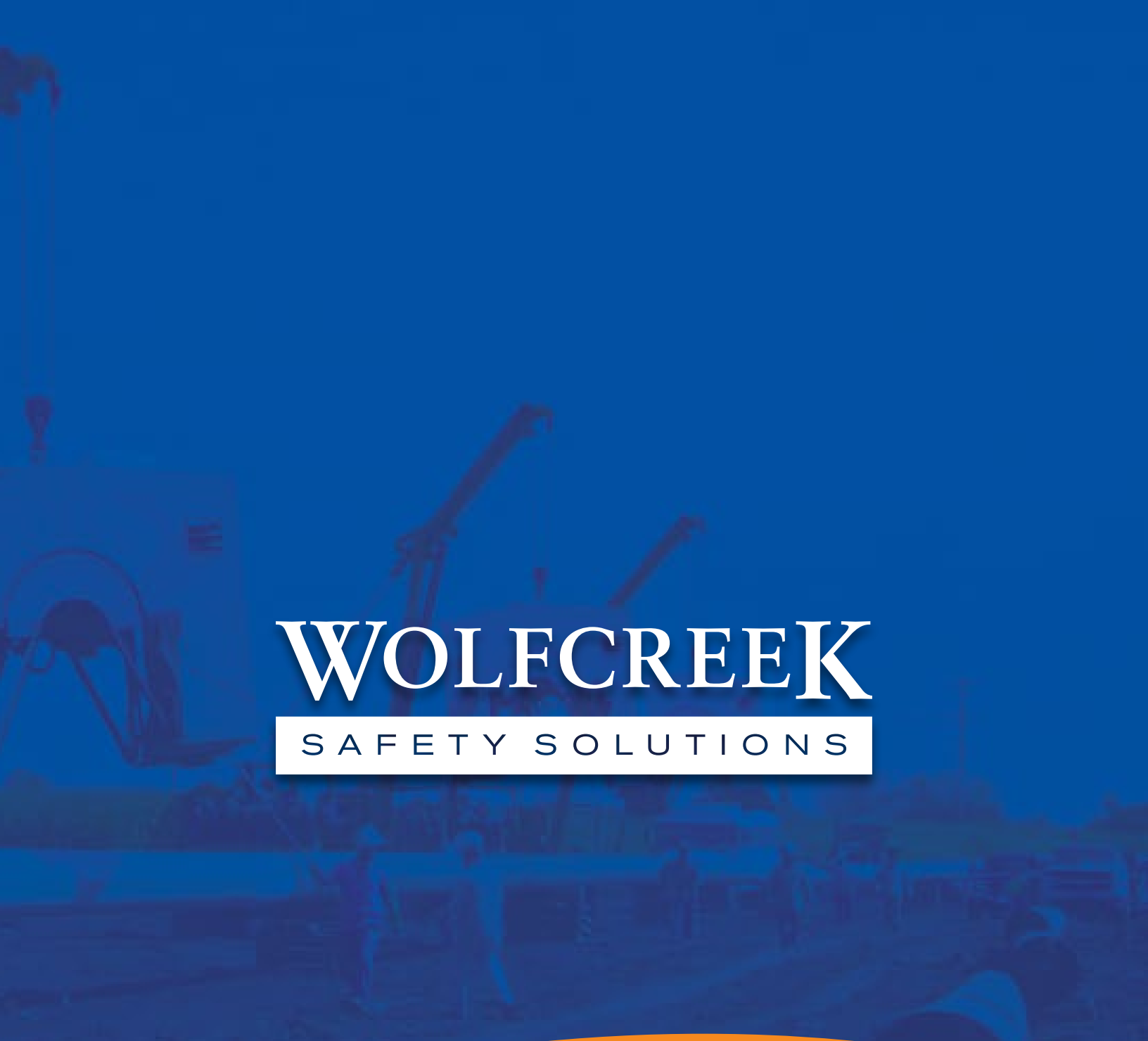

WOLFCREEK

SAFETY SOLUTIONS

CASE STUDIES

1

CLIENT

Large Pipeline Owner/Operator
$2.5B Pipeline Construction Project in Midwest

PROJECT

Creating a High-Performance Safety Culture – Workshops

INDUSTRY / SECTOR

Interstate Pipeline Construction

PROJECT OVERVIEW

Wolfcreek Safety Solutions was retained to develop and facilitate multiple workshops to establish core expectations and set a firm foundation for high performance safety during all phases of the project. These multi-session, highly interactive workshops, were designed to create a common set of safety culture beliefs and behaviors between the Pipeline Owner and several different pipeline construction contractors & subcontractors. Using advanced adult learning and team building exercises, the workshops culminated in an agreement by all to "own" and "operate" within the common cultural framework.

Subsequent sessions were held to reinforce and drive the understanding and personal ownership of these cultural beliefs and behaviors further down to the line level leadership of each company. With over 300 participants in the half to full day sessions, the objective of aligning the various safety cultures and risk reduction processes into a common "one team" commitment was met. With a solid foundation now set, further actions planned for this project will be designed, developed and deployed to build upon this foundation to further enhance cultural alignment, risk reduction and overall project effectiveness.

THE PROBLEM

The scope and scale of this multi-billion dollar pipeline construction project required the use of several different contractors and subcontractors. While each contractor or subcontractor was rigorously screened independently to ensure they were "safety capable" to perform their respect work, each also brought their own unique safety cultures and safety systems. The challenge was in how to unify the different cultures and safety systems into a singular "team" oriented culture and common performance expectations, while acknowledging the need to maintain the individuality of each company. Recreating each culture and trying a one-size fits all approach was not going to work.

OUR SOLUTION

The first workshop brought together the leadership of both the owner company and the prime contractors. Through an engaging and interactive workshop, the participants were led through a series of exercises to develop a common set of Safety Culture Beliefs and Behaviors that all agreed they could collectively engage in during the project. Multiple work groups were set up to ensure all participants had a say in the output and thus had "buy-in" on the commitment to live out these beliefs and behaviors. The subsequent workshops built upon these core Cultural Beliefs and Behaviors, with a focus on making them personal to each level of leadership among the participants and gaining their public commitment to engage in what these would look like in practice during real project scenarios.

2

CLIENT
Large Pipeline Construction Contractor

PROJECT
3 Second Safety (3SS)© – A Line of Fire Accident Prevention Technique

INDUSTRY / SECTOR
Interstate Pipeline Construction

PROJECT OVERVIEW

3 Second Safety (3SS)© was developed in response to the continued "Line of Fire" Accidents in the Pipeline Construction industry. These are among the most frustrating and frequently tragic accidents in construction. While several laudable efforts to prevent these types of accidents exist, the results have been less than desirable. 3SS is a unique and effective approach that takes the best from the psychology of safety, in the areas of Cognitive and Human Performance, and combines it with the latest in peer-reviewed research in energy based hazard recognition. This combination, along with practical exercises, creates a sum-is-more-than-the-parts technique for quickly scanning the work environment, identifying hazards, predicting when a line of fire accident could occur and intervening to stop it from happening.

To build 3 Second Safety (3SS)©, Wolfcreek Safety Solutions collaborated with Dr. Matt Hallowell, Endowed Professor of Construction Engineering at the University of Colorado at Boulder, and Dr. Dianne Stober, an experienced practitioner of integrating psychological and leadership focused approaches to safety. The resulting half-day, interactive workshop provides participants with both the knowledge needed to employ this technique, and real-world scenarios to practice on. This technique adds no administrative burden, no forms to fill out and no added bureaucracy. Participants are taught how to use 3SS© for themselves and for others, with additional emphasis on how to effectively engage another worker if they are in a line of fire situation. WSS completed a pilot workshop program at a major Pipeline Construction Contractor in 2017, yielding very positive results. All company Foremen and Superintendents have since been fully trained in 3SS techniques and are employing them in 2018 on a 2-year pipeline construction project, one of the largest in the U.S.

THE PROBLEM

Line-of-fire accidents are still happening far too frequently on construction projects, many times with catastrophic results. A common response is to look at the incident in hindsight and conclude that "If only the employee had not been standing there…." "If only the employee had not chosen to be in harm's way…" If only… The primary problem is that most of the hazard identification and mitigation focus occurs prior to the job starting. While pre-job planning, JSA's, etc. are important tools, they generally can leave a gap in identifying where most hazards occur in real-time, during execution of the work. If someone can be taught a simple, yet powerful method on how to regularly scan the work area in short bursts, while the work is going on, they can quickly identify potential line-of-fire accidents and intervene to stop them from happening.

OUR SOLUTION

3SS © isn't a new program, procedure, or policy. 3SS© is a technique to easily "see" construction safety risks in a new and vastly more effective way, through an innovative merger of:

- The traditional technique of short but thoughtful hazard identification scans (Four Second Safety),
- Cutting-edge techniques from the world of safety psychology (Cognitive Safety and Human Factors),
- And the newest peer-reviewed research in hazard recognition (Energy Method Safety).

With virtually no bureaucracy or administrative drag, the safety leader takes a very brief pause and uses three-second hazard identification in quick "bursts" to scan for and address line-of-fire exposures.

3

CLIENT
Large Pipeline Construction Contractor

PROJECT
Pre-Job Safety Meeting Quality Assessment App/ Safety Assessor/ Mobile App

INDUSTRY / SECTOR
Interstate Pipeline Construction

PROJECT OVERVIEW

The Pre-Job Safety Meeting Quality Measurement Tool was originally developed by Construction Industry Institute Research Team 293, an industry-academic team of 22 industry leaders. The Team was led by Dr. Matt Hallowell, Endowed Professor of Construction Engineering at the University of Colorado at Boulder. The tool was designed to assist practitioners with the assessment and improvement of the quality of pre-job safety meetings. The general philosophy of the team was that every safety manager or crew leader wants to lead a high-quality safety meeting, but they often need guidance and feedback on 'what good looks like.'

The anatomy of the tool includes nine elements that define the quality of a meeting, the levels of element maturity (i.e., Deficient, Good, Better, and Best), and the detailed criteria or description for each level. The content of the tool was developed using the Delphi method and the process was rigorous enough to be published in the American Society of Civil Engineers' Journal of Construction Engineering and Management.

After the tool was published, WolfCreek Safety Solutions - in partnership with the original lead researcher - developed the tool into a user-friendly app that enables efficient and effective field assessments and organizational analytics. The app allows organizations to enter and track their pre-job safety meeting quality data and use the analytics as effective leading indicators that can be used for continuous improvement.

THE PROBLEM

The current state of Pre-Job Safety Meetings, (using a Job Safety Analysis (JSA)), is one where quantity is emphasized over quality. The original intent of a JSA was for non-routine, high hazard work activities and as a tool to facilitate a high-quality safety discussion prior to starting the work. Over the years, use of JSA's has expanded in scope and scale to cover all work activities, with an increased emphasis on documentation and frequency. The result has been an increase in focus on the documentation and a decrease in focus on the quality of both the documentation and the resulting pre-job safety meetings. In many cases, crew leaders have not been taught what a high-quality pre-job safety meeting looks like. Often, key risks are missed and not discussed contrary to the original intent of the JSA and associated meeting. In addition, quantity of JSA's has not been validated as a predictive indicator for improved safety performance, whereas "quality" of the pre-job meetings has been.

OUR SOLUTION

Using the tool enabled by the Mobile App will add consistency and rigor in the assessment of pre-job safety meeting quality and, more importantly, to enable safety professionals to effectively coach 'what good looks like'. The ideal process involves observing, scoring, coaching, and improving. Initially, the assessor's role is to obtain an authentic observation of a typical pre-job safety meeting for the crew. After entering the meeting information, the observer will provide feedback to the meeting leader. Using this as an opportunity to coach and build rapport, the observer may highlight strengths and note the areas where the meeting could be improved. The discussion should begin with areas for improvement with specific recommendations and end on a positive note with specific strengths.

In addition, the app enables analytics in a variety of forms, including scores by criteria, work type, project, meeting leader, etc... Goals can be set, and results can be compared against those goals. The data can be easily exported to PDF and shared within the organization. Trending is a feature of the tool since trending and use of such data as a leading indicator drives continuous improvement.

4

CLIENT
Large Pipeline Construction Contractor

PROJECT
Strategic Construction Safety Performance Model® (SCSP)

INDUSTRY / SECTOR
Interstate Pipeline Construction

PROJECT OVERVIEW

The WSS Strategic Construction Safety Performance Model® (SCSP) was developed to create a strategic safety model and assessment framework relevant to the construction industry, based upon peer-reviewed research to define granular benchmarks of safety performance peaking at world-class.

The anatomy of this model divides these cues into four Divisions, each with their own unique set of Elements identified through additional peer-reviewed research. WSS defines progressive indicators for each Element, progressing from "good" to "better" to "best". The SCSP allows organizations to understand their current level of safety performance and make concrete plans with specific goals for improvement.

THE PROBLEM

The current state of safety models relies heavily on a tactical approach to safety performance enhancement, with an emphasis on executive leadership coaching based largely upon opinions and leadership psychology. Organizations that seek world-class safety performance must far surpass every OSHA, state, and local regulation and guideline. Until now, no framework has existed to guide that journey strategically. An empirical, fact based, and research-validated model is the best approach to improving every aspect of an organization's safety program.

OUR SOLUTION

WSS' team of safety practitioners took a scientific rather than a merely managerial approach to building a universal model for safety transformation in the construction industry. We built the SCSP upon the research of Dov Zohar and Edwin L. Zebroski which identified cultural cues and programmatic elements common to organizations with high safety performance, considering both catastrophic incidents and TRIR. We organized these strategic fundamentals into four Divisions: Workforce, Safety Programs, Safety & Operations, and Key External Relationships.

After reviewing a larger body of scientific research, we defined 17 essential Elements of safety performance, grouped by Division:

DIVISION	ELEMENT
Workforce	• Worker Involvement & Engagement • Employee Retention • Safety Behaviors • Rewards and Recognition
Safety Programs	• Substance Abuse Management • Emergency Preparedness • Learning & Communication • Management of Change (MoC) • Pre-Construction Planning & Design • Technical Training & Orientation • Case Management
Safety & Operations	• Safety as an Operational Value • Risk Management Techniques • Pre-task Planning & Safety Meetings • Safety Function Effectiveness
Key External Relationships	• Client Involvement & Partnership • Subcontractor, Vendor, & Supplier Management

The contributors to this model identified progressive indicators by leveraging additional peer-reviewed research and professional discretion based upon their many decades' experience in the subject of construction safety. These granular indicators lay out the characteristics of organizations performing at "good," "better," or "best" levels for each Element. World-class safety performance requires meeting the "best" indicator across the board.

This tool allows an organization to assess its safety program's level of maturity. By providing concrete definitions for "good," "better," and "best" performance for each Element of safety performance, the SCSP has helped large pipeline construction contractors identify strengths, find specific areas for improvement, and set up concrete plans for improvement that result in industry-leading performance.

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