7TH ANNUAL HUMAN PERFORMANCE WORKSHOP

John Idzior, Principal Engineer

August 8, 2024 | 9:00 a.m. to 1:00 p.m.

RELIABILITY FIRST

WELCOME AND LOGISTICS

All lines have been muted

This WebEx event is not being recorded

Please submit all questions through Slido plugin – RF staff will be monitoring

Slides will be emailed to attendees after the event

AGENDA

Presentation	Presenter	Time (Eastern)
Welcome and Introductions	John Idzior, ReliabilityFirst	9:00 - 9:05
HP Metrics & Why We Are Here	Johnny Gest, ReliabilityFirst	9:05 - 9:35
Delivering the Right Stuff	Andrew Dingee, System Safety	9:35 - 10:35
Break - 15 Minutes		10:35 - 10:50
How did they show up?	Summer Rae, Summer Speaks	10:50 - 11:30
Enhancing the Effectiveness of Job Briefings	Stephen Kerry, KnowledgeVine	11:30 - 12:20
HP and BES System Events	Dwayne Fewless, ReliabilityFirst	12:20 - 12:55
Closing Remarks	John Idzior, ReliabilityFirst	12:55 - 1:00

RF ANTI-TRUST STATEMENT

It is ReliabilityFirst's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct which violates, or which might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every ReliabilityFirst participant and employee who may in any way affect ReliabilityFirst's compliance with the antitrust laws to carry out this policy.

RF HUMAN PERFORMANCE CONTACTS

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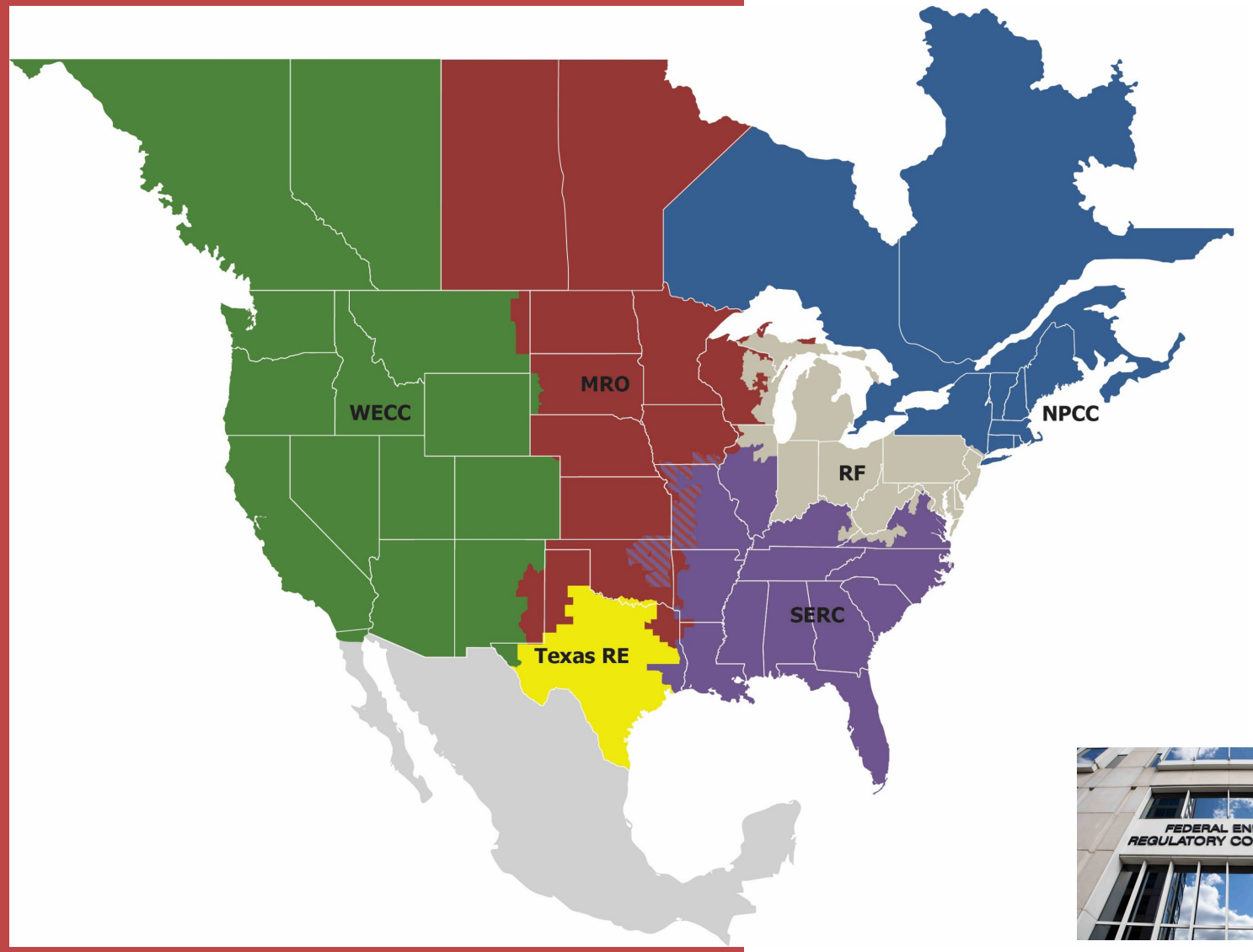
HUMAN PERFORMANCE WORKSHOP
WHY ARE WE HERE?

Johnny Gest - Manager, Engineering & System Performance

Aug. 3, 2023

RELIABILITY FIRST

ELECTRIC RELIABILITY ORGANIZATION (ERO)



- ERO Enterprise consists of NERC and six (6) Regional Entities
- Regional Entities are the Compliance Enforcement Authority (CEA) for their respective footprints

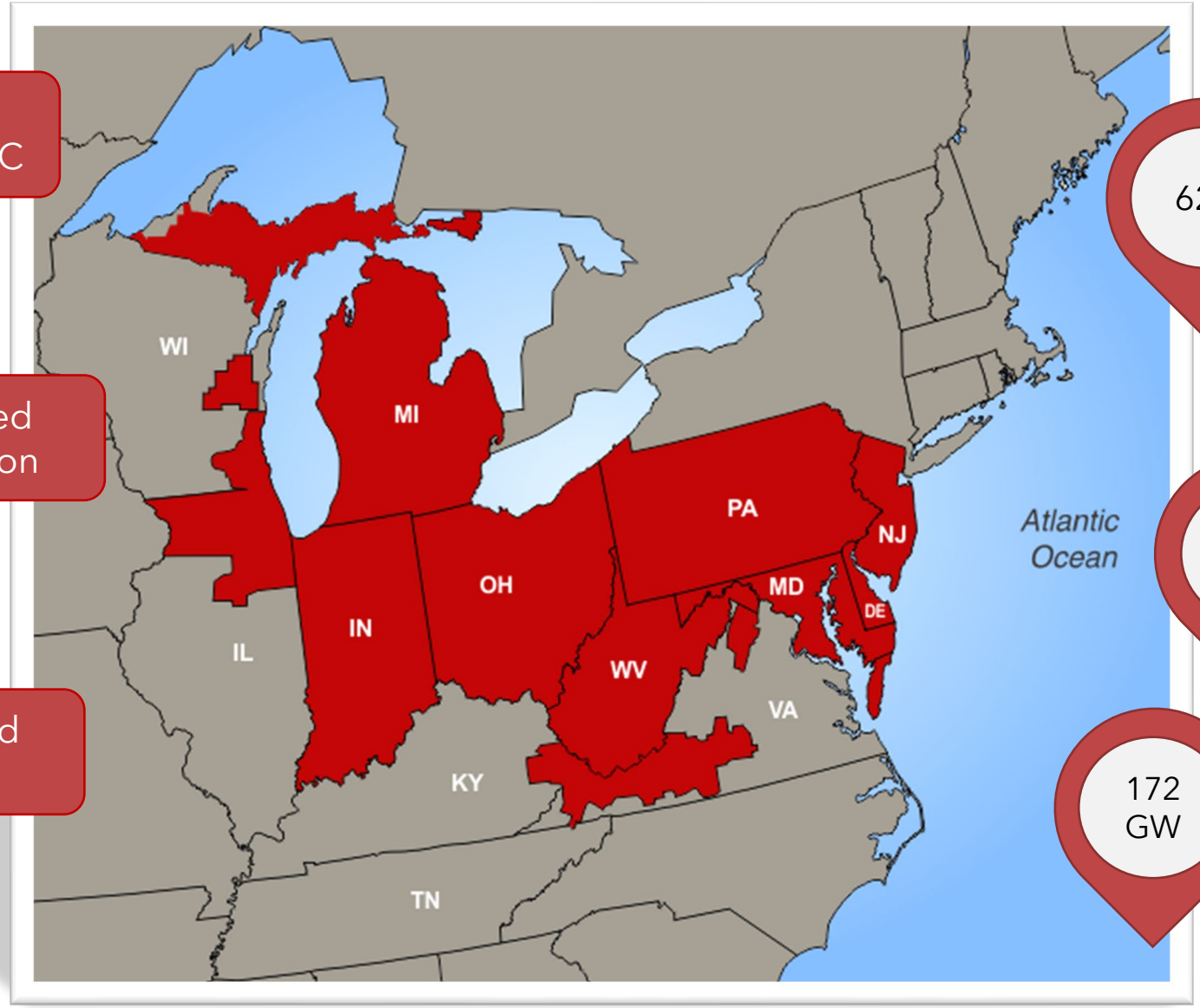
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

RELIABILITYFIRST FOOTPRINT

13 Number of States and DC

73M Estimated Population

270 Registered Entities



62K Miles of BES Lines

1300 Generating Units

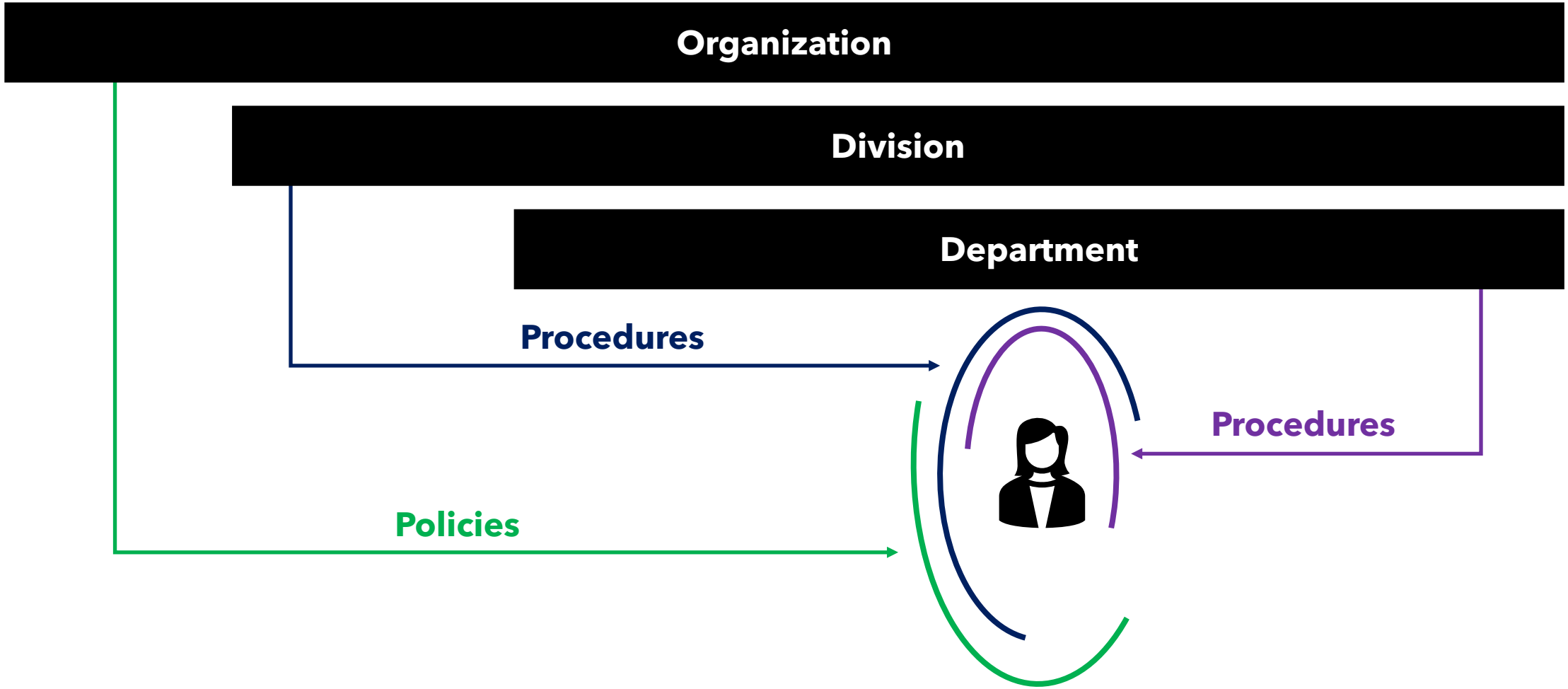
172 GW Forecasted Load

FORWARD TOGETHER RELIABILITYFIRST

Our mission is to preserve and enhance the reliability, security and resiliency of the bulk electric system.

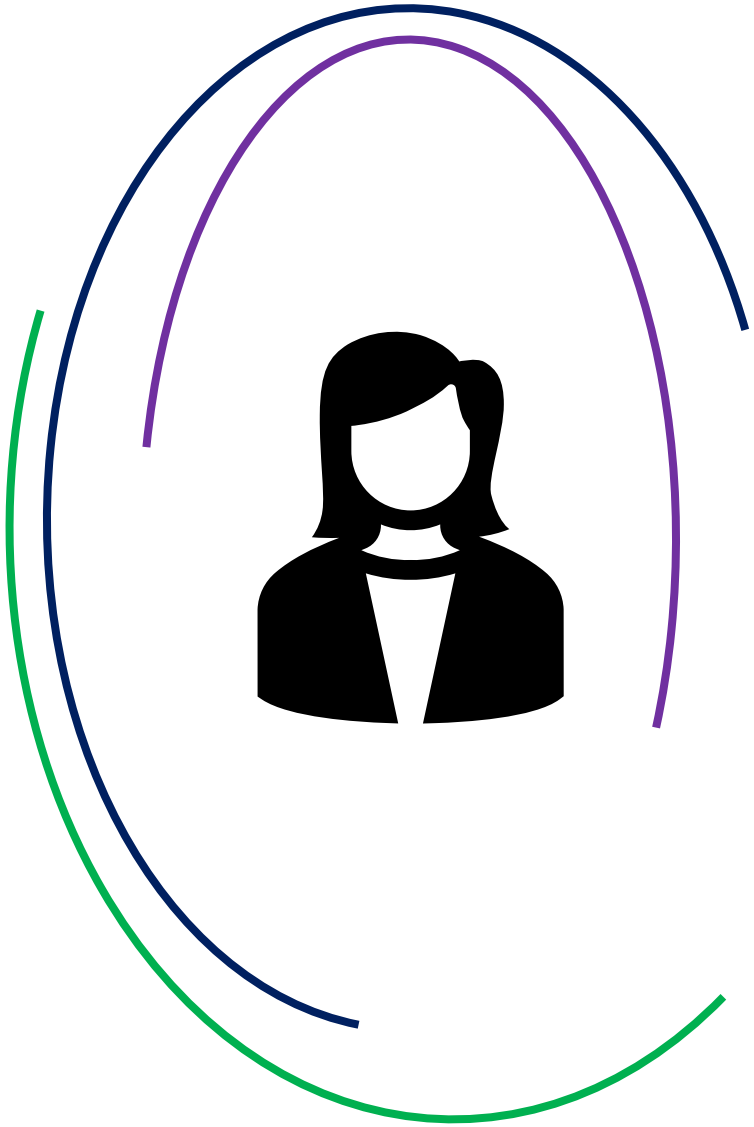
WHAT IS HUMAN PERFORMANCE?

Behaviors performed to achieve specific results in the present environment



PERFORMANCE DRIFT

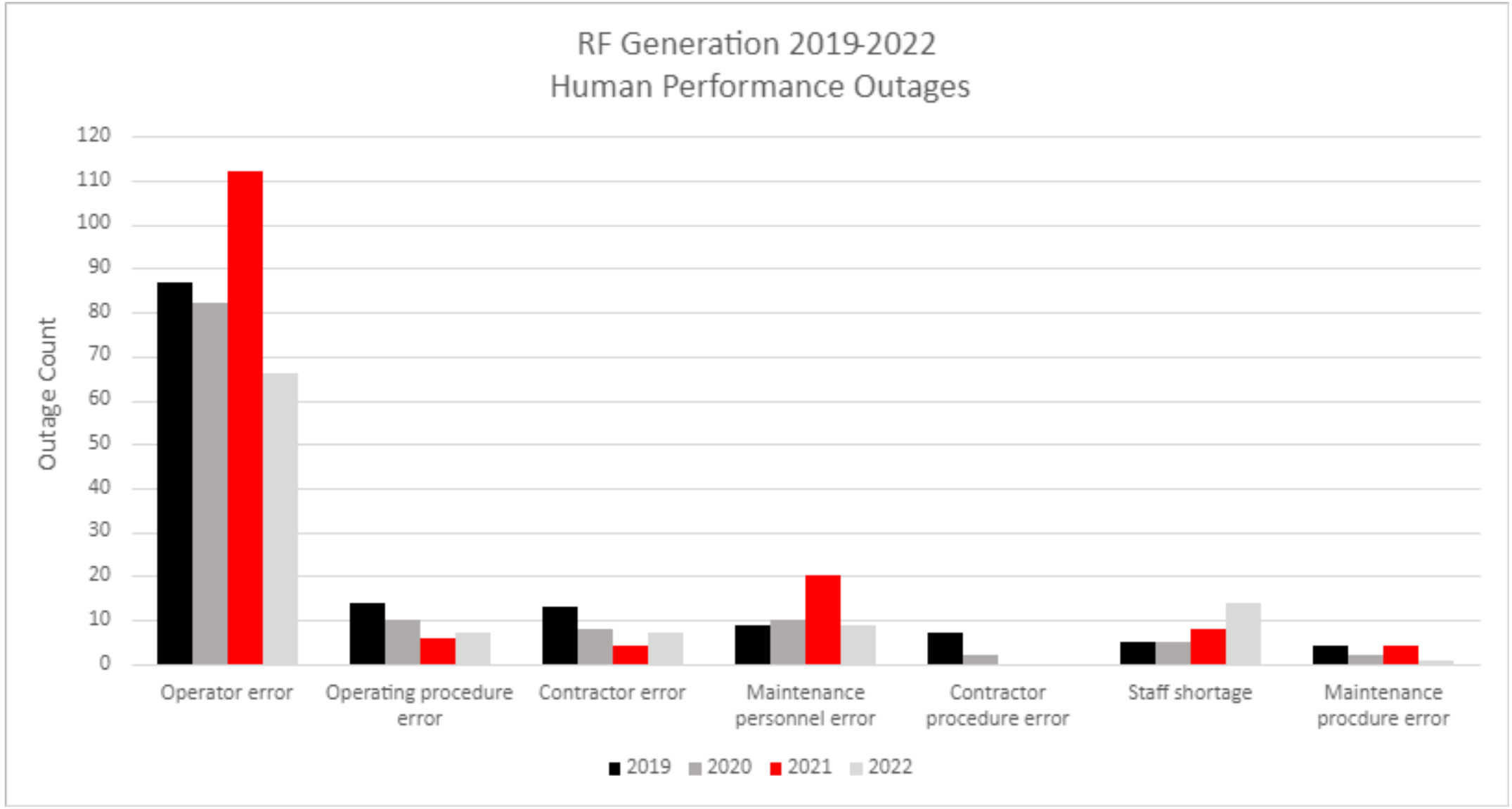
- Policies that discourage errors with harsh punishment
- Procedures that are unclear and cannot be followed
- Manager sets unclear performance expectations
- Feedback from workers is limited
- Personal health and stress
- Tools and environment changes
- Insufficient training



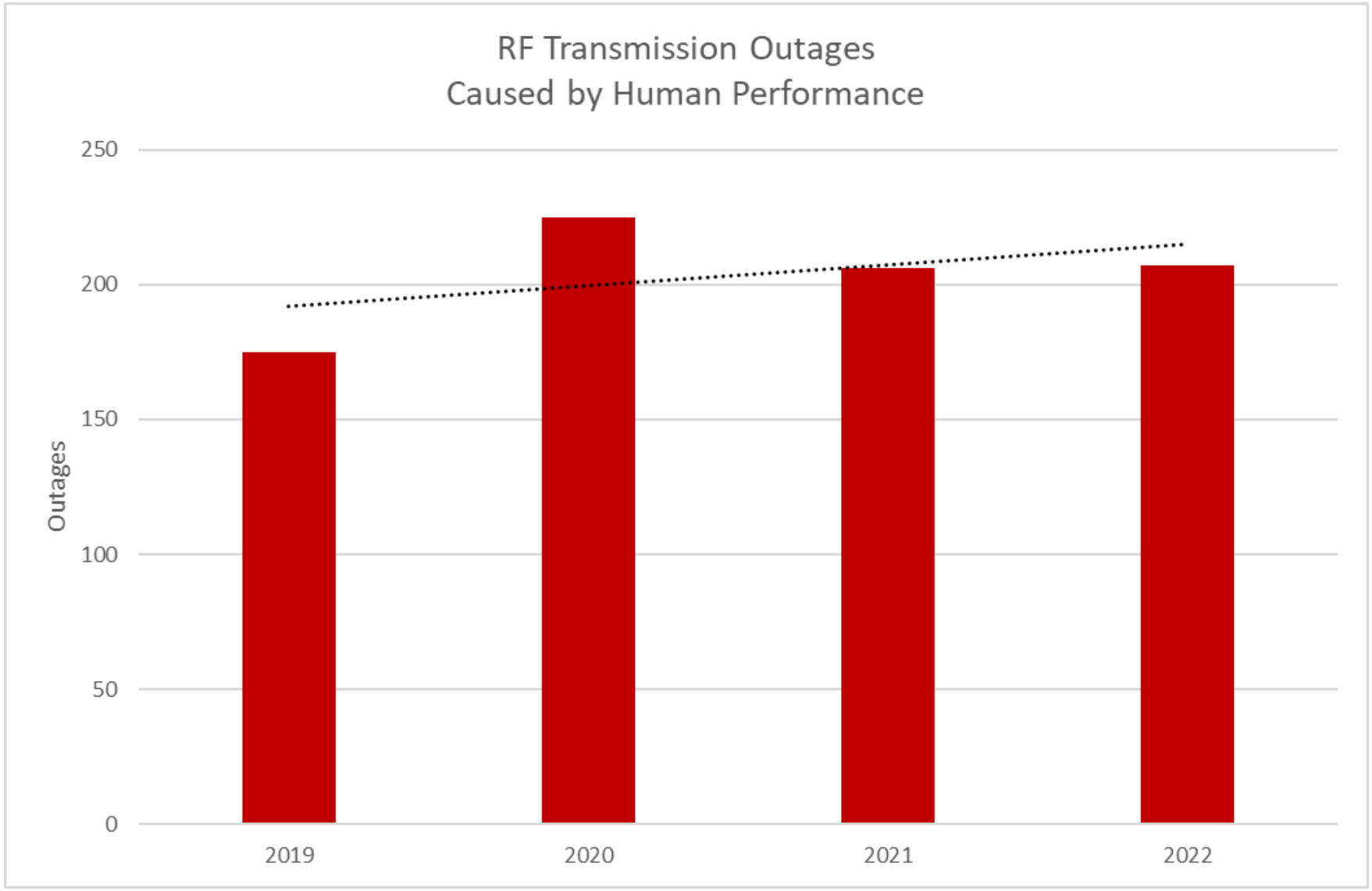
MAXIMIZING HUMAN PERFORMANCE

- We must understand that people will be people
- Make it easy for employees to do the right thing
- Make it hard for employees to do the wrong thing
- Make it so that when they do the wrong thing, it doesn't lead to a catastrophe
- Make the system conform to the people, not the other way around
- Create an environment that allows feedback and adaptation

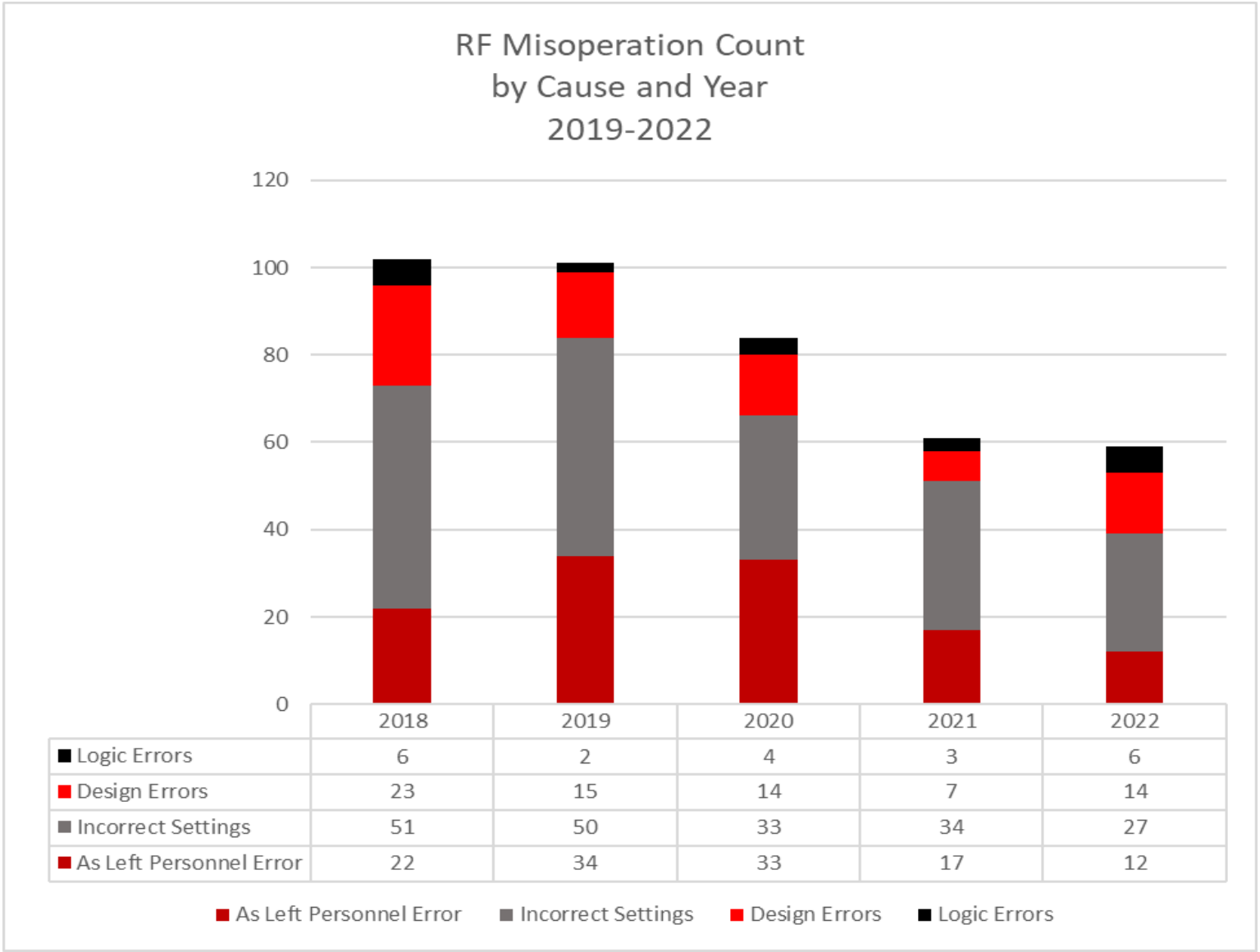
GENERATOR PERFORMANCE



TRANSMISSION PERFORMANCE



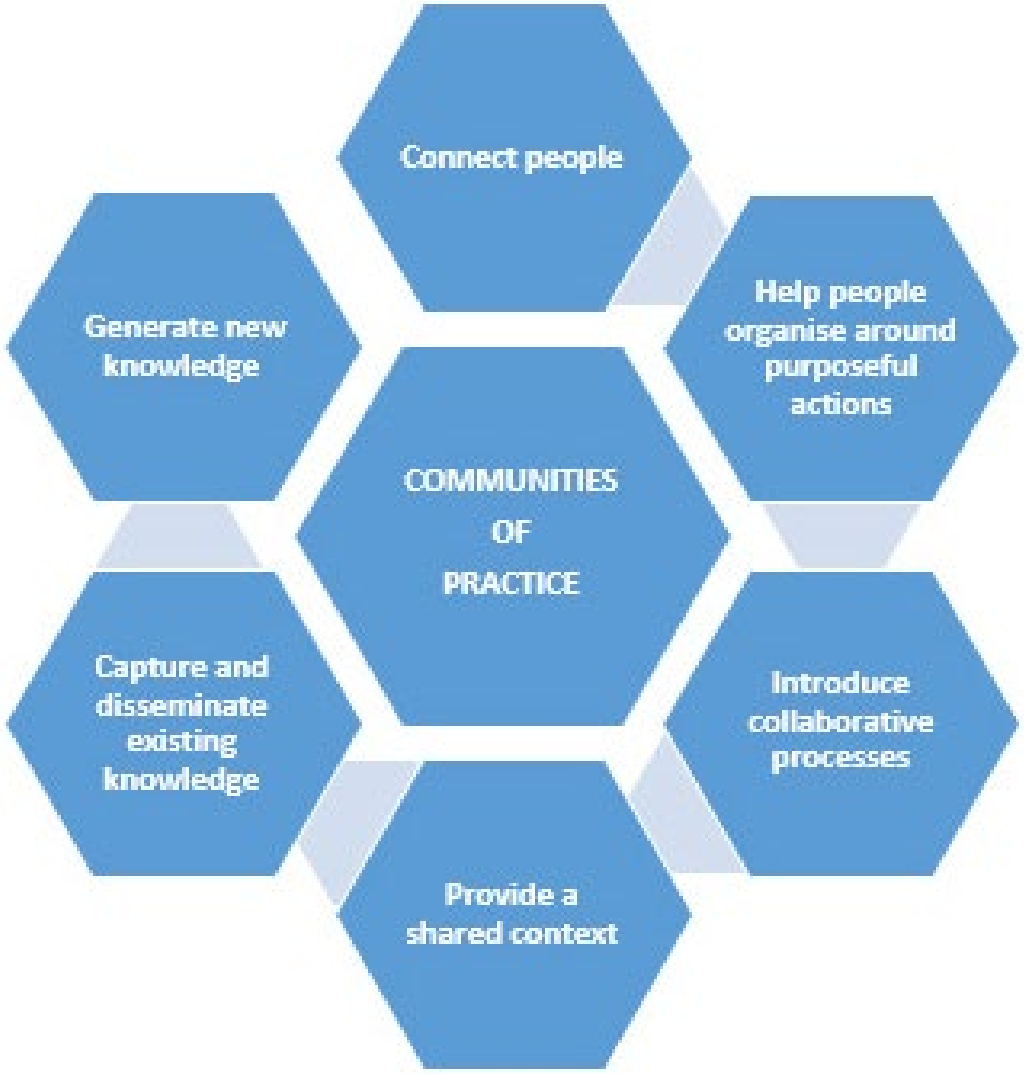
MISOPERATION PERFORMANCE



	2018	2019	2020	2021	2022
Logic Errors	6	2	4	3	6
Design Errors	23	15	14	7	14
Incorrect Settings	51	50	33	34	27
As Left Personnel Error	22	34	33	17	12

COMMUNITY OF PRACTICE

Group of people who share a common interest and learn how to do it better through knowledge sharing and lessons learned



Provide your information within SLIDO if you would like to participate

Technical Talk with RF

- Save the date for our next event: Monday, Aug. 19, 2-3:30 p.m.
- August's Tech Talk will be an "un-Tech Talk," as we delve into the human performance side of electric grid reliability – see our website for more details.

No Registration Required
Calendar Reminder

FORWARD TOGETHER RELIABILITYFIRST

Fall Reliability & Security Summit 2024

Monday, Sept. 16, 5-8 p.m.

Tuesday, Sept. 17, 8:30 a.m. – 5 pm

Wednesday, Sept. 18, 8:30 a.m. – 1 p.m.

Location: Conrad Indianapolis Hotel,

50 W. Washington St., Indianapolis, IN 46204

Join RF in Indianapolis for the 2024 Fall Reliability & Security Summit. We'll dive into the intersection of energy policy with reliability and security, as we navigate the challenges of a changing generation mix. Find additional agenda details and registration information on the event page on our website.

Please encourage your coworkers, staff, and stakeholders to sign-up to attend.

REGISTRATION LINK

FORWARD TOGETHER RELIABILITYFIRST

ReliabilityFirst
Human Performance Workshop

Thank you for your participation!

WELCOME

DELIVERING THE RIGHT STUFF

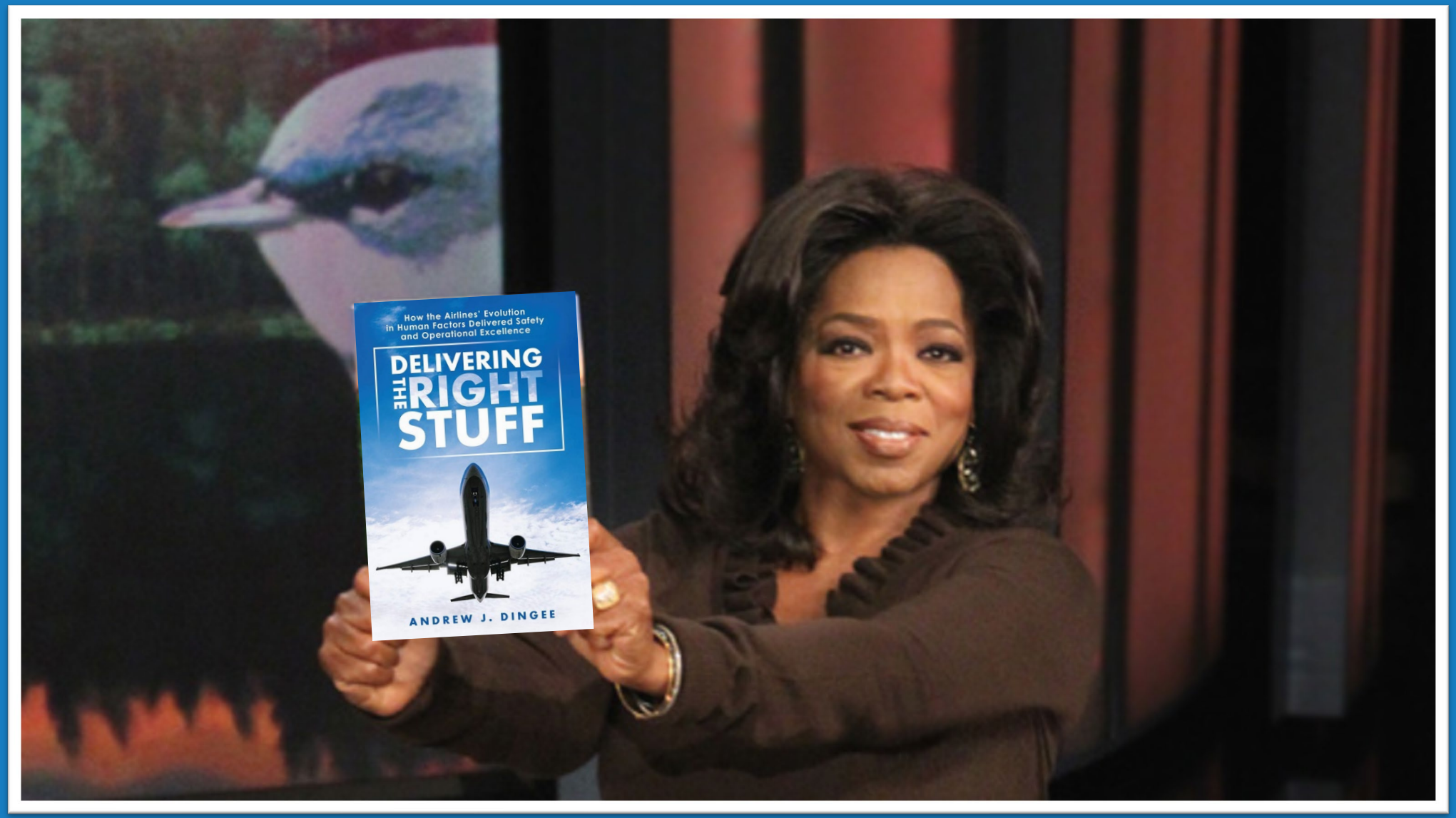
ANDREW DINGEE

- *Chief Standards Officer BP*
- *VP of HSE BP*
- *AV-8B Fighter Pilot, USMC*
- *Boeing 777 Instructor, United Airlines*
- *Human Factors, United Airlines*
- *Standardization Officer, USMC*
- *Accident Investigator*
- *Author - “Delivering the Right Stuff”*

WHAT ARE THE TRAITS OF A HIGH RELIABLE ORGANIZATION

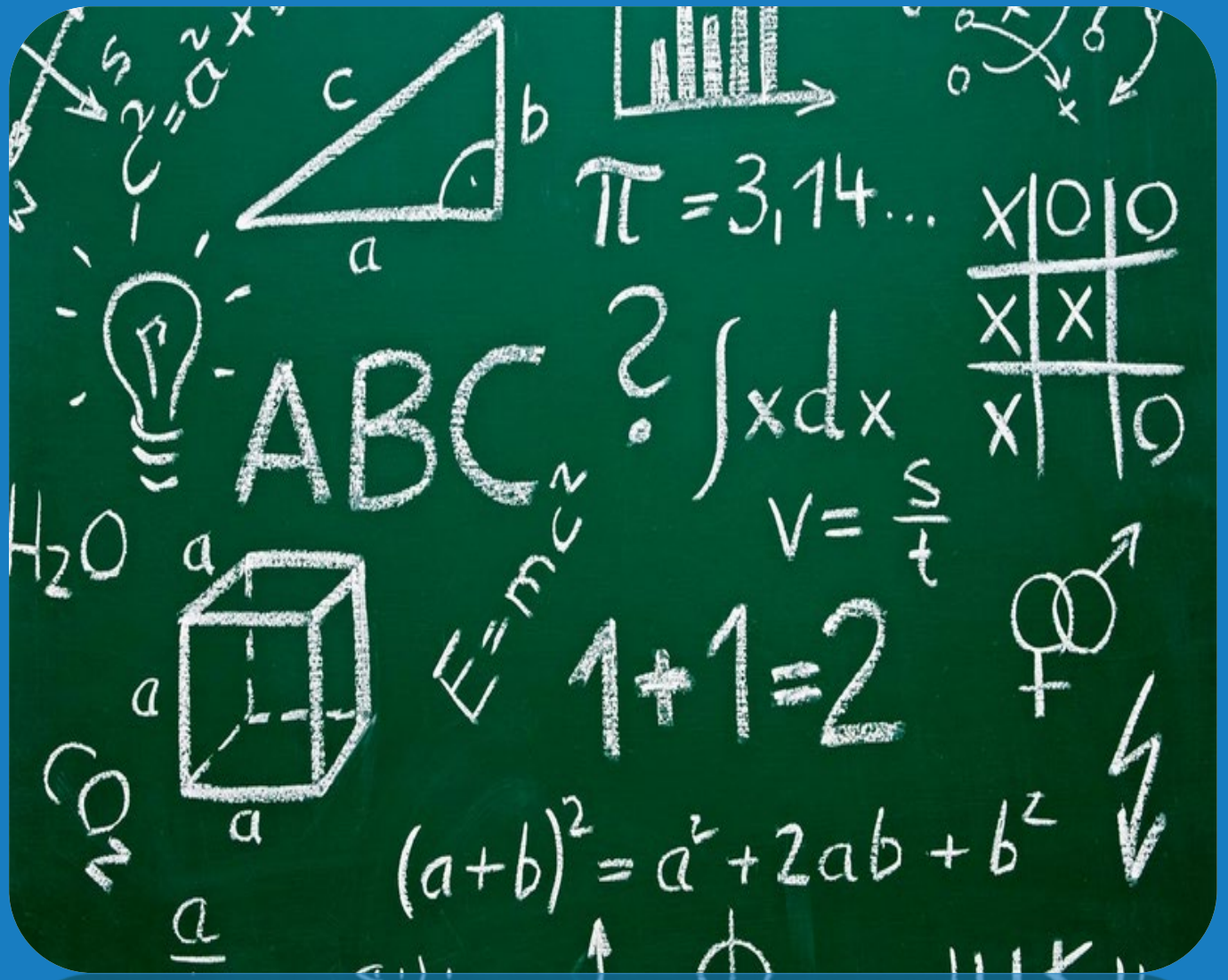
- Standardized Operating Procedures (foundation for a lean program)
- Corporate preoccupation with failure (chronic unease)
- Focus on simplification
- Training programs focused on work procedures
- Commitment to organizational learning; and
- Desire to learn about human error in the operational context.

VOLUNTEER


How the Airlines' Evolution in Human Factors Delivered Safety and Operational Excellence
DELIVERING THE RIGHT STUFF
ANDREW J. DINGEE

What is 2 x 2 = ?

What is 17 x 24 = ?




SUNDAY MONDAY TUESDAY WEDNESDEY THURSDAY FRIDAY SATURDAY
1 2 3 4 5 6
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31
21 22 23 24 25 26 27
28 29 30 31
26 27 28 29 30

YOU HAVE TWO COMPUTERS

- System 1 (Automatic)
- System 2 (Conscious)

- Thinking Fast Thinking Slow, Daniel Kahneman

System 1: Automatic (Jan – Dec)

- Unconscious / Instinctive
- Fast (100,000 bits/sec)
- Multi – Processor (Motor Skills)
- Low energy / couch potato
- Intuitive prediction

HELP!

Did anybody not read the word?

System 1 cannot be turned off.

System 1: Automatic (Jan – Dec)

- Unconscious / Instinctive
- Fast (100,000 bits/sec)
- Multi – Processor (Motor Skills)
- Low energy / couch potato
- Intuitive prediction
- Builds SA!

OUR ERRORS WHEN USING SYSTEM 1

1. 140 Biases in **ROUTINE** operations
   - Confirmation Bias – difficult to see short cuts (when short cuts become the norm/ “That’s how we always do it around here”)
   - Group Think
   - Plan Continuation Bias (highlighted when folks don’t speak up)
   - Halo Effect (best supervisor ever)
   - Mental Heuristics (fills gaps / ignores information)
2. DISTRACTIONS!
   - Prospective memory failure

Summary of System 1

- It is the fast processor (100,000 times faster)
- Mental Heuristics (short cuts in decision making) work most of the time.

HOW DO WE DEVELOP SYSTEM 1 THINKING?

- Previous experience
- On the job training

A systematic approach?

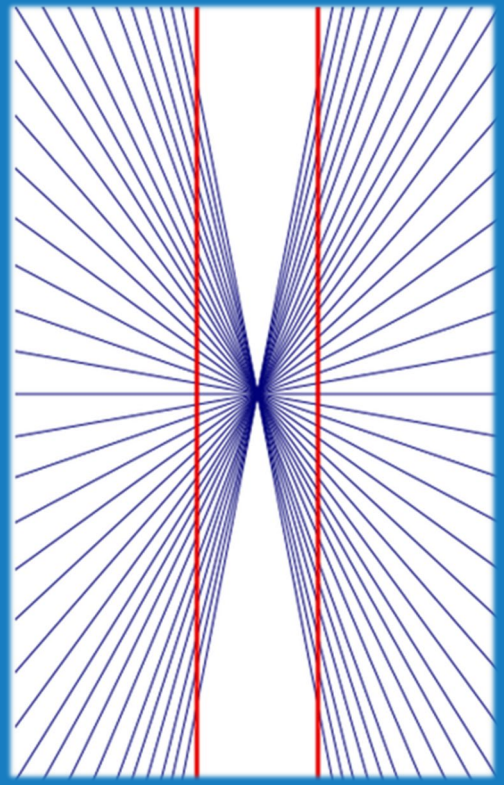
- Procedures *(details matter)*
- Professional Training

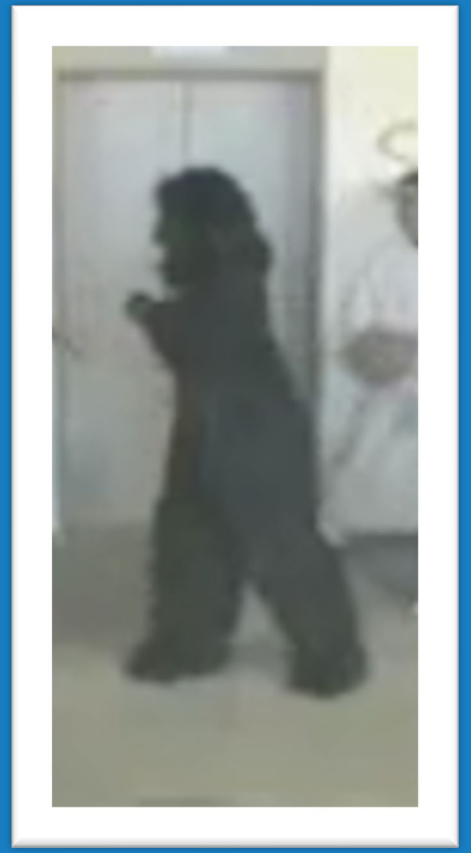
System 2: Conscious (Dec – Jan)

- Logical / effortful
- Slow (11-16 bits/sec)
- Serial processor (No multi-task)
- High energy
- Used for Non - routine work
- Answers questions (open ended ?)
- Searches memory
- Analytical
- You choose to turn it on! (or force it on)

OUR ERRORS WHEN USING SYSTEM 2

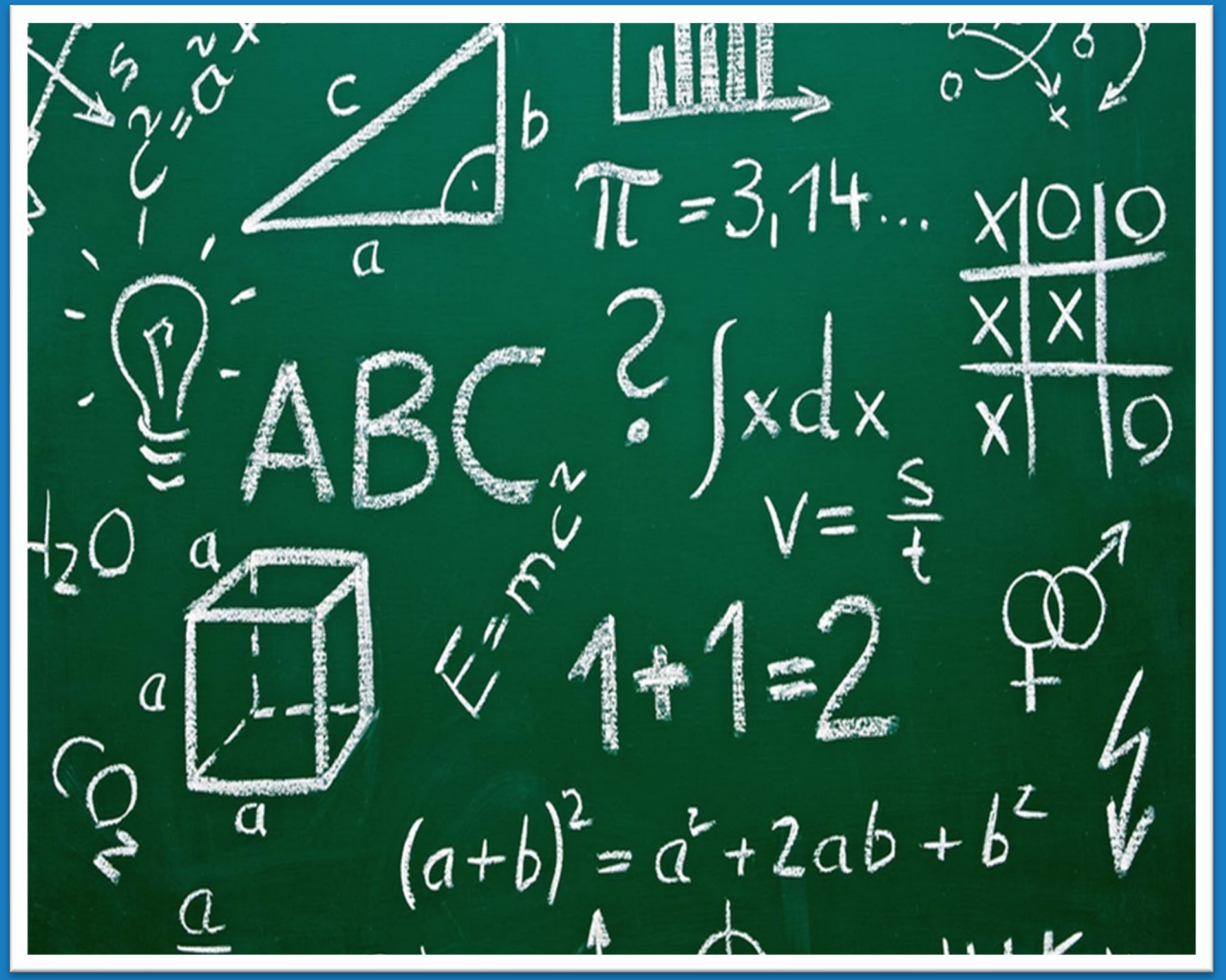
- Visual Illusions
- Distractions
- Channelized Attention





SYSTEM 2 PROGRAMS SYSTEM 1 (TRAINING!)

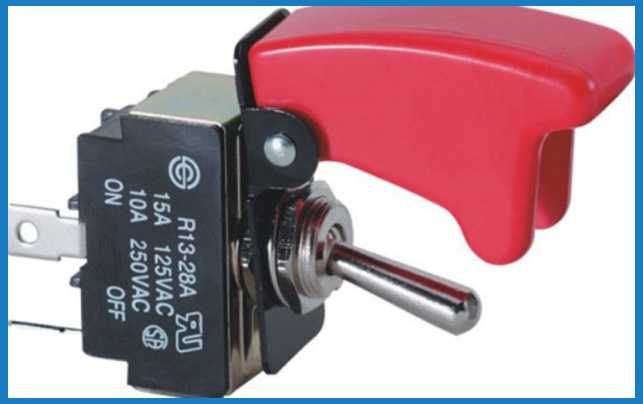
- What is 17 x 24 = ?
- Reverse calendar order



HOW CAN WE TURN ON SYSTEM 2 DURING ROUTINE WORK?

Forcing Function…is a technique used in error-tolerant designs to prevent the user from making common errors or mistakes.

FORCING FUNCTIONS ARE EVERYWHERE



TURN ON SYSTEM 2 TO TRAP HUMAN ERRORS

Challenge Question:	***Response:***
1. **Valves** visually checked and aligned in proper position (Line "walked")	**"Confirmed"**
2. Lowest pressure rated **component** in the system (Weakest Link)	**"State Component"**
3. Maximum ***WORKING*** pressure for the system (Weakest Link)	**"Working PSI Stated"**
4. Maximum ***EXPECTED*** pressure during this job	**"Expected PSI Stated"**
NOTE: Expected PSI is lower than pressure for weakest link	
5. What **overpressure protection devices** are protecting the system?	**"State Devices"**
6. Overpressure protection devices **set & verified**	**"PSI Settings Stated & Verified"**
7. System **rigged up** per procedure (i.e. Kick outs/Murphy tested prior to tie in)	**"Confirmed"**
8. Job **Procedure** reviewed for upcoming task	**"Reviewed"**
9. Area **clear by design** with buffer zones established	**"Clear & Established"**
NOTE: If area not clear, the line will be re-walked.	
If the checklist is interrupted, you **will** restart the checklist from the beginning.	

IF RICKY READ THIS….DIFFERENT OUTCOME?

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THE HISTORY OF CHECKLISTS IN AVIATION

HIGH RELIABLE ORGANIZATIONS

With an understanding of how we err…..HROs build their operating system to utilize system 1 to error proof then rally system 2 to trap human error.

THANK YOU

ADE DELIVERING THE RIGHT STUFF

CHECKLIST WORKSHOP

WHY DO CHECKLIST WORK FOR PILOTS?

1. We are trained to use them
2. They have proven that they work

3 TYPES OF CHECKLISTS

1. To do
2. Emergency Checklists
3. Quality (trap error)

Before Critical Lift Checklist

	Challenge Question (Crane Operator)	Response (Spotter)
1.	Pre-Lift Inspection	"COMPLETED"
2.	Object Weight	"_____"
3.	Crane Capacity	"_____"
	***WARNING:** Object Weight must be less than Crane Capacity*	
4.	Rigging Capacity	"_____"
5.	Anchor Points	"INSPECTED, APPROVED"
6.	Emergency Stop	"LOCATED"
7.	Center of Gravity	"LOCATED"
8.	Lift Clearance Height	"SAFE"
9.	Lift Path	"KNOWN"
10.	Landing Zone	"PREPARED"

CHECKLIST COMPLETE

BENEFITS OF CHECKLISTS

- Workers deliver consistency (quality)
- Traps errors: distractions, memory failures, human performance
- Efficient – 20 seconds
- Digital signature

REDUCE INFECTIONS WITH CENTRAL LINE INJECTION

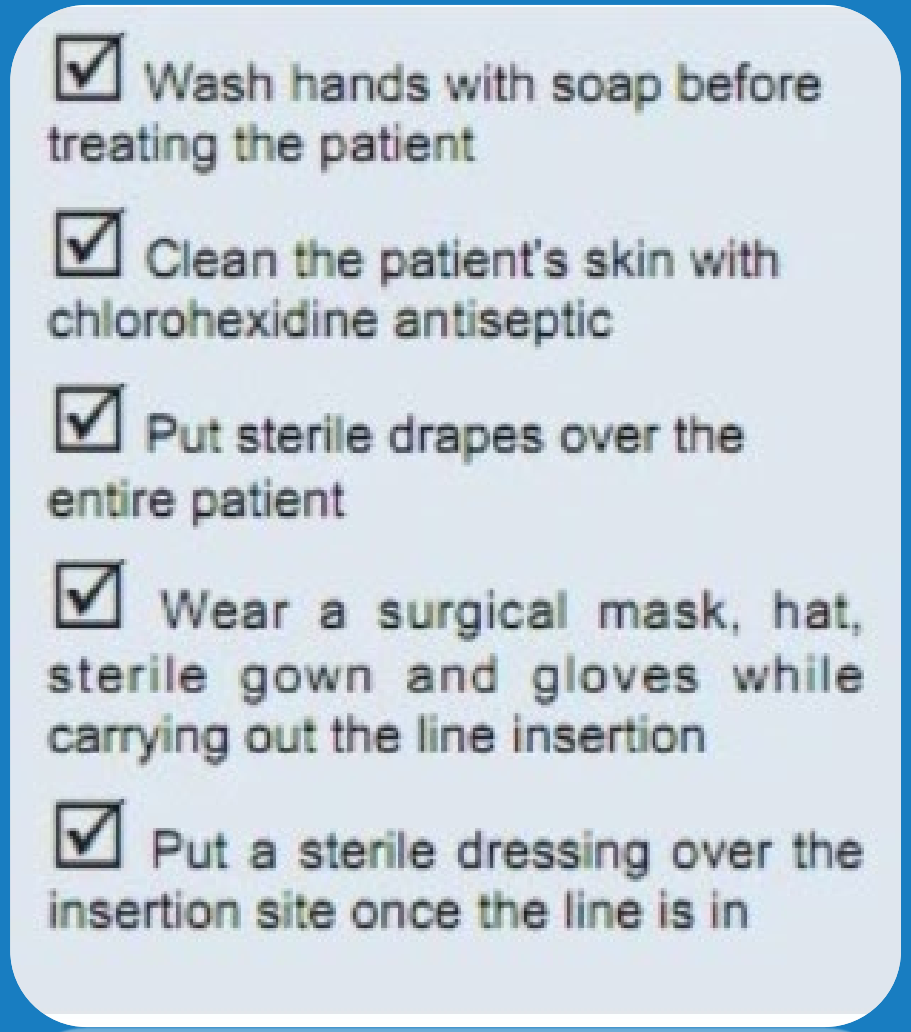
1. Wash hands
2. Wear sterile gown
3. Completely cover patient
4. Clean site
5. Remove when not needed

RESULTS: 1 HOSPITAL / 1 YEAR

- 8 Deaths prevented
- 43 infections avoided
- $2 million saved

RESULTS: SYSTEM / 18 MONTHS

- 1500 lives saved
- $175 Million



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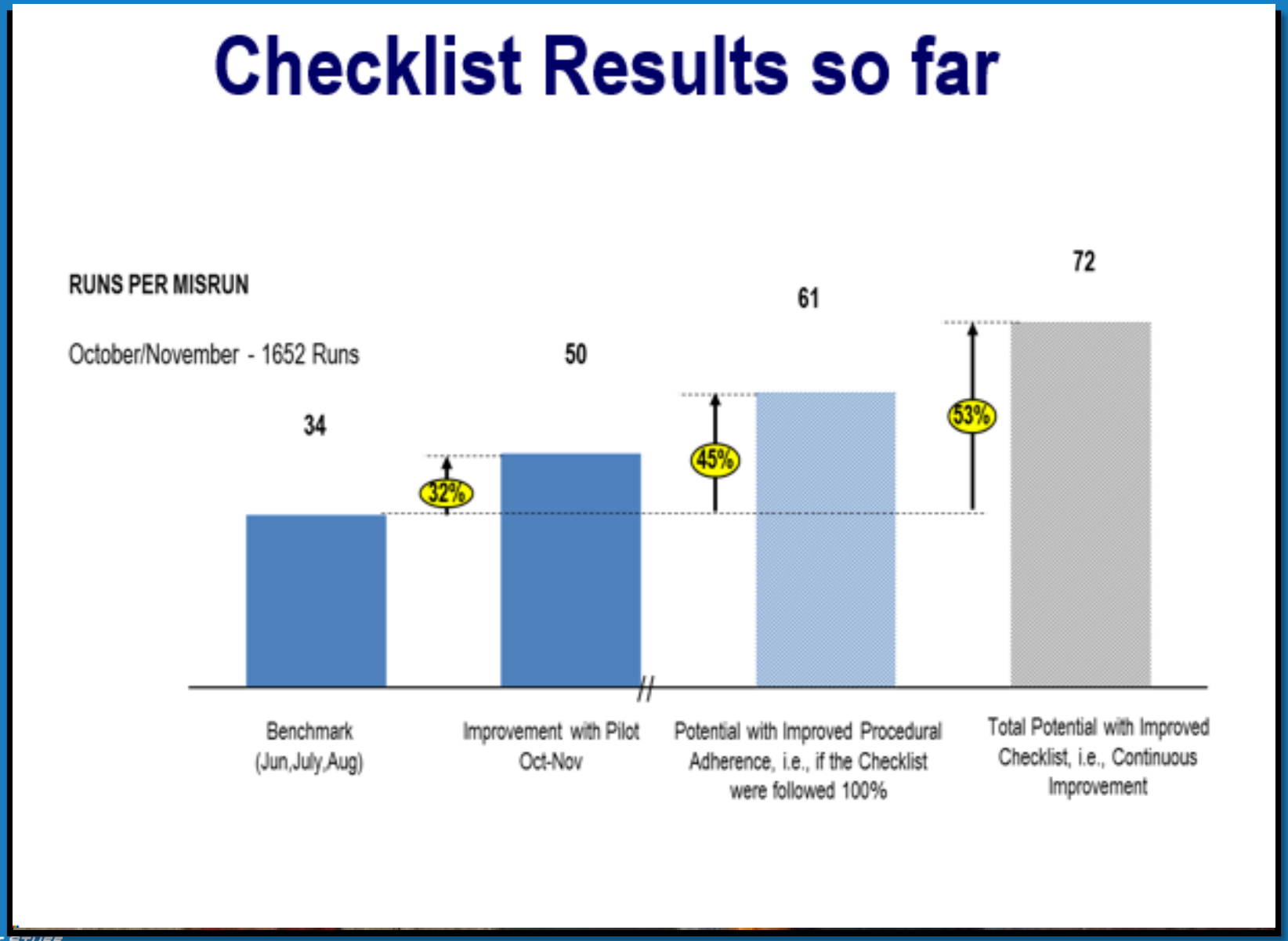
10.	Landing Zone	"PREPARED"

CHECKLIST COMPLETE

PERFORATING GUNS – REDUCED ERROR (saved $100 million)



QUALITY – 59 SAVES IN 2 MONTHS

REBUILD FINAL QC CHECKLIST

CHALLENGE QUESTION		RESPONSE
	PRE-PAINT	
1.	Bit Serial Number	**"MATCHES WORK ORDER"**
2.	Bit Plenum	**"CLEAN, CLEAR, NO DAMAGE"**
3.	API Threads/Sealing Face	**"INSPECTED"**
4.	30° Surface	**"FREE OF DEFECTS"**
5.	Cutters	**"INSPECTED"**
6.	Bit Body	**"EXCESSIVE BRAZE AND FLUX REMOVED"**
7.	Nozzle Threads/Seating	**"INSPECTED AND VERIFIED"**
8.	Nozzle O-Rings	**"INSTALLED, PROPERLY SEATED"**
9.	Bit Diameter Go/No-Go	**"VERIFIED"**
10.	Go/No-Go Serial Numbers	**"ANNOTATED ON WORK ORDER"**
11.	First QC Sign Off	**"COMPLETED"**
	POST-PAINT	
12.	Bit Serial Number Verification	**"_____, LEGIBLE"**
13.	Paint Scheme/Quality	**"CORRECT/PASS"**
14.	Bit Labels	**"APPLIED"**
15.	Rebuild Paperwork	**"COMPLETE, 100% SIGNED OFF"**
16.	Final QC Sign Off	**"COMPLETED"**

ELECTRICAL SUBMERSIBLE PUMP - $80 MILLION

If Tandem Motor Connection Required:

6a. Motor Assembly Jacks ..... **"In Place"**

6b. Coupling Engagement ..... **"Verified Top & Bottom"**

6c. Splines ..... **"Aligned, With Tool"**

6d. Terminal Pins..... **"Straight, Tight"**

6e. O-ring ..... **"Lubricated, Installed"**

6f. Rig Alignment..... **"Centered"**

⚠ **CAUTION!**

Eyes must be positioned to verify engagement during connection.

6g. Motor Connection ..... **"Confirmed"**

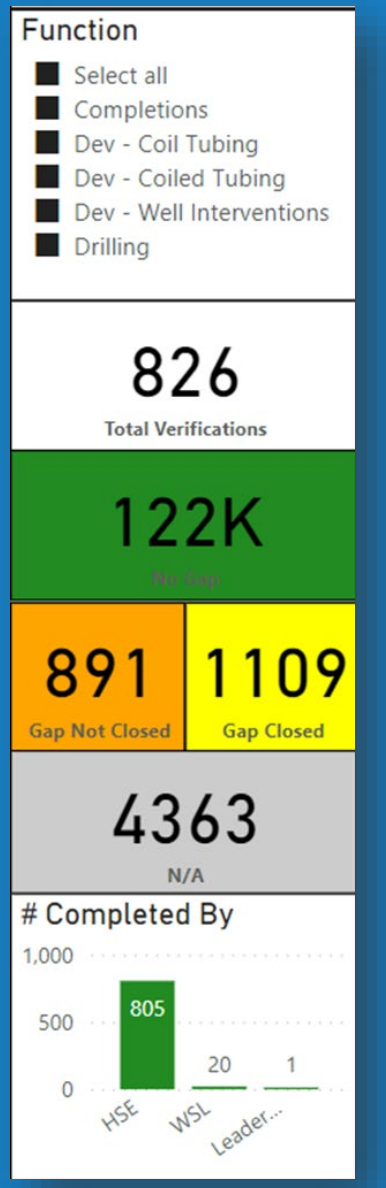
6h. Winding Resistance Check..... **"____Ω, Balanced"**

6i. Bolts ..... **"Torqued, ____ft.lb"**

End of Checklist

50 – 75% HSE INCIDENT REDUCTION

- Identified 10 hazards on well site per day = reducing HSE metrics by 50%



OSHA LOTO EVENTS

- 120 fatalities / 50,000 injuries per year
- 65 % lacked a crosscheck

BEST PRACTICES FOR CHECKLIST WRITING

- Past tense *(procedures are written in present tense)*
- Responses written to turn on system 2 *(not checked, yes)*
- Sequential steps *(how the work is accomplished)*
- Checklist title tells the reader when to use it *(Before / After)*
- Inserted at the pause of execution *(can't checklist everything)*
- 2 – person verification *(improves execution – catches errors)*
- Written in blood *(causal codes from accidents - Lowest psi rated)*
- 7 – 11 line items *(20 seconds to accomplish)*

COMMON ERRORS REGARDING LOTO

1. Failure to stop equipment
2. Failure to dissipate residual energy
3. Accidental restarting of equipment
4. Not completing corporate paperwork
5. Not wearing appropriate PPE
6. Not locking equipment
7. Failure to clear area before restarting

AFTER LOCK OUT TAG OUT CHECKLIST

AFTER LOCK OUT TAG OUT
(Before work is conducted)

Read at the completion of LOTO work but before work is conducted and at the start of each shift.

	Challenger	Responder
1	Exclusion Zone……....	**"ESSENTIAL PERSONNEL ONLY"**
2	All Possible Energy Sources……	**"IDENTIFIED and ISOLATED"**
3	Circuit Breakers / Shut Off Valve/s.....	**"SECURED / NA"**
4	LOTO Tags ……..	**"VISIBLE and SECURED"**
5	LOTO……	**"SIGNED and COMPLETED"**
6	Equipment Re - Test……..	**"CONFIRMED NO ENERGY"**
7	Equipment ON / OFF Switch……...	**"RECONFIRMED OFF / NA"**
8	Any Residual Energy……	**"RELEASED"**
9	Number of Individual Lock/s……	**"____ SECURED"**
10	Group Lock……...	**"SECURED / NA"**
11	Hand Tool Inspection……..	**"COMPLETED"**
12	Arch Protective PPE and Safety Glasses……..	**"ON / NA"**

Checklist Complete

BENEFITS

- Checklists improve outcome with no improvement to skill!
- They increase efficiencies / reduce risk
- They allow incidents and accident that occur outside of the individual to place lessons learned within their day-to-day activities – Organizational Learning

THANK YOU!

How did they show up?

A whole person approach to safety

About Me

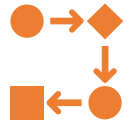
Speaker, Strategist, Culture Consultant

I work with organizations who are serious about protecting their people and continuously strive to do safety better.

I believe that workplace injuries are either predictable or preventable and most of the time it's both.

I believe that as long as humans are performing the work, humans will get hurt at work.

Every organization no matter the size or performance wants fewer and less severe incidents.



How can we make that happen?

MY GOAL

- Rattle the collective mindset of leaders.
- Educate on the relationship between safety and wellbeing.
- Inspire you to integrate your safety and wellbeing programs.

Reduce

- Days Away
- New LTD Claims
- Medical Costs

Increase

- Return to Work %
- Program Usage
- Satisfaction Scores

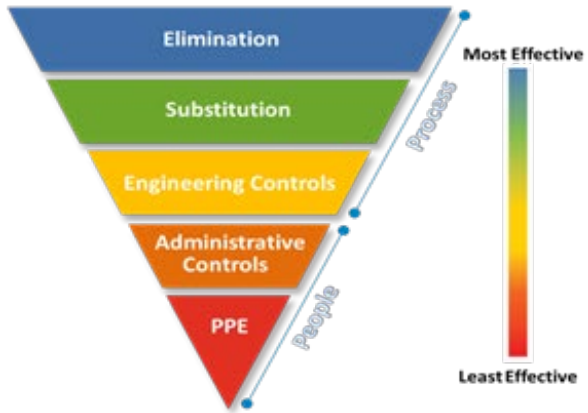
Inspire you to aspire

What I’ll Cover

- Situation
- Problem
- Solution

SITUATION: Safety Programs

Risk Reduction - HOC

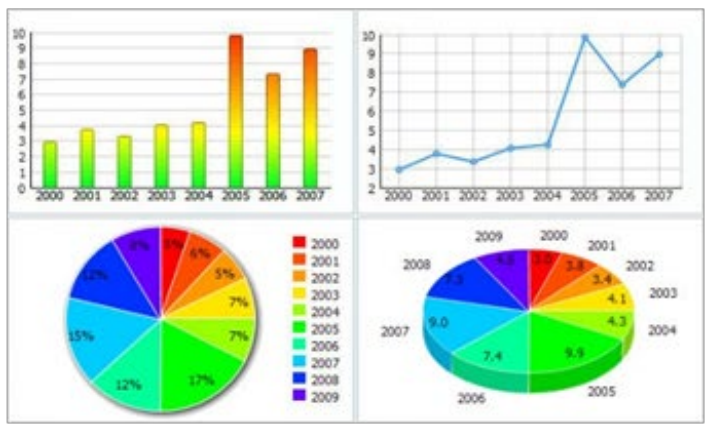


Hazard Identification

Human Performance

Critical Risk Management

Leading and Lagging indicators



SITUATION:
Wellness Programs

- Emphasis on physical health
- On-site gyms
- Annual physical incentives
- Health Fairs

“If things are going to stay the same, things will have to change.”

PROBLEM #1

Missing pieces: “Total” Wellbeing

TOTAL WELLBEING


Self-actualization
desire to become the most that one can be
Esteem
respect, self-esteem, status, recognition, strength, freedom
Love and belonging
friendship, intimacy, family, sense of connection
Safety needs
personal security, employment, resources, health, property
Physiological needs
air, water, food, shelter, sleep, clothing, reproduction
Thrive
Survive
Maslow's hierarchy of needs


Intellectual
Emotional
Spiritual
8 Dimensions of Wellness
Physical
Environmental
Social
Financial
Occupational

Sources of Stress

- Lifestyle
- Physical
- Social
- Financial
- Organizational
- Physiological

Shows up as:

- Distraction
- Shortcuts
- Problems with memory and focus
- Fatigue
- Anxiety

And that's not ALL!

- Frequent headaches, and jaw clenching or pain
- Tremors or trembling of lips, and hands
- Neck ache, back pain, muscle spasms
- Lightheadedness, faintness, dizziness
- Ringing, buzzing, or popping sounds
- Rashes, itching, hives, or "goosebumps"
- Unexplained or frequent "allergy attacks"
- Constipation, diarrhea, loss of control
- Difficulties breathing
- Sudden panic attacks
- Chest pain, palpitations, rapid pulse
- Excess anxiety, worry, guilt and nervousness
- Increased anger, frustration, and hostility
- Depression, frequent mood swings
- Increased or decreased appetite
- Insomnia, nightmares, disturbing dreams
- Difficulties concentrating, racing thoughts
- Constant tiredness, weakness, and fatigue

Sleep Deprivation

Sleep Deprivation:

- Degrades cognitive processing – can't think as clear or fast
- Affects memory
- Slows reflexes
- Less accurate decision making
- Increased risk taking
- 70% more likely to be involved in a workplace accident

- Three Mile Island Nuclear Plant
- Chernobyl Nuclear Power Plant
- Exxon Valdez oil spill
- Space Shuttle Challenger explosion

PROBLEM #2

Silos

Safety & Wellbeing Silos

Cultures

Committees

Conversations

Communications

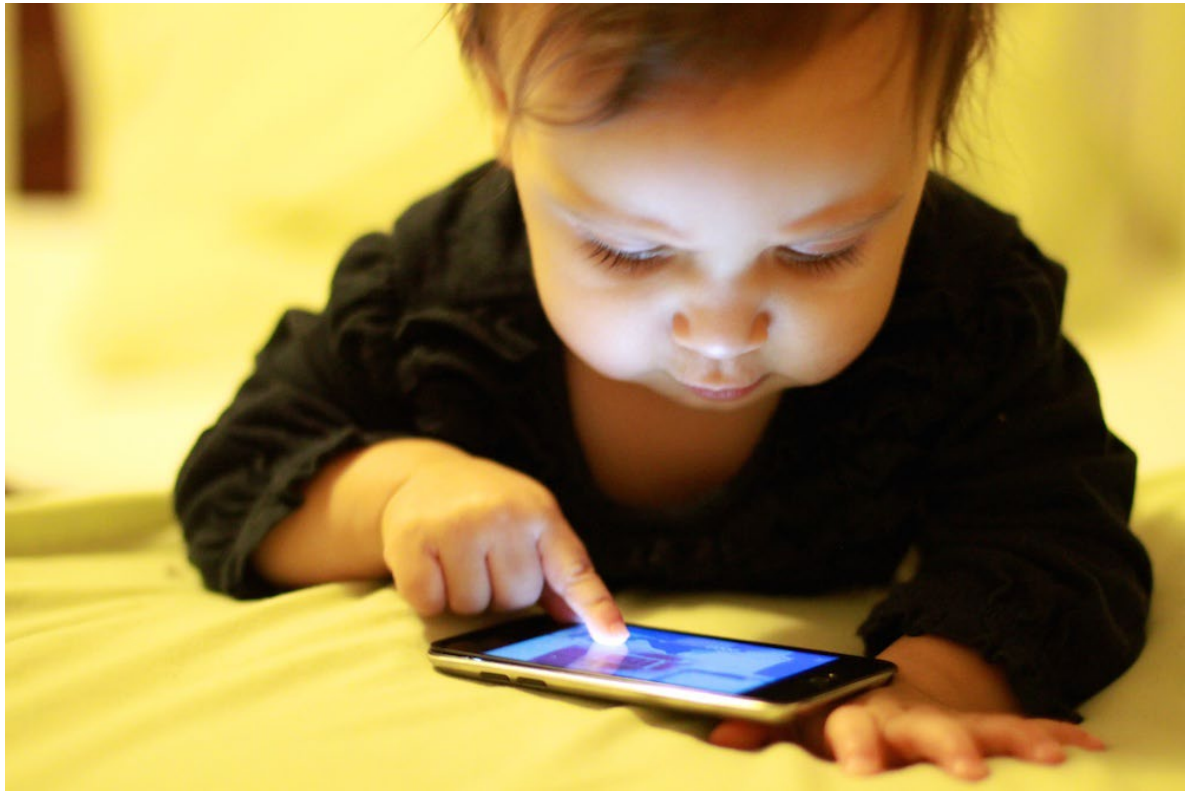
Real stories, real people

Show me how it works!

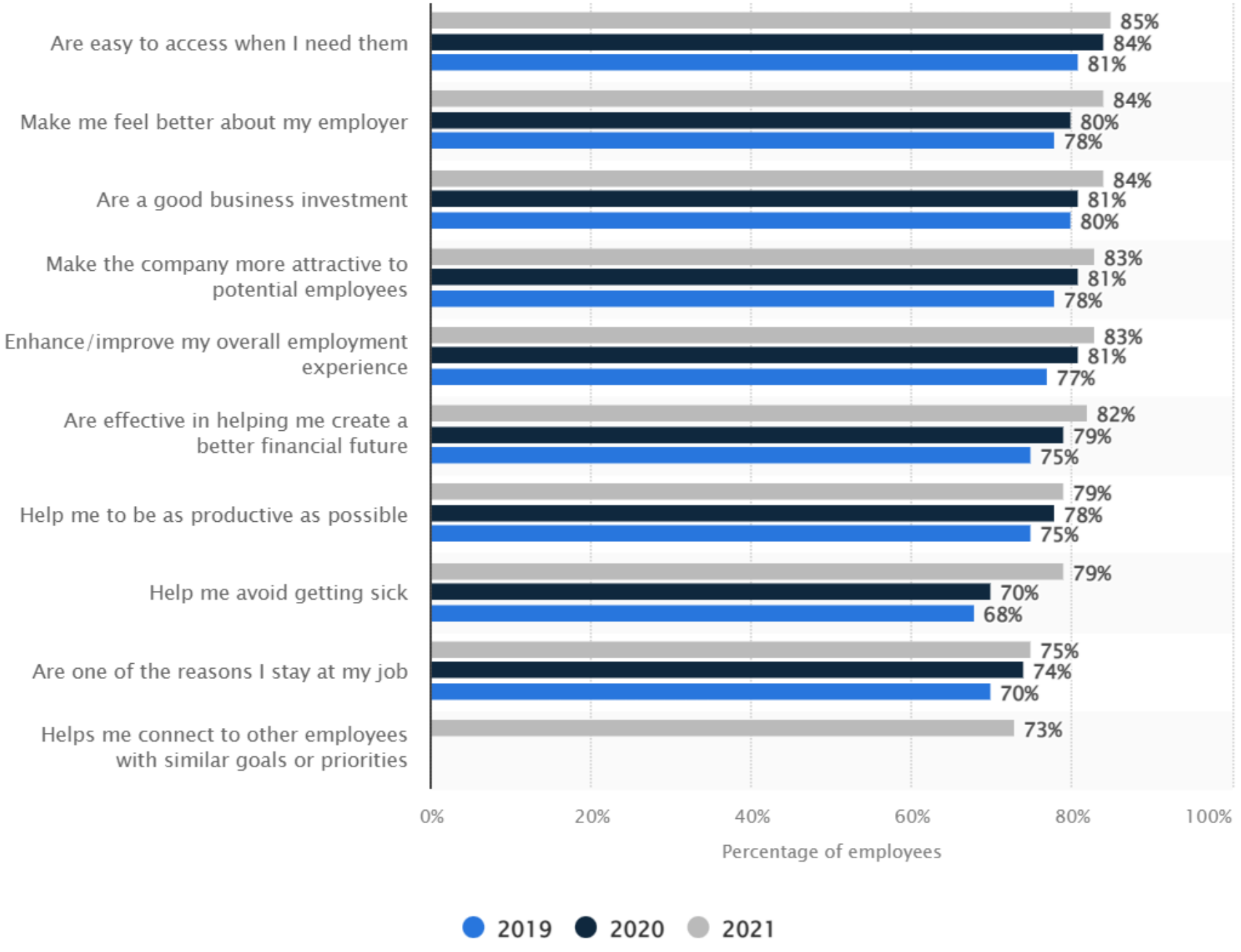
MENTAL Well-being: Are You Ready?	EMOTIONAL Well-being: Are You Willing?	PHYSICAL Well-being: Are You Able?
Attention; Ability to Focus	Psychological Safety, Trust, Ownership	Sleep, Hydration, Nutrition, Fitness
• Avoid distractions • Attention to detail • Ability to concentrate • Understand the task	• Freedom to ask questions • Stop work authority • Brother's keeper mindset • Responsibility	• Physical readiness • Ability to physically perform the work • Ability to think clearly

How did they show up asks: Are You or Are They?

Ready → Willing → Able



Well-being is not a luxury


Are easy to access when I need them
85%
84%
81%
Make me feel better about my employer
84%
80%
78%
Are a good business investment
84%
81%
80%
Make the company more attractive to potential employees
83%
81%
78%
Enhance/improve my overall employment experience
83%
81%
77%
Are effective in helping me create a better financial future
82%
79%
75%
Help me to be as productive as possible
79%
78%
75%
Help me avoid getting sick
79%
70%
68%
Are one of the reasons I stay at my job
75%
74%
70%
Helps me connect to other employees with similar goals or priorities
73%
0%
20%
40%
60%
80%
100%
Percentage of employees
2019
2020
2021

Expectation to prioritize safety = Permission to prioritize wellbeing

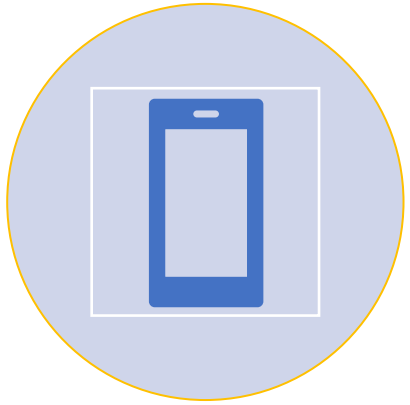
- Where are you?
- Where do you want to be?
- What pieces are missing?

Integrate Safety & Wellbeing Programs

Bridge the gap

STAFF MEETING CONVERSATIONS

PRE/POST-JOB BRIEFS



INTEGRATE SAFETY AND WELLNESS MESSAGING

Added Benefits

Benefits for your people

Enhanced employee morale, satisfaction, and engagement by demonstrating genuine care for their overall wellbeing.

Benefits for your business

Reduced absenteeism, turnover, and healthcare costs associated with workplace injuries and stress-related illnesses.

Overall Results

Improved productivity, innovation, and organizational resilience

Fosters a culture of trust, collaboration, and continuous improvement.

Aspire to:

1. Understand the dimensions of total wellbeing.
2. Consider the impact of individual wellbeing on personal safety.
3. Create an organizational expectation around prioritizing personal wellbeing.
4. Integrate safety and wellbeing cultures.

BONUS

Enjoy better safety performance and more satisfied employees.

What you can do today

- How did they show up?
- How did I show up?
- How did the people I am responsible for show up?

How did they show up?

Keep doing the good things

Create a culture of care

SUMMERRAE

summerspeaks.com

AICON

Enhancing the Effectiveness of Job Briefings

Presenter

Stephen Kerry – Director of Technology

- AI Interaction Designer
- Software Project Manager
- Data Analyst

KnowledgeVine Overview

Who We Are

- **Founded:** 2014
- **Focus:** Human and organizational performance improvement

Core Philosophy

- **Primary Goal:** Reduce errors to improve safety, quality, productivity, and efficiency.
- **Approach:** Integrate human performance practices into daily operations through a combination of software, training, and coaching.

Building Habits and Behaviors

KnowledgeVine®

Set easy to understand expectations

- Build a repeatable process
- Provide a Source of Truth

Reinforce expected standards and behaviors

- Build in Accountability
- Optimize Teachable Moments
- Provide Positive Feedback

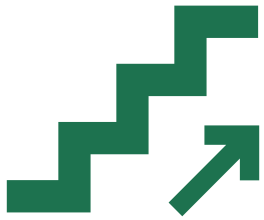
Inspect what you Expect

- Examine the Results
- Provide Feedback
- Make Changes when Needed

KV HP Coaching

KnowledgeVine®

Benefits of HP Based Coaching



Building Habits and Behaviors

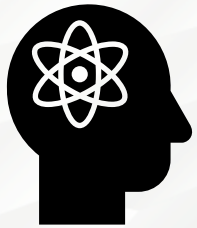
Training in the Moment

Continuous Improvement

Coach Challenges

Cost

Time



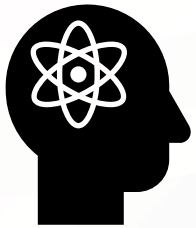
Learning Curve

Solving the Problem with AICON

KnowledgeVine®

AICON reduces the cost of a coach by 95%.

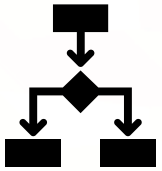
AICON utilizes pre-allocated time, ensuring no additional time costs.



AICON can learn your standards and procedures in minutes.

Setting Expectations

KnowledgeVine®



Slide Generation

Defines and Facilitates a consistent process across the organization.

Record and Transcribe

Provides true insights on what is being while ensuring accountability that the conversations are happening.

Document Resources

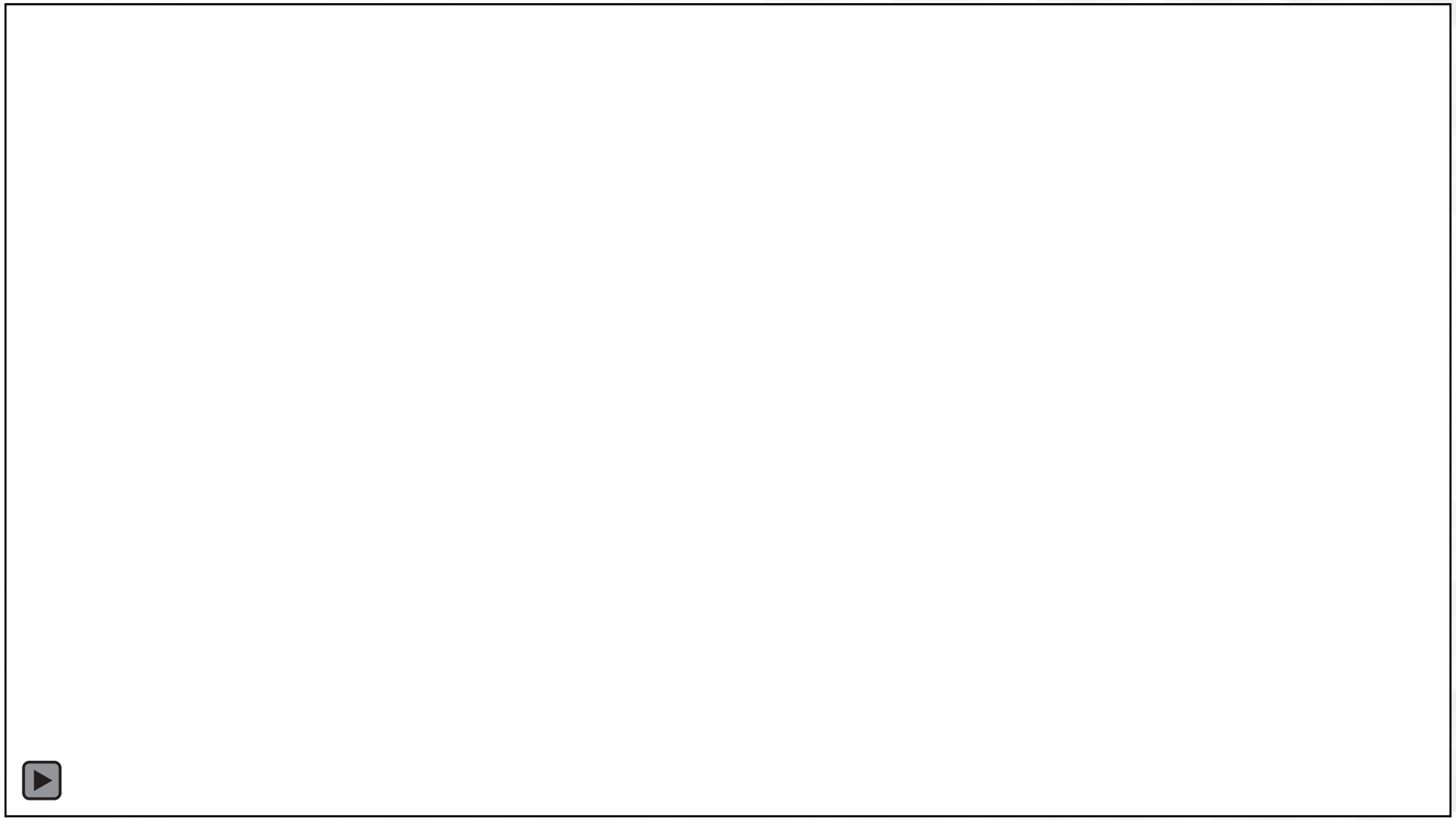
Provides a source of truth that can be referenced by AI and updated when organizational changes are made.

Artificial Intelligence

Real-time feedback on discussions with integrated knowledge to provide guidance and dictate proper behavior.

AICON Introduction

KnowledgeVine®



Reinforcing Expectations

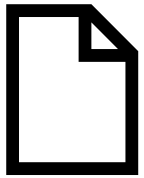
KnowledgeVine®

In the Moment Feedback

Evaluates the conversation to determine what standards were missed and integrates them into the conversation.

Integrated Training

Based on long term evaluations, the system builds in training that is added seamlessly to the existing conversation.



Daily Summaries

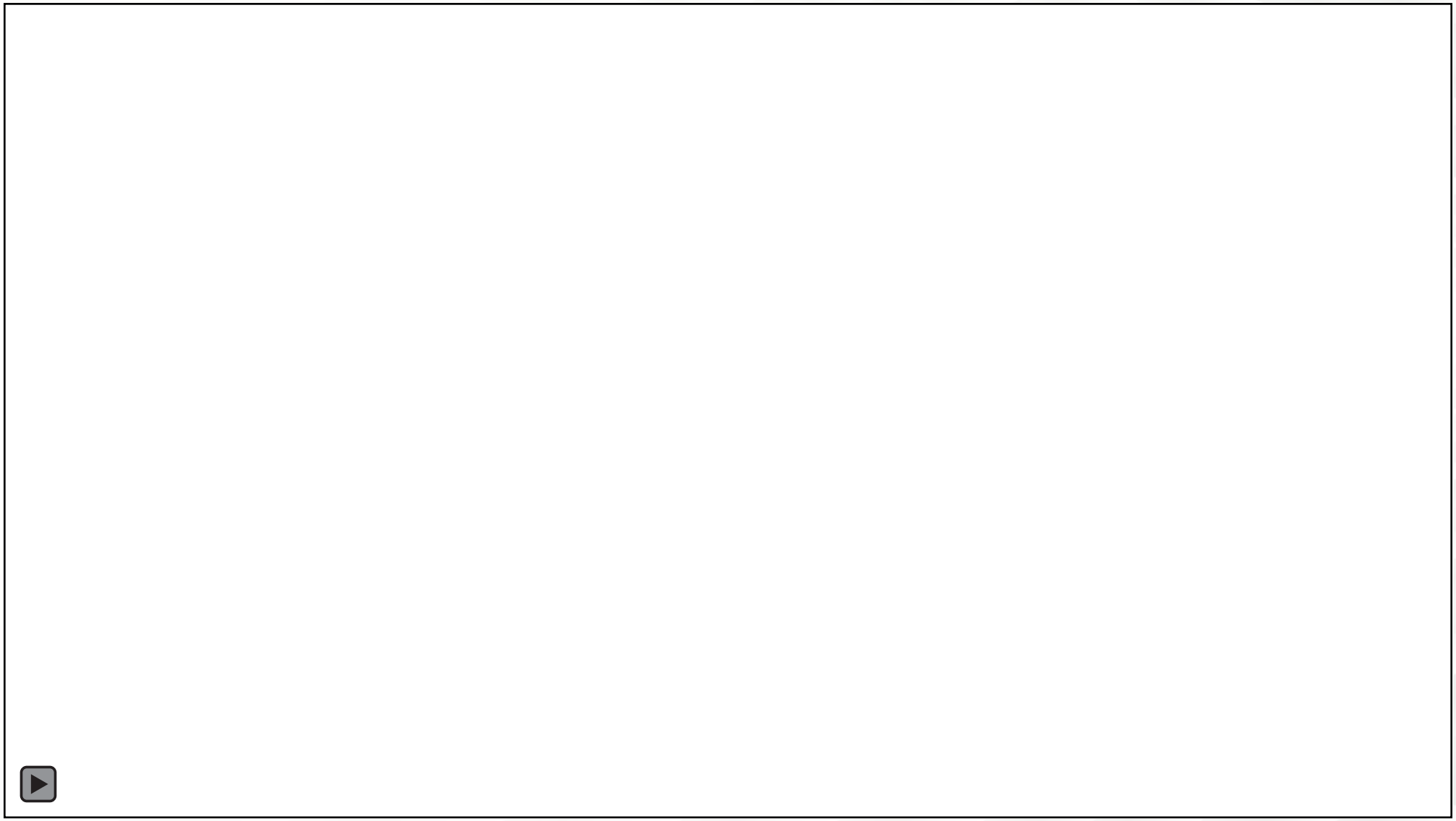
Summarized versions of conversations complete with feedback both positive and constructive.

Artificial Intelligence

Allows for the process to include subtle training of preferential behaviors like engagement, questioning attitude, and other HP concepts.

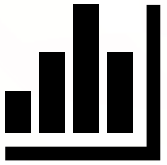
Integrated Training

KnowledgeVine®



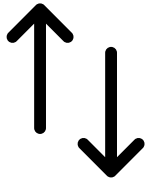
Inspect what you Expect

KnowledgeVine®



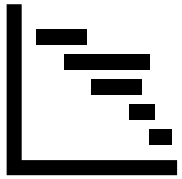
Latent Organizational Weaknesses

Provides insights from daily conversations across the organization to help identify and correct organization wide problems.



Process Improvement

Identifies the strengths and weaknesses of the process at multiple levels of the business.



Real-Time Information

Allows for easy access to todays conversations, locations, and tasks.

Artificial Intelligence

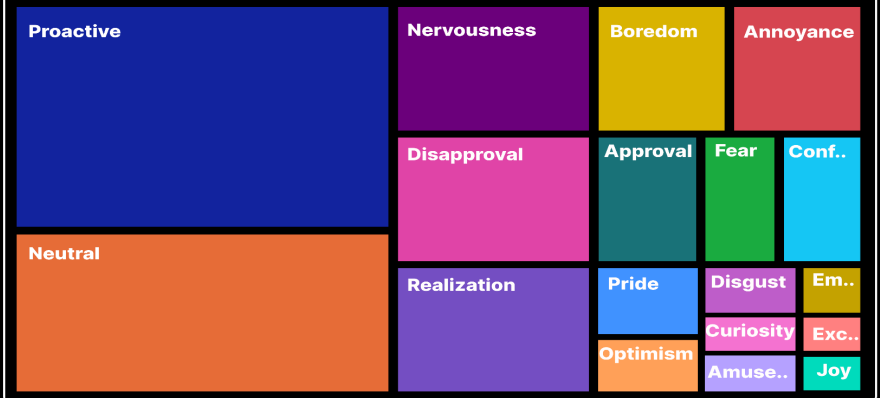
Provides truly predictive insights to recognize the highest potential cause of incident at a crew and organization level.

Crew Level Insights

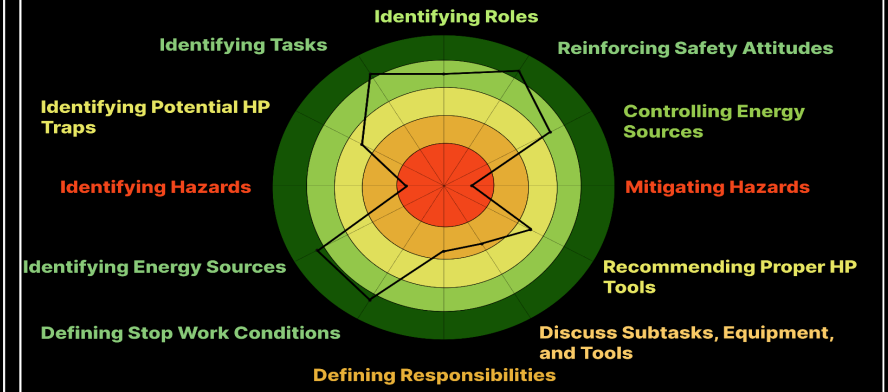
KnowledgeVine®

Ryan Smith Crew Leader	185 Pre-Job Briefs	22:45 Avg Duration	8:17am Avg Start Time	4 Avg # of Speakers

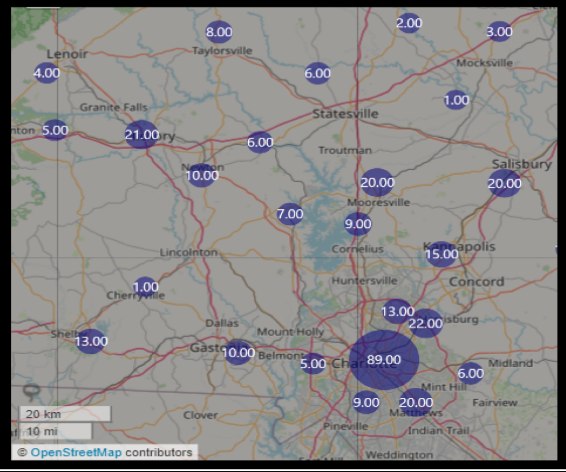
Speaker Sentiment



Pre-Job Brief Analysis



Work Locations

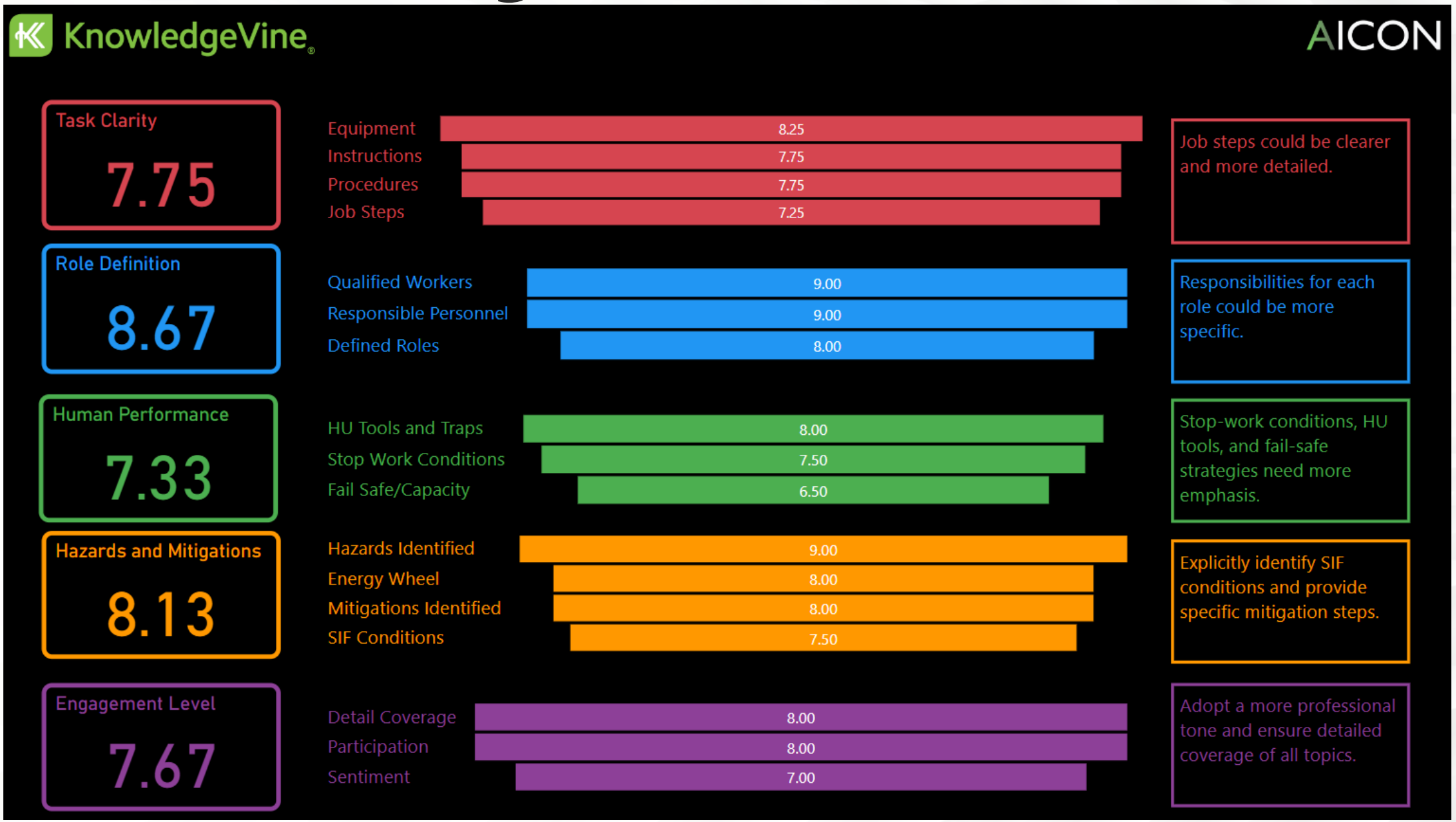


Training Focus - Topics that require explanation

Topic	
One Shot	17%
3-Way Communication	12%
Grounding	12%
Fall Risk	10%
Wet Conditions	8%
Dehydration	6%

Conversation Insights

KnowledgeVine



Questions and Answers

KnowledgeVine®

AICON

HUMAN PERFORMANCE FACTORS

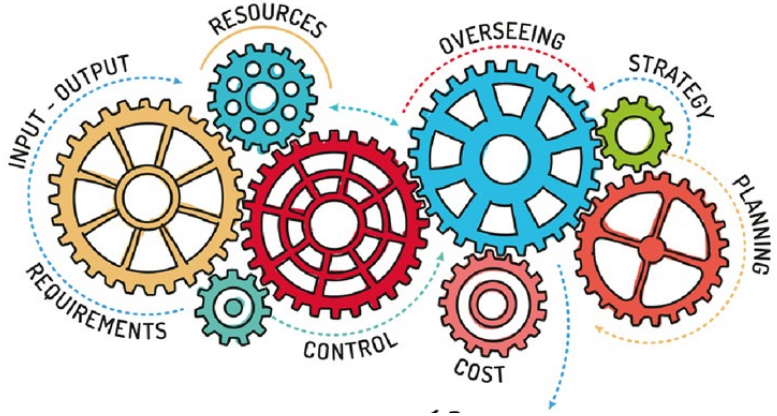
Dwayne Fewless, Principal Analyst

August 8, 2024 RF Human Performance Workshop

RELIABILITY FIRST

HUMAN PERFORMANCE VS. ORGANIZATIONAL PERFORMANCE

- ERO Event Human performance Trends
- ERO Organizational Performance Trends
- RF event Human Performance Trends
- RF Organizational Performance trends
- Strategy to help improvements



HUMAN PERFORMANCE VS. ORGANIZATIONAL PERFORMANCE

A3 Individual Human Performance

- B1 – Skill Based Error
- B2 – Rule Based Error
- B3 – Knowledge Based Error
- B4 – Work Practices LTA

A4 Management/Organization

- B1 – Management Methods LTA
- B2 – Resource Management LTA
- B3 – Work Organization & Planning LTA
- B4 – Supervisory Methods LTA
- B5 – Change Management LTA

HUMAN PERFORMANCE VS. ORGANIZATIONAL PERFORMANCE

- **Human Performance** refers to Individual Human performance
  - Substitution test would show different results
- **Organizational Performance** refers to practices, policies, team work, and procedures, management decisions, etc.
  - Substitution test would show similar result

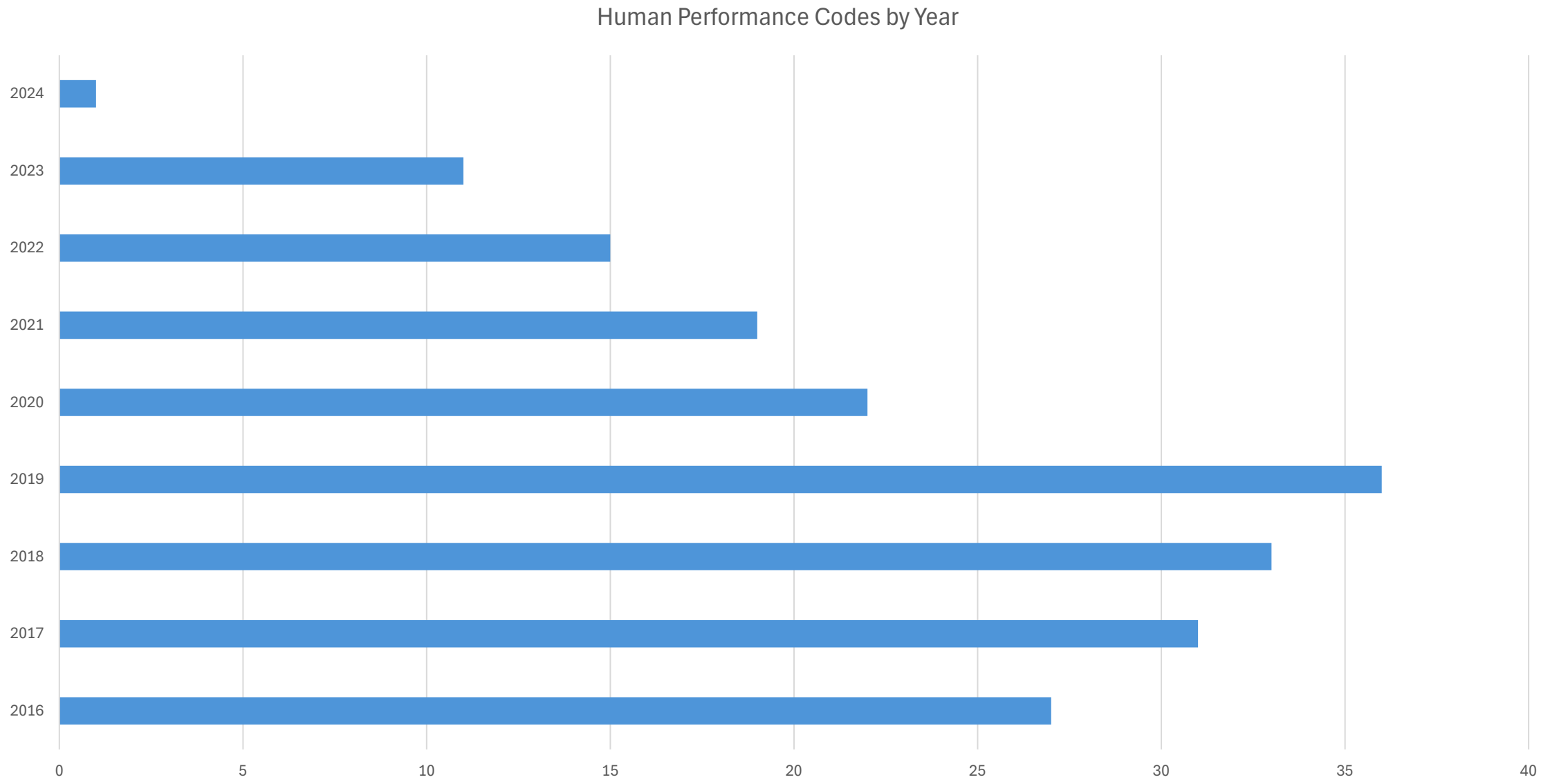
TYPES OF HUMAN ERROR

- **Skill-Based Mode**–associated with highly practiced actions in a familiar situation
  - Main error driver–Distraction
  - Error Rate 1:10,000
- **Rule Based Mode** – based on the selection of stored rules derived from one's recognition of the situation
  - Main error driver – Incorrectly identified the problem
  - Error Rate 1:1,000

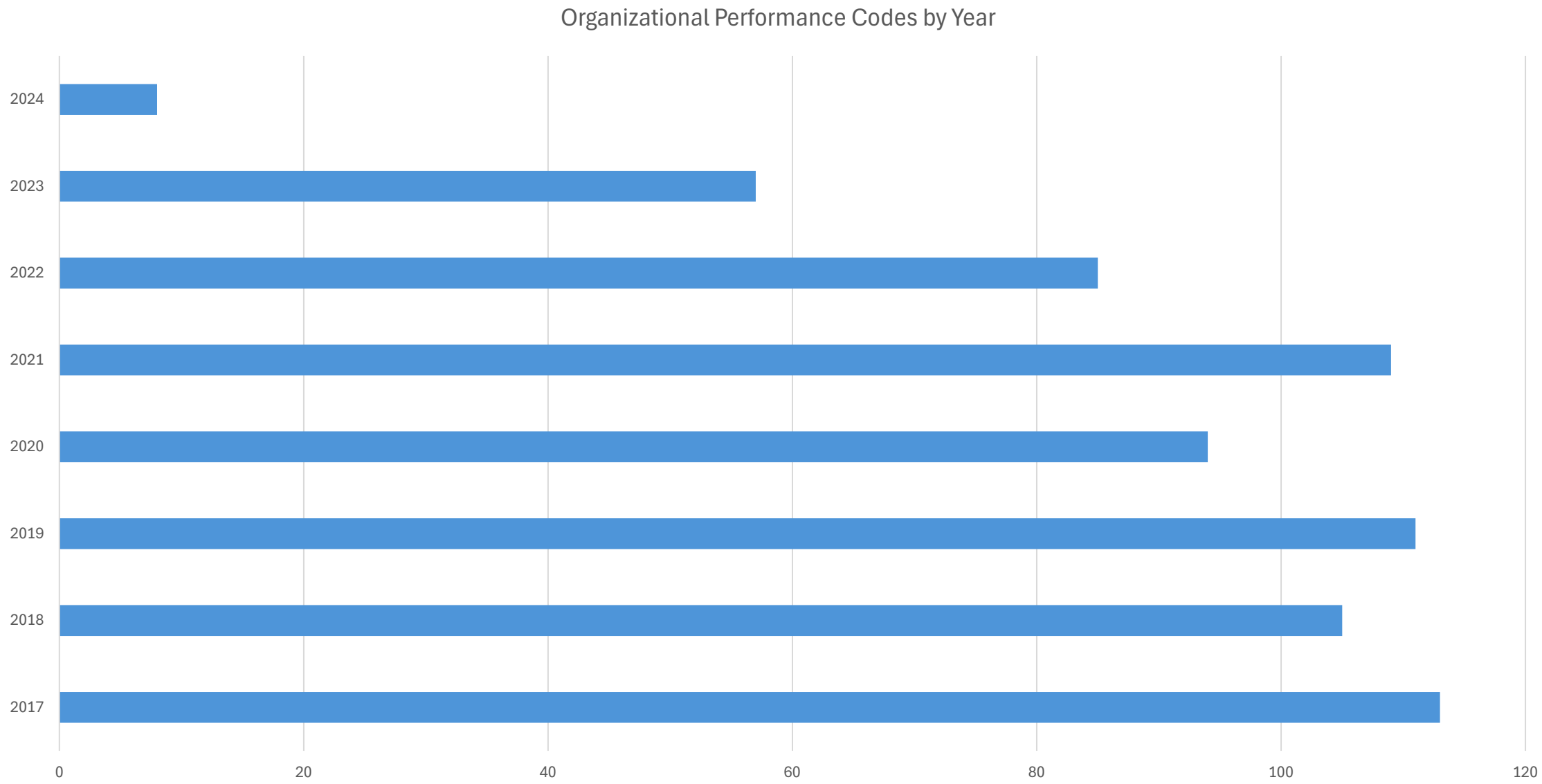
TYPES OF HUMAN ERROR

- **Knowledge-Based Mode**–Behavior based on unfamiliarity, so individuals must rely on experience, perceptions, and perspectives
  - Main Error Driver–Lack of a good mental model
  - Error Rate 1:2
- **Work Practices Error**** (This is when a person can't perform the task or deliberately causes an error.)

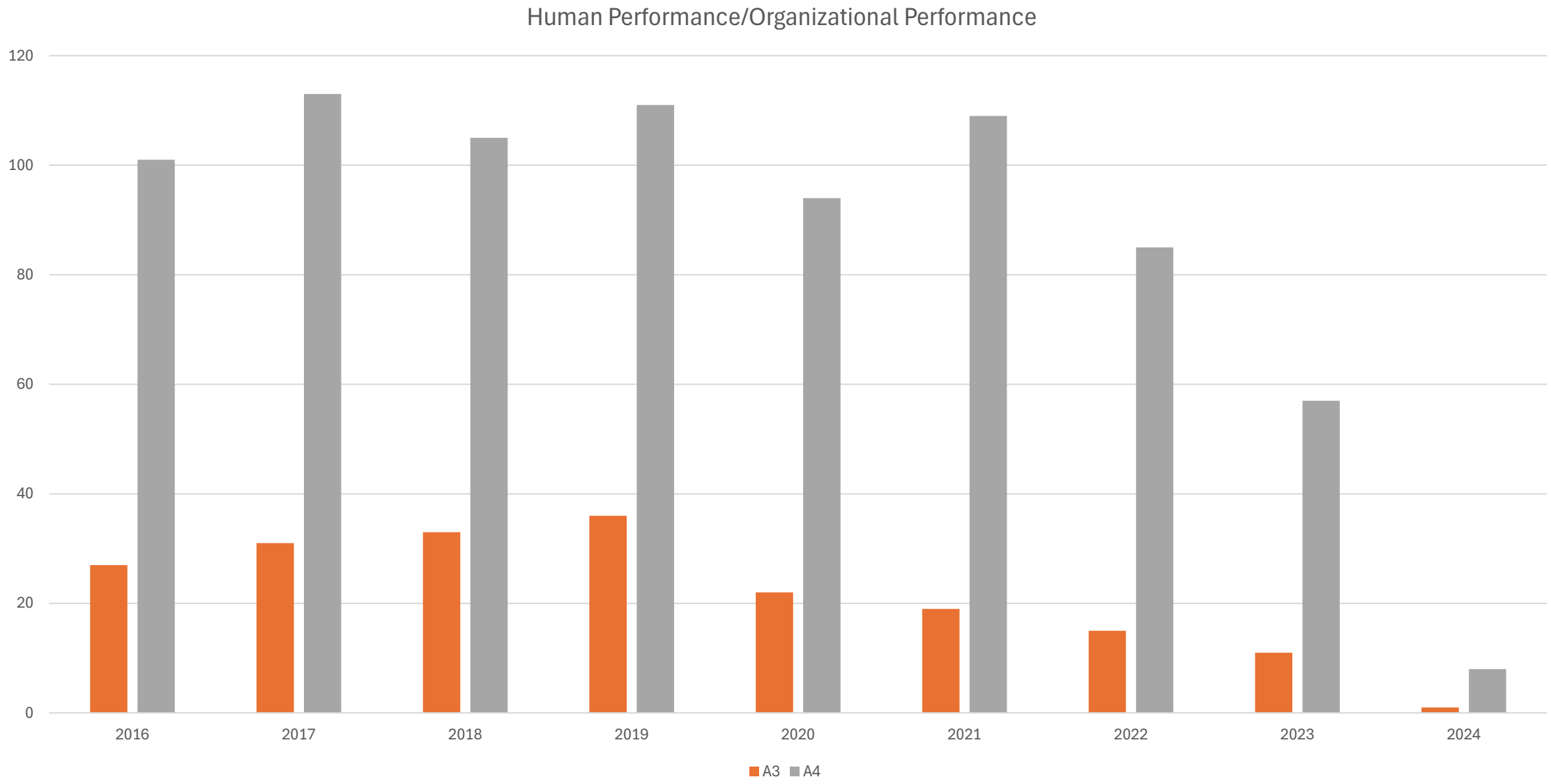
ERO EVENTS WITH HUMAN PERFORMANCE



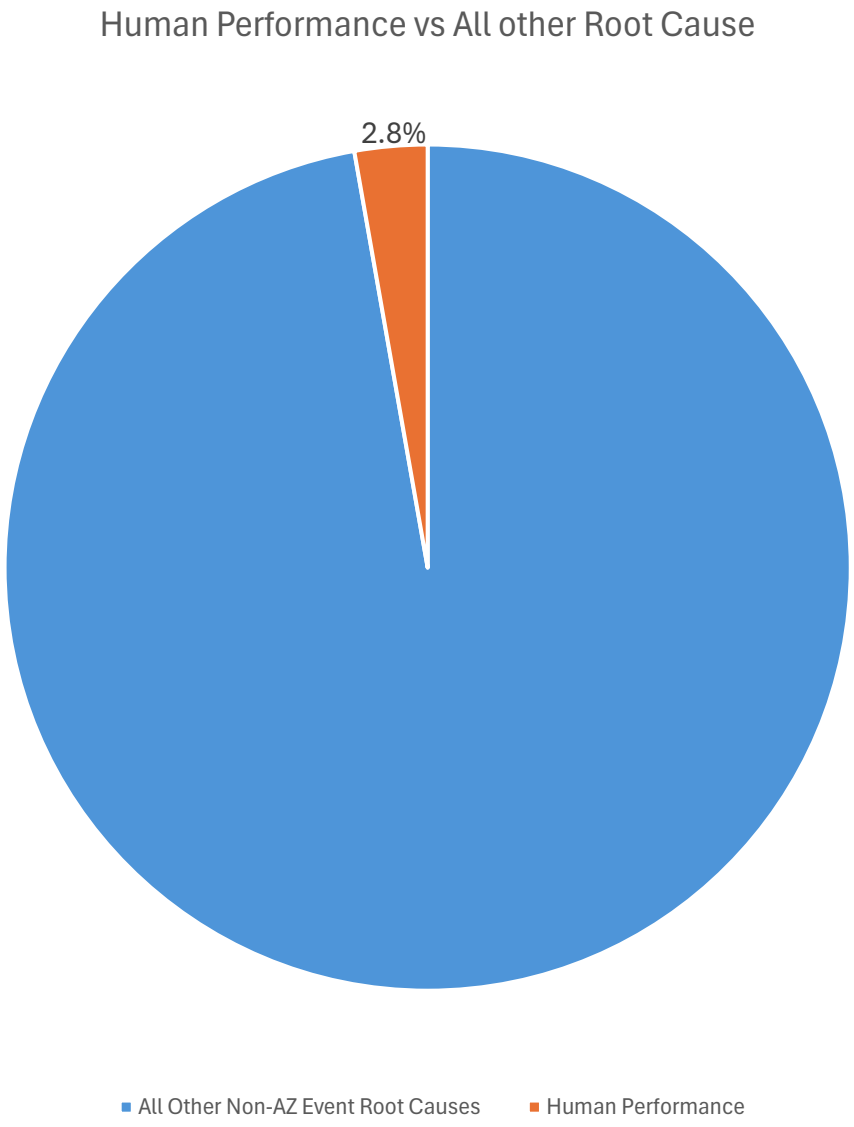
ERO EVENTS WITH ORGANIZATIONAL PERFORMANCE



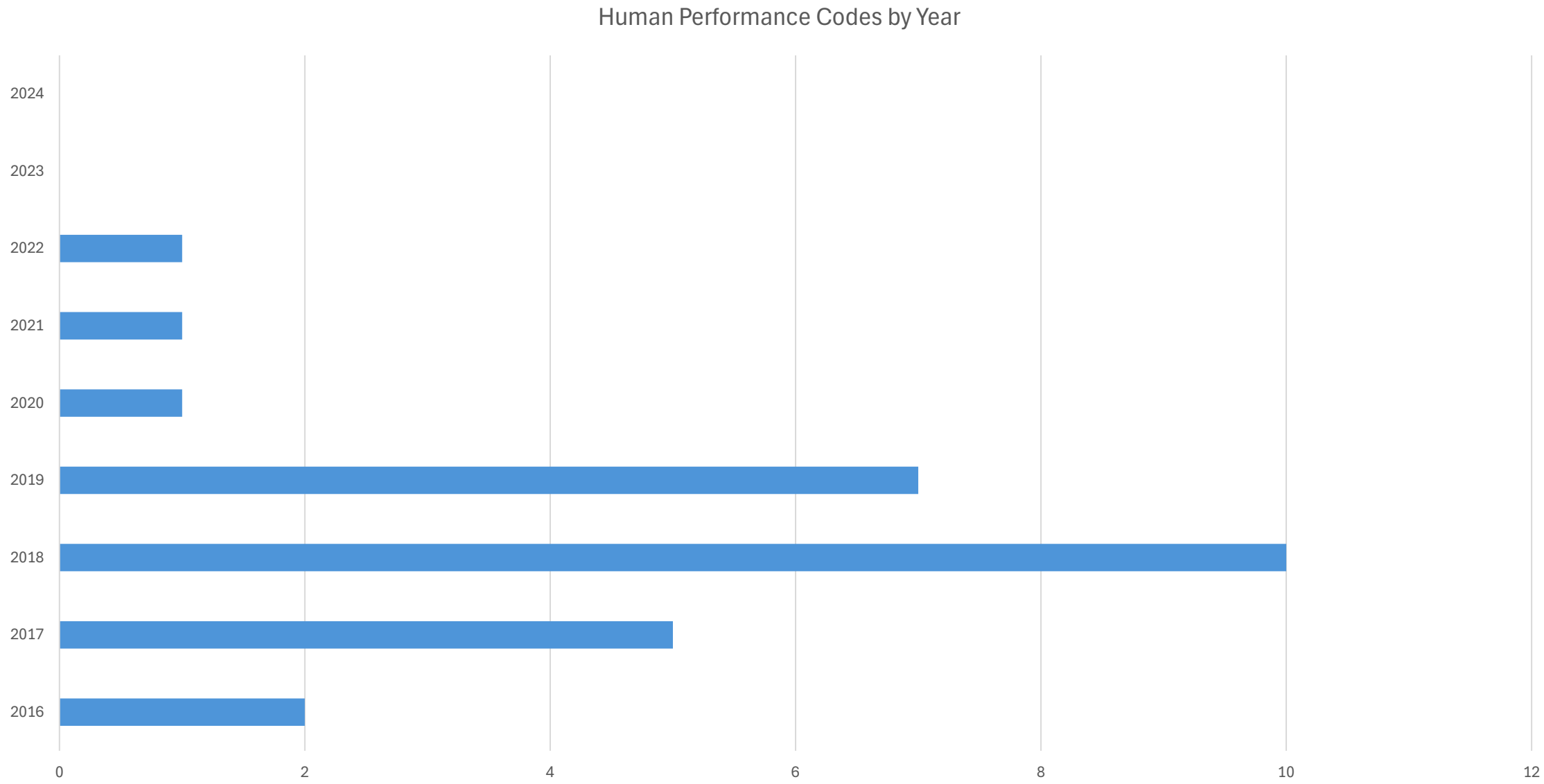
ERO HP VS ORGANIZATIONAL PERFORMANCE



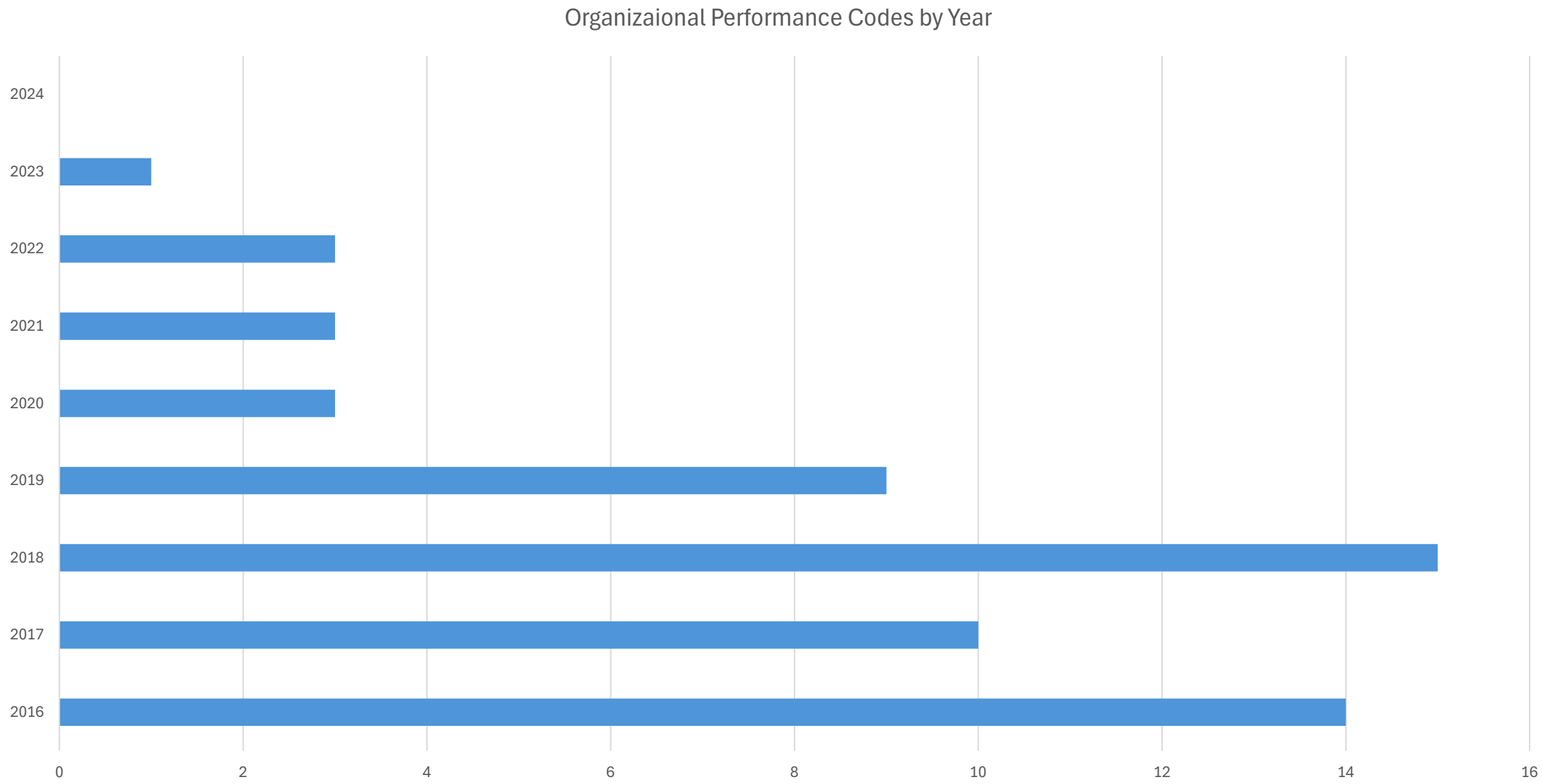
ERO HP VS ALL EVENTS



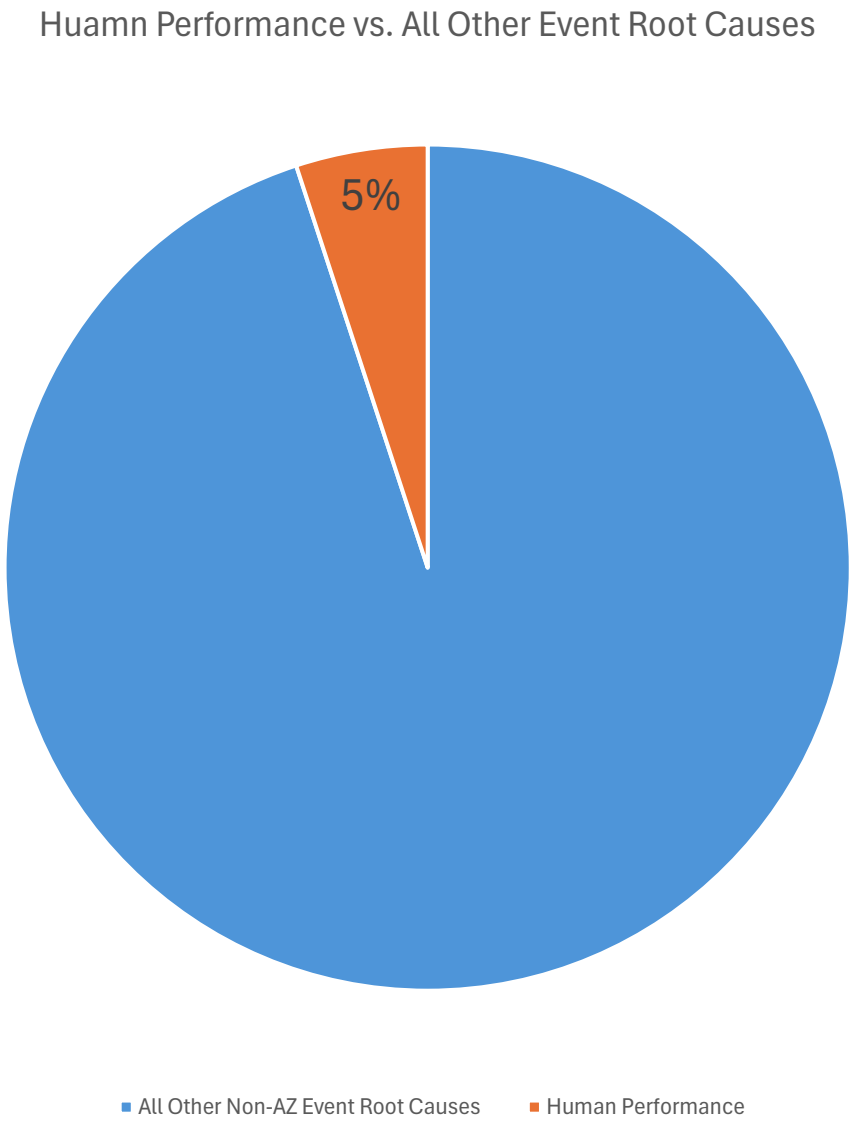
RF EVENT HUMAN PERFORMANCE TRENDS



RF EVENT ORGANIZATIONAL PERFORMANCE



RF EVENTS VS. HUMAN PERFORMANCE



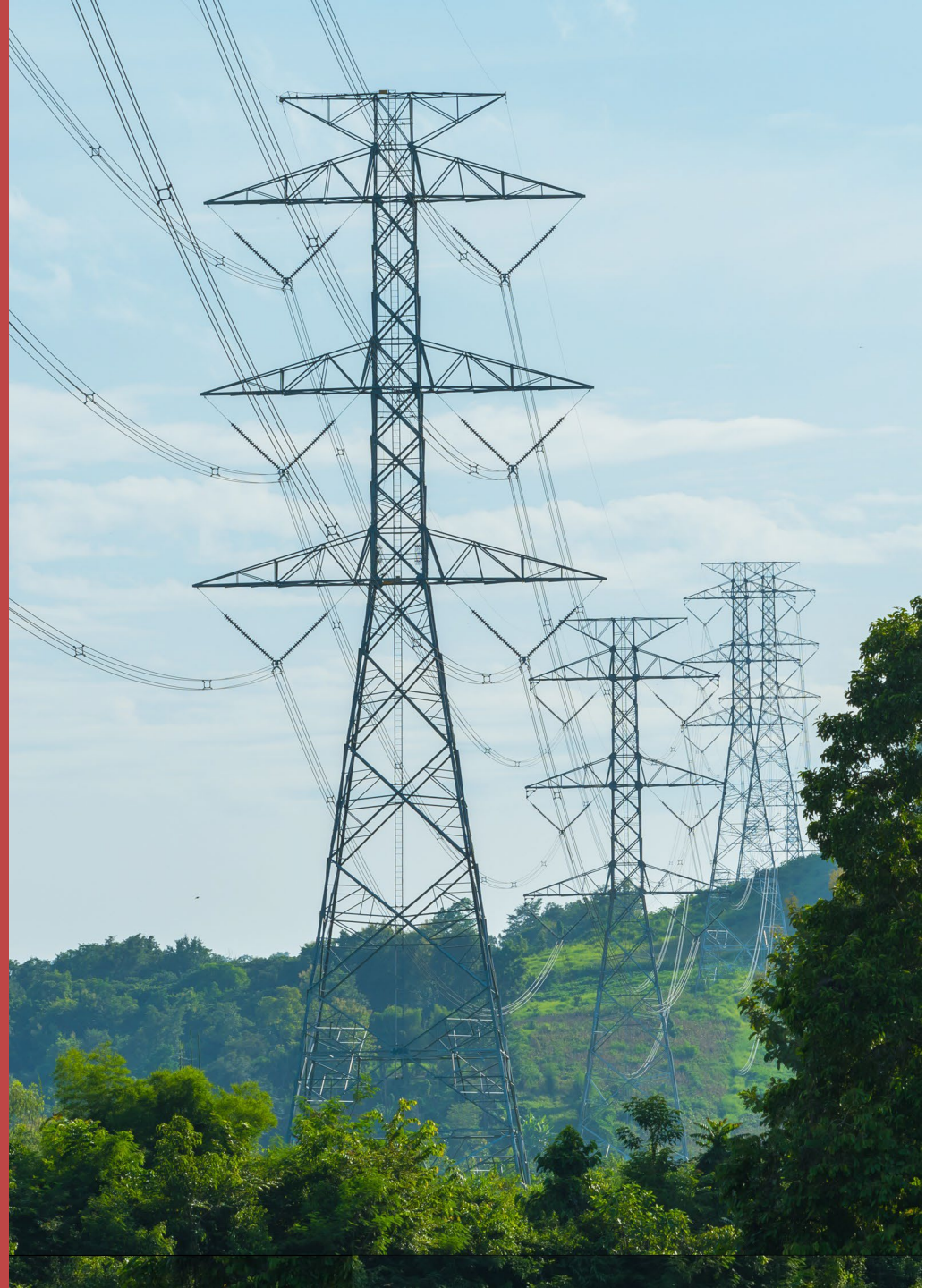
FORWARD TOGETHER RELIABILITYFIRST

RF STRATEGY TO HELP IMPROVEMENTS

- SIDE BY SIDE ANALYZATION OF EVENTS
- LESSONS LEARNED
- ASSIST VISITS
- RF HP WORKSHOPS
- HP WORKSHOPS

"Things don't just happen. They are made to happen."

John F. Kennedy



FORWARD TOGETHER RELIABILITYFIRST

QUESTIONS & ANSWERS

Dwayne Fewless

dwayne.fewless@rfirst.org