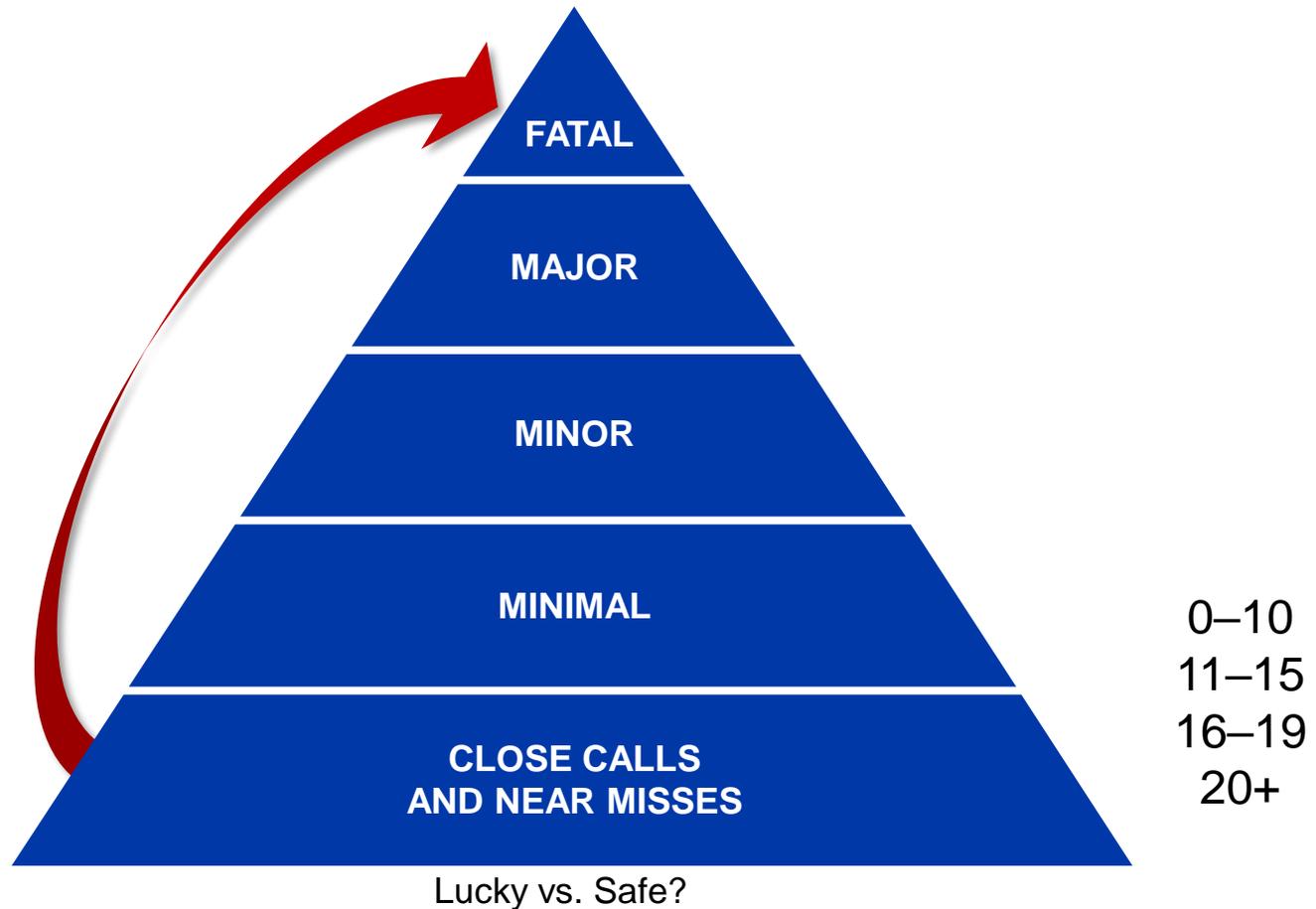




Is This the ONE Mistake?

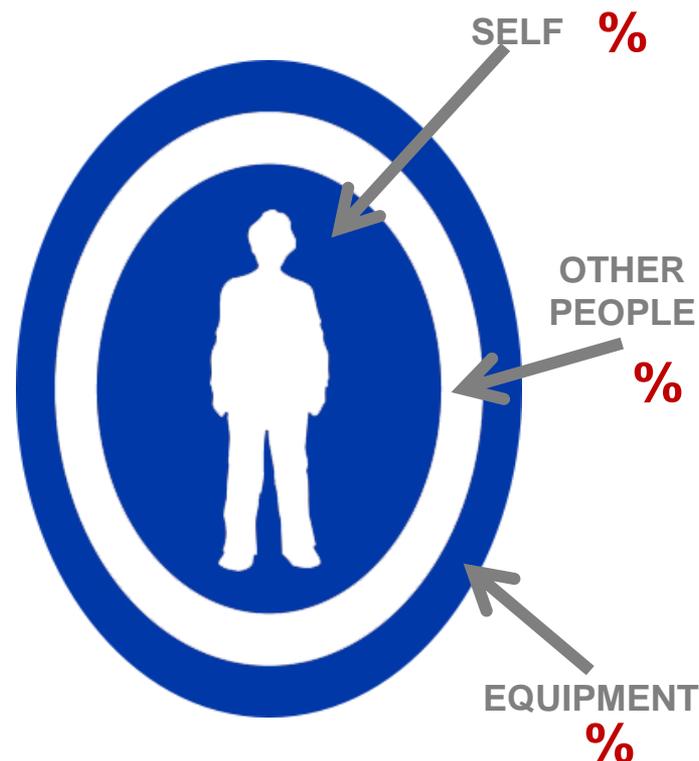


Personal Risk Pyramid



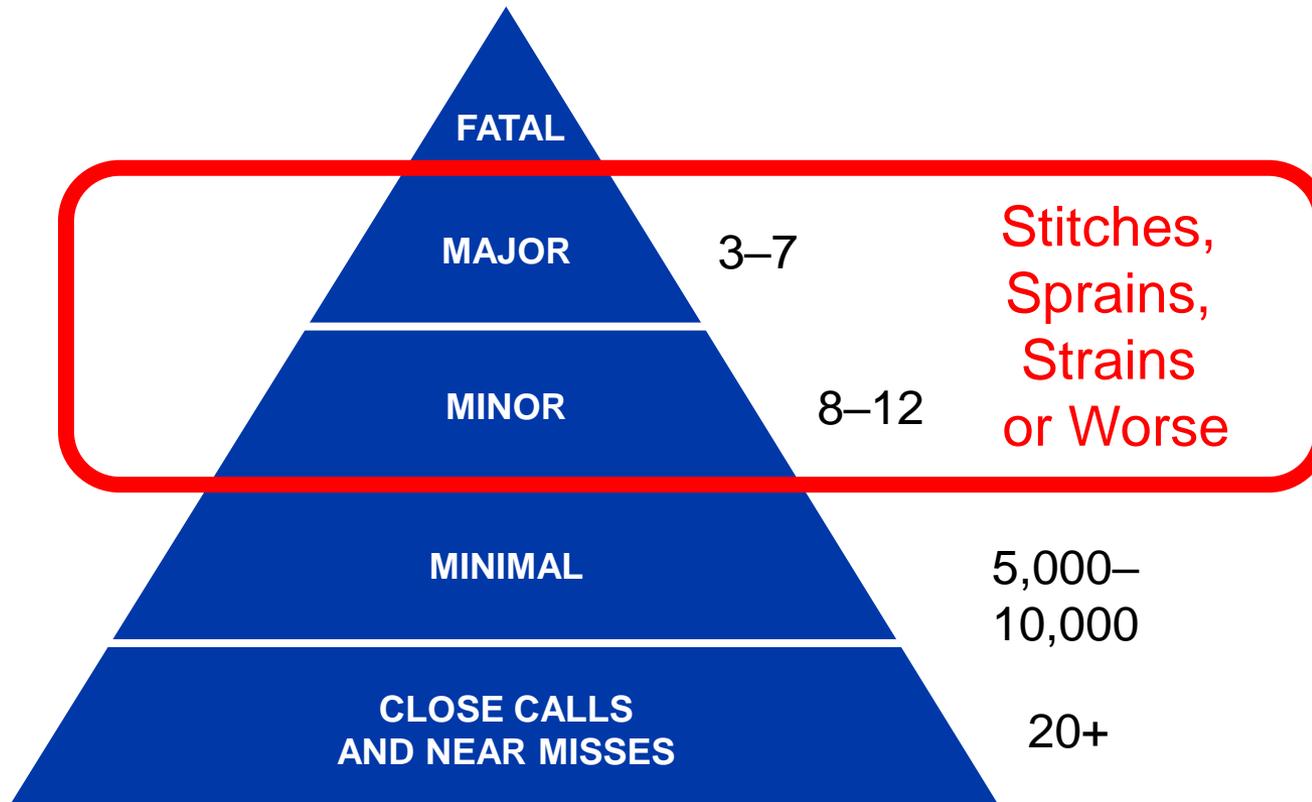
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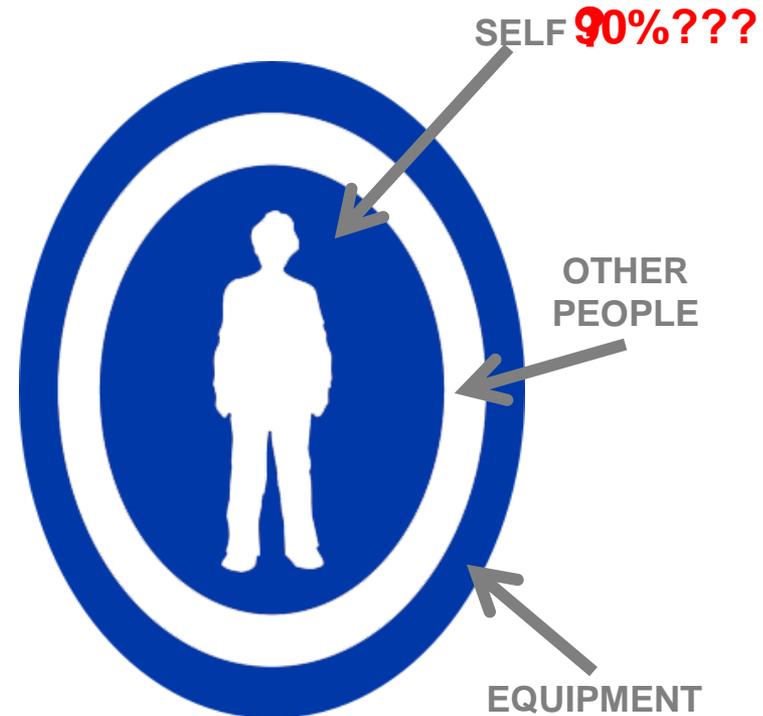
Personal Risk Pyramid

(based on 150,000 people)



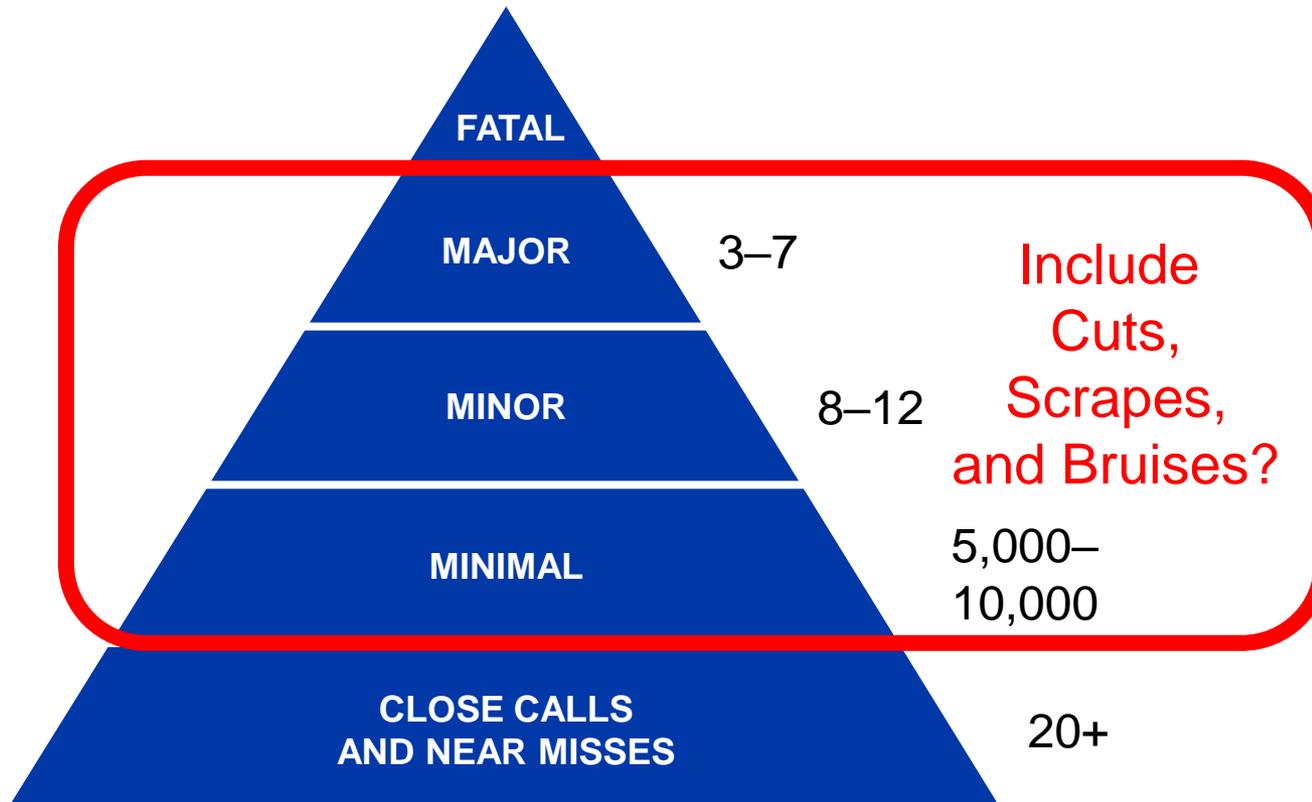
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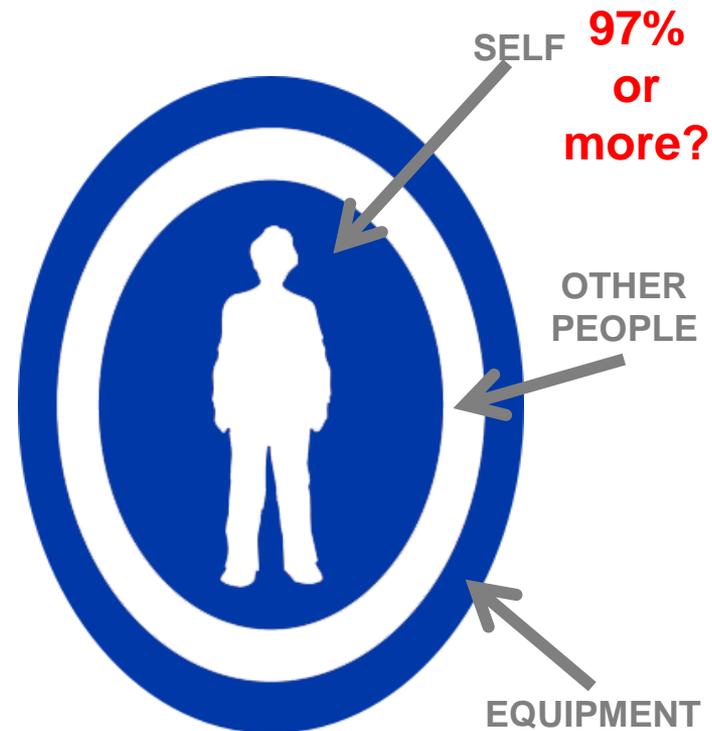
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Three Sources of Unexpected

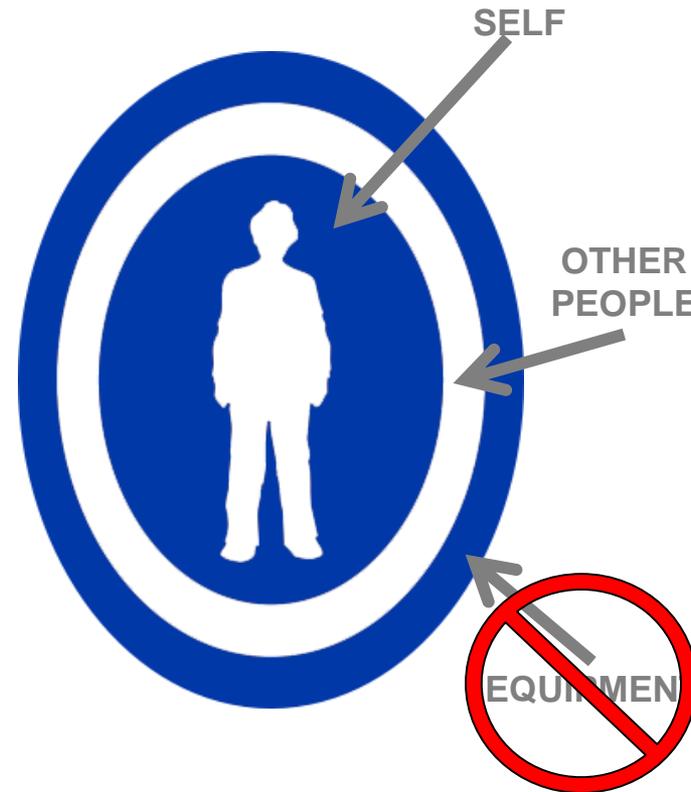
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Three Sources of Unexpected

National Safety Council:
Auto Accident Causation

- 97% Human error



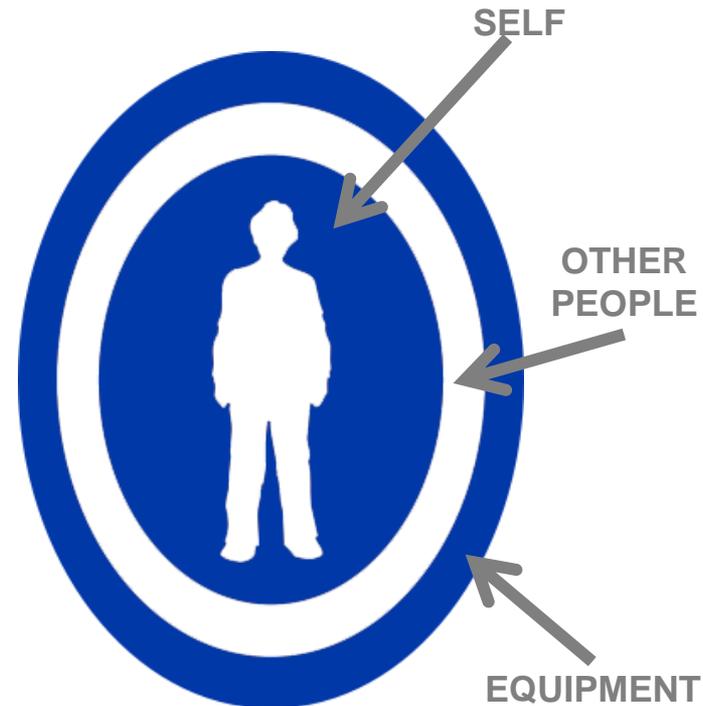
Three Sources of Unexpected

National Safety Council:
Auto Accident Causation

- 97% Human error

Public Workshop Surveys

- 90-99% Self
- 1–10% Other people
- Less than 5% equipment

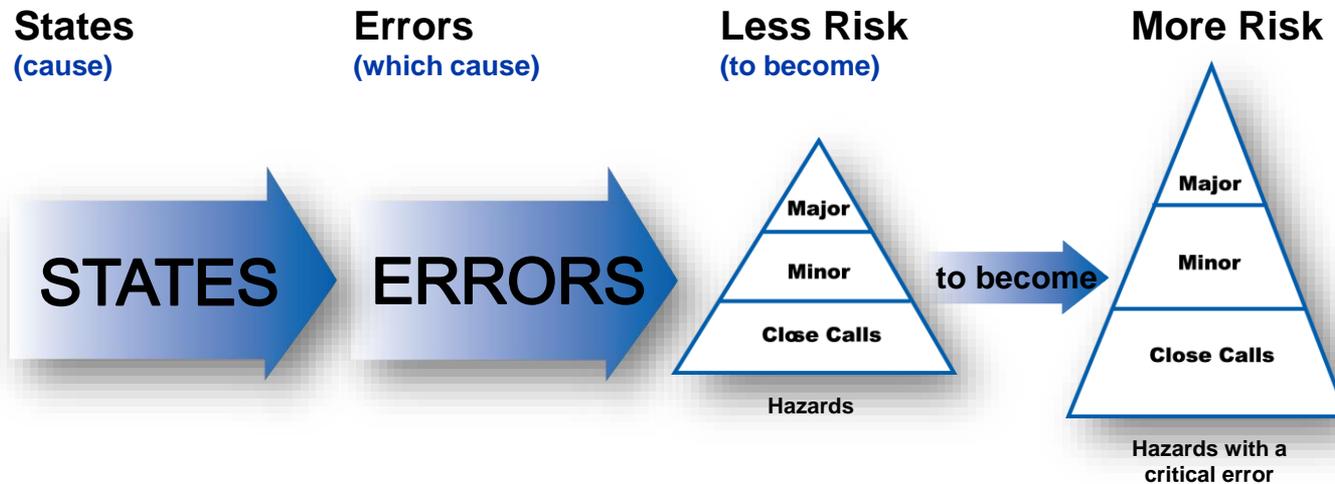


Second Paradigm Shift

The injuries you have had and the injuries your employees have had were mainly in the self area of the sources of unexpected. In other words, 90-97% of our injuries are a result of a state that lead to a critical error.



State-to-Error Risk Pattern



This *state-to-error* risk pattern is involved in over 90-97% of all accidental acute *injuries*.

Eyes on task
and mind on task
may seem simplistic
or just common sense.

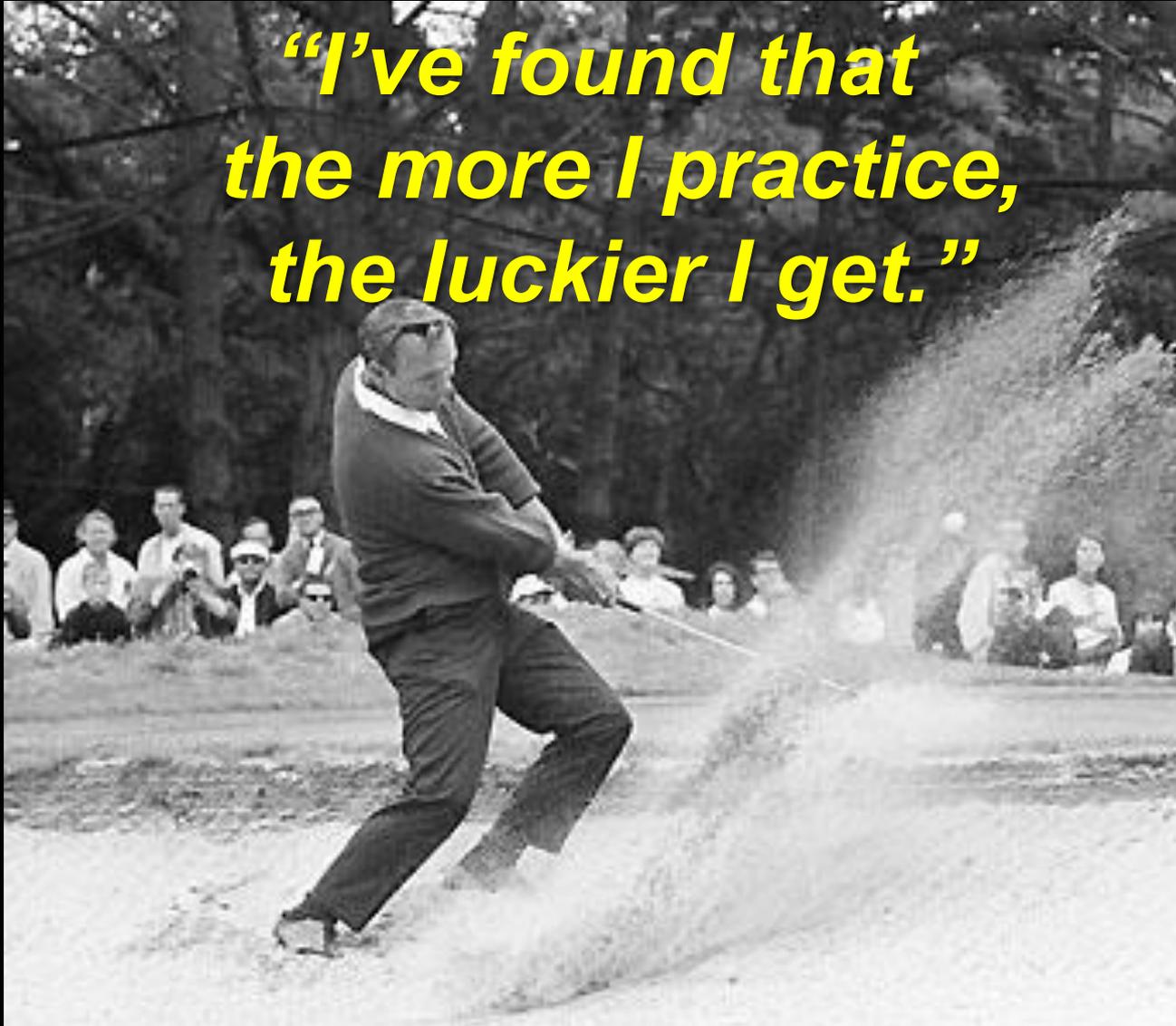
However,
safety is a skill.

Since it is a skill,
it is something that can
be improved
with practice and effort.



Arnold Palmer on Being “Lucky”

***“I’ve found that
the more I practice,
the luckier I get.”***



The Luckiest People On Earth

Identifying the Problem Will Help to
Prevent Injuries,
More Importantly
It Can Increase Organizational
Performance
When People Make Less Mistakes

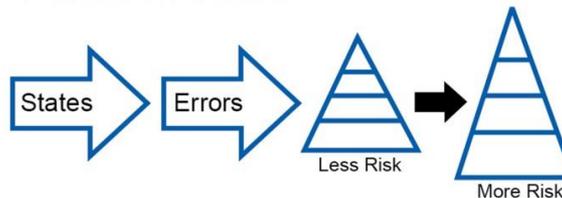
But First You Must Be Proficient in Using the CERTS

Critical Error Reduction Techniques



Critical Error Reduction Techniques (CERT)

1. *Self-trigger on the state (or amount of hazardous energy) so you don't make a critical error.*
2. *Analyze close calls and small errors (to prevent agonizing over big ones).*
3. *Look at others for the patterns that increase the risk of injury.*
4. *Work on habits.*



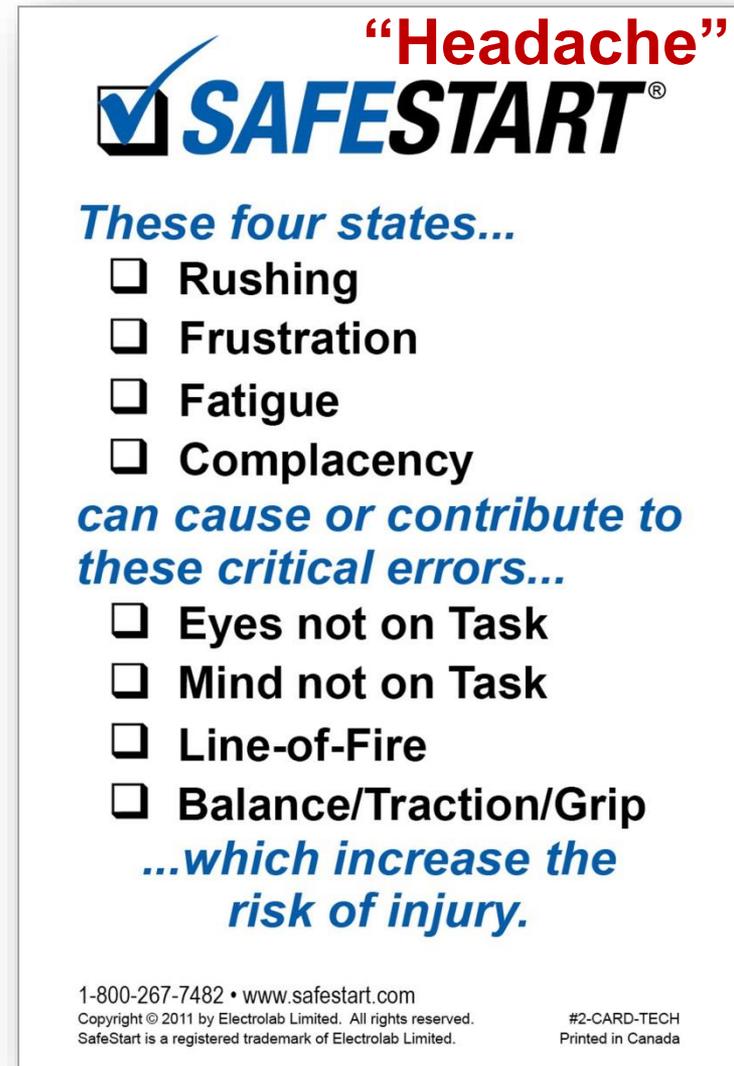
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The SafeStart Card

- The front of the SafeStart card summarizes key SafeStart concepts.
- Think of this side as the “headache.”



“Headache”



These four states...

- Rushing
- Frustration
- Fatigue
- Complacency

can cause or contribute to these critical errors...

- Eyes not on Task
- Mind not on Task
- Line-of-Fire
- Balance/Traction/Grip

...which increase the risk of injury.

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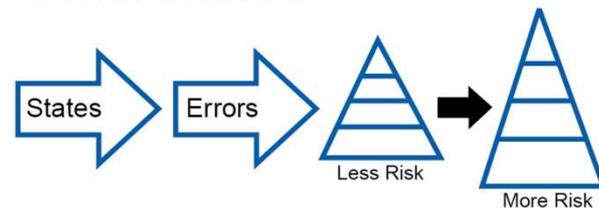
The SafeStart Card

- The back of the SafeStart card summarizes key SafeStart techniques.
- You could think of this side as the “aspirin.”



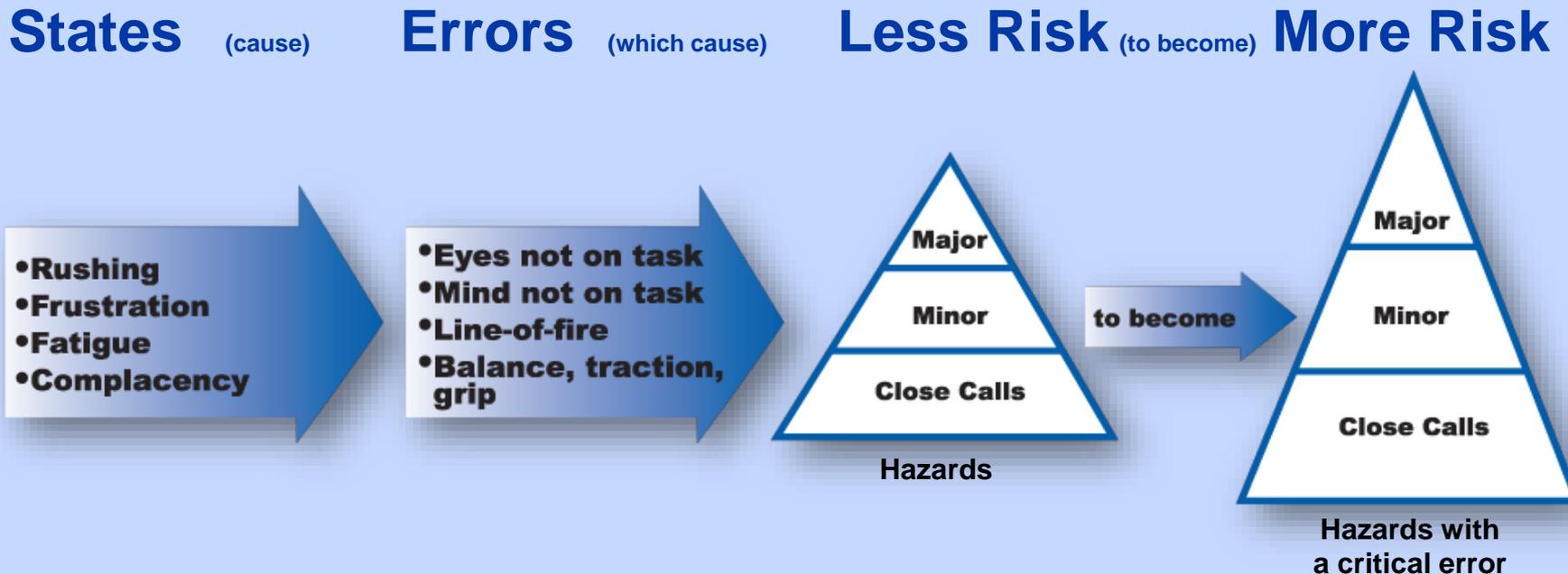
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SafeStart Basic Principles

- States cause errors, which in turn increase risk of injury.
- This risk pattern is involved in over 95% of all acute injuries.



It's All About The CERTS



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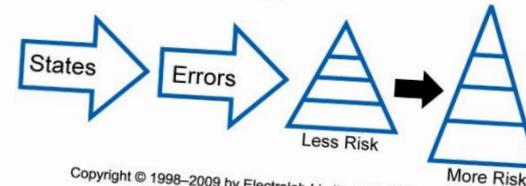
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Self-Trigger

- Self-trigger on the state (or amount of hazardous energy) so you don't make a critical error.
- This first CERT works because we're usually in one or more of the four states before we make a critical error.



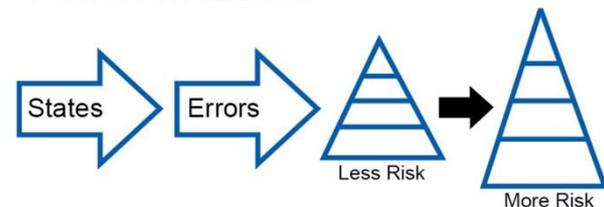
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How It Works

- When you self-trigger, try to do something to eliminate the state.
- If you can't, watch what you're doing, concentrate on what you're doing, think about line-of-fire, and look for and think about things that could cause you to somehow lose your balance, traction or grip.



These four states...

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- Frustration
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Complacency Is Different

- Rushing, frustration and fatigue are easy to recognize.
- Complacency is difficult to self-trigger on because it creeps up on you over time.



These four states...

- Rushing
- Frustration
- Fatigue



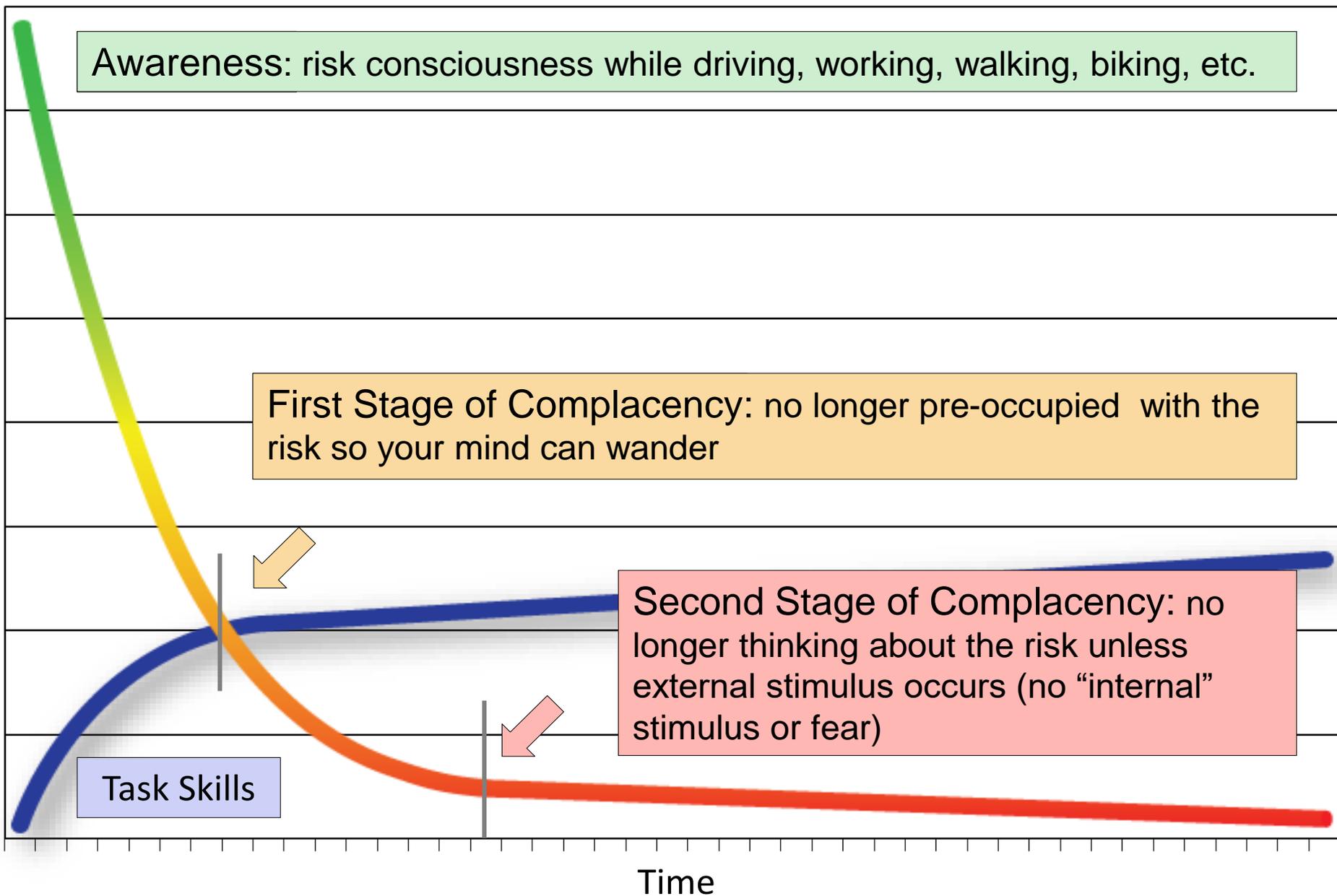
- Complacency

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...which increase the risk of injury.

The Awareness/Complacency Continuum



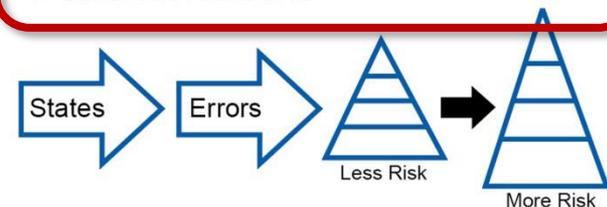
Complacency Is Different

- Rushing, frustration and fatigue are easy to recognize.
- Complacency is difficult to self-trigger on because it creeps up on you over time.
- The other three CERTs are used to deal with complacency.



Critical Error Reduction Techniques (CERT)

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4. Work on habits.



Look At Others

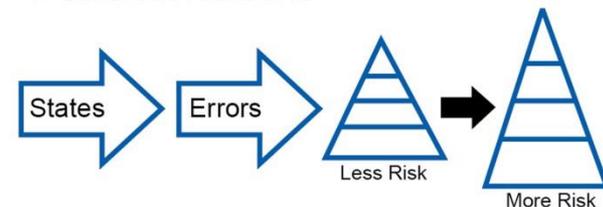
- Looking at others for the patterns that increase the risk of injury helps to **fight** complacency.

[We can learn a lot about safety and risk by watching other people. The escalator and improved safety performance.]



Critical Error Reduction Techniques (CERT)

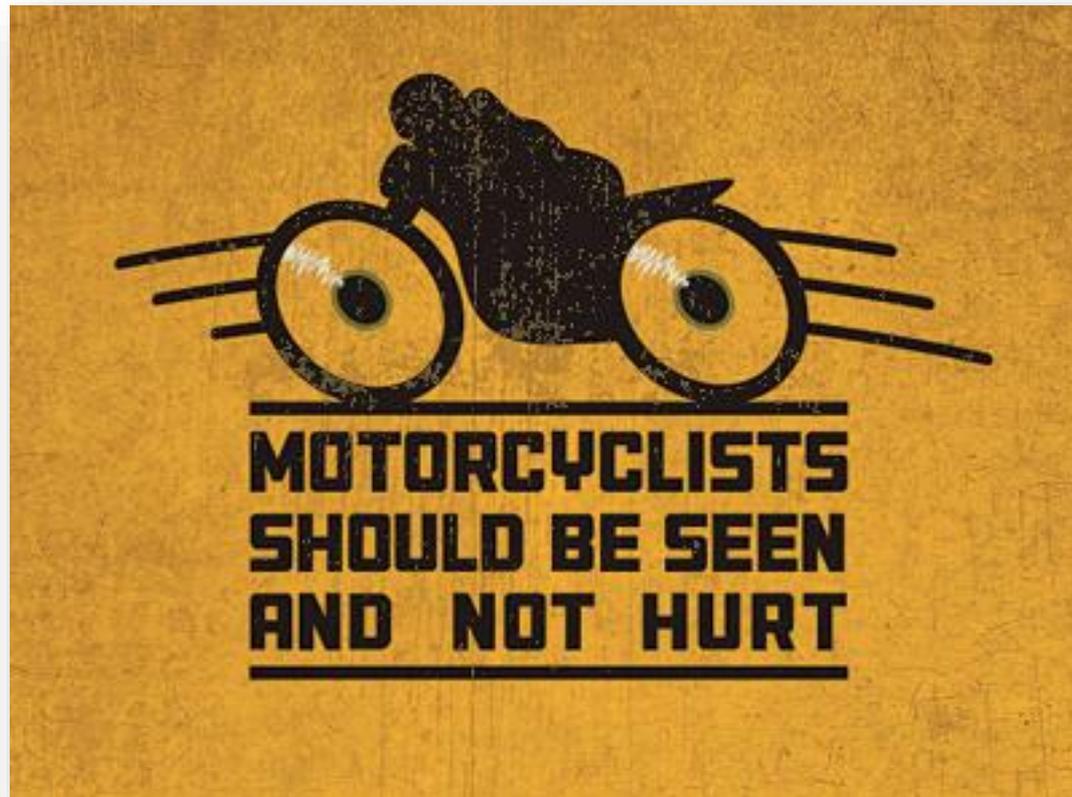
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The Love of My Life



Who Has a Motorcycle?



Being Our Brother's/Sister's Keeper

- Whenever you see a state-to-error risk pattern or you see someone make a critical error, you'll automatically get an instant reminder to think about what you're doing at that moment.

States (cause) **Errors** (which cause) **Less Risk** (to become) **More Risk**



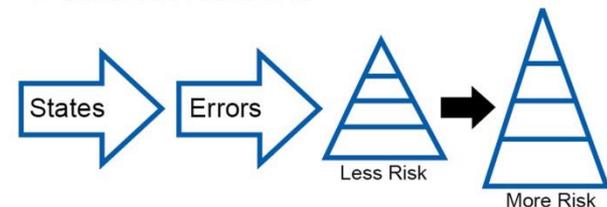
Look At Others

- Look at others for the patterns that increase the risk of injury.
 - Focusing our attention
 - **Fighting** complacency
 - Avoiding the risk posed by the other guy
 - Recognizing and intervening when the risk is too great
[Protecting co-workers, family and friends]



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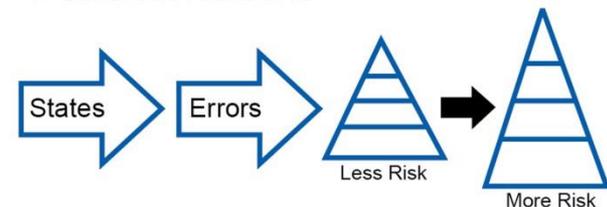
Analyze Close Calls

- Analyze close calls and small errors (to prevent agonizing over big ones).
 - Helps prevent **future** complacency
 - Helps us discover what we need to work on
 - Little or no pain involved



Critical Error Reduction Techniques (CERT)

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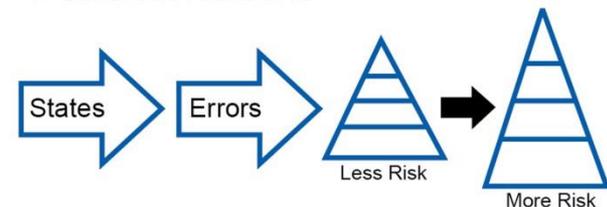
Analyze Close Calls

- How do you analyze close calls and small errors?
- Ask yourself two questions:
 1. What critical error or errors led to the close call or minimal injury?
 2. What state or states caused or contributed to me making the critical error or errors?



Critical Error Reduction Techniques (CERT)

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2. Analyze close calls and small errors (to prevent agonizing over big ones).
3. Look at others for the patterns that increase the risk of injury.
4. Work on habits.



Analyze Close Calls



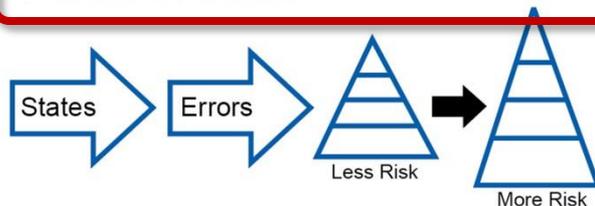
Critical Error Reduction Techniques (CERT)

1. Self-trigger on the state (or amount of hazardous energy) so you don't make a critical error.

2. Analyze close calls and small errors (to prevent agonizing over big ones).

3. Look at others for the patterns that increase the risk of injury.

4. Work on habits.



These four states...

- Rushing
- Frustration
- Fatigue

- Complacency

can cause or contribute to these critical errors...

- Eyes not on Task
- Mind not on Task
- Line-of-Fire
- Balance/Traction/Grip

...which increase the risk of injury.

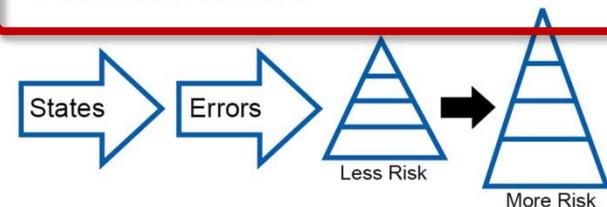
Work on Habits

- Working on your safety-related habits will help to **compensate** for complacency leading to mind not on task, so that what you do automatically or habitually will be safer.



Critical Error Reduction Techniques (CERT)

1. Self-trigger on the state (or amount of hazardous energy) so you don't make a critical error.
2. Analyze close calls and small errors (to prevent agonizing over big ones).
3. Look at others for the patterns that increase the risk of injury.
4. Work on habits.



Work on Habits

- It's not realistic to expect everyone to always be thinking about what they are doing, especially if they're doing something that they've done hundreds and hundreds of times before.



Work on Habits

- That's why it's important that what you do automatically or habitually is just as safe as it can possibly be.



Better Performance is the Aspirin



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Critical Error Reduction Techniques (CERT)

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The diagram illustrates the relationship between states, errors, and risk. It starts with a box labeled 'States' with an arrow pointing to a box labeled 'Errors'. From 'Errors', an arrow points to a triangle labeled 'Less Risk'. A second arrow points from 'Less Risk' to a triangle labeled 'More Risk'.

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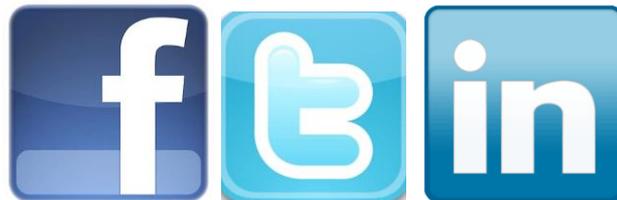
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Is This Line of Fire?

