

**Safety Culture: A Resource for Leaders**

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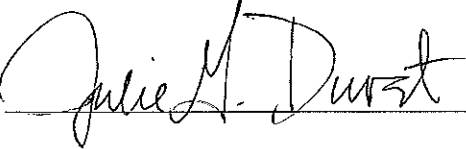
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### **Abstract**

Few would argue against the idea that a safe working environment is important for organizational success. Beyond legal and regulatory requirements, organizations with unsafe working environments will experience negative operational and financial impacts, lower levels of trust between leaders and subordinates, and struggle to recruit and retain quality employees. Unfortunately, leaders looking to improve safety culture within their organizations face a confusing and often contradictory body of literature. This paper aims to support leaders in this endeavor and argues that organizations can enable long-term safety success through a cultural approach focused on building commitment to safety as an organizational value. A cultural approach to safety is more proactive towards new risks than traditional compliance-focused safety programs. It has benefits that go beyond the direct working environment and is more likely to result in sustained safety success across an entire organization than a rules-based approach focused on forcing compliance. This paper will consolidate and provide clarity on key themes across the expansive literature on safety culture, commitment, and leadership to provide a practical resource for leaders to understand what safety culture is and how to develop and sustain it within their organizations.

*Keywords:* Safety, Culture, Commitment, Leadership

**Table of Contents**

Introduction.....	4
What is Safety Culture?.....	7
The Limitations of Safety Programs.....	10
Case Study: The United States Army.....	14
Why a Cultural Approach to Safety?.....	19
Culture in Aviation.....	24
Commitment vs. Compliance.....	28
The Impact of Leadership.....	32
Safety Culture vs. Safety Climate.....	36
The Limitations of a Cultural Approach.....	38
Safety Culture – A Proposed Path Forward.....	40
Leader Involvement.....	40
Employee Involvement.....	44
Communication.....	47
Enable Organizational Learning.....	50
Conclusion.....	54
References.....	56

## Introduction

Despite more than 30 years of research on the concept of safety culture, leaders trying to improve safety within their organizations today are confronted with a confusing and often contradictory body of literature. There are numerous definitions of safety culture. Researchers often approach the concept from different perspectives, arguing whether safety culture is something an organization is or something it has (Guldenmund, 2010, p. 1468). There are arguments over whether such a thing as safety culture even exists (Mulcahy, 2021), or how closely linked safety culture is to the broader organizational culture (Clarke, 2000, p. 68). Further complicating the issue, the idea of safety culture is regularly blurred with safety climate in research literature. Leaders with a desire to improve safety culture within their organization may understandably struggle to define exactly what they're trying to improve, how to go about improving it, and how to know if they're succeeding.

Unfortunately, existing research literature provides little to assist leaders in understanding how culture impacts safety within their organizations. Antonsen (2016) argued, "Safety research is often applied research in the sense that it is intended to have some kind of practical utility, the knowledge produced should provide the basis for improvement... relatively little has been published on how our understanding of cultural influences on safety can be used to improve or intervene in safety issues" (p. 103). Instead, much of the published literature and commentary on safety is oriented around implementing specific processes and management practices to reach established safety goals (Mathis & Galloway, 2013, p. xviii). Given the generally vague definitions of safety culture, any formal, measurable program that allows managers to demonstrate improvements in safety is alluring. This approach may even be necessary in newer organizations where leaders must build a program from the ground up, though this is likely a

minority of modern businesses or organizations. Formal safety programs are also a means of shaping behavior, which is well established as a core component of driving long-term cultural change (Kotter, 2002, p. xii).

However, a safety program by itself is not capable of ensuring long-term safety success without a broader supportive culture. Leaders or safety professionals may struggle to convince employees to prioritize safety in time or resource-constrained environments where people sense the real organizational focus lies elsewhere. These organizations may experience short periods of success in response to a concerted effort - likely after an accident or major near miss - only to slide back into old habits after failing to cement new behaviors into place (Hayes, 2018, p. 21). These organizations will likely not benefit from trying to force employees to comply with more layers of rules and processes if the underlying culture is not supportive.

Additionally, compliance-based approaches to safety generally take a static view of the environment and focus primarily on following prescribed rules or processes. This makes them reactive in nature. Changes are made only after an accident or near miss, or in response to new rules imposed by government or other regulatory agencies. While organizations may develop or adopt stricter standards than what administrative authorities such as the Occupational Safety and Health Administration (OSHA) require, those focused on compliance are unlikely to do so in the absence of a catalyst like a major accident. Most will simply meet the minimum standard required to avoid fines or other punishment and cite a lack of significant injuries or deaths to argue they have a safe organization, regardless of whether there is room for improvement.

Furthermore, compliance or rules-based approaches are almost always administered by safety professionals and often with minimal communication from senior leaders. This can create the impression safety is not a significant concern or priority for an organization. This

compartmentalization of safety undermines any effort at establishing commitment to safety as an organizational value. Compliance-based programs are also limited in that they do not support a mindset of safety outside the work setting where employees spend most of their lives.

Conversely, a cultural approach to safety encourages and teaches employees to identify and mitigate risk in all aspects of their lives.

A cultural approach to safety is better suited to create long-term safety success within an organization. The goal of this paper is to provide a practical resource to assist leaders looking to develop an effective safety culture by reviewing:

- The concept of safety culture
- The limitations of rules-based safety programs
  - Case Study: The United States Army
- Why a cultural approach to safety is better for long-term success
  - Case Studies: Culture in Aviation
- The difference between commitment and compliance
- The impact of leadership
- The difference between culture and climate
- Limitations of a cultural approach to safety
- How leaders can develop and sustain an effective safety culture within their organizations

I will consolidate and clarify key themes within the existing research on safety culture, commitment, and leadership, and utilize case studies to illustrate these ideas. My goal is to provide leaders a practical resource to develop and sustain an effective culture of safety within their organization, regardless of their industry or specific safety program in use.

### **What is Safety Culture?**

To understand how to develop safety culture it is important to first have an idea of what one is trying to develop. Unfortunately, safety culture is a blurred notion that three decades of research has not been able to bring into focus. The concept of safety culture first emerged following the April 26<sup>th</sup>, 1986, Chernobyl nuclear accident (INSAG, 1992, p. 21) which killed 31 people and spread radioactive materials across roughly 77,000 square miles. In its summary report of the accident, the International Atomic Energy Agency (IAEA) identified “violations of procedures” as a major factor contributing to the accident (INSAG, 1986, p. 17) and attitudes of staff and management “conditioned by overconfidence” (Ibid, p. 30) as enabling the multiple violations. Amongst the report’s General Observations section was an argument for the need of a Nuclear Safety Culture in all operating nuclear plants (Ibid, p. 76), though this term was not clearly defined in the report.

Following the initial Chernobyl summary report, the term Safety Culture began to be used increasingly in the study of nuclear plant safety, but progress was limited by the lack of a clear definition or guidance on how the effectiveness of safety culture could be assessed (INSAG, 1991, foreword). The IAEA subsequently published INSAG-4 in 1991 to assist senior managers involved in nuclear plant safety in better understanding the topic, creating the following definition:

“Safety culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance” (Ibid, p.1).



As the idea and study of safety culture spread beyond the nuclear industry, numerous attempts to define the concept more broadly emerged. Guldenmund (2010) captured several definitions in addition to INSAG's narrow interpretation:

**Table I.** Various Definitions of Organizational Safety Culture

Author(s)	Definition of Organizational Safety Culture
Deal & Kennedy, (1982) but used by numerous other authors also in the field of safety	The way we do things around here
Cox & Cox (1991)	Safety cultures reflect the attitudes, beliefs, perceptions, and values that employees share in relation to safety
INSAG (1991)	Safety culture is that assembly of characteristics and attitudes in organizations and individuals that establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance
Pidgeon (1991)	The set of beliefs, norms, attitudes, roles, and social and technical practices that are concerned with minimizing the exposure of employees, managers, customers, and members of the public to conditions considered dangerous or injurious
ACSNI (1993)	The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures
Ostrom, Wilhelmsen, & Kaplan (1993)	The concept that the organization's beliefs and attitudes, manifested in actions, policies, and procedures, affects its safety performance
Geller, E.S. (1994)	In a total safety culture (TSC), everyone feels responsible for safety and pursues it on a daily basis
Berends (1996)	The collective mental programming toward safety of a group of organization members
Guldenmund (2000)	Those aspects of the organizational culture that will impact on attitudes and behavior related to increasing or decreasing risk
Hale (2000)	The attitudes, beliefs, and perceptions shared by natural groups as defining norms and values, which determine how they act and react in relation to risks and risk control systems
Richter & Koch (2004)	The shared and learned meanings, experiences, and interpretations of work and safety—expressed partially symbolically—which guide peoples' actions toward risks, accidents, and prevention
Westrum (2004)	The organization's pattern of response to the problems and opportunities it encounters

There are numerous other definitions beyond those provided by Guldenmund; attempts to list them all do not serve any purpose other than to further highlight the confusing and varied nature of research into this topic. However, despite the wide range of definitions, there are some commonalities to aid in leaders' understanding of the concept. First, safety culture is a group phenomenon, something shared or collectively held by members of an organization. This implies that it cannot be implemented through forced compliance by any individual, regardless of their power within an organization. Second, safety culture includes both thoughts and actions. It involves what people believe about safety and how those beliefs manifest themselves across

the organization. While some definitions of safety culture, like ‘the way we do things around here’ are strictly behavior based, most also consider ‘why’ people do the things they do. Third, while culture itself is non-judgmental – it is what it is – safety culture is generally viewed in the context of being good or bad, or alternatively as being weak or strong, with the assumption that a strong safety culture is inherently a good safety culture.

Along those lines, researchers have also attempted to quantify what constitutes a ‘good’ safety culture. Pidgeon and O’Leary (2000) identified 1) Senior management commitment to safety, 2) Shared care and concern for hazards and a solicitude over their impacts upon people, 3) Realistic and flexible norms and rules about hazards, and 4) Continual reflection upon practice through monitoring, analysis, and feedback systems, or what the authors describe as organizational learning (p. 18). McSween (2003) argued an ideal organization establishes a culture where each employee is their brother or sister’s keeper (p. 70). Mathis and Galloway (2013) defined an excellent safety culture as one that is motivated to continually improve (p. 114). The ACSNI definition provided by Guldenmund above notes a positive safety culture is founded on mutual trust, shared perceptions of the importance of safety, and confidence in the efficacy of preventive measures.

Ultimately, there is unlikely to be a single accepted definition of safety culture, consensus on what definitively separates good safety culture from bad, or agreement that safety culture is even a distinct entity separate from organizational culture. In fact, organizational culture, and culture in general, have little more consensus in the research literature than safety culture. Thus, for leaders attempting to develop safety culture, **I argue that it is best to approach safety as something that organizations should be committed to as an organizational value.**

The term safety culture still retains considerable utility as a label to signify the consequences that culture can have for safety (Antonsen, 2009 p. 184) and as a common term within the safety profession and larger organizational lexicon. For those reasons I continue to use the term safety culture throughout this document. However, approaching safety as a value eliminates concerns over a precise definition of safety culture. More importantly, it avoids inadvertently minimizing safety by making it something separate from the broader organizational culture. Approaching safety as a value also develops the idea within an organization that safety is something individuals should be committed to, as opposed to a program they must comply with to avoid punishment.

Regardless of how an individual organization ultimately chooses to define it, a successful culture of commitment to safety as a value includes thoughts and actions held and taken by individuals across the broad organization. The group aspect of safety culture distinguishes it from a top-down safety program and helps keep the organization resilient against shifting priorities and negative influences from individual members. A safety culture enables propagation of safety values at all levels and assimilation of new members joining the organization, and it is the key to long term safety success.

### **The Limitations of Safety Programs**

Even the earliest reports on safety culture recognized and acknowledged that a safety program is insufficient on its own to create a truly safe organization. In its report on safety culture, the IAEA argued that “sound procedures and good practices are not fully adequate if merely practiced mechanically” (INSAG, 1991, p. 1). Meeting the bare minimum regulatory or inspection requirements does not inherently make an organization safe or ensure it will remain

safe in the future. By themselves, safety programs are insufficient to ensure sustained success for numerous reasons.

First, safety programs, by their very nature, seek to establish stability and permanence (Crutchfield & Roughton, 2014, p. 3). They are somewhat blind to the idea that what is acceptable for risk assessment and management today might not be so tomorrow (Pidgeon, 1991, p. 133). Safety programs view safety in static terms from the top down, establishing rules and requirements for current processes, monitoring to ensure compliance, and punishing or rewarding employees to achieve desired outcomes. Safety programs tend to layer new rules on top of old, creating such a labyrinth that, intentionally or not, violations of procedure become routine (Reason, 1997). This creates a culture where normalization of deviance is understood and accepted within certain levels of an organization, rather than a culture where all employees value safety, enforce safety within their spheres of influence, and look for ways to continuously improve safety across the organization.

Dragan, Georges, and Mustafa (2017) argued the simplistic reward-punishment approach to reducing accidents is fundamentally at odds with the complexity of modern organizations (p. 618). The authors contended that traditional event-based models cannot drive human behavior in complex systems and environments (Ibid.). The size, complexity, and interconnectedness of modern organizations means leaders and safety professionals cannot write a rule for every scenario or situation an employee may encounter. Even if one could, the top-down approach of a safety program means the rules are being written and enforced by those most detached from the likely hazards. This gap between ‘work-as-imagined’ and ‘work-as-done’ (Dekker, 2017) results in safety policies and procedures that may or may not be the most effective at truly reducing risk.

This gap may reduce trust in leadership and lead to employees disregarding rules for individually or locally developed procedures that better mitigate the real risks.

Assuming one could anticipate every possible safety need ahead of time and write the correct rule or procedure, employees operating in a compliance-based culture will undoubtedly take shortcuts around safety procedures in pursuit of other values like production or efficiency. This can happen even in high-risk environments where one would expect safety rules to be rigorously followed. A study of personnel working in coal mines found that both workers and supervisors were ambivalent about the application of safety standards (Lebecki & Martyka, 2014, p. 10). The researchers found rules-following was inconsistent and apathetic even within an elevated-risk profession, showing how the most robust safety program is still insufficient to ensure safety success in organizations lacking an effective safety culture. Almost all organizations will say safety is important, but actions often demonstrate it is not an urgent matter (McSween, 2003, p. 149). This is especially true in time or resourced-constrained environments or when cost and competitive pressures are present. When ‘push comes to shove’, employees will direct their efforts accordingly.

In addition to punishment for violations, safety programs often included some type of incentive or award for safe behavior or the identification of unsafe conditions. Individual employees may receive gift cards. A group may receive a pizza party for a certain number of accident-free days. The United States Army gives everything from flashlights to keychains to coffee mugs to Soldiers as safety Impact Awards. These external incentives can be good ways to recognize and motivate employees but can also have unintended consequences. If incentives are linked to the wrong metric, they can motivate employees to do the wrong thing (Center for Chemical Process Safety, 2021, p. 32; Resnick, 2009, p. 46). In the pizza party example above,

suppose a work site is one day away from a free lunch and an employee suffers a minor preventable injury. The motivating incentive in this scenario actually discourages the employee from reporting the injury.

The accident triangle developed by Herbert Heinrich in 1931 and expanded on by Frank Bird in 1966 proposes that for every major injury or death - the top of the pyramid - there are significantly more minor injuries, near-misses, or unsafe acts with no consequences. In the pizza party example, failure to report the minor preventable injury prevents the incident from being used to further organizational learning and growth, possibly leading to another employee suffering the same injury at some point in the future. This type of mis-incentive built into a well-intentioned safety program increases the likelihood that even serious near-misses will go unreported, creating a ticking time bomb scenario where an employee ultimately suffers a serious injury or death in what should have been an easily preventable situation.

I caution against drawing the conclusion from this section that formal safety programs are not important. They unquestionably are, as a means of shaping behavior, emphasizing safety as an organizational priority, and educating employees on safety practices and procedures. Safety programs help an organization minimize the loss of institutional safety knowledge as personnel leave for other positions or retire (Center for Chemical Process Safety, 2021, p. 28). There is now a body of literature on successful applications of behaviorally based approaches to safety (Guldenmond, 2010, p. 1477). A safety program, or safety management system, is how an organization formalizes its safety culture, how it manifests its thoughts and beliefs about safety into concrete action that reduces risk. However, the reliance on safety programs to ensure safety success has significant limitations and 'puts the cart in front of the horse'. A safety program by itself is insufficient to ensure lasting safety success, and there are observable disconnects

between mature organizations with established safety programs and weak safety cultures that illustrate this shortcoming. We can look at the United States Army as one such organization.

### **A Case Study: The United States Army**

The United States Army (hereafter referred to as Army) illustrates the disconnect between a safety program and safety culture. The Army has robust regulations and policies in place to govern safety, starting with Army Regulation (AR) 385-10. AR 385-10 is a 165-page document that implements OSHA requirements and Department of Defense Instructions and provides policy on “Army safety management procedures with special emphasis on responsibilities and organizational concepts” (AR 385-10, 2017, p. 3). It is supplemented by Department of the Army Pamphlet (DA PAM) 385-10, a 112-page document that further “implements the safety requirements of AR 385-10 and other Federal regulations and laws” (DA PAM 385-10, 2008, p. 3). There are 14 additional safety-focused DA PAMs providing detailed guidance on specific topics ranging from ammunition, radiation, and electrical safety to accident investigation and reporting. There is also Army Techniques Publication (ATP) 5-19, an 84-page document designed to complement AR 385-10. ATP 5-19 provides doctrinal guidance on managing risk and takes a holistic approach that “focuses on the composite risks from all sources, rather than the traditional practice of separating accidents from tactical hazards and associated risks” (ATP 5-19, 201, p. v). Together, there are over 1,800 pages of safety material between AR 385-10, its supporting DA PAMs, and ATP 5-19.

The Army also has a dedicated Safety Center that tracks accidents and near misses, publishes safety documents, and leads safety investigations. The United States Army Combat Readiness Center (USACRC) has operated for over 60 years and has the mission of “preserving Army readiness through analysis, training, and the development of systems that prevent accident

loss of our people and resources” (United State Army Combat Readiness Center, retrieved August 23, 2022). The USACRC produces audiovisual presentations on a wide range of safety topics and distributes Preliminary Loss Reports (PLRs) to inform the force on basic circumstances surrounding any on or off-duty Soldier death. The USACRC also publishes the *Risk Management Magazine* and aviation focused *FlightFax* newsletter. The site even manages a Travel Risk Planning System that allows Soldiers to identify and mitigate risks associated with planned off-duty travel in personal vehicles.

Beyond the Safety Center, the Army has numerous training opportunities for safety professionals and other Soldiers. The Army provides a 16-hour distance learning course for Soldiers assigned as Additional Duty Safety Officers and a series of tailored Risk Management courses. There are also six-week resident courses tailored to aviation and ground safety professionals. The Army further requires commanders to complete a 9-hour Leader’s Safety and Occupational Health Course to provide leaders with the critical knowledge, skills, and abilities to lead and administer safety programs effectively and to incorporate risk management into all unit planning and activities (ATRRS course catalog, retrieved 1 October 2022).

The evidence suggests the Army is providing ample guidance to its commanders and allotting considerable financial and resource support to its safety program. However, despite this well-established and comprehensive safety program, the Army continues to lose Soldiers to preventable accidents at unacceptably high rates. A United States Government Accountability Office Report (2021) studying tactical ground vehicle accidents between fiscal years 2010 and 2019 identified an annual average of 29 Class A and B accidents (p.14) resulting in 101 total military deaths (p.17). Class A and B accidents are defined as those causing at least \$500,000 in damage or resulting in death, permanent partial or total disability, or three or more personnel



receiving inpatient hospital care. The report identified lapses in supervision among the most common causes of accidents. Despite establishing practices to mitigate or prevent accidents, in accordance with a typical rules-based approach, units did not consistently implement them. The report also noted that while Army officials believe serious accidents are generally reported accurately, less serious accidents and near-misses are likely underreported (Ibid, p. 8). The report attributed this underreporting partially to fear of retribution, an inherent weakness of compliance-focused safety programs. A report by the National Commission on Military Aviation Safety similarly found that investigations into aviation accidents below the Class A and B threshold were inconsistent and often incomplete (NCMAS, 2020, p. 17). Even though these are potentially the best indicators of future serious mishaps, many Army units do not place much value on reporting them.

In fiscal year 2022, the Army experienced 82 total military mishap fatalities. While down year over year, the number is in line with historical averages and includes numerous likely preventable deaths. Among the fatal accidents were a field ambulance driving over two sleeping Soldiers, killing one. Another Soldier fell from a rescue hoist as he was being airlifted into a helicopter following a hiking accident. Another Soldier died in an occupational mishap when a containerized kitchen fell on him during a tire change as the Soldier tried to remove a jack stand. In October 2021, four Soldiers were ejected from a military vehicle during a roll-over as a result of not wearing their restraint devices, killing one. Another four Soldiers were ejected from a military vehicle in April 2022 while not wearing restraint devices, with one suffering fatal injuries. A lack of seat belt use and other risky-driving habits are identified in numerous personal vehicle and motorcycle fatalities as well.

Though accident statistics are a lagging indicator and an imperfect gauge of safety culture, they are a widely used metric and have value when used as part of a balanced scorecard to measure safety ‘success’ (Mathis & Galloway, 2014, p. 101). They are also one of the most useful tools for outside observers studying an organization’s safety culture and can at least partly inform the gap between the Army’s robust safety program and its ongoing accident rates. To help explain this gap, we can turn to culture.

Culture makes limited appearances in the 165-page AR 385-10. The word culture appears only three times; once when describing how safety materials such as posters and handouts should be used to strengthen training and maintain a safe culture when working with electrical equipment (AR 385-10, 2017, p. 103). The other two times are in reference to a risk-assessment survey commanders must complete within 90 days of assuming command (Ibid, p. 16). The document does list a responsibility of the USACRC commander as serving as the focal point for instigating cultural change (Ibid, p. 9) but lists nothing for subordinate commands with respect to culture. The first requirement given to commanders and directors of Army commands, service component commands, direct reporting units, field operating agencies, and the Chief of National Guard Bureau is to “establish, emphasize, resource, evaluate, and ensure a vital, organization-wide safety program” (Ibid, p. 10). The Army’s primary safety document reinforces the idea that unit commanders are running an effective safety program to comply with established requirements, not developing safety culture within their ranks or generating commitment to safety as an organizational value.

The Army’s primary leadership document, Army Doctrine Publication 6-22, *Army Leadership and the Profession*, is a 132-page document that describes the “foundations of Army leadership...and describes the attributes and core leader competencies expected of all leaders

across all levels and cohorts” (ADP 6-22, 2019, p. v). The importance of culture within the Army and leader responsibilities for developing it is recognized heavily throughout the document with a total of 53 references. However, safety is mentioned only seven times, with zero mentions in the context of culture, further driving this disconnect between leadership and safety. Most mentions of safety pertain to individuals disregarding their personal safety in executing a courageous act or getting others to safety during combat.

Yet another example of the disconnect between safety and leadership is found in the Army Risk Assessment Program (ARAP) survey. This assessment is designed to assist new commanders in understanding and addressing root causes of accidents by “focusing on organizational safety climate and culture” (AR 385-10, 2017, p. 16). This resource enables commanders to identify risks and improve safety within their units. However, after assuming command, commanders must also conduct a separate survey focused on overall command climate. By keeping the ARAP separate from the larger command climate survey, the Army is further reinforcing the idea that safety is somehow ancillary or disconnected from the broader organizational climate within a unit. This contributes to the idea that safety is a program an organization needs to manage, as opposed to something they value and an integral part of who they are culturally.

Like the ARAP and Command Climate Survey separation, Army commanders typically publish a command philosophy outlining their leadership principles upon assuming command. For aviation commanders, supervisors, and directors, AR 385-10 requires them to publish their principles and approach to safety and risk management in an entirely separate memorandum (Ibid, p. 81). By failing to include safety and risk management as part of the primary command philosophy, the Army is again reinforcing the idea that safety is a separate program detached

from the broader organizational culture. Even more confusing is the fact that the Army only requires this additional written safety philosophy for aviation units and not commanders in other branches.

Information and guidance that could support a cultural approach to safety is buried within more technical safety documents. DA PAM 385-30 (2014), *Risk Management*, acknowledges a significant shortcoming of safety programs in complex organizations when it states, “Safety standards and policy cannot cover every Army mission and operation” (p.1). It lays responsibility for integrating risk management into all planning and operations on individual Soldiers in addition to commanders (Ibid, p. 3). It states that first-line supervisors are critical in implementing controls and must understand “the safety and health hazards to which employees under their immediate direction and control may be exposed (Ibid, p. 14). It encourages supervisors to educate employees on the rationale for risk controls and support employees’ participation in the implementation of controls. This guidance is directly in line with a cultural approach where all members of the organization are committed to successfully and consistently mitigating risk. Unfortunately, these documents are more likely to be read by additional duty safety officers than by leaders in a position to influence the development of safety culture more effectively within their organizations.

The Army demonstrates why a safety program, no matter how well resourced or intentioned, is insufficient to establish a successful safety culture. A better approach, regardless of the specific program or Safety Management System used within an organization, is one focused on developing a commitment to safety as an organizational value where employees at all levels incorporate safety into their everyday decision-making processes.

### **Why a Cultural Approach to Safety?**

A cultural approach to safety develops commitment to safety as a value across the entire organization. It does not require threats or punishment to achieve its goals (Crutchfield & Roughton, 2014, p. 15). A strong safety culture guides personal interactions and employee behavior in the gray areas where formal rules do not exist. It is more proactive towards new or emerging risks than a top-down, compliance focused safety program, and better suited to modern, complex organizations. To establish a culture where people do not cut corners or take unsafe action when they are not being monitored, commitment is needed at every level in the organization (Center for Chemical Process Safety, 2021, p. 40; Mathis & Galloway, 2013, p. 65). To ensure sustained success, these positive views towards safety must be developed across the entire organization and “cannot be imposed by any one group” (Clarke, 2000, p. 68). This requires a cultural approach beyond what a top-down safety program can deliver.

Employees are not programmable entities executing simple instructions given to them by managers. Nor can everyone be expected to always behave ‘rationally’. First, rational is a subjective term that means different things to different people, depending on their individual situation. Second, if people always acted rationally with respect to safety, preventable human error accidents would be much less common. Acting to protect one’s own safety is perhaps the most rational of all human behaviors. However, people regularly take shortcuts or partake in risky behavior in both their professional and personal lives. In organizations where safety is not viewed as a value, people act ‘rationally’ in support of goals that are. They ‘rationally’ sweep minor incidents under the rug or ‘rationally’ fail to disclose near-misses for fear of reprisal. These minor incidents and near-misses become lost opportunities to create organizational learning and promote commitment to safety as an organizational value. Managers watching and

disciplining employees for safety violations under this type of compliance-focused safety program inadvertently increase the chances of serious injury or death at some point in the future.

In a work setting, culture is a powerful force for shaping behavior, both positively and negatively. Organizations that emphasize profit or performance over safety will drive employee behavior towards those goals, even if the resulting actions are inherently unsafe. This orientation towards performance goals can occur even in organizations that are not traditionally profit focused or business driven. In its investigation into the 1986 Challenger Space Shuttle disaster, the Rogers Commission discovered a culture within NASA that, despite the incredibly complex and dangerous nature of its mission, had become increasingly tolerant of risks with a largely silent and ineffective safety program (Columbia Accident Investigation Board, 2003, p. 25). The political pressure and resource constraints inherent since NASA's earliest days had contributed to a fundamentally unsafe organizational culture that pushed forward with the Challenger launch, despite safety objections the night prior and multiple warning signs leading up to the fatal mission. Amazingly, despite numerous reforms in the wake of the Challenger disaster, many of the same institutional practices, including "inadequate concern over deviations from expected performance, a silent safety program, and schedule pressure" (Ibid, p. 101) were still present in the Columbia Space Shuttle crash in 2003. Performance-oriented aspects of NASA's organizational culture were so strong and domineering over safety precautions that "despite the constant shedding of foam, the Shuttle Program did little to harden the Orbiter against foam impacts" (Ibid, p. 131).

Schein (2004) noted that many of the assumptions and beliefs of mature organizations can be traced back to the values of founders and early leaders (p. 242). As the Challenger and

Columbia disasters demonstrate, if safety is not one of these values, risks and hazards that seem obvious in hindsight may not receive the attention they deserve until after a major incident.

Alternatively, organizations that place a high emphasis on safety as an organizational value are much more resistant to operational pressures and more proactive towards emerging or potential hazards. Paradoxically, organizations committed to safety as an organizational value may be more operationally successful in a complex, rapidly changing world where top leadership cannot reliably predict the future. Mazur et al (2015) argued a strong culture can overcome the tendency for complex systems to continually drift towards the edge of chaos (p. 290). Antonsen (2016) noted the growing emphasis in organizational learning research of having requisite variety, or multiple interpretations of a problem, to better anticipate what may go wrong in the future (p. 106). This enables an organization to proactively address hazards before a near-miss or accident. An environment of trust and open communication is required for employees to bring these multiple interpretations to organizational leaders. A top-down, compliance-focused safety program is less effective at promoting and encouraging the discussion of diverse viewpoints than a cultural approach where safety is considered an organizational value.

Another important benefit of a cultural approach is the impact it can have on organizations like the military where leaders rotate out of a given position every two or three years. Leaders in these types of organizations may have significant influence over the organizational climate, but less impact on the overall culture. By successfully establishing and building a commitment to safety across all echelons, organizations can avoid the ups and downs associated with concerted efforts at improving safety, followed by periods where the issue slides back down the priority list. An effective safety culture is also better suited to endure through bad leadership. Because culture takes a such long time to develop and is highly resistant to change

once established (McSween, 2003, p. 21), commitment to safety as an organizational value will ensure safety practices are not easily discarded based on changing leadership or in favor of short-term results a more career-focused leader may prioritize.

Lastly, a cultural approach has positive benefits beyond the immediate work setting. It is a paradox that an employee can use hearing protection at work and then go home and mow the lawn or use a leaf blower without it. The employee likely wears hearing protection at work to avoid being hassled by their boss. A cultural approach promotes a broader safety mindset, not just at work, not just when the boss is watching, but always, including the personal or recreational environments where individuals spend most of their time. Employees committed to safety as an organizational value are more likely to value it outside of work and apply risk management practices in their personal lives. A cultural approach to safety across the organization can help minimize time away from work due to professional or personal injuries. This, in turn, can lead to increased efficiency and productivity. A cultural approach to safety can even have positive benefits through lower medical costs in organizations that provide some type of health care coverage to retirees, as people who apply safety practices in all areas of their lives are less likely to suffer injuries requiring long-term medical care.

I recently walked through a work bay on an unscheduled tour of a maintenance facility. Inside the work bay, four employees were sanding and smoothing a large rotor blade with air powered tools. During my observation, two employees were wearing eye and ear protection and a respirator, one just had eye protection, and one had nothing. I could taste the particulates in my mouth despite spending only 30 seconds in the room and being over 10 feet from the blade, yet half the employees were working without wearing any basic protective equipment. Despite the established rules and a formal safety program, this organization's culture did not value safety



enough for all employees to take even minimal precautions when no one was monitoring for compliance.

### **Culture in Aviation**

Having discussed the limitations of safety programs and why a cultural approach is more likely to lead to sustained safety success, a review of accidents within military and commercial aviation industries will illustrate how similar rules-based safety programs can be less effective across comparable organizations due to cultural factors.

The different United States military services may seem like odd candidates for case studies on how cultural factors can lead to different safety outcomes. The Army, Navy, and Air Force all fall under the policies of the Department of Defense and regularly operate jointly in training and combat. Personnel can attend numerous joint courses. All services are all closed organizations that promote their top leadership from within. The Air Force did not even exist as a separate organization until September 1947. Prior to then it was a subset of the Army. Yet despite the many similarities, the services have important cultural differences that manifest themselves in safety settings.

In United States military aviation, Wiegmann and Shappell's (2016) research demonstrated how the 'flexibility' of naval culture, developed in an era when ship captains could not radio home for permission to act, led to a significantly higher percentage of rules violations in aircraft accidents when compared to the Army and Air Force (p. 104). In a review of 151 Class A accidents – those causing property damage of at least \$1,000,000 or leading to a fatality or permanent total disability – over fiscal years 1991-1997, the researchers found roughly 1/3 were associated with a least one rules violation (Ibid, p. 102). In the Army the rate was closer to 1/4, and it was less than 1/10 in the Air Force. The findings for naval accidents were also

relatively consistent across the sample period, indicating cultural factors were resistant to change even after major catalysts like a fatal accident. In fact, naval aviation culture was so ‘flexible’ at all echelons that rules violations rarely led to removal from flight status (Ibid, p. 104). Following this research, the Navy implemented a multi-pronged approach aimed at improving attitudes towards rules violations and risk. Within three years the Navy was able to lower their percentage of accidents associated with rules violations to near parity with the Air Force (Ibid, p. 106).

Analysis of commercial aviation accidents provides further examples of the importance of culture in successfully implementing and sustaining a safety program. Accidents among Asian-based commercial airlines led to over 1000 deaths, more than 70% of the global total, between a 12-month period from 1997-1998 (Dorman, 1998, p. 2). Dorman noted that, despite specific training programs at airlines to address aviation safety, there was often a “command-and-control culture that discourages subordinates from questioning superiors” in the nations with the highest accident rates (Ibid.).

Given the wide range of commercial aviation fatalities from year-to-year, a single 12-month sample size is too small to draw definitive conclusions from. The experience of Korean Air, based in South Korea, illustrates how cultural factors can influence safety over a longer period. Despite operating under standardized international aviation rules, Korean Air had a disproportionately high rate of deadly crashes beginning in the 1980s. According to Gladwell (2008), Korean Air had a loss rate more than 17 times higher than American carrier United Airlines between 1988-1998 (p. 179). He noted that Korean Air was crashing planes so often that in the National Transportation Safety Board report on Flight 801’s crash in Guam in 1997, “it was forced to include an addendum listing all new Korean Air accidents that had happened just since investigation began” (Ibid, p. 180); four in total, with a fifth crash taking place a few

months after the report's release. Gladwell argued the enormous attention paid to the relative standing of two people in conversation by Korean culture inhibited junior officers' willingness to make assertive or direct statements in dangerous situations. In the Flight 801 crash, the Captain attempted to make a visual landing at night and in poor weather. The First Officer and Flight Engineer both recognized the danger of not using an instrument landing procedure in the situation, but neither was able to clearly state so or assert themselves. They made subtle mention of the rain and the usefulness of the plane's weather radar, but the Captain failed to recognize the hints in the stressful environment. The resulting plane crash killed 228 of the 254 people on board.

CRM, alternatively known as Cockpit Resource Management or Crew Resource Management, is a program in the commercial aviation industry that emerged in the late 1970s in response to several human error caused accidents. Historically, an aircraft Captain was the dominant personality in a very hierarchical cockpit. CRM was meant to improve communication, teamwork, and decision making within aircraft by flattening the Captain and First Officer relationship, enabling a better overall crew response to emergencies or other unusual situations. In their review of the Asiana 214 crash, where a Boeing 777 crashed at the edge of the runway on approach into San Francisco International Airport, Chow, Yortsos, and Meshkati (2014) suggested adoption of CRM was more successful in the United States, where a less hierarchical societal culture had enabled anyone in the aviation crew to raise safety concerns or call for a go-around and reattempt landing (p. 117). Conversely, because seniority still influences many aspects of Korean life outside the cockpit, junior pilots may be less willing to speak up, even in obvious safety-related situations.

Like the improvement within U.S. Naval aviation, Korean Air was ultimately successful in improving their cockpit culture following a focused effort. They brought in outside personal to run their flight operations and began conducting all training in English, the standard language spoken in Air Traffic Control. This gave Korean pilots an opportunity to escape the “sharply defined gradients of Korean hierarchy” (Gladwell, 2008, p. 219) and fully absorb the lessons of CRM without the influences of their cultural past. The culture-oriented change effort enabled Korean Air to turn itself around and become one of the world’s safest airlines within a few years (Ibid, p. 182).

In response to ongoing discussion regarding cultural factors in aviation, Song (2018) conducted research with Western and Korean student pilots in a flight simulator. The experiment involved an instructor deliberately giving unsafe instructions to students to gauge their response rate in comparison to recognition of the unsafe instruction. He found a higher percentage of Korean students were able to recognize the unsafe instruction compared to their Western counterparts, but denied the unsafe instruction at a significantly lower rate overall (Ibid, p. 41). Korean students were also more careful in presenting their opinion to the instructor, politely asking for confirmation as opposed to flatly denying the unsafe instruction (Ibid, p. 42). Song’s findings reinforce both the importance of cultural factors in safety and the resilience of culture to change. The long-standing traditions of Korean culture remained in student pilots who had not undergone a culturally focused change program like Korean Air nearly two decades prior.

Commercial aviation has become exceptionally safe in recent years, while military aviation has continued to experience higher accident rates. The United States military services lost 157 aircraft and 198 lives to accidents from fiscal years 2013 through 2018. The nature of military aviation, involving tactical maneuvers, often near the ground or at night, means true

parity is likely impossible. However, a study on military aviation accidents from fiscal years 2013 through 2018, determined the overwhelming majority of accidents “could not be attributed to the inherent risk of military aviation” (NCMAS, 2020, p. 24). The study suggested the military aviation community needed to redefine how it approached the very idea of safety to achieve rates comparable to civil aviation. The authors recommendations included the establishment of a joint safety council that could empower safety officials and account for unique cultures in tailoring a path toward safety success (Ibid, p. 25).

Lastly, Noort, Reader, Shorrock, and Kirwan (2016) expanded beyond the cockpit in a related study on the relationship between national culture and safety culture. The researchers noted that a high propensity for Uncertainty Avoidance, the tendency of people to minimize anxiety caused by risky and ambiguous situations, correlated negatively with safety culture across numerous industries. They hypothesized cultural tendencies for high uncertainty avoidance can lead to a reduced willingness to engage in social acts with threatening consequences, such as speaking-up or admitting error (Ibid, p. 519). This desire to avoid uncertainty also leads to a higher reliance on established protocols, possibly inhibiting decision-making in ambiguous or dynamic safety scenarios (Ibid.). Put simply, when it comes to safety, culture matters.

### **Commitment vs. Compliance**

On the surface, commitment and compliance look similar and may appear to achieve the same result. However, a large percentage of what looks like commitment is really compliance (Senge, 2006, p. 218), and there is a significant difference between the two when it comes to long-term organizational success. Compliance is aimed at forcing people to behave in accordance with specific rules or requirements. It is generally only effective at generating short-

term or intermediate results (Klann, 2010, p.1). A traditional safety program is compliance-oriented, with managers and supervisors monitoring front line employees to ensure they follow the prescribed rules and processes. Violations are typically punished, sometimes with little regard to the context or root cause of the violation. However, this approach only works if the punishment is severe enough or the likelihood of being caught is high enough to outweigh the comfort or convenience the employee enjoys from breaking the rule (McSween, 2003, p. 14). Additionally, a compliance-focused approach requires a large supervisory or management staff that is inefficient and not cost-effective from a business standpoint (Ibid.).

Compliance is also associated with fears of blame and reprisal. Bond (2008) argued the fear of reprisal inherent in compliance-based safety programs may be the single greatest barrier to organizations reporting errors and sharing accident information that could be used to improve organizational safety (p. 7). This approach makes the organization less safe and lower performing in the long run.

In a study of the United Kingdom rail sector following a series of accidents between 1997-2002, Jeffcott, Pidgeon, Weyman, and Walls (2006) found that fear of blame or legal culpability for accidents led to a proliferation of written rules and procedures for employees to comply with. This defense strategy by managers resulted in an overly prescriptive and inflexible approach to safety and risk management (p. 1112). Front-line workers were actively discouraged from using their own ingenuity to deviate, with one respondent noting “the rule book says I must do X therefore I will do X, I will not do this better or worse... I will do exactly what this says” (Ibid, p. 1115). By constraining front-line workers, those with the best knowledge and understanding of specific job hazards, into a bureaucratic regime of rigid processes, the rail organization lost its ability to innovate and became less adaptive against emerging risks. The

pervasive fear of blame and punishment in a culture of compliance simultaneously reduced near-miss and other hazard reporting across the industry (Ibid, p. 1117) that may have been used to avoid one or more of the serious accidents over the study period.

Antonsen (2016) discovered a similar bureaucratic response to accidents within the Norwegian oil industry following a rise in lost-time injuries in the late 1990s (p. 133). Investigations into the incidents often found failures to comply with existing rules. Instead of attempting to determine why rules were being consistently violated, companies responded by creating more rules and procedures. Layering of rules constrained employee actions but did not improve overall safety. Following a shift in focus away from forced compliance and blame towards organizational learning, personnel injuries dropped significantly from 13.8 per million working hours in 2001, to 2.6 per million working hours in 2005 (Ibid.).

Commitment, on the other hand, is very different. Committed individuals do not need a push to move towards a goal. They move towards it freely and will go over or around obstacles to reach it. In extreme examples, people will put their life on the line for a cause or team they are committed to. In a study of commitment vs. control-based approaches to safety, Barling and Hutchinson (2000) suggested that organizations are more likely to benefit from an approach emphasizing commitment than one focused on compliance with minimal safety standards achieved through goal setting, feedback, and punishment (p. 83). While control-based approaches may be needed in response to major events or individual employees who routinely violate established procedures, they are less effective on an organizational scale. Barling and Hutchinson's study also showed that commitment-based safety practices enhanced trust in leadership (Ibid.). Trust between leaders and employees is a common trait of high performing

organizations, suggesting that an organization does not have to sacrifice performance or results in the name of safety.

Commitment is the key to unlocking what Olson and Simerson (2015) described as discretionary effort from individuals (p. 181). Most organizational interactions are transactional. People are good at determining what they will receive for the effort they give (Ibid.). Absent some intrinsic motivating factor, they are unlikely to give more. Commitment to co-workers, to a leader they admire, or to organizational values, provides the intrinsic motivation that keeps people moving even when no one is looking or there is no extrinsic, transactional reward for doing so.

Leadership expert John Maxwell (2008) argued “You can’t keep a committed person from success” (p. 40). In the case of safety, success is more than just following the rules as they are currently written. Success means mitigating risk as a routine part of operations, identifying emerging risks before they cause an accident, stopping observed unsafe acts, and openly discussing mistakes and near-misses to help the entire organization learn. This requires commitment across all levels of an organization beyond what a compliance-focused approach can deliver.

Successful organizations also seem to understand that a single leader cannot drive sustainable change through directives (Curran, 2002, p. 4). As discussed earlier, safety culture is a group phenomenon. A single leader, no matter how personally committed they may be, cannot possibly hope to achieve safety success on their own. They only have one set of eyes and ears, and only so much time in a day. They may be one or more levels removed from the processes and operations with elevated risk. They have an entire range of organizational activities to focus on. Success in safety takes organization-wide commitment.



A culture focused on commitment to safety as an organizational value is ultimately one where employees will make the safe decision in gray areas where clear rules do not exist, or where formal rules do exist but cannot be routinely monitored or enforced. An effective safety culture can overcome pressure to compromise safety in favor of other short-term goals (Zohar, 2002, p. 23), even in time constrained environments. Conversely, employees in organizations that prioritize performance-oriented metrics will take shortcuts around safety rules to achieve success in areas their leadership truly value, even if they have a formal safety program in place. This is especially true if the likelihood of injury from any single shortcut is low, and these behaviors are further reinforced each time a shortcut is taken and does not result in injury (McSween, 2003, p. 9). This environment establishes a normalization of deviance, creating a ticking time bomb scenario as shortcuts around safety rules will, given enough instances, eventually result in a catastrophic event. Commitment to safety as an organizational value defuses this time bomb. An effective safety culture ensures that when accidents do happen, they are less likely to be severe, and uses those accidents or near-misses as learning opportunities to prevent future incidents. This helps organizations achieve sustained safety success over the long-term.

### **The Impact of Leadership**

Like culture, leadership is a widely studied concept. There are many competing theories on what constitutes good leadership and the relative usefulness of applying different styles of leadership depending on the organizational model or experience and motivation levels of employees. Attempts to describe different leadership styles in detail or definitively define good leadership are beyond the scope of this paper. There are two important takeaways for leaders attempting to develop commitment to safety as an organizational value. First, leaders can and

should exist at lower levels of an organization than traditionally held, and second, leadership is a critical factor for both short-term performance and long-term cultural development.

For a baseline understanding of what leadership entails, few organizations rely more heavily on leaders or place more power in their hands than the military. The Army defines leadership as “the activity of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve the organization” (ADP 6-22, 2019, p. 1-13). Under this definition, a leader both ‘is’ and ‘does’. Another important aspect of this definition of leadership is its dual focus on successfully accomplishing the current mission while developing the organization to enable future mission accomplishment.

This is somewhat out of step with classical interpretations of management and leadership that view management as primarily concerned with efficiently and effectively running current practices (accomplishing the mission), while leadership focuses on change and strategically preparing for the future (improving the organization). This has been described as managers doing things right and leaders doing the right things (Boynton, 2016). In a cultural context, managers traditionally act within the bounds of existing culture while classical leaders can be viewed as those who create and change cultures (Schein, 2004, p. 11).

However, in times of change, regular managerial work is increasingly a leadership task (Hayes, 2014, p. 167). Traditional managers or supervisors in a changing or developing environment would be better described as first or second-line leaders. Even in traditionally hierarchical organizations, leadership must be spread down the organizational structure and include frontline and mid-level leaders who will do most of the heavy lifting (Ibid, p. 180). This view of leaders across all levels of an organization fits a mindset of accomplishing the current mission while working to improve the organization. It is also better suited to a complex and

rapidly changing world where empowered junior leaders can often make good decisions based on senior leader guidance but execute much more quickly than a traditional leadership model where decisions are primarily made from the top levels of an organization (McChrystal, 2015, p. 209; Obolensky, 2016, p. 51). In this dynamic operating environment in which most organizations exist, the less an employee's job can be automated, the more you need them to take initiative, innovate, and think critically to achieve organizational success (McChrystal, 2015, p. 212). When trying to develop or change culture, nothing is automatic. Empowering leaders throughout the organization as part of what Kotter (1996) called a guiding coalition is critical for achieving structural change (p. 6).

Whether one looks at current performance, organizational development, or the impact on culture, there is broad consensus that leadership is critical to organizational success. Combat veterans Jocko Willink and Leif Babin (2015) argued leadership is the single most important factor in any team's performance (p. 49). Crutchfield and Roughton (2014) similarly argued an organization cannot excel without leadership (p. 131). The Army teaches that leaders are essential and "inspire people to become energized and motivated to achieve desired outcomes" (ADP 6-22, 2019, p. 1-13).

Within the broader organizational and culture development literature, leadership is widely considered to be the key enabler of the change process (Hayes, 2014, p. 167; Hussain, Lei, Akram, Haider, & Ali, 2018, p. 126). Kotter (1996) described leadership as the engine that drives change (p. x). Schein (2004) argued it is leaders who initiate the development of group culture by "imposing his or her beliefs, values, and assumptions at the outset" (p. 224) and suggested "the only thing of real importance that leaders do is to create and manage culture" (p. 11). Leaders set priorities and establish standards for their organizations, and allocate resources

and support for those priorities as they move towards a desired end state (Mathis & Galloway, 2013, p.xiii). Leaders make changes stick by anchoring them into the culture of an organization (Kotter, 1996, p. 30).

When it comes to safety, leaders are critical in cultural development and help determine whether a safety program moves from something employees do, to something they value. The previously discussed Government Accountability Office report (2021) examining Army tactical vehicle accidents between 2010 and 2019 illustrates the importance of leadership on outcomes. The report found 76% of the provided accident narratives identified improper supervision or leadership as a cause or contributing factor (p. 24), and that implementation of risk management practices varied between units (Ibid, p. 26). Despite having the exact same safety programs and requirements, Army units with poor leadership experienced higher accident rates. That the Army experiences some vehicles accidents is not surprising, given that it often operates in demanding, high-stress environments, but this report demonstrated the importance of leadership in ensuring safety success.

Leaders also are also important for modeling behavior and are looked at by organizational members for cues on how to act. Schein (2004) argued these informal observations are even more powerful teaching and coaching mechanisms than formal, prepared messages (p. 258). Does a leader personally wear eye and ear protection when visiting employees in a part of the building where such protective equipment is required by organizational policy or regulation? Leaders who do set the example, reinforce the written rule, and send a powerful message about its importance. Alternatively, if they fail to wear protective equipment, any written rules are undermined. A message is communicated that safety is not

important, and a broader cultural assumption is created that members can pick and choose what rules to follow and what rules to ignore.

A study to determine how some construction companies were able to consistently work with no serious injuries while others struggled determined the key difference was in the emphasis the Chief Executive Officer placed on safety (Nelson, 1998, p. 42). The study found that successful 'safe' organizations had established cultures, driven by leaders, where unsafe behavior was not tolerated. It is easy for safety professionals to say unsafe behavior is not acceptable; that is their job. It is another thing for leaders, who must balance numerous competing ideas and issues within their organizations, to prioritize safety over more business-centric considerations.

Ultimately, leaders play several key roles in the development of safety culture. They prioritize and communicate safety as a cultural value. They create a vision for the organization and develop a strategy to reach the desired end state. They direct appropriate resources to achieve set goals. They set the example and model behavior to reinforce written policies. Senior leaders empower leaders at lower levels to act in line with a common vision and support the effort along the way.

### **Safety Culture vs. Safety Climate**

Before proceeding further, it is important to briefly discuss the difference between culture and climate to help leaders fully understand the challenge they face. Though similar, climate is shorter-term and more easily influenced by an individual leader. It can be thought of as a situation (Denison, 1996, p. 644) or a snapshot (Mears & Flin, 1999, p. 5) of current thoughts, feelings, and behaviors of an organization. Culture is a more complex set of beliefs and values developed slowly over time. Culture can be thought of as the written story of an organization,

“rooted in history, collectively held, and sufficiently complex” (Denison, 1996, p.644) as to remain resilient against outside forces and resistant to attempts from individual members and leaders to impose change. The current page of an organization’s culture cannot be fully understood without the context of the story leading up to it. It is not just what an organization does, but why it does things the way it does them.

Though culture and climate are different phenomenon, they are also clearly connected and there is no obvious line of demarcation where something transitions from climate to part of the broader organizational culture. Denison noted that when examining climate and culture literatures at a deeper level, seemingly clear distinctions between the two concepts disappear (Ibid., p.645). He argued the two concepts are more differences in interpretation and should not be viewed as “fundamentally different and nonoverlapping phenomena” (Ibid.).

These different interpretations of culture and climate, the lack of a single commonly understood and accepted definition for either concept, and the uniqueness and complexity of individual organizations further challenge leaders attempting to develop a safety culture. They also demonstrate the difficulty of accurately assessing whether progress is a temporary improvement to climate or part of a larger cultural shift within their organization, and why a ‘one size fits all’ safety program is likely insufficient to drive lasting cultural change without tailoring it to fit a unique organization.

A more thorough examination of culture and climate is beyond the scope of this paper. For leaders attempting to develop or improve safety culture within their organizations, the important takeaway is to understand that climate can be improved more quickly than culture. What appear to be positive developments to safety culture may only be more transient improvements in climate that will quickly dissipate if not reinforced. Leaders must avoid

declaring victory too soon and allowing priorities and resources to shift elsewhere before new attitudes have truly taken hold within the organization. All leaders can affect the climate within their respective organizations, but those changes may or may not eventually affect the wider culture (ADP 6-22, 2019, p. 6-5).

### **The Limitations of a Cultural Approach**

It would be professional malpractice to provide a resource for leaders attempting to develop safety culture without also discussing the limitations of such an approach. After all, if there were a guaranteed way to successfully develop safety culture, it would have been implemented by now. Before outlining a plan for leaders to help generate commitment to safety as an organizational value, I will caution readers on the limitations to this approach.

As discussed earlier, safety culture is a blurred and hazy concept. Attempts to define and apply it will inevitably lead to an oversimplification of a complex set of beliefs and relationships within any organization. Research into safety culture assumes an often-times unrealistic level of homogeneity within organizations. Antonsen (2009) noted that most organizations are not characterized by consensus and harmony (p. 183). There are likely internal divisions, power dynamics, and forces for and against change at various levels throughout most organizations. Different groups within an organization may disagree on what constitutes safety success and how much time or how many resources should be committed to achieving it.

Given the natural difference of opinion within any group, a cultural approach may be less effective in larger organizations. The larger an organization, the more 'sub-cultures' likely exist. Referring back to the Army, numerous branch-specific cultures – Aviation, Field Artillery, Logistics, etc., exist within the broader institutional culture. There are rank-specific cultures – Commissioned Officer, Warrant Officer, Non-Commissioned Officer, and Enlisted. There are

composition-specific cultures – Active Army, Army Reserves, and Army National Guard. There are also numerous unit-specific cultures. Attempts to develop an overall safety culture will likely proceed unevenly even with a sustained and committed effort from the very highest institutional echelons.

However, issues surrounding safety are more universal and generally less complex than other organizational operations (Mathis & Galloway, 2013, p. xxiii). While perhaps a bigger challenge in organizations with numerous subcultures, it is still possible for leaders in these organizations to ultimately develop commitment to safety as an organizational value.

A cultural approach to safety also takes longer to implement than a compliance-based approach. While draconian punishment can be used to force compliance and achieve short-term results, commitment requires freedom of choice (Senge, 2006, p. 223). A cultural approach is an attempt to persuade employees and generate internal commitment to safety as an organizational value. It is not a success if employees are simply doing the right things when being observed or inspected. Organizations in crisis, or where normalizations of deviance are pervasive, may require a more directive approach initially, in conjunction with a cultural approach, to ensure long-term safety success.

Embedding new cultural assumptions in mature organizations is also much more difficult than in newer organizations (Schein, 2004, p. 315). Mature organizations likely have a more deeply defined culture than new or growing organizations. This may be true even if a mature organization is relatively small or homogenous and without the sub-cultures of most large organizations. Entire organizational structures and processes may need to be redesigned to develop commitment to safety as an organizational value.



Lastly, no single approach can fit every organization. The diversity and uniqueness of organizational cultures makes trying to imitate successful safety cultures “somewhere between impractical and impossible” (Mathis & Galloway, 2013, p. xviii). Each organization must individually assess its current safety culture and any sub-cultures, develop a vision of its future desired end state, and create a clear path forward. While this presents challenges, it is not impossible, and a cultural approach to safety is more likely to result in sustained success in any environment than the top-down, compliance-focused approach that defines most safety programs.

### **Safety Culture – A Proposed Path Forward**

Up to this point, I have demonstrated the limitations of a traditional compliance-focused safety program and argued why a cultural approach is more likely to result in sustained safety success. I have outlined the important differences between compliance and commitment and the critical role leaders play in achieving organizational success. I have also highlighted the blurry line between culture and climate and cautioned readers on the limitations of a cultural approach

As confusing and contradictory as the literature surrounding safety culture is, there is a path forward for leaders looking to develop commitment to safety as a value within their organizations. Four cornerstone principles (leader involvement, employee involvement, communication, and enabling organizational learning) are discussed below to support leaders in this endeavor. I describe them as cornerstones, as these principles can be thought of as the foundational components used in successfully building commitment to safety as an organizational value.

Leader Involvement: As discussed earlier, a tailored safety program is important to provide guidance to members of an organization and assess the effectiveness of efforts. A safety

program is how an organization formalizes its safety culture. Regardless of the program in use, it must be supported by involved leadership to be successful (Guldenmund, 2010, p. 1478).

Crutchfield and Roughton (2014) argued it is vital for leaders to demonstrate their personal commitment to safety through visible, positive involvement in order to achieve safety excellence (p. 137). If safety is not prioritized by leaders, employees will not put effort into safety beyond what is required to avoid major personal injury or discipline from supervisors.

In its initial report on the Chernobyl nuclear disaster, the International Atomic Energy Agency stressed that “the ultimate responsibility for the safety of the operation must lie with the plant management” (INSAG, 1986, p.31). Peterson (1998) suggested it is this responsibility, or accountability, of those in charge that initiates the move towards safety excellence (p. 32). It takes accountability of those in charge to build culture, which ultimately changes behavior. Safety professionals manage and implement a program; it is up to leadership to make that program a priority. Culture is a group phenomenon, but it is up to leaders to set organizational goals for the group to work towards. As they set these organizational goals, leaders must avoid allowing safety to become an additional or ancillary program subordinate to other priorities (Crutchfield & Roughton, 2014, p. 138).

Mathis and Galloway (2013) maintained that developing an overarching safety strategy is the best way for leaders to impact safety culture (p. xxiii). Kotter (1996) stated that without a sound vision, cultural change efforts “either won’t add up in a meaningful way or won’t stir up the kind of energy needed” to successfully implement the vision (p. 8). This strategic vision creates alignment and unity of effort, and enables leaders to impact safety culture from a distance. It is important for this strategy to be connected to reality and to fully understand the problem you are trying to solve. Chesterton (1930) illustrated this by describing two reformers

who stumble upon a fence. The first exclaims he does not see the use of the fence and proposes to take it down. The second stops him and says “If you don’t see the use of it, I certainly won’t let you clear it away. Go away and think. Then, when you can come back and tell me that you do see the use of it, I may allow you to destroy it” (p. 35). Leaders must be involved to correctly identify the underlying issues and root causes of the current environment - why the things in their organization are the way they are - so they can create the vision needed to effectively plot a path forward. This may involve interviews and meetings with employees and junior leaders at multiple levels in addition to working with the safety team helping develop and ultimately implement the plan.

Leader involvement in this context means all leaders. McChrystal (2015) noted a paradox where leaders today have never had access to more, or better, information with which to make decisions. However, the world is so much more complex, interconnected, and constantly changing than it was even a few decades ago. By the time a single leader could analyze all the available information and make the single best plan, events will likely have changed and rendered that decision obsolete (p. 69). The classical view of a single charismatic and capable leader directing all the forces of an organization is outdated in today’s world.

While top leadership sets goals and develops strategy, they cannot hope to interact with all group members in organizations larger than a few dozen members. First and second line leaders who have regular contact with employees are in the best position to have a strong influence on the sub-cultures throughout the organization. These positions, typically viewed as managers or supervisors concerned with current practices, should be viewed and empowered as leaders. Cultural development can be thought of as a large-scale change initiative. Hayes (2014) drew on the research of several others to note the distinctions traditional managers at lower

levels and upper-level leaders face during change initiatives (p. 168). In a change-oriented environment, leadership cannot just be concentrated at the top.

This leadership must be genuine and consistent as well. People will not follow a leader they do not believe in (Maxwell, 2008, p. 10). A leader can say safety is important, or publish well-written safety guidance, but if employees do not believe a leader truly cares about and prioritizes safety, they will do little more than the bare minimum needed to stay out of trouble. If there is misalignment between a leader's words and actions, trust will be diminished and the effort to develop commitment to safety as an organizational value undermined.

Lastly, leaders must remain involved. It can be tempting for leaders to think their safety culture is in good shape based on a lack of recent accidents, and quickly move on to other areas of concern. However, to develop a culture of commitment to safety as an organizational value, it cannot be the 'flavor of the month', a box to check as complete before moving on to other organizational priorities. As previously discussed, developing culture is a long process. Initial improvements may just be changes to climate, and leaders must resist the urge to declare victory and move on. Kotter (2002) argued this trap is inherent in any large-scale change effort (p. 144). It is common for organizations to take on the easier parts of a problem first to create initial victories and generate momentum for the larger parts. As people sense optimism, and other issues arise, long term aspects of the change effort will naturally lose priority. People who were not fully on board with the new direction may also view initial victories as an opportunity to say 'good enough' and dig their heels in against further change. Leaders must remain committed to a cultural approach for the long haul and ensure new thoughts and behaviors towards safety truly take hold.

Employee Involvement: This is perhaps the biggest problem associated with typical approaches to safety, and the Achilles Heel of attempts to develop a culture of commitment to safety as an organizational value. Involving employees in the development of an organization's safety culture is important for several reasons. First, it is difficult to get someone committed to something they are not involved in. The more involved a person is in a plan or change effort, the more emotionally invested they become in a successful outcome. People who are given responsibility for a decision similarly become invested in the outcome (McChrystal, 2015, p. 215). Antonsen (2016) described this as increasing ownership and argued it is crucial to building acceptance of safety procedures and moving away from reliance on forced compliance to rules as the primary means to reducing accidents and injuries (p. 126).

Involving employees in safety issues also avoids the unintended consequence of employees not feeling responsible for their own safety. Lack of employee involvement creates a reliance on managers to ensure safety, instead of employees actively watching out for one another (McSween, 2003, p. 13). Trying to keep employees safe primarily from the top inadvertently absolves them from individual responsibility. Conversely, involving employees in the development of safety plans and processes eliminates this phenomenon and helps create a culture where employees and leaders at all levels are committed to safety for themselves and those around them.

Front-line employees are typically the closest to the hazards and risks in most organizations. Employees today are "more aware, more informed, and have higher expectations than ever before" (Obolensky, 2016, p. 18). As a result, front-line employees may view new rules or regulations imposed by higher as degrading and indicative of a lack of trust in their knowledge and abilities. They may resent procedures developed by people with less

understanding of the work itself (Antonsen, 2016, p. 126). Mathis and Galloway (2013) described a success story of improving the worst safety-performing site in the division of a petrochemical company to the best in less than a year, primarily based on increasing employee involvement (p.28). The division had previously tried increasing the size of their safety department, a common approach of traditional safety programs, with limited success. It was the increased employee involvement, and the resulting commitment which followed, that ultimately allowed the division to achieve safety success. The speed of improvement in this example also speaks to the power of employee involvement in the safety process.

The principle of employee involvement in developing safety culture is similar to the concept of involving employees in any large organizational change. Lewin's (1951) field theory posited that within any organization there exists a variety of opposing forces. While an organization may appear static, it is likely more or less equally balanced by forces pushing for change at various levels and those resisting it. Change occurs when this balance changes, either by the pushing forces overwhelming opposition, or by reducing the overall resistance to change. Reducing resistance is a far more effective way to tip the balance than trying to overwhelm those opposed to any change effort. Involving employees in any change effort helps reduce resistance and increase commitment, which, as previously discussed, is a critical component in sustained success. Senge (2006) described this as a pull towards a goal that people want to achieve and argues that without it, the forces in favor of the status quo can be impossible to overcome (p. 209).

Involving employees in the development of safety culture increases trust and avoids the inevitable resentment that comes with forcing individuals to comply with rules or processes they may not agree with or see value in. No organization outside of a small team or group will ever

have complete agreement. Organizations with high levels of trust are better suited to constructively work through the disagreements and conflicts that will inevitably arise in any dynamic group environment.

Lastly, employee involvement is likely to generate some of the best safety solutions to current and emerging risks. Front-line employees have been creating solutions to problems for a long time, often at much lower costs than top-down fixes. In 2005, during the U.S. led war in Iraq, a Soldier on the ground figured out how to defeat improvised explosive devices (IEDs) with a glow plug inside a metal can, mounted to a pole extending off the front of their vehicle (Atkinson, 2007). This simple solution temporarily solved a problem the Pentagon's Joint IED Task Force had not after spending almost \$1.5 billion working on it (Ibid.). The idea was quickly turned into the Rhino and Rhino II, with more than 13,000 devices being fielded for military vehicles (Ibid.). Conversely, three Apollo 1 astronauts were killed in a 1966 fire after nylon straps ignited in an oxygen rich atmosphere and the increased pressure prevented them from escaping through the inward opening hatch (Center for Chemical Process Safety, 2021, p. 30). The astronauts had previously requested all flammable materials be removed from the cabin and suggested an outward opening capsule door, but designers ignored them after deeming a cabin fire to be improbable (Ibid.).

Employee-generated solutions will be increasingly important as organizations continue to become more complex and interconnected, and as a result become less able to predict where risks and hazards will emerge. Employee involvement will also contribute to creating the best overall solution to what Senge (2006) described as divergent problems, or problems to which there is no single right answer. From both a cultural and practical standpoint, involving employees just makes sense.

Communication: The prioritization of safety as an organizational value is irrelevant if that priority is not communicated effectively and routinely to all employees, particularly those at lower levels of an organization most likely to be closest to the highest risk. Jeffcot, Pidgeon, Weyman, and Walls (2006) noted that while upper-level organizational commitment in the U.K. rail industry was generally high, “the emphasis on this as a priority was lost, or diluted, by intermediate management levels as it passed down through the organizational hierarchy and came into conflict with other (e.g., performance-based) aspects” (p. 1116). This breakdown in communication can be bottom-up as well, when middle managers act as ‘censors’ instead of ‘sensors’ (Mathis & Galloway, 2013, p. 94). Whether the intent is to protect employees in a culture of fear and reprisal or prevent bad news that could make a manager look bad from moving up the chain, this barrier to communication keeps top leaders from having a clear and full picture of the situation and developing an effective strategy.

Communication must be easily interpreted and understood. Formal statements, like the Army’s command philosophy memorandum, allow leaders to clearly articulate their priorities and values to the organization. Note that more communication in these formal statements is not inherently better communication. Too much communication runs the risk of real or perceived inconsistencies, or employees missing the key takeaways. Clear, concise communication of safety values and priorities is far better than the byzantine structure of rigid rules and policies that define most safety communication. Schein (2004) suggested these formal statements have value as a way for leaders to emphasize values and special areas of focus (p. 269). He also cautioned that these statements can only cover a small portion of the assumptions that underline an organization’s culture (Ibid.).



While more communication is not necessarily better communication, repetitive communication is. The first time an employee hears or sees a message about an organizational commitment to safety, it is unlikely to have a lasting impact. They may even view it cynically, as just another management initiative that come will and go in short order. To displace cultural attitudes and beliefs built and shaped by years of experience, communication on safety must be regular and recurring. Additionally, research by Throness (2013) found memory of past safety events diminished after roughly three years for individuals not personally involved (p 2). This led to recurring safety events that should have been preventable. Regular communication on safety incidents to keep lessons learned fresh helps ensure repeat incidents are minimized.

Communication on safety is not just written or verbal. Leader action, or inaction, is a form of communication and can send a strong message. This is the classic ‘actions speak louder than words’, and what leaders do not pay attention or react to sends a powerful signal to the organization (Schein, 2004, p. 252) regardless of what they say. Misalignment between a leader’s words and actions will undermine safety efforts and broader trust across the organization. Deeds are generally more powerful than words in this respect, and nothing undermines a change effort more than inconsistency between verbal communication and behavior (Kotter, 1996, p. 10). For example, if a leader routinely re-schedules monthly safety training or cancels it all together, it sends a message to the organizations that safety is not important. It does not matter why the meetings are cancelled, or what the leader’s written safety policies state. Members of the organization will internalize the action and adjust priorities accordingly. Conversely, the more involved a leader is in the development of safety culture, the more strongly it communicates its importance. Schein (2004) argued one of the most powerful embedding mechanisms leaders possess to communicate what they care about is what they

systematically pay attention to, measure, and control (p. 246). Those in positions of influence and power risk losing this embedding if their safety communication - written, verbal, and actions - is inconsistent or infrequent.

The context of information is also important. A key part of communicating effectively is leaders ensuring they explain *why* a formal rule or process exists (Willink & Babin, 2015, p. 77). Individuals perceive things differently based on their unique experiences and background. The context behind information helps bridge the gap between telling an employee to comply with a rule or process and helping generate commitment and intrinsic motivation for a rule or process. In this effort, processes or rules can be described as best practices or standards. Cautions or warnings describing negative outcomes can help communicate why it is in everyone's best interests from a safety perspective to use them. Providing the *why* underlying a procedure also forces leaders to consider their own intentions and how the formal rule or process lines up with the true performance of the work (Antonsen, 2016, p. 126). Leaders should spend time as part of this effort thinking about how their communication will be received and how to eliminate or address any perceived inconsistencies between their words and actions.

Feedback is an important part of the communication principle. Constructive feedback, delivered with the goal of improving employee safety, as opposed to simply correcting or chastising someone, can reinforce positive safety practices and help them take hold as part of an organization's culture. Timing of feedback is also important. The Army (2015) advises leaders to provide feedback as soon as possible after an observation (p. 3-11). Feedback becomes less effective if leaders wait until formal performance reviews or sit-down counseling to deliver it. McSween (2003) similarly argued feedback should be connected directly to the observation process (p. 88). As feedback becomes further separated in time from the event itself, it is less

likely to be viewed as concern for employee safety and decreases the likelihood it will be received positively or lead to a change in behavior.

Leaders should solicit feedback from employees during these events also. An employee likely has a reason for doing what they are doing. Perhaps a particular piece of safety equipment is broken. Perhaps they were not aware of a specific process or procedure. Perhaps they were under time pressure to get a job complete. Leaders can use this feedback gathered from employees to improve organizational safety, and the very act of asking for feedback can increase trust by communicating genuine care and concern for an employee.

Lastly, while effective communication is important for success in any setting, it can have an outsized safety impact in certain organizational structures. Huang, Sinclair, Lee, McFadden, Cheung, and Murphy (2016) examined 4,600 long-haul truckers, an occupation which receives little cultural reinforcement in comparison to most occupations. The truckers were non-unionized, further limiting connections to a common cultural framework. The researchers showed that quality of supervisor communication about safety “uniquely” contributed to safety outcomes (p. 357). The researchers maintained quality communication includes both top-down communication, but also bottom-up, expressed in their research as the extent to which employees feel comfortable raising safety issues to their supervisor.

When combined with leader and employee involvement, clear, concise communication, regularly repeated and reinforced through action, can be a force multiplier for leaders attempting to develop commitment to safety as an organizational value.

Enable organizational learning: The final principle in establishing and sustaining a successful safety culture is to enable organizational learning. Success, in safety or elsewhere, can be a short-lived experience if not reinforced and built upon. The world is constantly changing.

New risks and hazards will emerge. Organizations can only react to external events and forces so many times before they eventually get it wrong. A learning organization is an adaptive and proactive organization that is more likely to succeed in any imagined or unimagined future.

Organizational learning requires both knowledge and sharing. It cannot be generated solely by management decisions or directives (Granerud & Rocha, 2011, p. 1031).

Organizational learning needs involvement from both leaders and employees, and effective communication through echelons and across functional areas to be successful. As organizations and systems increase in complexity, cause and effect are more likely to be separated by time and not immediately obvious (Senge, 2006, p. 119). The linear solutions that define many approaches to risk management are insufficient in this type of environment (Dragan, Georges, & Mustafa, 2017, p. 618). A learning organization will be better prepared to identify potential risks and develop effective mitigation measures.

As part of enabling organizational learning, leaders must embrace mistakes. As counterintuitive as it may seem to embrace mistakes in pursuit of a successful safety culture, it is critical to fostering honest communication and enabling group learning. Senge (2006) argued “the patterns of defensiveness are often deeply engrained in how a team operates” (p. 10). It is not a natural human instinct to accept fault or blame, and “there is in each of us a propensity to find someone or something outside ourselves to blame when things go wrong” (Ibid, p. 19). This reaction is understandable in a historical context where mistakes are typically punished. However, in a safety setting, these reactions deprive others of learning opportunities and are detrimental to organizational growth and sustained success. To break these cultural patterns and natural instincts, leaders must resist the urge to punish honest mistakes.

This does not mean leaders should not hold individuals accountable for deliberate violations of established procedures and standards. These types of character mistakes have a detrimental impact on culture if allowed to stand. But leaders must view character mistakes separately from performance or judgement mistakes, which can typically be corrected through training, experience, and mentorship. The Army (2015) advises its leaders to not only embrace mistakes, but to actually encourage subordinates to take reasonable risks as part of their individual growth and the fostering of a learning environment (p. 3-2). Risk in this situation does not mean taking shortcuts around safety procedures, but to support individuals leaving their comfort zone and growing personally and professionally, without fear of negative repercussion for making honest mistakes that will inevitably occur in these environments.

Secondly, leaders should establish an environment of self-reporting. Mazur et al (2015) noted that developing and fostering event reporting has been partly credited to safety culture improvement in multiple industries (p. 293). The authors argue their own adoption of reporting in a no-blame culture yielded “measurable enhancements” in their culture of patient safety (Ibid.). McSween’s (2003) injury analysis suggested employee behavior is responsible for between 86 and 96 percent of injuries (p. 6). An environment where employees are not comfortable self-reporting is an environment where behavior mistakes will continue to be repeated. Reason (2000) similarly maintained this reporting culture is crucial to effective risk management (p. 768). This principle is easier if leaders embrace mistakes at an organizational level and create trust amongst employees that self-reporting of honest mistakes will not lead to punishment.

As I discussed earlier, a safety program cannot write the correct rule for every possible scenario. The ‘right’ decision or solution to a problem may not be written down anywhere. There

may also be gray areas in which multiple acceptable courses of action lay. An environment where honest mistakes are used to further organizational learning enables employees to use their intuition, developed through years of practical working experience, to make decisions within their areas of responsibility. This intuition is important in an environment defined by rapidly increasing knowledge but less certainty (Obolensky, 2016, p. 16). Solutions developed within a learning organization can improve not only safety, but operational and business-centric areas as well, further reinforcing the idea that an organization can simultaneously be safe and high performing.

Lastly, to enable organizational learning, leaders must set the example and be open to learning as well. As senior leaders are likely situated the furthest from the highest risks and hazards within their organization, it is imperative they be receptive to feedback from employees. As with the principle for involved leadership, employees will notice a disconnect between leaders who say they want a learning organization but are not receptive to feedback or learning themselves. The Army (2015) suggests leaders can set the example and foster a learning environment by telling their team about a time they made mistakes accomplishing a risky or challenging mission and what lessons were learned from the experience (p. 3-4). This can also help support a broader environment of self-reporting.

It is natural for leaders to want to appear infallible or to have all the answers, but this approach is out step with the size and complexity of modern organizations and the sheer breadth of areas leaders are likely responsible for. Humility from leaders, combined with an openness to feedback, demonstrates personal commitment to creating a learning organization. It reinforces other communication efforts aimed at generating commitment to safety as an organizational value.

### **Conclusion**

While important for educating and training employees, shaping behavior, and emphasizing safety as an organizational priority, traditional safety programs have significant shortcomings. They are generally reactive in nature and slow to identify emerging hazards and proactively mitigate risk. They rely heavily on monitoring, compliance, and punishment to achieve results, which undermines trust and can increase risk of serious safety incidents as learning opportunities go unreported for fear of reprisal. They create layers of rules that inevitably lead to a culture where deviation is normalized, and violations of rules become routine. Traditional safety programs are inefficient and outdated in today's complex and dynamic world.

A better approach is one focused on generating commitment to safety as an organizational value. A cultural approach is more likely to ensure long-term safety success and can arguably lead to higher performance in operational areas as well. In this paper, I provided case studies and examples to highlight the shortcomings of traditional safety programs and why they cannot ensure safety success without a broader supportive culture. I demonstrated the importance of culture in safety success. I discussed the differences between commitment and compliance and the important role that leaders play in the development of culture. I also cautioned readers on not mistaking short-term changes to climate for culture and discussed the limitations of a cultural approach to safety. Lastly, I provided a practical path forward, built upon four cornerstone principles – leader involvement, employee involvement, communication, and organizational learning. These principles share commonalities and are mutually reinforcing. They are foundational principles leaders can use to develop their organization's safety culture regardless of the industry or specific safety program in use.

When discussing vague or fuzzy ideas like safety, or culture, it can be difficult to articulate a clear picture of a better future. The challenge is magnified for leaders trying to develop or improve safety culture, a concept with no clear definition or agreement in the volumes of published literature. With this paper, I have, hopefully, provided leaders a practical guide on the concept of safety culture and its key principles to attack this challenge within their organizations. By combining involved leaders, involved employees, and effective communication, leaders can enable organizational learning, generate commitment to safety as an organizational value, and ensure long-term safety success.



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