

# Spirit AeroSystems

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## Ready for Liftoff

Spirit AeroSystems' Safety Cultural and Human Factors Journey



# Who I Am

- Global Director for EHS and Security for Spirit Aerosystems
- EHS, Training, Operations and Facilities experience in the Manufacturing industry for nearly 20 years.
- Veteran of the US Navy
- Married for 29 years to my incredible (and patient) wife, Nedra.
- Father of 4 daughters, and proud new grandparent of a little boy!
- I am a sports fanatic, particularly all things related to Pittsburgh sports.
- My wife and I enjoy traveling, cooking, and raising our little hobby farm of ducks and chickens in our patch of land in Wichita, KS.



# Why I Do This





# Spirit Aerosystems, Inc. – Who We Are



**DIVERSIFIED DESIGN AND MANUFACTURING CHAMPION**

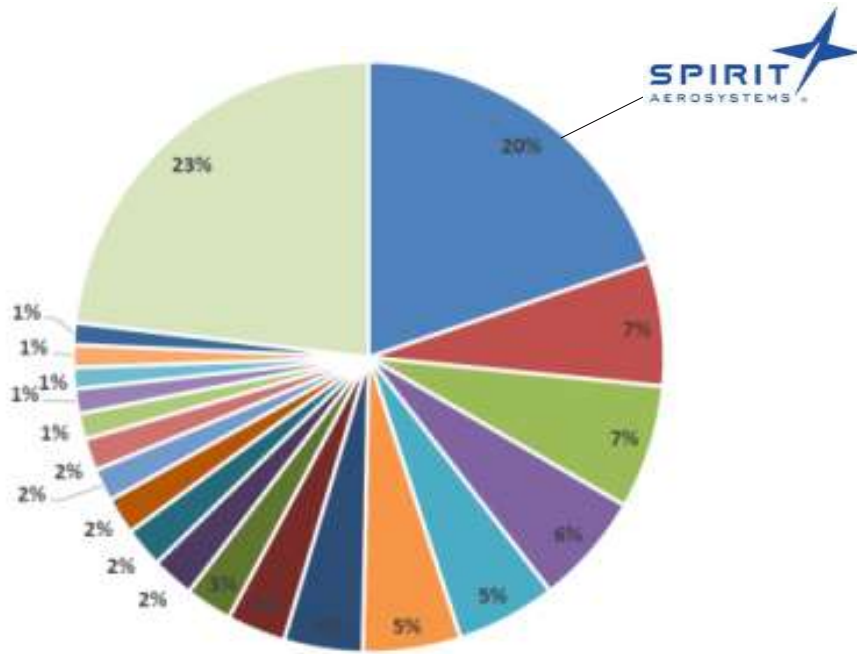


**DIVERSIFY • DE-LEVER • DRIVE MARGIN**

# Spirit Is the Leading Global Aerostructures Tier 1 Supplier



## Global aerostructures leader



Source: Counterpoint

## With a balanced aerostructures portfolio



Fuselage  
(52%)

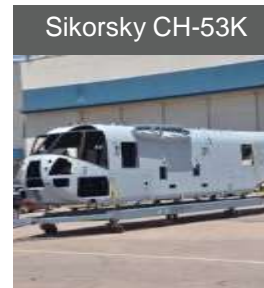


Propulsion  
(26%)

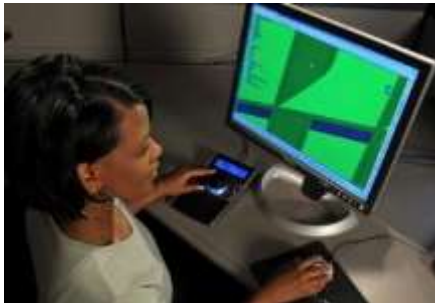
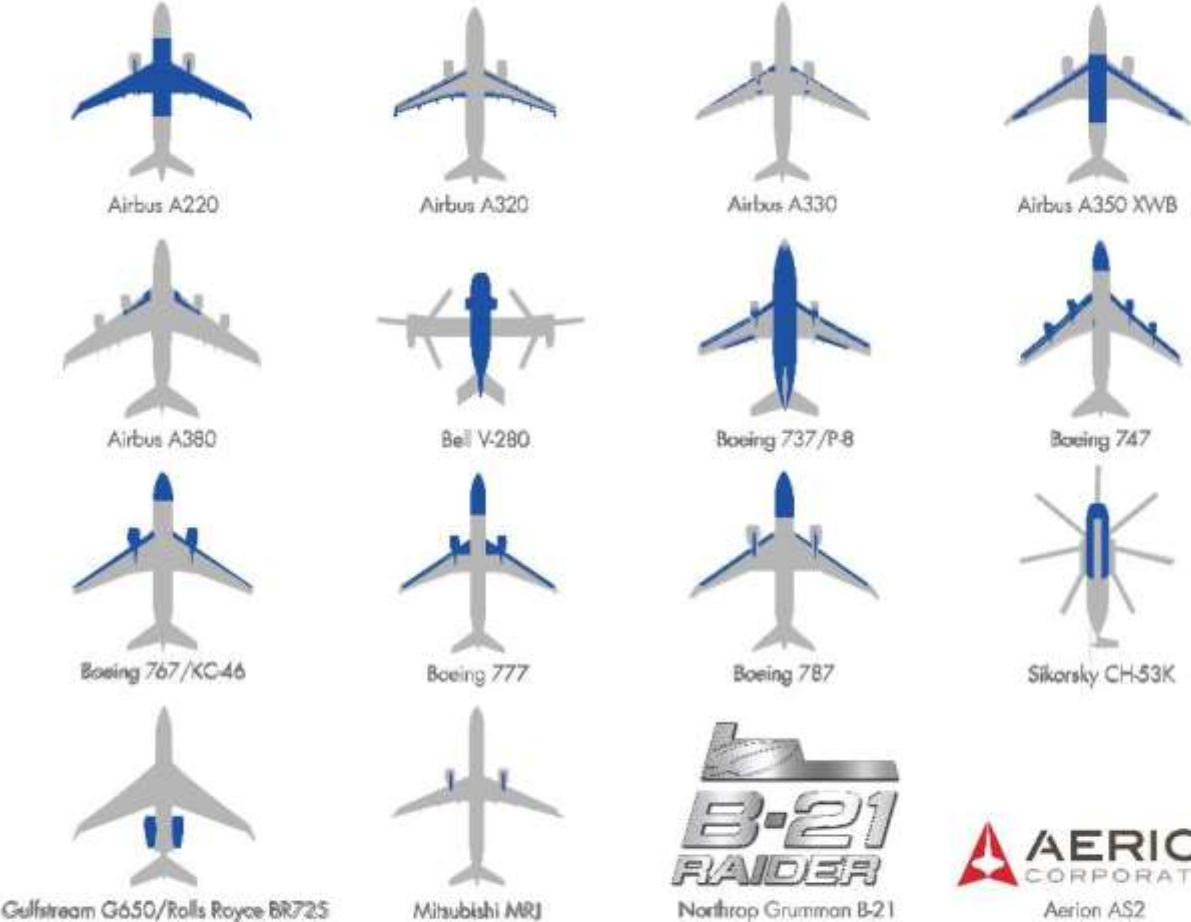


Wing  
(21%)

## And an emerging presence in Defense



# Broad Presence on Best Programs



DESIGN



BUILD



SUSTAIN

# Spirit Has a Global Footprint



- Spirit's current headcount is roughly 16,000 employees around the globe.
- Our HQ in Wichita has approximately 10,000 of those employees.



# Spirit's History in Aviation and Aerospace

- Spirit Aerosystem's history is rooted in the early days of aviation.
- Lloyd Stearman moved his company from California to Wichita in 1927.
- Two years later, the United Aircraft and Transport Corporation (now known as The Boeing Company) purchased the Stearman Aircraft Company.
- The B-29 Superfortress, the B-47 Stratojet and the B-52 Stratofortress are some of the historical aircraft manufactured in Wichita over the years.





# Spirit's History in Aviation and Aerospace

- Spirit's history is not limited to American aviation history, as our Prestwick, Scotland and Belfast, Northern Ireland sites have links to major elements in the global aviation industry.
- Our Belfast location was home of the Short Brothers who secured the manufacturing rights for the "Wright Flyers" in 1908.
- Our Prestwick location was home to aviation pioneer, David McIntyre, who in 1935 established Scottish Aviation Ltd which was an essential producer of aircraft during WWII.



Photo from our Belfast location taken in 1909. Included in the photo are the Short Brothers, the Wright Brothers, Charles Rolls, and Henry Royce.

# Ready for Liftoff – Building Our Foundation



2005	2008	2016
Emerging from Boeing	ISO 14001 / OHSAS 18001 at Wichita HQ	Tom Gentile named CEO



- Spirit AeroSystems is born through the divestiture of Boeing's of Tier I aerostructures.
- Spirit developed their Safety and Environmental Management Systems, receiving certification to the ISO 14001 and OHSAS 18001 standards in 2008 (note: in 2020, Spirit was certified to the new ISO 45001:2018 standard) – Today, 93% of Spirit employees work in facilities with EMS and SMS certs.
- Tom Gentile named CEO, providing top-down commitment towards Environmental, Health, and Safety.

# CEO Commitment and Top-Down Approach

- CEO Safety Walks (GEMBA's)
- Bi-weekly Executive Safety Councils
- Safety Funding
- Leading from the Front
- Safety Communication



Team:

We often talk about the importance of safety in our factories. Safety is and always will be our number one priority because what we do each day in our factories can result in safety incidents if we are not constantly vigilant.

Our global operations teams meet every two weeks in our Global Safety Council, chaired by Chief Technology and Quality Officer Kevin Matthies, to review any incidents, discuss root cause and corrective actions, and share best practices. To help energize safety practices around the world, we recently initiated a contest between different sites to report near misses, unsafe conditions, and at-risk behaviors. The idea came from one of our new Board members, Pat Shanahan, who had held a similar contest when he was at Boeing. In keeping with the college basketball tournament currently underway in the U.S., we called the contest "Near Miss Madness." These efforts also help ensure that we deliver safe products to customers.

Teams get different levels of points for every type of near-miss they report. There are two rounds to the contest, which the top teams advancing to the NCAA Final Four next week. So far, we have had over 400 near misses reported. Reporting and correcting near misses is an important element of maintaining a safe work environment.

# Ready for Liftoff – Forged in a Crucible



October 2018	March 2019	March 2020
Lion Air Flight 610 Crash	Ethiopian Air Flight 302 Crash	COVID Crisis Begins



- Production came to a screeching halt from 57 APM to just 71 for all of 2020.
- Combined impact of these catastrophes resulted in employment actions that effected 8,000 employees
- Reassigned hundreds of other employees to support the global response to the COVID-19 pandemic



# COVID Response

- During the COVID-19 pandemic, Spirit answered the call for global community support.
- Locally in Wichita, Spirit joined the Ad Astra Alliance to help produce thousands of 3-D printed faceshields for medical providers to supplement the demand for PPE.
- Partnering with Vyaire, a medical manufacturer of ventilators, Spirit launched a manufacturing facility in just 3 short months that produced over 20,000 ventilators.



Spirit CEO, Tom Gentile with the CEO of Vyaire, standing in front of the first shipment of ventilators.

# Ready for Liftoff – Emerging Stronger

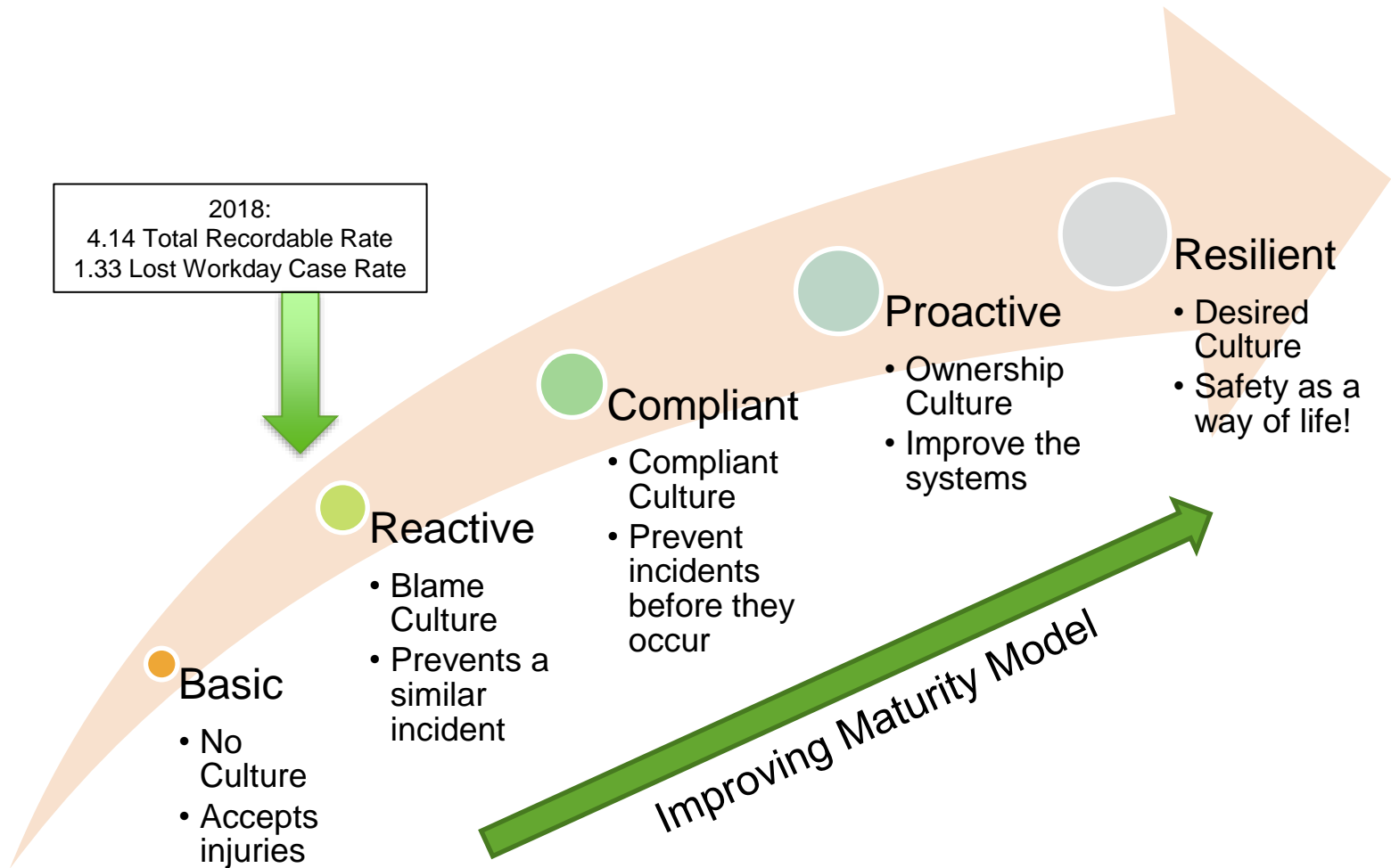


- While still feeling the effects of the dual crisis (737 and COVID), Spirit positioned itself for the future with a significant acquisition of Bombardier's Aerostructures Division (Belfast, Morocco, and Dallas MRO).
- 2021 saw the reorganization into 3 key segments; Commercial, Defense and Aftermarket.
- 2022 has seen increased production rates and the focus on the future!

# The Safety Journey



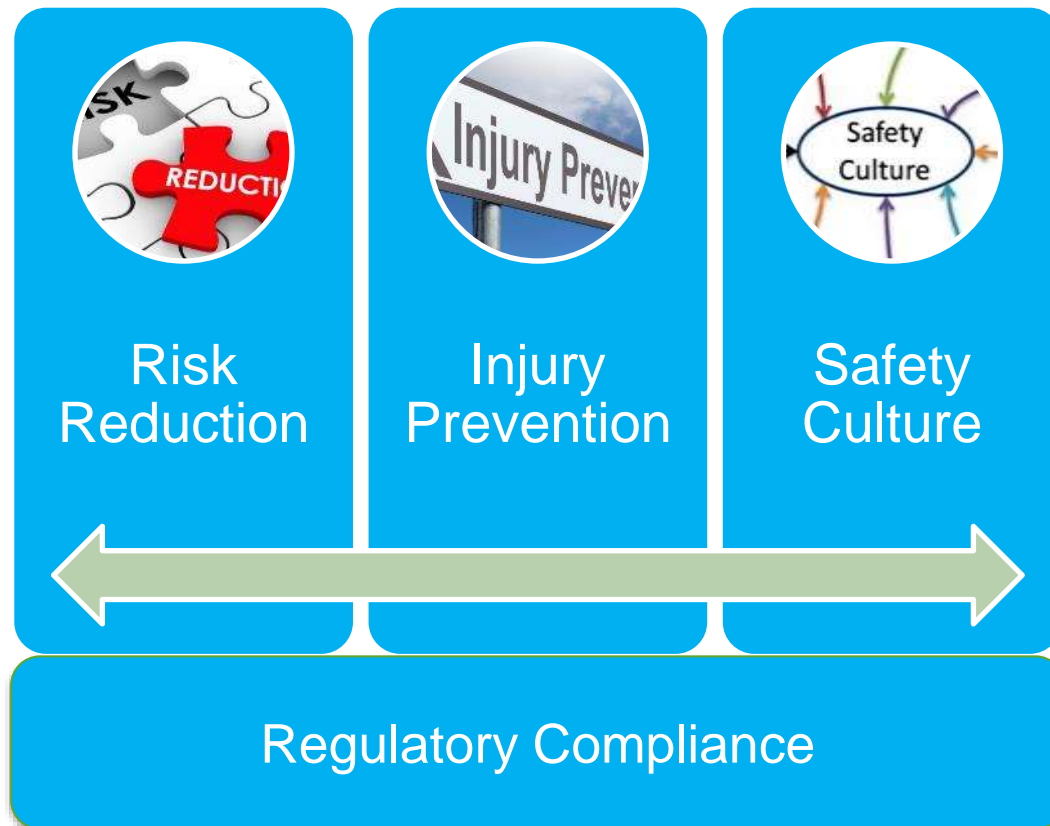
# Safety Culture Maturity Model





# Safety Strategy Framework - Standardized

- Each site and function develops an annual safety strategy via this three-pronged approach.
- Each strategy is unique to the challenges and risk of the site/function, the framework is the same.

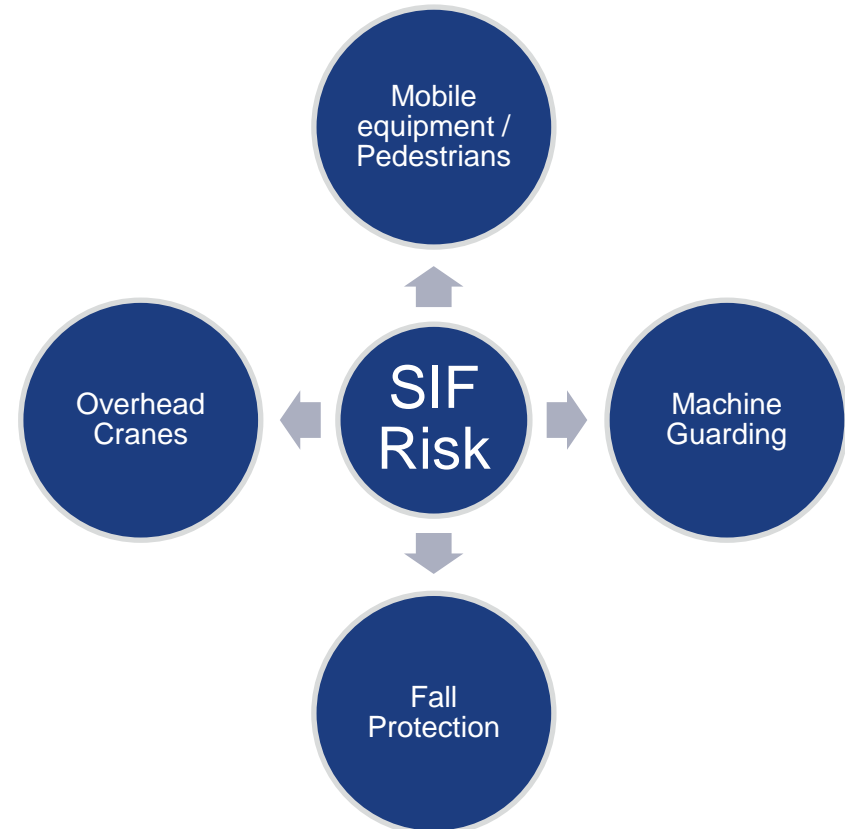


**Compliance is the foundation for our Safety Success!**

# Risk Reduction

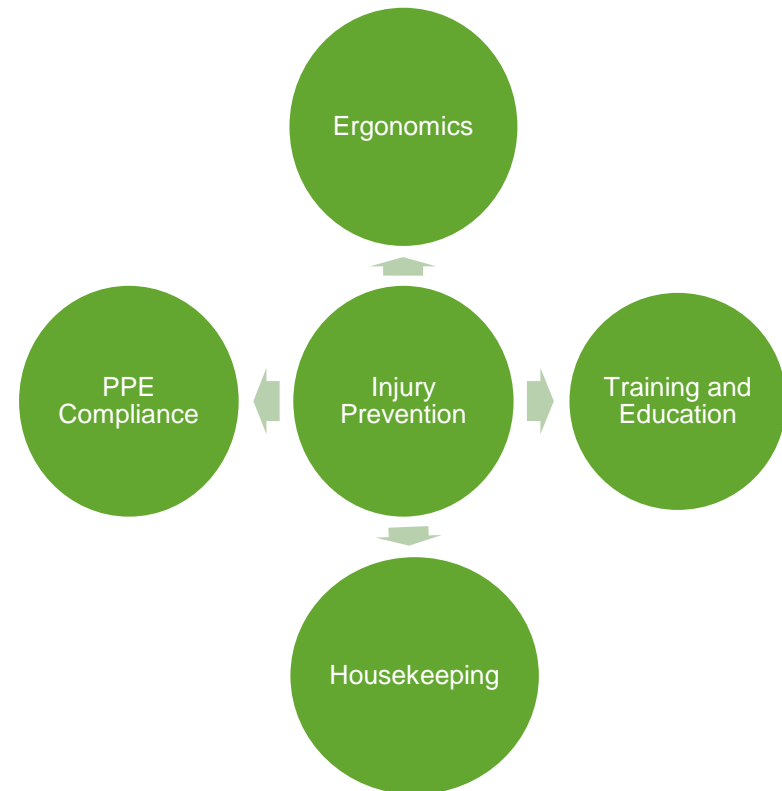


- Risk Reduction starts with Risk Identification.
  - **Deliberate**
  - **Systematic**
  - **Objective**
- While any risk warrants attention; aggressive mitigation efforts should be directed towards SIF (Significant Injury-Fatality) potential.



# Injury Prevention

- Injury prevention is about attacking our metrics like Total Recordable Incident Rate (TRIR)
- Ergonomics is still one of the largest drivers of recordable injury - ~40% of recordable injuries. We are partnering with companies like Humantech on systematic approaches towards Ergo risk identification and reduction.



# Safety Culture

- Safety Culture is at the DNA of **Best-in-Class** Safety Organizations.
  - **Leadership Commitment**
  - **Employee Engagement and Empowerment**
- Safe Start appeals to the minds and hearts of our team members. Addresses the underlying causal factors for nearly 95% of our incidents.
- Union Safety Program – Our Union Safety Administrators are a direct conduit to the workforce and act as extensions of the EHS team and our initiatives.





# Safety Culture



# Safety House



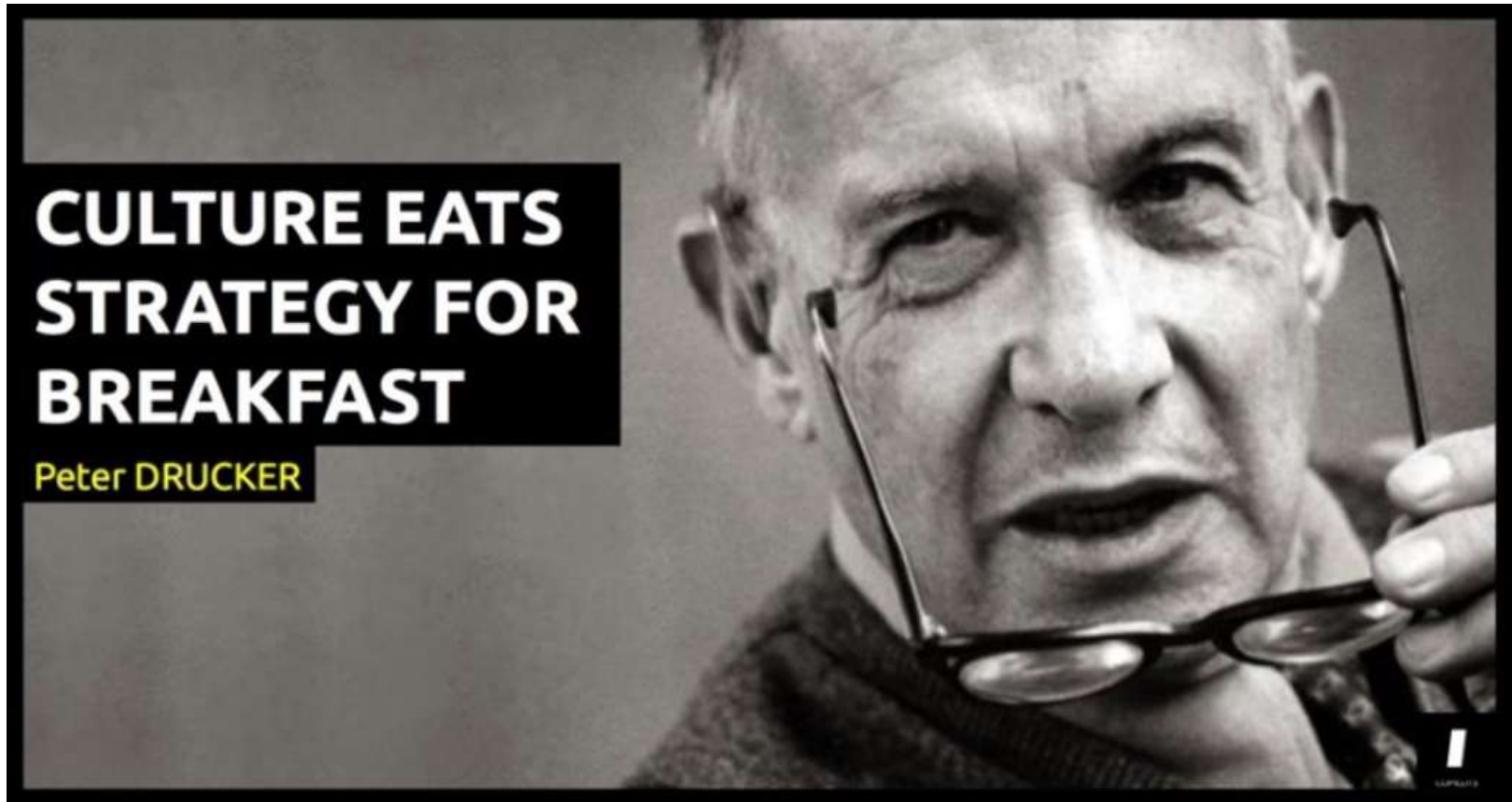
**Where Does Culture Fit In?**

# Safety House



**Without Culture, Nothing Sticks Together**

# Importance of Culture



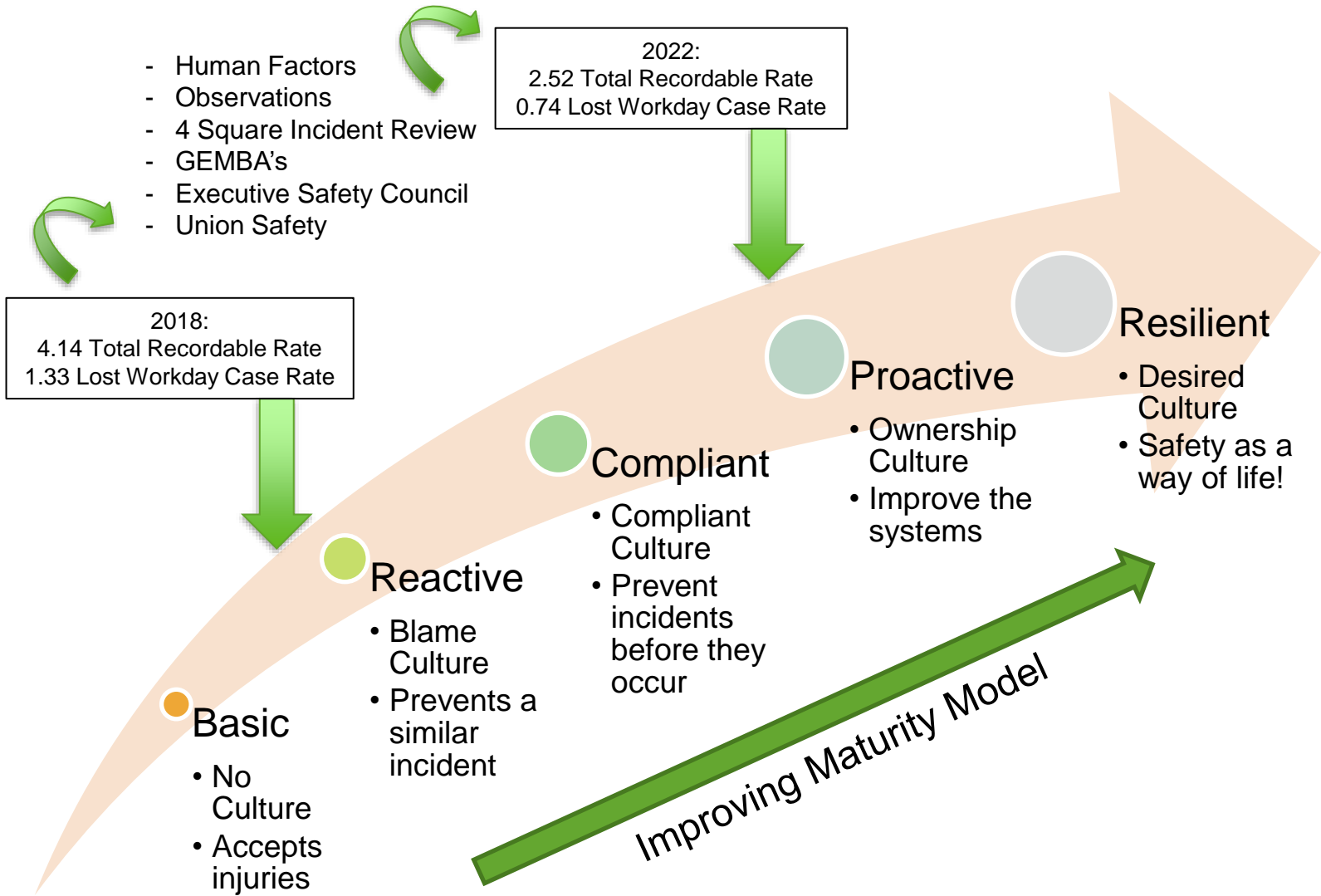


# Safety House



**Culture is a Differentiator**

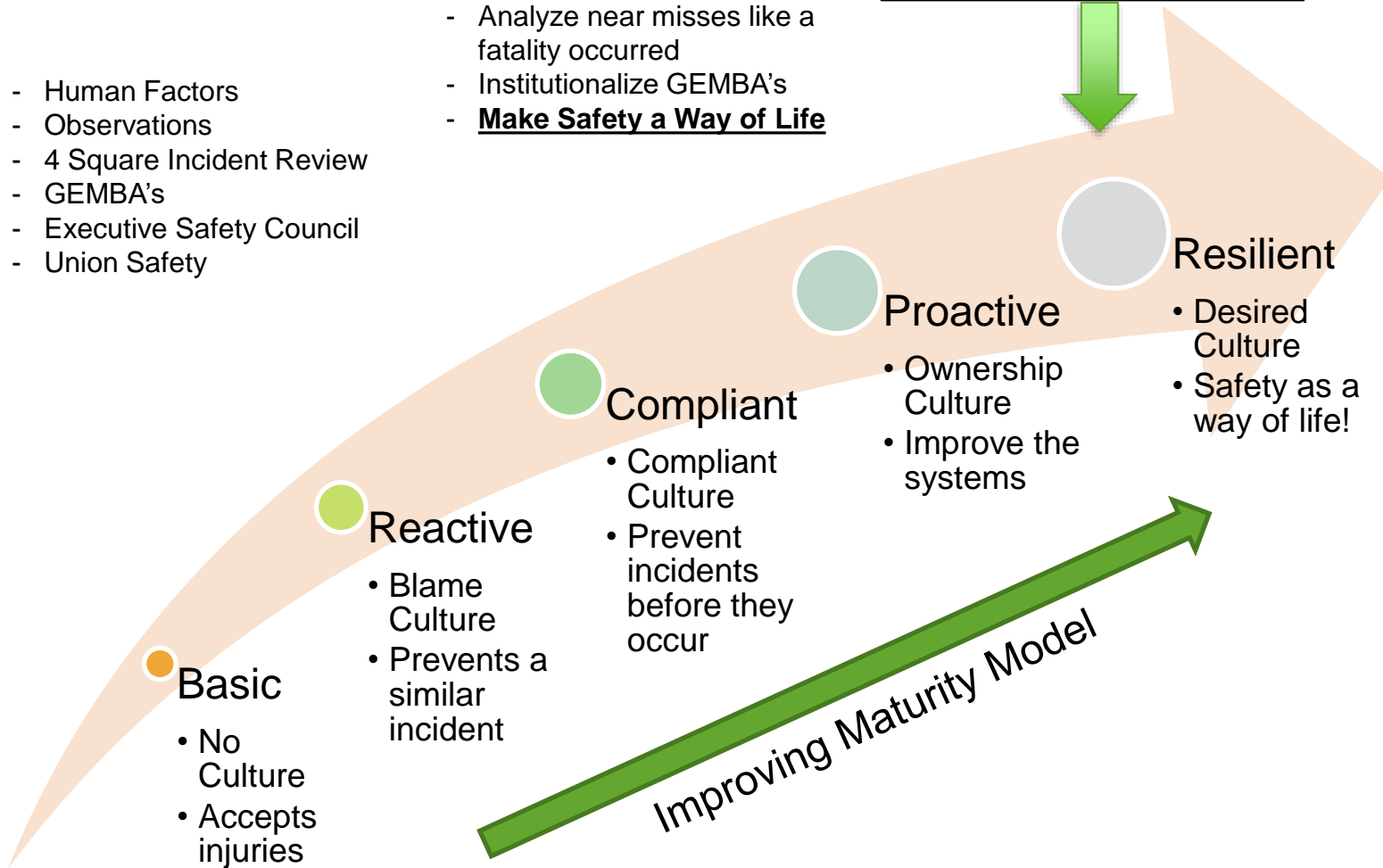
# Safety Culture Maturity Model



# Safety Culture Maturity Model

2022 and beyond:  
**WORLD CLASS**  
 < 1.0 Total Recordable Injury Rate  
 <0.2 Lost Workday Case Rate  
 All sites ISO certified  
 External Recognition

- Human Factors
  - Observations
  - 4 Square Incident Review
  - GEMBA's
  - Executive Safety Council
  - Union Safety
- Design for Safety
  - Leverage Human Factors
  - Analyze near misses like a fatality occurred
  - Institutionalize GEMBA's
  - **Make Safety a Way of Life**



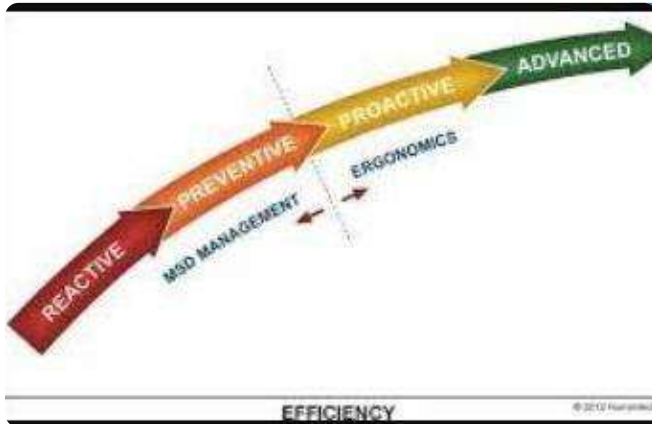
**Safety as a Way of Life**

# Realizing the Vision

- Ergonomic emphasis, both legacy issues and designing for the future
- Full court press on Near Miss / Hazardous Condition / Hazardous Acts
- Sustainable Future
- Development of our Union Safety Administrator – Voice of the workforce
- Global Expansion of Safe Start and Human Factors Emphasis

**Where Flight Will Take Us**

# Ergonomic Emphasis



- Ergonomic and Soft Tissue Injuries continues to be the number driver of injury at Spirit locations.
- Systematic approach, assessing jobs for risk, prioritizing solutions.
- Designing risk out for future projects.

Risk Priority Score (RPS) **45**

Whole-Body Assessment									
Hands/Wrists		Elbows		Shoulders					
Left	Right	Left	Right	Left	Right	Neck	Back	Legs	
3	3	0	3	4	4	3	3	0	
Physical Stressors:									
Manual Material Handling									
Lift/Lower				Push					
Pull				Carry					



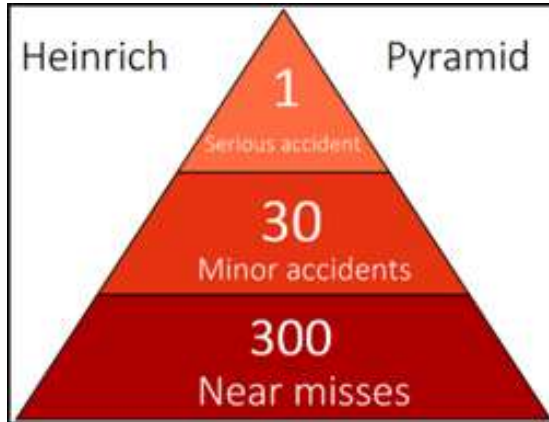
Risk Priority Score (RPS) **12** 73% Reduction

Whole-Body Assessment									
Hands/Wrists		Elbows		Shoulders					
Left	Right	Left	Right	Left	Right	Neck	Back	Legs	
2	0	0	0	0	2	2	2	0	
Physical Stressors:									
Manual Material Handling									
Lift/Lower				Push					
Pull				Carry					





# Engaging the Workforce – Near Miss



- Competition to pull Near Misses, Hazardous Conditions, and Hazardous Acts from the workforce.
- Near Miss Madness: Resulted in twice as many documented Near Misses in 4 weeks than any full year in Spirit's history





- Spirit has a responsibility to help protect the environment and promote the health and safety of our employees, customers, and communities.
- Acting as a trusted partner with those key stakeholders is the foundation for Spirit's new Sustainability strategy.



## RENEWABLE ELECTRICITY

By the end of 2021, Spirit's entire 12 million square-foot facility in Wichita, Kansas will be **100%** powered by a nearby wind farm. The project is also designed to support local economic development.



## WATER RECYCLING

Spirit is one of the largest industrial water recyclers in the United States – recycling more than **2 million gallons** of process water daily at our Wichita, Kansas facility.



## RESOURCE EFFICIENCY

Spirit was recognized as **JEC Innovation Award Finalist** for its IRIS™ technology, that can achieve a nearly **20%** reduction in aircraft operating emissions.



## CERTIFICATIONS

**100%** of Spirit's production facilities are AS 9100 or ISO 9001 certified.



## DIVERSITY AND INCLUSION

Spirit is a supporter of the **Catalyst** initiative to accelerate progress for gender equity, diversity, and inclusion in the workplace.



## UNCONSCIOUS BIAS TRAINING

**100%** of Spirit's employees will complete the Company's Unconscious Bias and Anti-Discrimination trainings upon employment.



## COMMUNITY GIVING

Since 2005, Spirit employees have donated approximately **\$31 million** to nonprofit agencies and relief organizations through the Good Neighbor Fund.



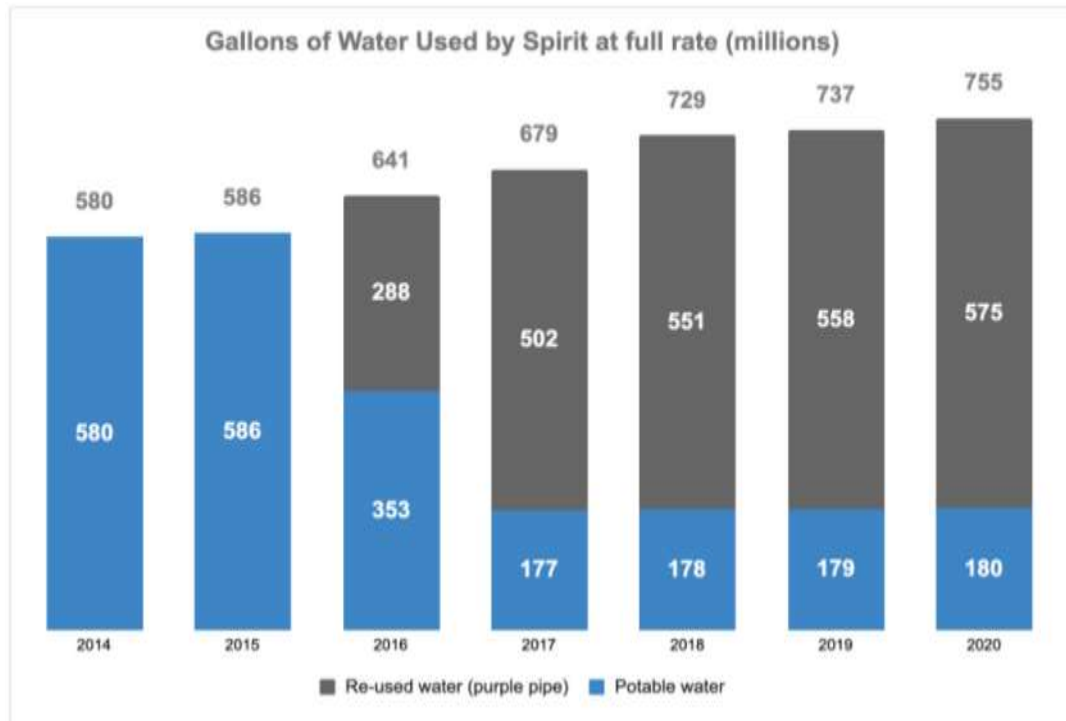
## COVID-19 SUPPORT

Spirit produced **ventilators** and critical **personal protection equipment** – including face masks and shields – for local communities and hospitals around the world.

# Purple Pipe Project



- At Spirit, we consider drought a chronic, physical, climate-related risk at our Wichita facility which influences our water efficiency strategy. Spirit has entered into an agreement with the City of Wichita to use non-potable grey water in our industrial processes where possible. As a result of this project, Spirit has reduced its potable water usage by more than 70 percent.



# Renewable Energy



- Spirit's largest site, in Wichita, KS, is now powered by 100% renewable energy.
- Two other sites (Tulsa, OK and Prestwick, Scotland) are also powered by 100% renewable energy.

**SPIRIT AEROSYSTEMS**  
Switches to Renewable Energy in Kansas





# Community Spirit



- Corporate grants
- Good Neighbor Fund
- Total giving: 5.47 million\*
- Volunteers: Over 5,000\*
- Volunteer hours: Over 17,000 valued at \$439K\*

\*Spirit and employees-2019



# Union Safety Administrators

- A critical cultural piece of our Spirit's Safety Strategy has been the development and enhancement of our Union Safety program.
- We have 15 USA's that are employees that worked in the functional areas they support.
- As subject matter experts, they have a sense of credibility with the workforce and act as their voice.
- They partner with their EHS counterparts on Safety Strategy development and execution.
- Our recent gains could not have been possible without their collaboration and support, and our future goals will not be realized without their continued efforts.



# Safe Start

- Spirit started its Human Factors journey in the spring of 2019!
- 25 employees attended Train-the-Trainer courses at the Wichita location.
  - Half were USA's!
- Rollout was initially very successful, but headwinds from the Boeing Max and COVID crises impacted our expansion.
- With business recovery in full swing, our rollout has regained steam.



# Safe Start

- Challenges:
- Our initial training covered roughly 1,500 employees in Wichita in late 2019/early 2020; sadly, half of those employees were impacted by our economic crisis.
- Nearly 1/3 of trainers were also impacted.
- Financial investment during an unprecedented dual crisis made execution difficult.
- But.....



# Safe Start

- We are Emerging Stronger and Safe Start is an integral element of our strategy moving forward.
- Wichita:
  - All New Hire employees received Units 1-3 during their first month and Units 4-5 are scheduled in their Learning Plans
  - Commercial side of our Wichita business will be fully trained by the end of 2022
  - Safe Track and/or Rate Your State under consideration
  - Safe Start language is embedded in our Incident Investigation Processes



# Safe Start

- We are Emerging Stronger and Safe Start is an integral element of our strategy moving forward.
- **Tulsa:**
  - Safe Start Now is in-process
- **Maine:**
  - Safe Start Now is in-process
- **Kinston:**
  - Safe Start Now is in-process
- **France and Morocco:**
  - Kicking off this fall
- **Malaysia:**
  - Finalizing rollout plans
- Remaining sites expected to launch by the end of 2022





# Realized Benefits of Human Factors

- Breaks walls down between workforce and management – Transparency
- Focuses on 24/7 safety, not just safety at work
- Looks at the antecedents to safety behavior
- Holistic approach to safety:
  - The Job
  - The Individual
  - The Organization

**Sways the hearts and minds of all employees**

# Closing

- Our journey is hardly complete, and really never ends.
- Headwinds are continuous and often unforeseen (i.e. COVID?)
- K.I.S.S. – Find the vital few focus areas and work them. Less is more!
- Culture eats Strategy for breakfast.



Thank You

