

Breaking the Cycle of Risky Behavior

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- Presentation today is from a seminar I attended last spring. We are allowed to use this, with the caveat that I tell people that, should you require the services of an outside company, this is one company that provides safety training.
- This is set up using age—child, teenager, adult
- I would like to think of this as early in working life or safety committee life, becoming more mature with time

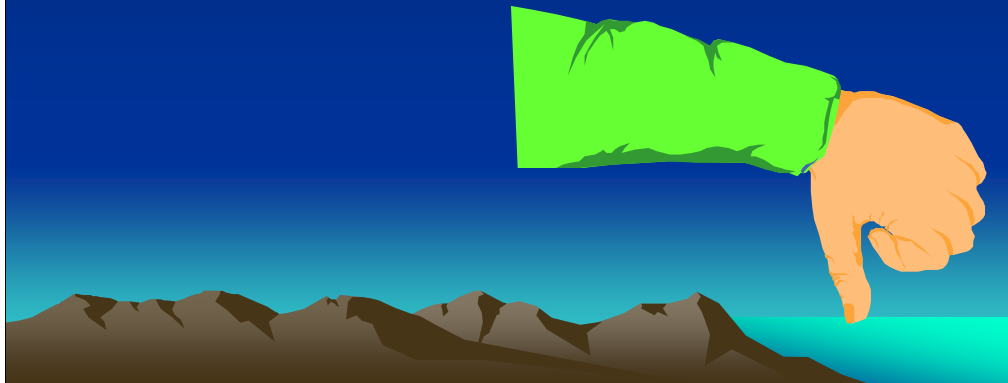
Filling Your Personal Safety Tool Box

- Topics
 - Introduction to Safety Awareness issues
 - “Why People do What They do”
 - Four States & Four Critical Errors That Cause “All” Accidents



Unsafe Conditions

- Unknown
- Failed to correct



•There will always be ‘unknowns’ in any situation. No matter how hard we try to control every single aspect of the surroundings.

Unsafe Acts

- Unknown
- Unable
- Positive reinforcement of negative acts
- Unmotivated



- There will always be ‘unknowns’ in acts, for example, in what an individual normally in the area does or perhaps when others are visiting or new to our area.
- There will be some things we are unable to change. Some tasks are inherently dangerous and cannot be eliminated entirely, although the task can be evaluated to ensure it is conducted as safely as possible.
- Sometimes we unwittingly reinforce the negative instead of reinforcing the positive. In sports they have proven that a basketball team does better at free throws with the instruction ‘You can make the free throws. They are important to the team.’ rather than ‘Don’t miss free throws.’ The emphasis in this case is on ‘miss’ and that’s what happens more often.
- Sometimes folks are unmotivated. As a safety committee you can promote Safety as an Attitude in your area which will help with this.

Combine Two Basic Approaches:

- **Compliance**
 - OSHA – MSHA – NFPA - Laws
 - Rules - Procedures - PPE - etc.
 - Voluntary Standards - AISC
- **Behavior Modification (US Culture)**
 - External
 - Culture
 - Habit
 - Observation
 - Internal
 - Attitude
 - Habit

Significant Resistance

•Compliance in the University system replaces OSHA with LBL757 and directives from the Board of Regents.

•Compliance

- Certainly NFPA, EPA and state such as DEQ...DO apply.
- AISC = Am Institute of Steel Construction

EXTERNAL =

- Culture—maybe ‘cooler’ to be safe in an office than in a warehouse, for example
- Habit & Observation—things/attitudes employees observe in their department/building/area—do you talk safety but your lab/warehouse does not observe appropriate safety practices?

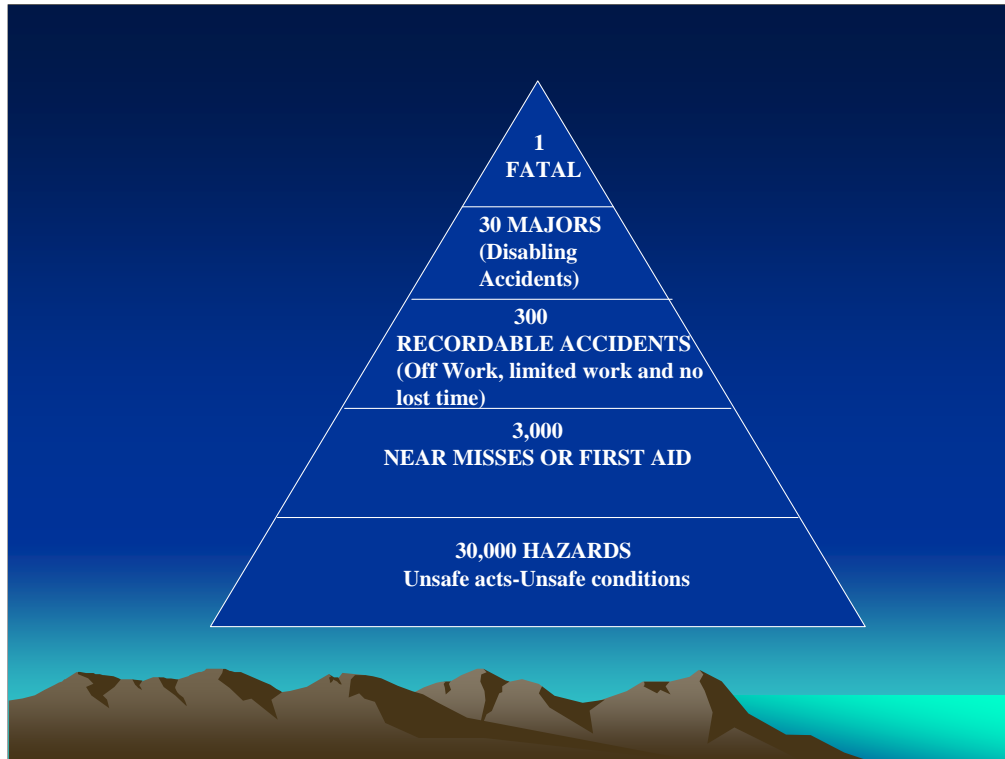
INTERNAL =

- Attitude--Has the individual employee internalized Safety as an Attitude? This can be fostered through Safety Committee efforts.
- Habit—Perhaps the employee is just in the habit or doing things a certain way—Safety Committees and Supervisors can provide evaluation of process and assistance with making changes—EHS is happy to provide assistance

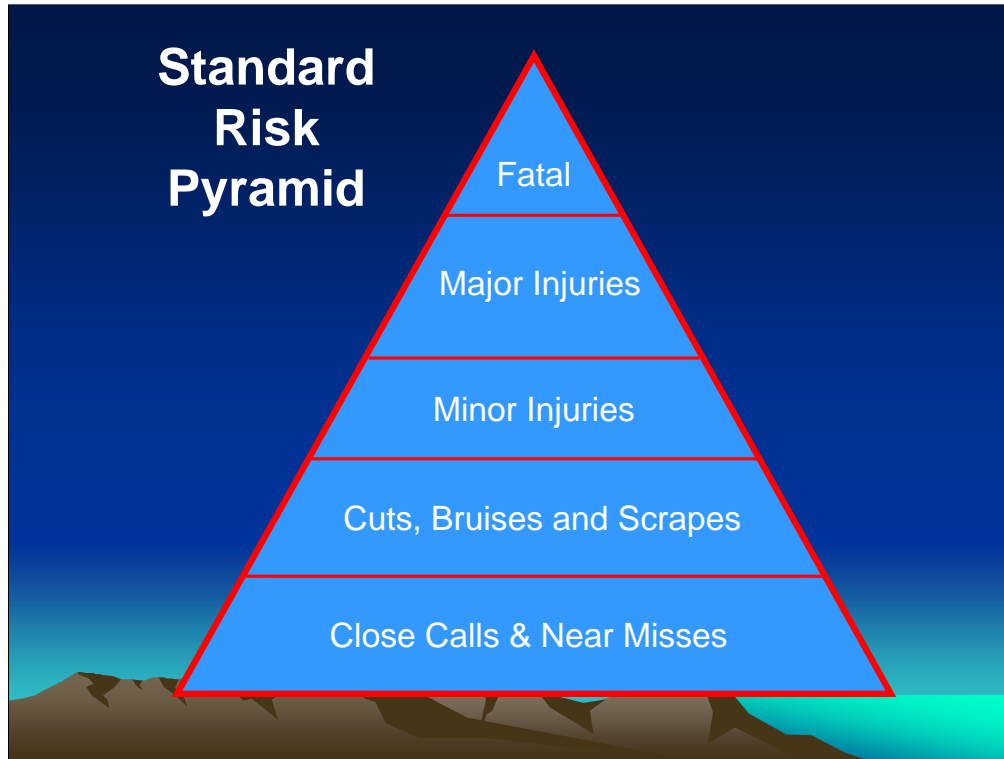
Relationship: Hazard, Behavior and Risk

- **Concept** - Hazards seldom change but the way we interface with the hazard (our behavior) varies and our risk of injury increases or decreases depending on the behavior we exhibit.
- To a great degree we control our own "Risk Triangle"

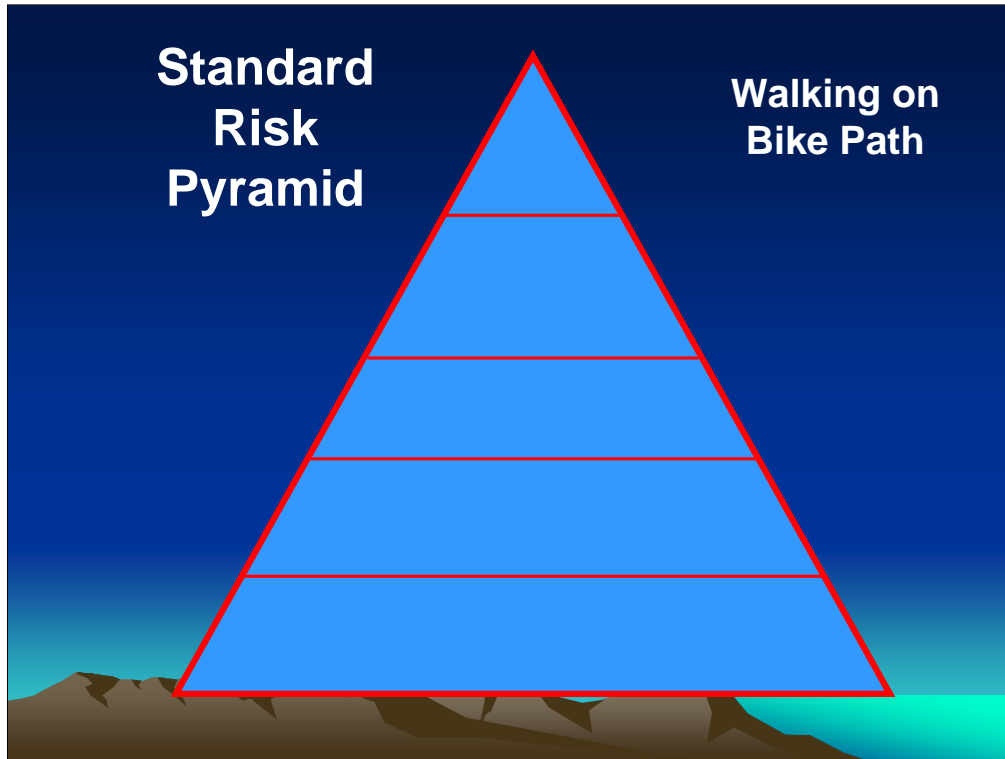




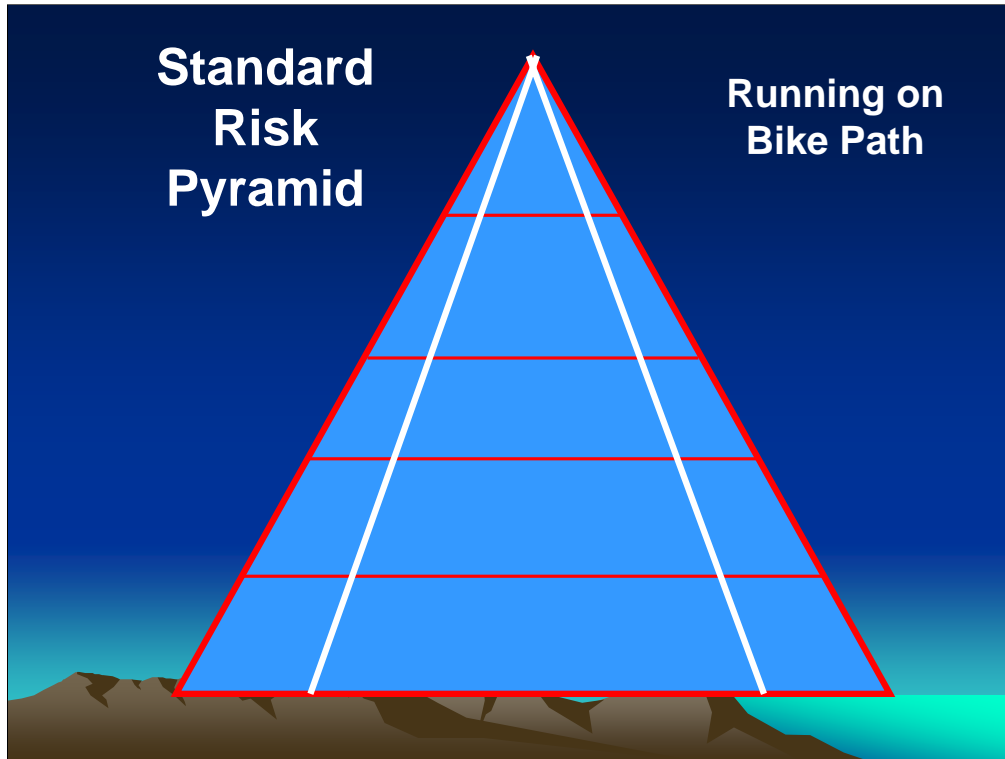
- Widely accepted for over 70 years, the safety triangle serves to illustrate **Heinrich's theory** of accident causation: unsafe acts/conditions lead to minor injuries and...
- This shows an equilateral triangle, and that may not be the case, depending on the safety culture.



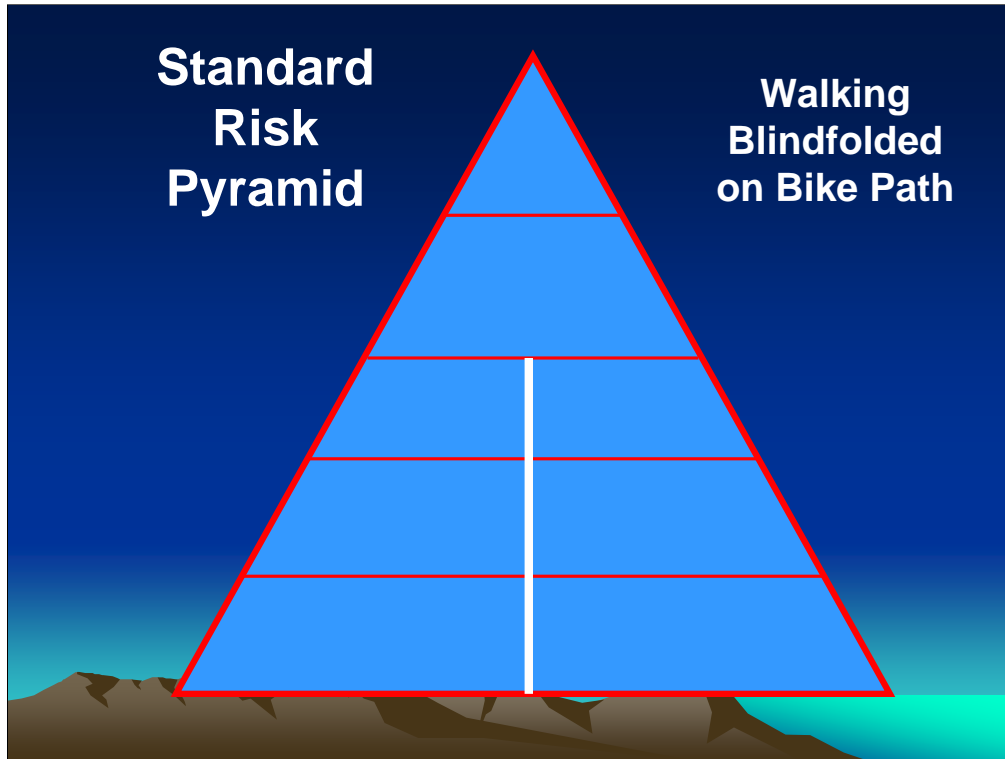
- High level example. While often fatal accidents occur because of ‘unknown’ factors, we certainly want to do whatever we can to prevent such an occurrence.
- One of the most valuable things a supervisor can do, and safety committees can foster, is examination of Close Calls and Near Misses—EHS investigates accidents (involving Workmen’s Comp) and hopefully the supervisors, safety committee or department does as well in an effort to prevent future occurrence.
- The bottom two categories—Near Misses and ‘first aid’ occurrences—employees should be encouraged to report to their supervisor and the safety committees, NOT for the purpose of laying blame BUT for the purpose of doing an assessment of what went wrong and how this event could be avoided in future
- Close calls, near misses, and ‘first aid’ event often become minor injuries or worse.



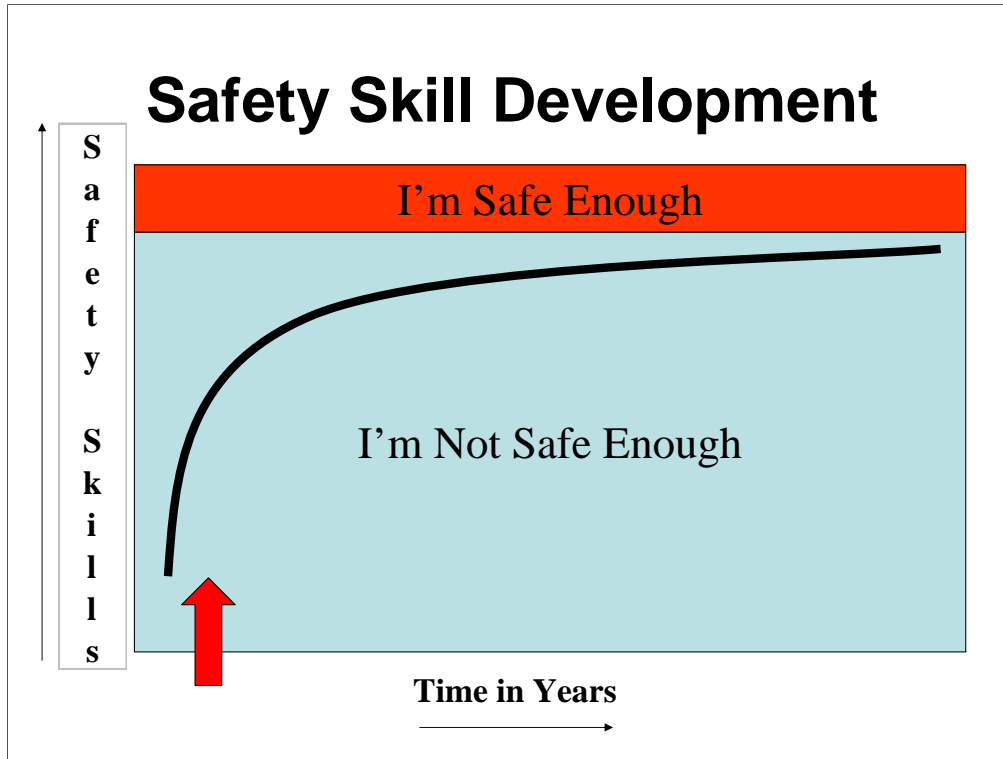
•Just for fun let's use an example most can relate to and see how that relates to the standard risk pyramid when circumstances change. This is an everyday analogy because you all are from different areas. You could actually as a safety committee look at specific tasks/procedures...this is another way of looking at the Job Hazard Assessment hopefully the Supervisors in your departments have done for all employees.



- When you run rather than walk, you add a hazard component that makes the pyramid narrower and the event in the section of the pyramid more likely to occur.

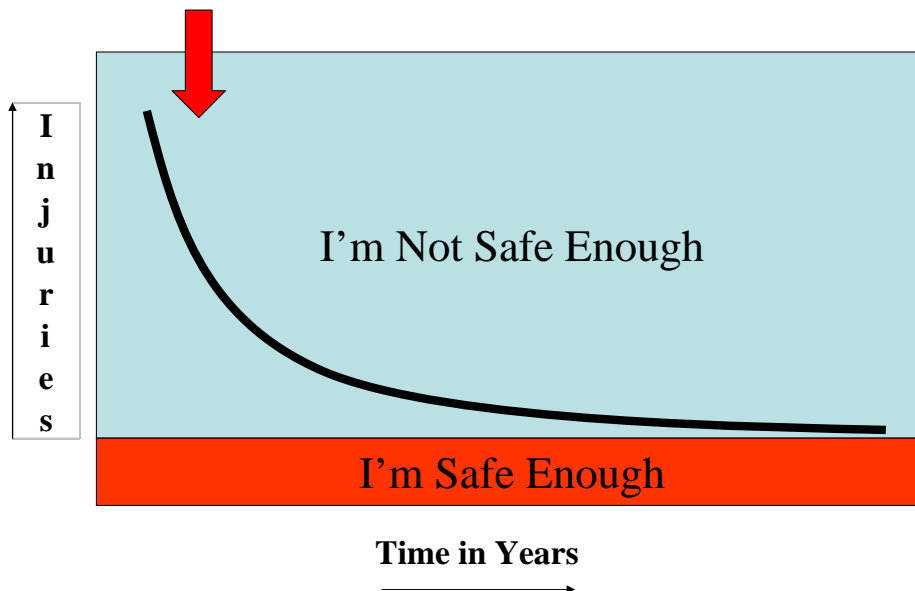


•Walking blindfolded without assistance certainly would make the likelihood very great that you would have close calls or near misses, a 'first aid' event or even a minor injury. You could extrapolate that to increase the likelihood of an event in the top two rows, but assuming the bike path is inherently safe (guard rails and no unprotected drop-offs for example), you probably would go slowly and use great caution so the likelihood is not great you would have a major injury or fatality.



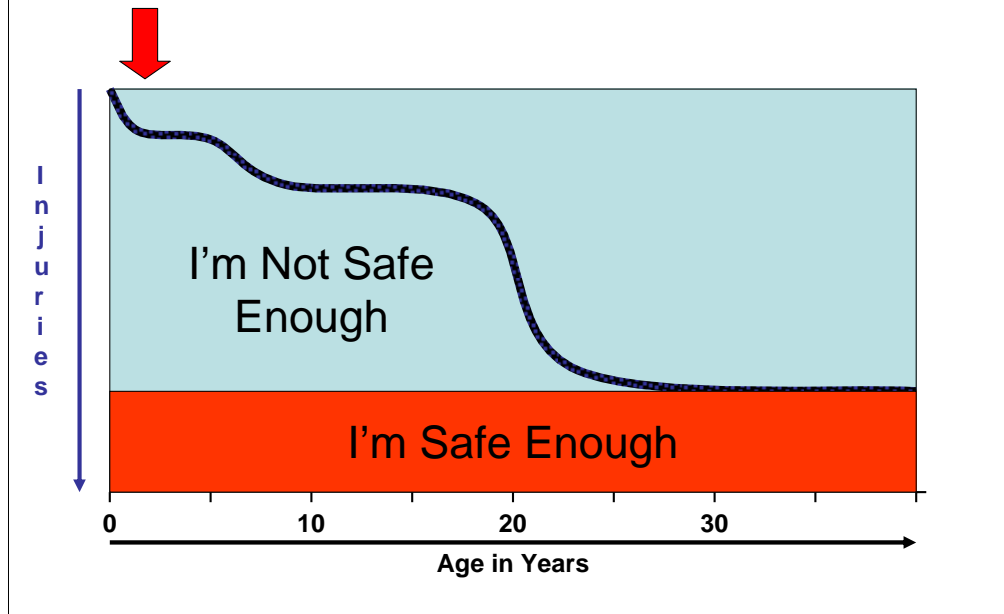
- Most of us have seen that greater safety awareness and skill is something that we naturally acquire as we grow up some improvement driven by knowledge and some driven by motor skills and coordination. But what drives the majority of the improvement?

Injury Decline



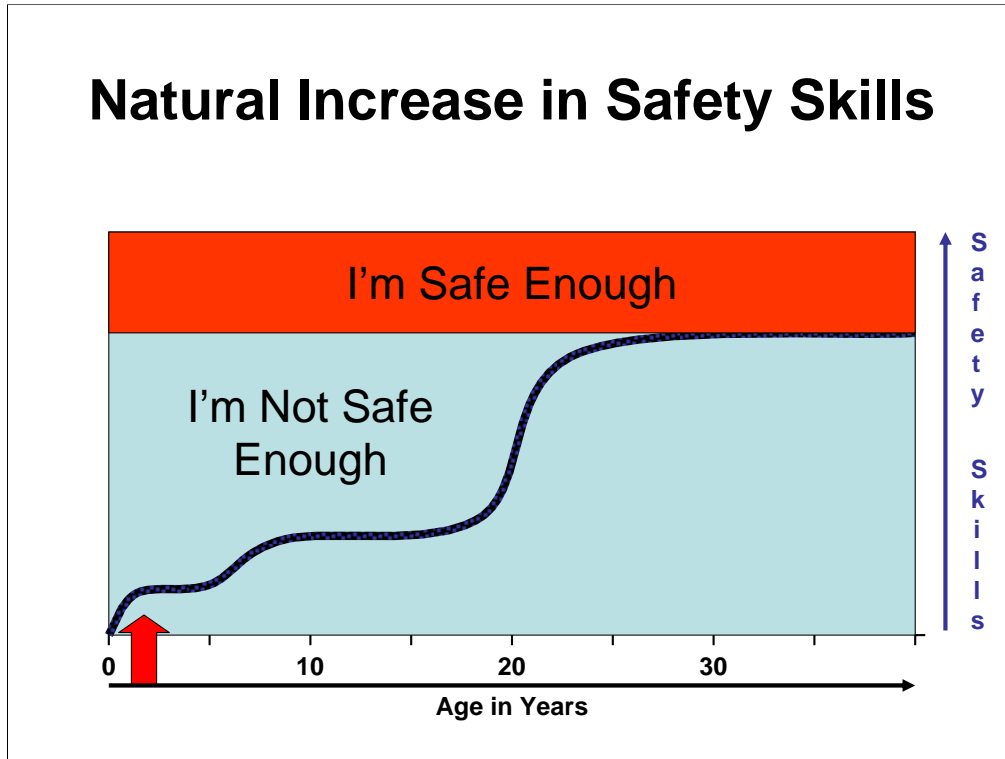
- One of the things that drives our rapid improvement is our injuries. When we are very young we are being injured at an alarming rate. And as we grow we rapidly reduce the frequency of these injuries but not to zero. We individually get to the level (different for each of us) where we feel that we are “safe enough”
- Using our analogy of adult working life and safety committee work, I am NOT advocating you allow folks to get hurt just to prove a point and help with their learning. Rather, use Close Calls, Near Misses and ‘First Aid’ events which DO occur as training and safety evaluation tools.

Natural Decline in Injuries



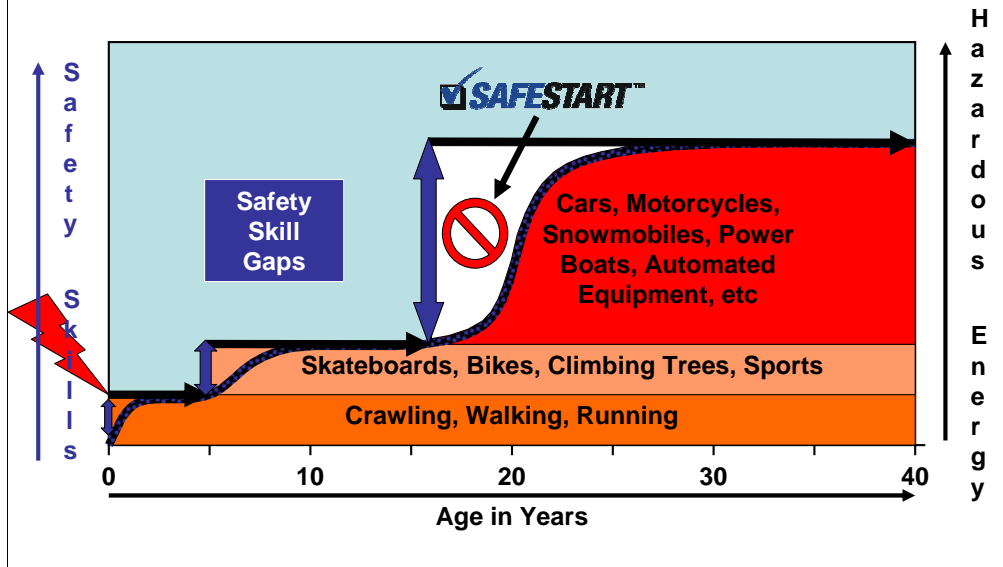
- Again, please think of this as adult working life and safety committee life, because safety committee efforts CAN and DO make a difference.

Natural Increase in Safety Skills



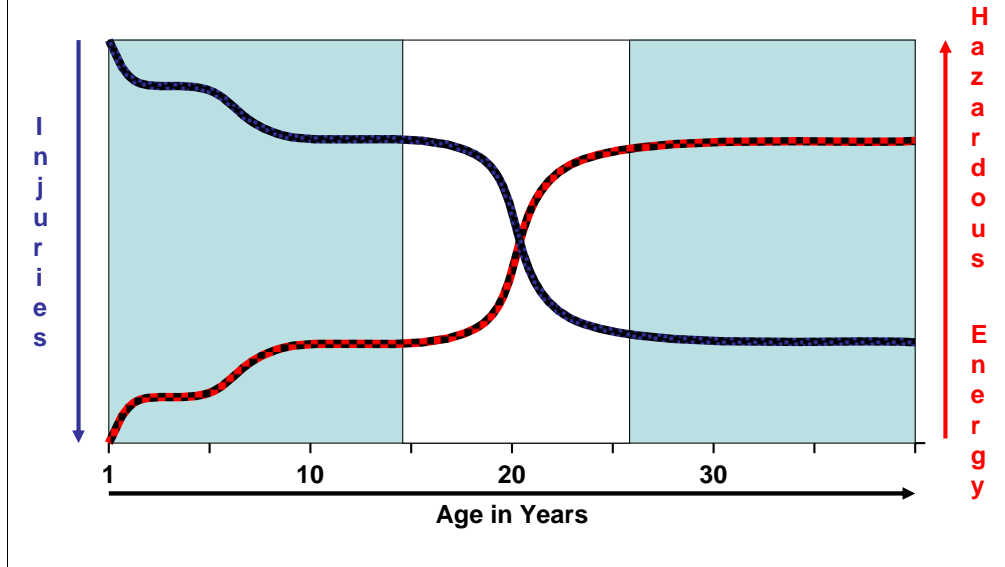
- And this shows the natural increase in safety skills...hopefully NOT taking 20-30 years of our work life!!!

Hazardous Energy Step Changes



- Mentioned earlier that hazardous energy is a component in accident occurrence. This uses the child to adult analogy and we COULD convert that to newly hired/more inexperienced employee, through stages until the employee is more trained and experienced.
- What the safety committees can do in your own departments and areas is help fill in Safety Skill Gaps. There is always a gap...maybe even just periodically providing the EHS Core Training (high level safety information needed by all) is one step you could take.

Hazardous Energy and Injuries



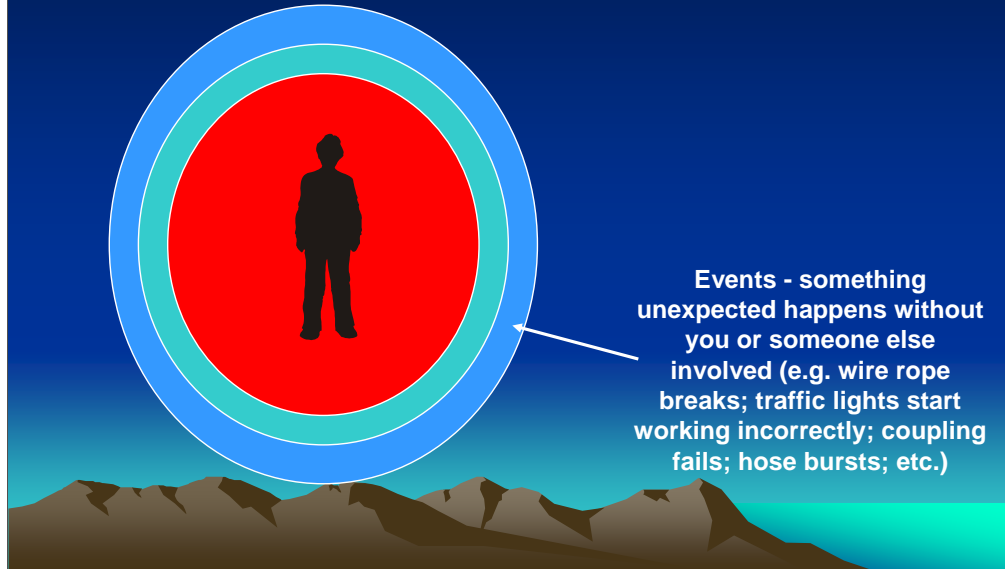
- Recap of what we've been looking at the past few slides...

- We can go back to our own personal risk pyramid (I suggested you might want to do for your department or area) and then based on your own history identify which of their incidents in each category involved equipment failure, the other guy, or the self area (almost everything is always in the self area for everyone)

- An exercise such as this, involving accidents, close calls, near misses, first aid events, gets individuals to see (without blaming anyone) that, for all types of errors, we work on the human factors or states that cause those errors is going to have the most significant impact on keeping them safe in the future. In other words, we go down even one level further on the risk pyramid and add human factors.

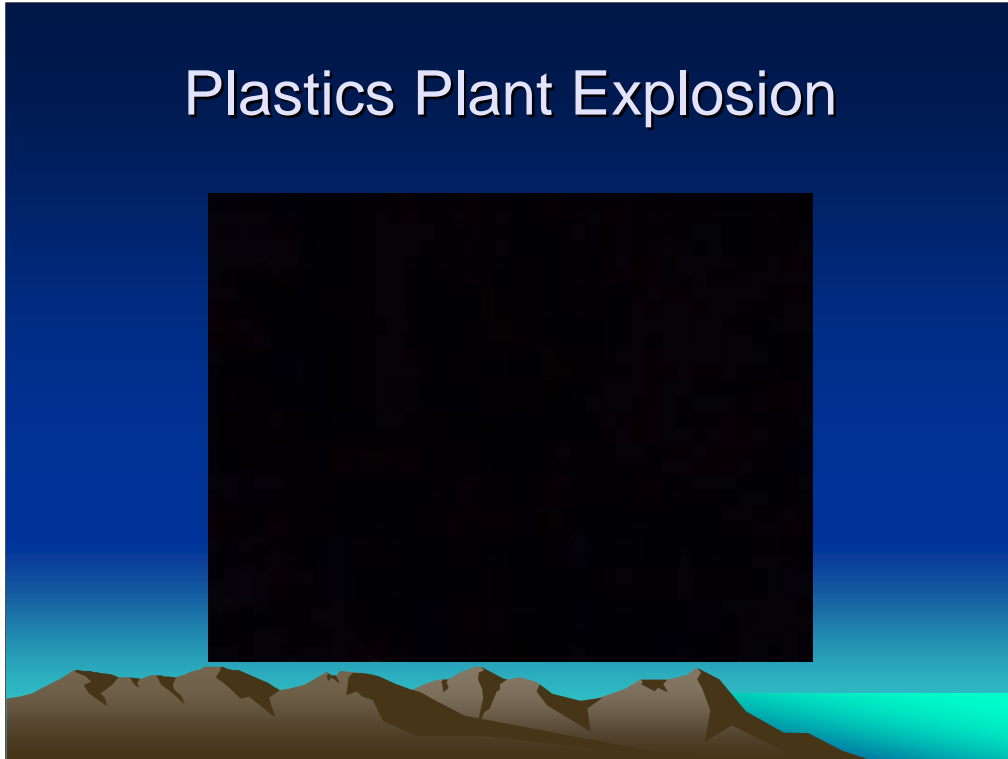
- The self area often is the likely cause of the vast majority of everything else above in the risk pyramid.

Sources of Unexpected.....



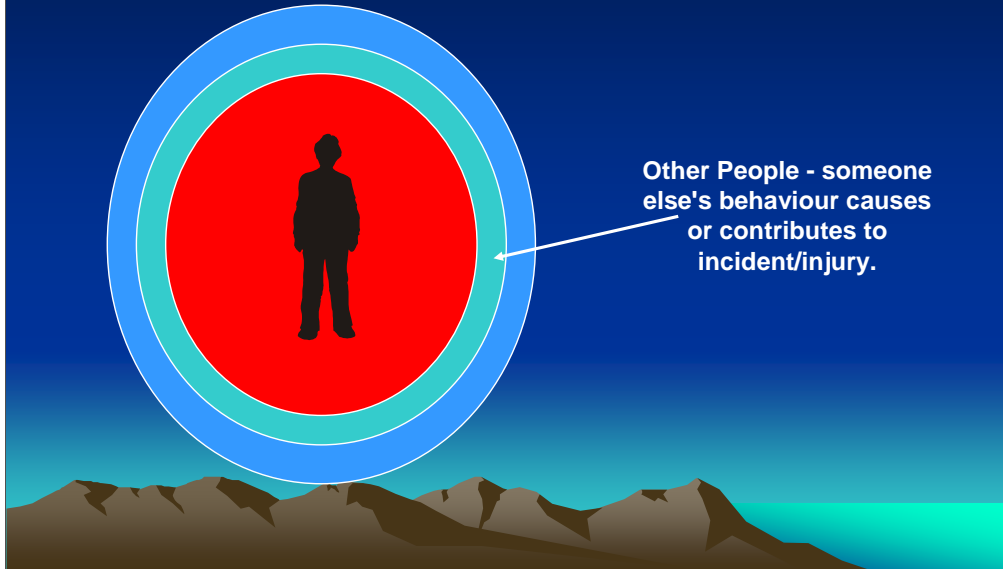
- After we have asked the individuals to produce their risk pyramid we will review the three “Sources of Unexpected”

Plastics Plant Explosion

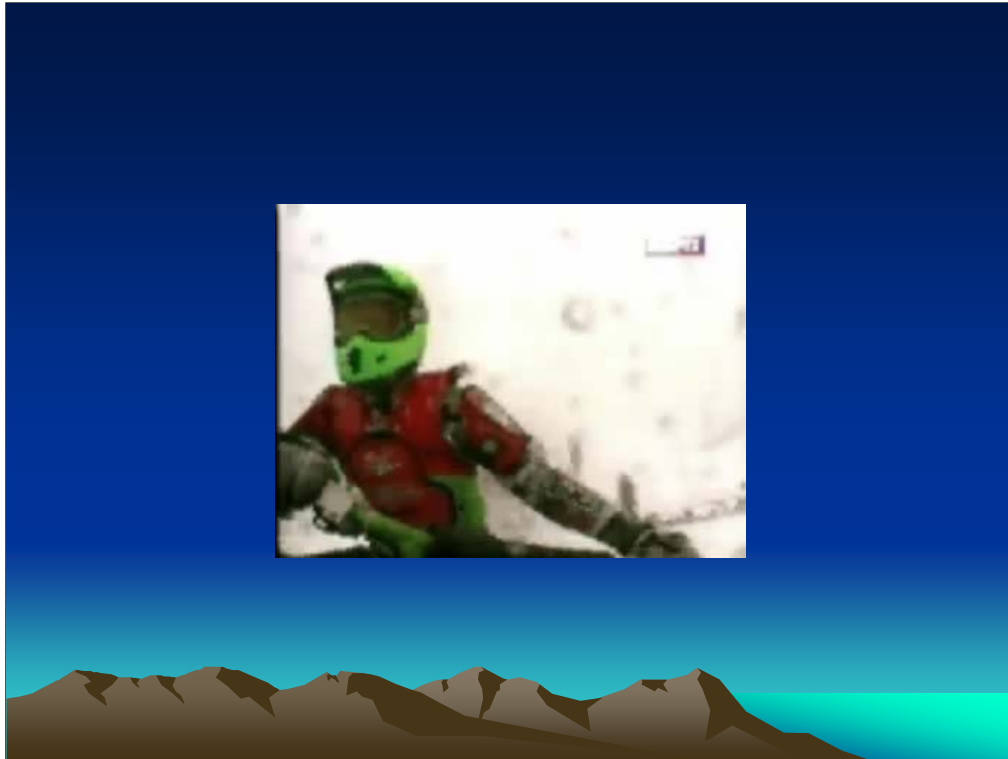


•You can be injured by equipment failure as this example illustrates. This is a clip from a Plastics Plant Explosion. Many people were injured through no lack of safety of their own.

Sources of Unexpected.....

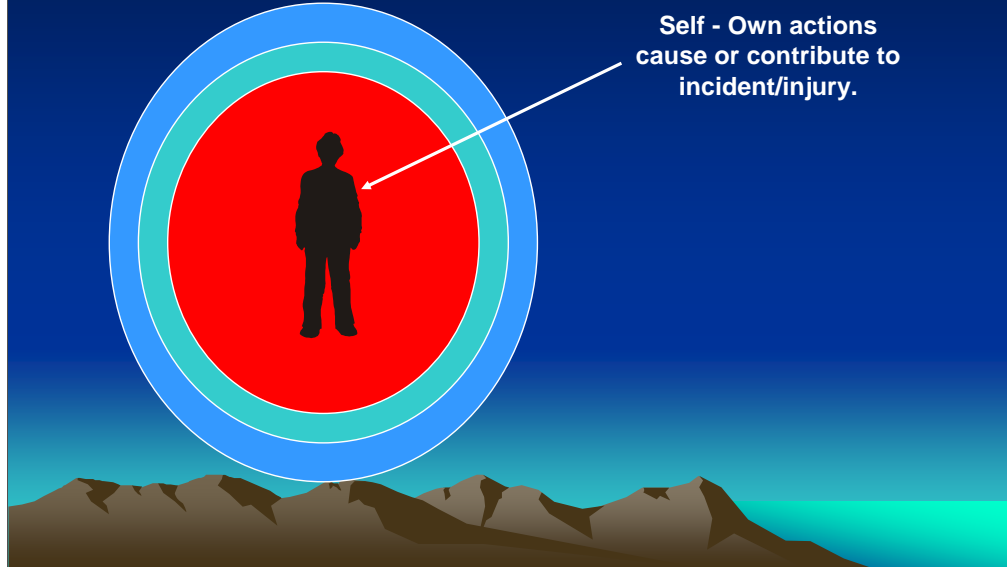


- Behavior of others is important. We need to all develop an attitude of safety that encompasses not only ourselves, but our co-workers. AND we can take this all home...approximately 85% of accidents occur in the home, rather than at work!!!



•And you can be injured by something the other guy does. This clip shows a snowmobile event where the person in front has not idea what is behind him. He was injured but not killed in this incident.

Sources of Unexpected.....



- Have you ever heard the saying 'We are our own worst enemy'? That is very true...but we CAN do something about THAT.



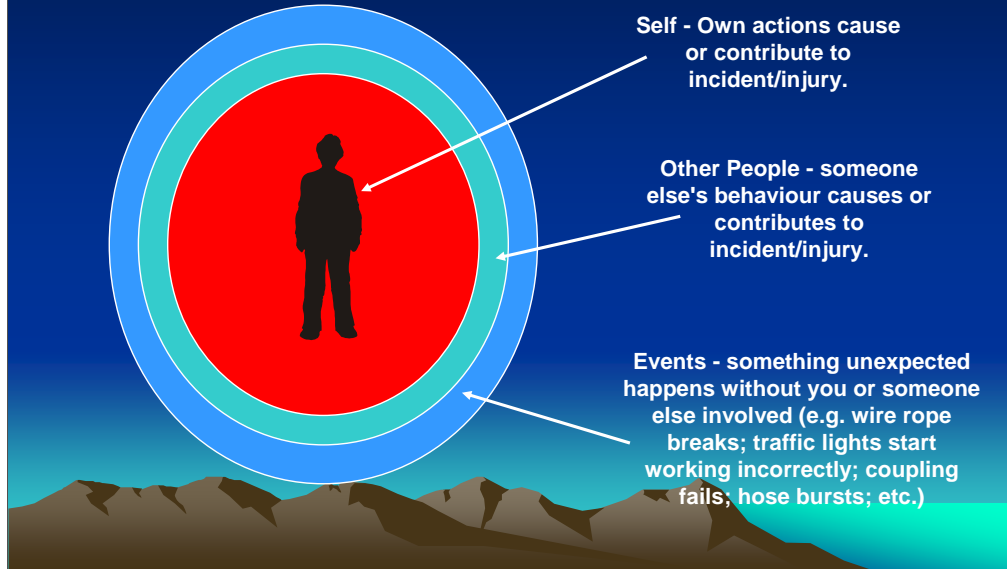
•And you can be injured by something unplanned or unexpected that you do yourself as this example illustrates.

Questions for group about video:

Q1 – Was this accident caused by **lack of training** regarding this specific procedure? A1 – Of course not. He's so good at doing this that he represents his country. What do you suppose he was thinking about when he was running towards the vault? (medals, victory speech, sticking the landing). It wasn't making sure he hit the springboard.

Q2 – Is it an equipment failure? A2 – A lot of people immediately **want to blame the equipment** (the springboard MUST have had talcum powder on it and he slipped). But if you watch closely you will see **he never** hits the springboard.

Sources of Unexpected.....



•Brief recap.

There Are 3 Types of At-risk Behavior

- Conscious or intentional behavior
- Habitual behavior
- Unintentional behavior

Even if people are deliberately willing to increase the risk of a situation, hardly any of them are deliberately trying to get hurt. Something unexpected or unplanned always has to enter the equation.

- Now let's look at at-risk behavior.

Conscious - Intentional



- I would bet that these guys were just thinking about how to make things happen...rather than how to be injured on the job.

Unintentional



- Wonder how many times the operator loaded trucks when the truck was actually there...or perhaps this is an issue of setting a brake.

Habit



•This is an example of an unsafe habit. The area was cordoned off and clearly marked. The huge machines are not clearly able to see smaller vehicles. This was a ‘no access area’ for regular vehicles such as the red truck. The operator, however, took this shortcut often...don’t we all sometimes do things in an unsafe manner ‘just this once’ or ‘to save a few minutes’?



•The driver was killed. Are our unsafe habits worth the few minutes or the bother? Food for thought.

The Four Critical Errors

- Eyes Not on Task(s)
- Mind Not on Task(s)
- Being in The Line-of-fire
- Poor Balance/Traction/Grip

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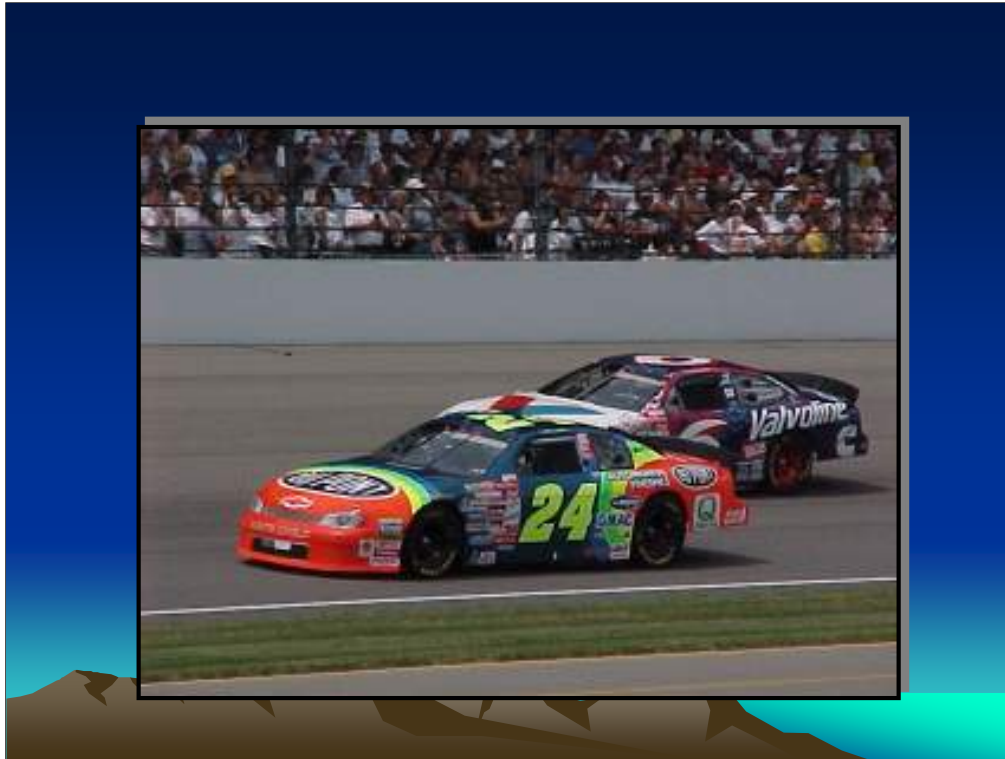
Nail – Exit – Car Door - Ice

- Four critical errors we all do can lead to problems
- CERT is Carnegie Mellon Computer Emergency Response Team
- Examples using 4 items at the bottom.

The Four States

- Rushing
 - Frustration
 - Fatigue
 - Complacency
 - Cause or Contribute to the Four Critical Errors That Cause “All” Accidents
- © CERT

- There are 4 states we can be in that contribute to critical errors.



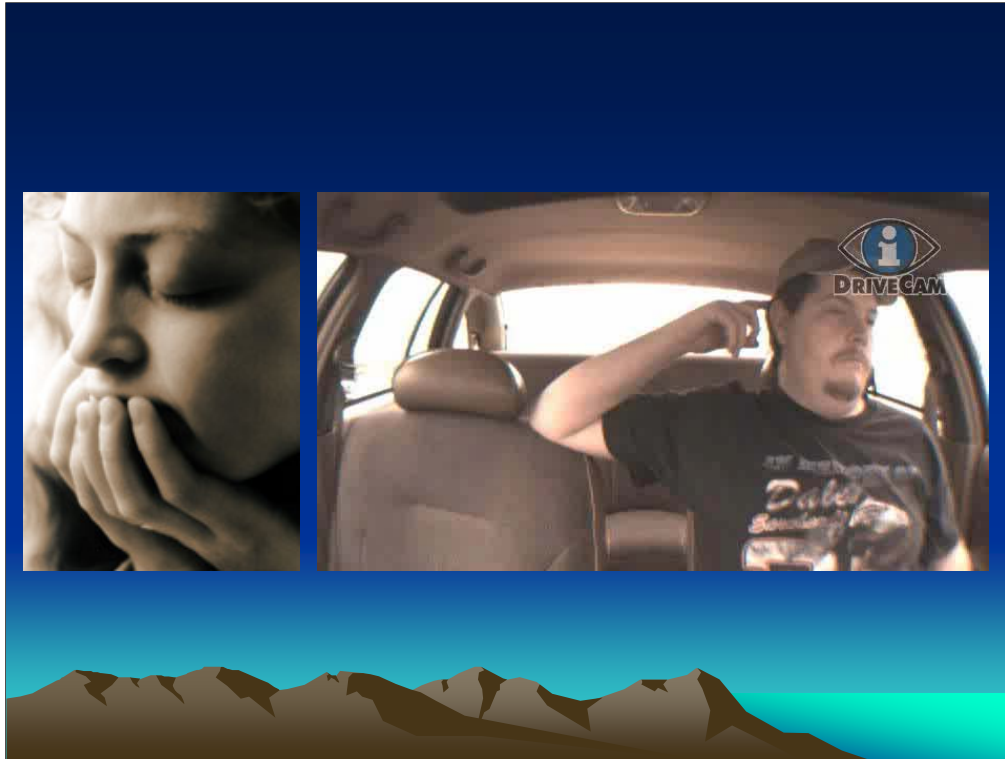
•Rushing – going faster than you are used to or have “habit strength” for—Have you ever seen the TV clip of ‘I Love Lucy’ or ‘Lavern & Shirley’ where they are working on a factory assembly line and can’t keep up? This is hysterical as candy or the beer stack up and cause a mess...but in real life this would not be so funny and certainly is unsafe.



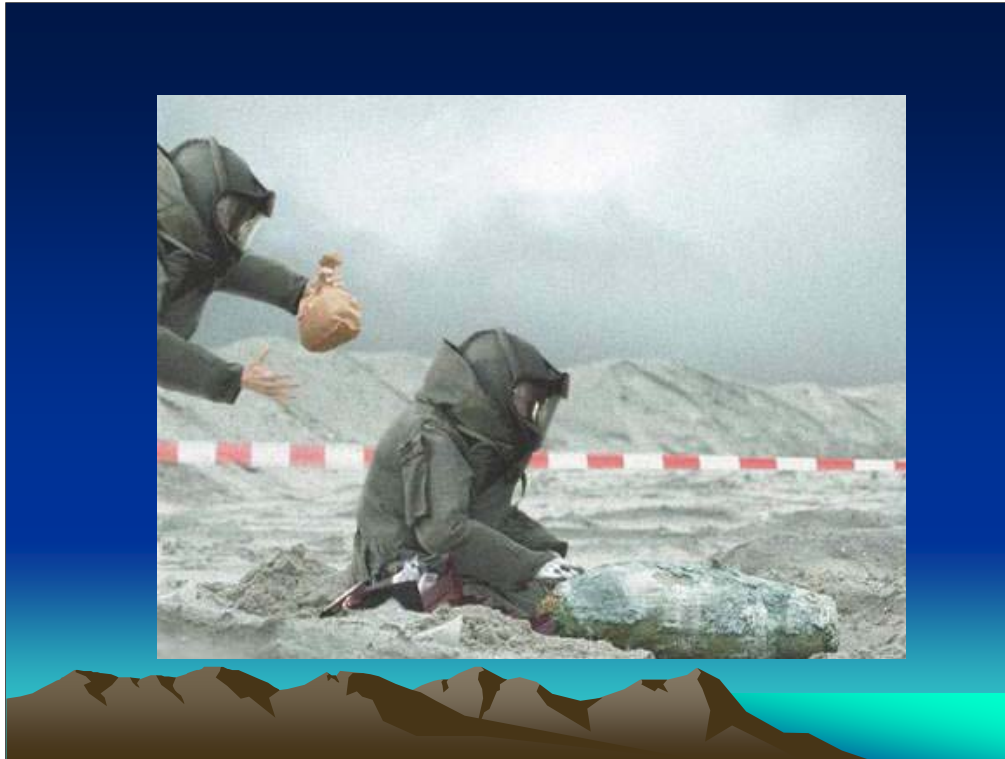
- Rushing – doing too many things at once
- Multi-tasking in our society is considered a plus and often job advertisements request applicants who can ‘multi-task’. BUT this is not necessarily a good thing. There are times when it is appropriate and times when trying to do too many things at once can lead to accidents and injuries.
- Talking on cell phones in this country is one example we all are familiar with...even just walking down the street talking on a cell phone and certainly driving when our attention is not 100% focused when hazardous energy is present.



- Frustration – funny film but the last thing the man does is kick a cathode ray tube – about the equivalent of kicking a bomb
- Frustration with equipment or general job frustration both can lead to unsafe practices.

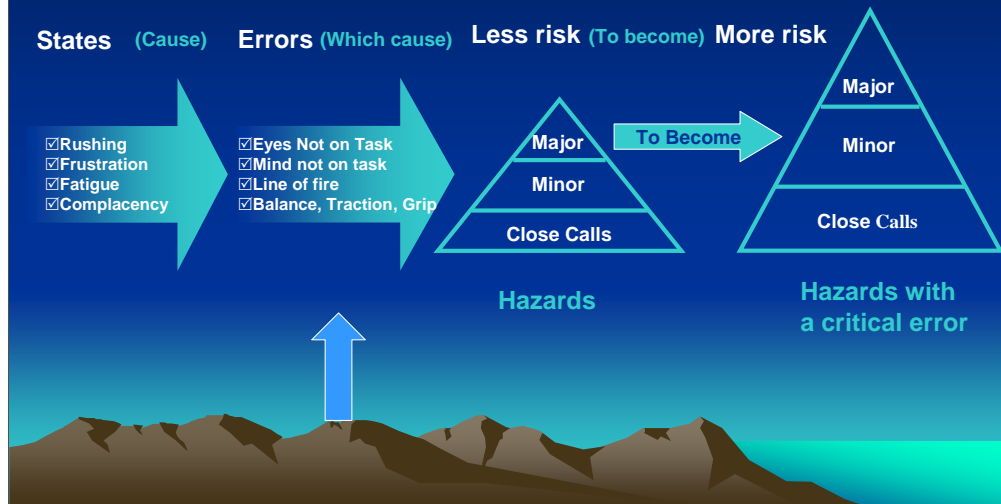


- Fatigue – how many people have fallen asleep or almost fallen asleep while driving
- Can you tell when you are fatigued? Did you STOP or think you needed to drive on? Food for thought.
- And this gentleman is NOT wearing a seatbelt. Do you and your employees ALWAYS wear seat belts? Most accidents happen within 25 miles of home, so 'short trips' are no excuse to avoid buckling up.



- Complacency – Even people who work around extremely large amounts of hazardous energy can become complacent with these hazards over time
- This is a bomb squad. Sometimes employees get complacent and horse around, even if their jobs/tasks are very hazardous.

Risk Patterns



- So from a coaching standpoint we train people to see and “trigger” on states before they make errors and increase the risk of injury or incident.

Critical Error Reduction Techniques © CERT

- **Self Trigger on the State**
 - to prevent or avoid making the error
- **Analyze Close Calls and small injuries**
 - to prevent big ones – Learn from our OOPS!
- **Observers Others for the State to Error Patterns**
 - To avoid the risk
 - To prevent complacency
 - To recognize and intervene with co-workers
- **Work on our Habits**
 - Personal safety skills

Basic Safety Skills Are Learnable & Transferable

•This is a list of critical error reduction techniques. The main point is that basic safety skills are both learnable and transferable—you can teach others without their being injured.



- Conclude with this clip you may have already seen on the internet. How many times do you suppose the cashier has stepped back just as she does here with no adverse consequences? How many times do you think the employees going to the basement storeroom have done that same task with no adverse consequences?

- I hope this presentation has given you, Safety Committee Chairs, something to think about and some ideas to take back to your committees to use in your own safety committee efforts.

- If you are interested in a copy of this presentation, visit with me either after we are finished today, or by phone or email.