

Summary Training Module 1 – Human Performance -Cognitive Concepts

How We Think About Safety



Cognitive Concepts – How We Think About Safety at Work

Our attitude towards safety is shaped by many factors. Previous experiences, near misses or injuries, or even our perception of what management prioritizes on the job.

Sometimes management deficiencies are not obvious, in some cases values differ and this can create errors in judgement. An employee may feel that schedule is the only priority and that they must take safety shortcuts to “get the job done”. This is not the Ampirical way.

Unsafe Actions or Conditions

Often unsafe acts or conditions are the result of human errors. These can be intentional decisions or unintentional errors because of other pressures. Preventing these errors is the focus of human performance training. Mistakes occur when we fail to pre-plan for the risks, fail to maintain situational awareness, or in some instance choose to violate a known safety requirement.

Choosing to violate a safety requirement is most often the result of competing thoughts about the perceived risk and outcomes of the action. Some may make an excuse or justify the shortcut to convince themselves the risk is worth it. In other cases, unsafe behavior may be caused by inconvenience, attitude, or pressure. Recognize detrimental attitudes in yourself and others (pride, invulnerability, not me). The Ampirical Way means keeping safety as a value over any priorities on the project.

Summary Training Module 2 – Modes of Performance - Learned Behavior

What Creates Safety Value in You?



Learned Behaviors

Experience shapes our mindset towards safety and influences our daily work. Familiar skill-based work activities often expose overconfidence or the inability to assess true risks to the worker and others. You've heard the phrase "I've been doing this for years and never got hurt". Lack of injury is not an indication of safe work.

Rule-based work is used most for critical tasks, checklists, or infrequent activities but creates risks due to infrequent use or habit.

Learning & Applying Rules Reduces Risk

Knowledge-based performance is most often utilized when workers are unfamiliar with the task or situation. This requires more focus and attention to detail. A worker relies on his perception of the current situation and past experiences to diagnose potential issues and address risks. Without strong problem-solving skills this experience can result in lower performance, so communication and accurate information is key to success. Knowledge based endeavors have one of the highest rates of errors and for this reason many organizations migrate to Rules-based performance.

So, whether relying on skills, rules, or knowledge to complete the task the overarching lesson is to understand human tendencies to make excuses to take risks; resist established rules and cross-checks to save time; and to short-cut diagnosing risks in lieu of perceived time savings or convenience.

The Ampirical Way relies on attracting and retaining skilled craftsmen with the skills, training, knowledge, and professional maturity to recognize at-risk behaviors in themselves and others and to actively choose to comply with the rules. Professional craftsmen understand the importance of asking a question, seeking guidance, and stopping mid-task if something seems unsafe or has the potential to injure. Being a Pro in your work means you have the skills and the maturity to complete the job incident free.

Summary Training Module 3 – Proactive Approaches to Reducing Errors

Preparing For Success or Error Recovery



Are We Learning from Near-Misses & Mistakes?

When embracing human performance best practices, the anticipation, prevention, and/or recovery from active errors on the jobsite is critical. Do we openly discuss errors? Are employees willing to admit near misses without fear of disciplinary actions or other negative outcomes? If not, we are missing the opportunity to identify error traps and to create lessons learned for the benefit of the whole project.

Errors May Occur but How We Recover Is Key

What is a JSA morning meeting or review? It is a planning session. A meeting designed to discuss the planned activities and possible risks on the job today. It is the opportunity to engage every worker in a conversation to ensure they understand the safety rules, the critical steps of the work, and avoid risk by mentally walking through the job tasks and verbally conversing with all members of the crew in an exchange of ideas and concerns. Part of this discussion can involve task assignments. Making sure the right people are on the right tasks to leverage strengths or acknowledge weaknesses.

Why do we walk through and inspect activities on the jobsite? This is a performance evaluation. Identifying behaviors, actions, or errors and correcting them before an incident occurs. This is an opportunity to evaluate equipment operators and others' situational awareness. Are people in the blind spot or no-zone? Are operators or drivers making moves without a spotter or without verifying clearance and safe travel? Is each member of the crew looking out for the person next to them and willing to speak up to address a safety concern?

What are you going to do about it? Silence is consent. If you see an unsafe act and ignore it – you've condoned that behavior. Addressing an unsafe act need not be confrontational. Use questioning manners and allow for explanation. The Ampirical Way means watching out for one another and stepping up.

Summary Training Module 4 – The Ampirical Way – Team Approach to Tasks

You Are Your Brothers Keeper. This Is Not a Spectator Sport.



Did You Ever See a Situation and Later Think “I Should Have Said Something”?

We spend a large percentage of our lives at work. We rely on a safe work environment to avoid injury, support the family, and to grow in our profession or trade. No one comes to work to get injured. How many times have you seen a coworker take risks or do something very unsafe and you just shook your head? Why? What kept you from speaking up? Was it fear? Are you shy? Do you not care? The Ampirical Way requires action.

Working On an Ampirical Project Requires Active Safety Participation, Not Just Presence or Attendance

Your work is important. You are here because we recognize the skills and potential you bring to the project. The Ampirical Way means you are emotionally and cognitively engaged in the work – you care. You care about the quality of your work and the safety of the project and your coworkers.

Attention to detail, situational awareness, and being actively engaged in your surroundings means your head is on a swivel. You notice things. You are not afraid to speak up when quality or safety is at risk. You don't tolerate behaviors and you know that unsafe equals unprofessional. You take pride in your work.

We want to hear your concerns. Your observations. Your input in the safety culture of the project. Silence is consent. Are you really content with unsafe conditions and risks to your personal safety?

Every safety meeting, JSA review, or safety session commit to bringing something to the table. Be a contributor to a safer more aware culture. Lead by example and show others that you are professional. Peer check and mentor when you find issues.

Summary Training Module 5 – Human Performance Tools for Success

When In Doubt Stop. It's Okay to Hit the Pause Button



Isn't Human Performance Just Fancy For "*Don't Get Hurt*"?

No. What we are talking about in this series is a change of mindset. A different way of thinking and acting will increase performance, reduce risks, and improve your work experience with Ampirical. It's so much more than "don't get hurt".

When we hear the word "asset" most of think tools, equipment, trucks, materials. Our most valuable asset is our people. This series focuses on the greatest asset we can manage.

Attitude And Approach to Safety Are Key

Being aware of your surroundings, proximity of equipment, excavations, and other hazards forms the basis for hazard recognition and mitigation. You can't avoid it if you didn't know it was there.

If your supervisor or manager spends more time in the trailer or the truck than interacting with the crew – trouble is brewing. In the absence of clear instructions, assumptions take over. Assumptions lead to poor safety attitudes and perceptions that safety doesn't matter on this project.

The Ampirical Way means engaging in the safety process. Asking questions for clarification. Developing a questioning attitude rather than remaining silent. Participating in JSA development and having input in the process. Speak up and be a part of the solution rather than a spectator.

If you are an experienced tradesman or craftsman, be the problem solver that others look to for guidance. Base your problem solving in safety over all other external factors (time, cost, convenience, perceived priority).

It doesn't do any good to earn it if you aren't around to spend it. Take ownership of your project and have the courage to hit the pause button when something seems risky or unsafe. You need not be a supervisor to be a coach and mentor your team.

Summary Training Module 6 – Human Performance Communication Tools

When Communication Becomes Effective – Checks and Cross Checks



Do You Know the Difference Between Hearing and Listening? What About the Difference Between Speaking and Communicating?

Hearing – the ability to hear a sound

Listening – giving attention to a sound

Speaking – expressing thoughts in
each language

Communication – an exchange of
information, ideas, or news

Are You Going Through the Motions or Engaging?

When attending a JSA morning meeting or pre-task planning session are you engaged in it or just present? Are you simply hearing the words or are you listening to the content? When asked to participate are you speaking at the supervisor or are you communicating with him/her?

We all acknowledge that simply being present for a meeting can be a huge waste of time. Especially if you don't engage, listen, or communicate. Simple attendance is not the objective. The Ampirical Way challenges you to step up, speak up, and lead by example. Attending a JSA morning meeting will not reduce your risk on the job site today. In fact, if you aren't engaged in the topic, you probably forgot what was said before the crew was prepared to begin work.

JSA's, crew instructions, and training must include human performance discussion notes and feedback regardless of the tool selected for the task review or oversight:

S.A.F.E.R.; S.T.A.R.; 2-min. review; Stop & Seek; Questioning Attitude; Critical Step Review; Coaching; 3-way Communication; Peer Checking; or Procedure Use

Avoiding error traps today is particularly challenging due to the economic pressures all industries face. However, Ampirical Solutions believes employee safety is never yielding value and therefore will use every Human Performance tool at our disposal.

Summary Training Module 7 – Human Performance Tools for Success

The Basis for Improvement – 5 Key Principles



#1 Human error is normal

Error is so normal, it's not even interesting and it's never causal

#2 Blame fixes nothing

Blaming people stops us from learning about and fixing the problem(s)

#3 Learning is vital

Learning is a very important component of creating system reliability

#4 Context drives behavior

Individual behavior is a function of the organization's systems, processes, culture, and complexity

#5 How management responds to failure matters

Responding positively increases awareness and provides an opportunity for learning.

Attitude And Approach to Safety Are Key

Safety is not defined by the absence of accidents, but by the presence of capacity.

Workers aren't the problem; workers are the problem solvers.

We don't constrain workers from creating safety, we ask workers what they need to do work safely, reliably, and productively.

Safety doesn't prevent bad things from happening, safety ensures good things happen while workers do work in complex and adaptive work environments.

Projects have many moving parts and complex tasks intermingled with common basic everyday tasks. Workers must constantly adapt to changing priorities and evolving workspaces. To assume all workers know and understand safety values in each task is a recipe for unintended consequences.

Open, honest, direct communication with multiple crews, regarding tasks, changes in the environment, new and common hazards, and soliciting individual input to identify error traps is essential. Preaching safety is not the solution. Engaging the workforce in meaningful dialogue is.

Summary Training Module 8 – Human Performance Tools for Success

The Basis for Improvement

Human error is not a cause of failure. Human error is the effect, or symptom, of deeper trouble. It is not random. It is systematically connected to features of people's tools, training, tasks and operating environment. Human error is not the conclusion of an investigation. It is the starting point.

To create safety, you don't need to rid your system of 70% human errors. Instead, you need to realize how people at all levels in the organization contribute to the creation of safety and risk through goal trade-offs that are legitimate and desirable in their setting.

Rather than trying to reduce "violations", seek to understand from workers about the gap between work-as-imagined and work-as-done — why it exists, what keeps it in place and how it relates to priorities among organizational goals (both stated and unstated).

Using Tools to Influence Human Behavior

Pre-Job Briefing – Reviewing tasks, potential hazards, and step-by-step procedures before starting work.

Two-Minute Rule – Taking a short pause to assess the immediate work environment for unexpected hazards.

Three-Way Communication – Ensuring clear communication by repeating instructions and confirming understanding.

Procedure Use & Adherence – Following established procedures consistently to reduce errors.

Self-Checking and Peer Checking – Verifying one's own work and having colleagues review critical steps.

Independent and Concurrent Verification – Cross-checking tasks independently or simultaneously to catch mistakes.

Stop When Unsure – Encouraging employees to pause and seek guidance if uncertain about a task.

Post-Job Review – Reflecting on completed work to identify lessons learned and improve future performance.

Use communication tools to foster a conversation. Listen for error traps and address gaps in perception or understanding of safe work values and expectations.

Summary Training Module 9 – Human Performance Tools for Success

The Basis for Improvement – Human Performance Traps



Ask Questions to Elicit Thinking About Risks

Did anything in your work surprise you today?

- Tell me about the last time you had to adapt or veer from the job instructions?
- What's the worst thing that could happen and What can be done to ensure it never happens?
- What is the best and worst part(s) of your job?
- If you had \$1MM, what would you change?
- Is there anything I can do to improve your job?

Error Traps Influence Behaviors and Decisions

Task Demands:

- Time Pressure
- Unclear goals

Work Environment:

- Distractions
- Confusing displays, controls, visual cues

Individual Capabilities:

- Task Unfamiliarity
- Illness or Fatigue
- Substance Influence (drugs, alcohol, prescription)

Human Nature:

- Complacency
- Mental Shortcuts/Biases
- Non-Compliance

Consider how this error traps can affect decision making and shortcuts increasing risk and the probability of an incident. How we communicate safety as a value over a priority is key. Values are deep rooted core beliefs cultivated over many years. Priorities change from any number of outside influences. Ex: time, money, deadline management, perceptions.