Leadership's Effect on Safety Culture

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Leadership's Effect on SAFETY CULTURE

By Mark A. Lundell and Cheryl L. (Cheri) Marcham

IN THE 1900s, WORKPLACE DEATHS AND INJURIES were a way of life for employees, with an estimated 18,000 to 23,000 workers dying annually (Hofmann, Burke & Zohar, 2017). Subsequent to the congressional establishment of the OSH Act of 1970, the occupational injury rates declined from 10.9 injuries per 100 full-time equivalent (FTE) workers in 1972 (OSHA, 2018) to 2.9 per 100 FTE workers in 2016 (BLS, 2017), making a considerable impact on the safety and health of employees throughout the population. Yet, with more than 45 years of OSHA's regulatory controls and safety and health standards, combined with the technological and mechanical improvements of industry, workers still become injured or sick, and in 2016, 5,190 workers died as a result of occupational injury (BLS).

Those numbers are still unacceptably high when seen through the promise of the OSH Act, which entitles every worker to safe and healthful working conditions and makes all employers responsible to provide a work area free from recognized hazards. This promise cannot be kept solely by OSHA through writing regulations or by mere technological advancement. It must be carried on the backs of the leadership within industry that support and maintain a dedicated focus on the occupational safety of all their employees as a value in all they do.

Today, the workplace is growing rapidly, with larger equipment, more hazardous chemicals and newly developed synthetic materials. It is clear that OSH professionals have reached a fluency with identifying hazards, classifying risk and adapting to changing environments, but incidents still occur. A common factor in the occurrence of a significant number of incidents comes not from the failure to identify hazards or even from a failure in implementing regulatory oversight, but by those who, through faulty leadership, fail to follow the standards or regulatory requirements that are set but not enforced or promoted. Much of this has to do with time constraints, limited safety equipment or funding, lack of interest in safety, or merely a lack of participation in the safety effort.

By utilizing positive leadership principles and setting a good example of a safety mind-set, a leader can instill a true interest in and focus on safety from management through to apprentice.

KEY TAKEAWAYS

- **Leadership is the antecedent to safety culture and is essential for fulfilling the intent of OSH throughout industry. It is critical to the creation, support and drive of an organization's safety culture.**
- **Leadership techniques and approach must be flexible enough to adjust to the active working environments. Executives should understand the impact that leadership styles can have on safety culture.**
- **A professional safety perspective is essential for an organization to evaluate, uphold and embrace all levels of OSH culture. Safety professionals are a critical component of any organization.**

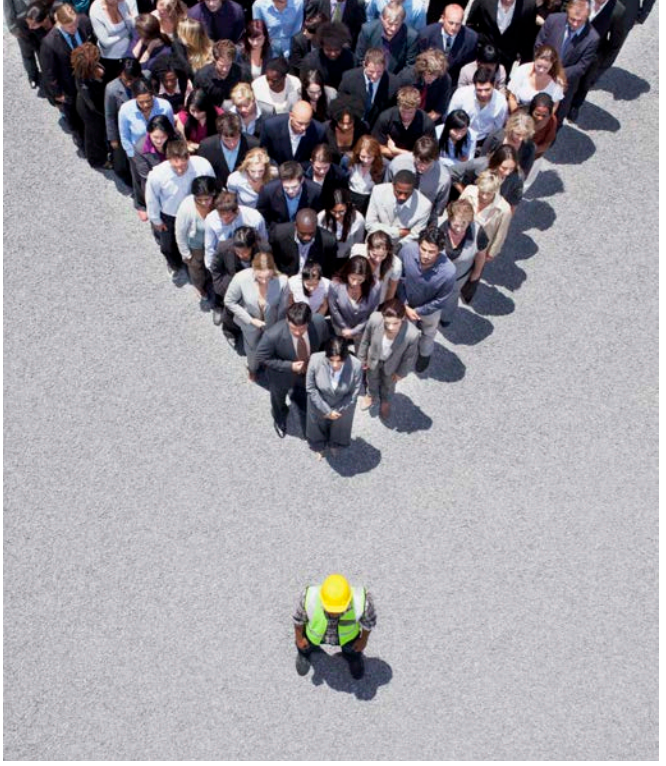
Leadership is the physical form of regulation and instruction as is seen throughout all occupational fields. Even with meticulous regulation, without effectively engaged leadership, the guidance provided by that regulation goes unnoticed or even ignored, making leadership the most critical element in keeping pace with the changing occupational environment and the promotion of positive safety culture.

Leaders "inspire people to want to do something" (Krause, as cited in Geller, 2000, p. 38), and good leaders invigorate the flow of interpersonal communication and orchestrate others to achieve synergy within the group (Nance, as cited in Geller, p. 38). *Culture* is defined as "the characteristic features of everyday existence shared by people in a place or time" and "the set of shared attitudes, values, goals and practices that characterizes an institution or organization." Antonsen (2009) defines culture as "the frames of reference through which information symbols and behavior are interpreted and the conventions for behavior, interaction and communication are generated" (p. 4).

In understanding these definitions, it can be seen that culture is the combined view of a group and the way that group coalesces to follow one rule, each other and its leader. In any case, the definition of safety culture should describe an environment where the social structure of an organization shows signs indicating the daily importance of safety by the group as a whole. This is where OSH needs leadership; only leadership can drive and develop the safety culture of an organization. As described by Martínez-Córcoles, Gracia, Tomás, et al. (2013), "Leadership is viewed as a shift lever for safety culture, and as an important antecedent of achieving high levels of safety" (p. 293). Without leadership, an organization's culture will fragment into unmanageable groups that follow their own potentially conflicting and possibly risky values and goals.

Failures in leadership or a misguided, misunderstood approach of leadership can have a countering effect on organizational safety; it may inadvertently condone unsafe behavior or create unsafe conditions where none existed previously. Leaders or managers who place profit and production over the safety of their employees, who are willing to overlook their faltering safety culture or bypass safeguards to get the job done, or who fail to support and follow regulatory requirements merely because they "don't have the time," can create an unsafe work environment.

For their purpose to be fulfilled, regulatory oversight, policy and safety standards rely on effective leadership to implement and employ them. Without effective leadership and management support of occupational safety and the development of a positive safety culture, regulation and policy can become immaterial and irrelevant. Leadership and management's impact on an organization's safety culture must be understood and employed by all to keep pace with changes occurring in the



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workplace today. The type of leadership practices and styles in an organization directly determine the safety culture, safety program participation and safety outcomes that can be expected within the organization.

Leadership Impact on Safety Culture

Identifying individual aspects of leadership style and their relation to safety is a daunting task, although in many cases it is clear to the eyes of the beholder. To clarify context of behavior as is related to leadership and occupational safety for reasoning going forward, it must be understood that the behavior of individuals is reliant on certain factors that are inherently a functional responsibility of leaders. Pink (2011) found that simple physical tasking can be easily influenced and improved merely through reward, but also found that tasking that requires even the most rudimentary cognitive skill cannot be improved with reward, regardless of reward size (RSA, 2010).

Theories and performance of leadership and those of occupational safety require that same cognitive skill to be successful. Pink (2011) reports that to improve performance, leaders must be provided autonomy and must also provide autonomy to their followers; they must allow them the pursuit of mastery of their skill and give them a purpose for their time. Pink also found that when introducing cash reward for cognitive tasking, the performance of such tasking actually declined with the offering of reward. This is where leadership style and safety performance connect: leaders who truly accept, understand and take advantage of these rules will experience the best results, develop the most spontaneous safety compliance, and therefore the truest form of safety culture. This also supports a culture of autonomy and highlights some of the errors that befall promoting safety performance through arbitrary reward.

Leadership can only influence safety culture if an understanding exists of the many forms of management of that culture. The keys to safety culture within any organization are the creation of leadership and management systems that 1) specify safety objectives; 2) distribute responsibility for safety; and 3) plan, organize and control the organizational environment according to safety objectives and precautions (Antonsen, 2009). To gain the benefits of these factors for human motivation and to utilize these keys to safety in an organizational environment, leadership must be aware of the culture of the organization and the ways in which it can manage behavior and culture change.

Behavior and culture are two separate types of change, yet both must be managed together, although in different manners, to gain the control of both. Behavior-based safety management is, much of the time, a bottom-up approach that starts at the level of the frontline employee, the workers on the assembly line or those directly involved with the physical production of the products within the organization (DeJoy, 2005). Contrasting that, DeJoy describes culture change or culture management as the divergent top-down approach coming from leadership, management and organizational behavior that provides the alternate focus on understanding and changing the fundamental values and beliefs of the organization through policy and executive guidance.

These both affect the performance of the other, as changing the behavior of the worker while not the behavior of management (therefore the root of culture) will only result in the return of negative behavior by the frontline worker (DeJoy, 2005). During the application of positive reinforcement, behavior can be altered to support the intended outcomes of positive safety behavior, although once that reinforcement subsides, the negative safety behavior returns (DeJoy). In addition, changing the behavior of management to support a positive safety culture without behavior-based safety management occurring in tandem will only provide trivial success. Without the input provided by the crew in a bottom-up behavior-based safety environment, an ill-informed top-down approach can lead to faulty policies that lack focus on the standard safety issues experienced by frontline workers (DeJoy).

To better understand how leadership affects safety culture, this article examines many forms of leadership such as active transformational, and active and passive transactional leadership, including democratic, autocratic and the passive leadership styles of laissez-faire and management by exception, and evaluate them for their impacts on safety culture.

Transformational Leadership

Many studies have concluded that transformational leadership practices have the most promising capability to achieve this combined effort between behavior and culture change in building safety culture. Barling, Loughlin and Kelloway (2002) found that transformational leadership consisting of a leader who displays idealized influence, uses inspirational motivation techniques, provides intellectual stimulation and takes time for individualized consideration to subordinates plays a critical role in molding the success of occupational safety. Kelloway, Mullen and Francis (2006) also found that transformational leaders who build high-quality relationships between leaders and followers contributed to improved safety communication and safety commitment.

Along with that, the perceptions of supervisors' safety-specific transformational and transactional leadership were related to increased individual safety consciousness and improved perceptions of safety climate (Kelloway, et al., 2006). Kelloway, et al., reported finding a direct and positive impact of safety-specific transformational leadership on safety consciousness and safety climate, and an indirect impact on reductions of incidents and injuries. Barling, et al. (2002), support that view and conclude that safety-specific transformational leadership is directly associated with improved occupational safety, and that transformational leadership is a form that can be taught to leaders.

Delegach, Kark, Katz-Navon, et al. (2017), report that transformational leadership is the key to enhance followers' promo-

tion motivation and that it contributes to employees' affective commitment to safety culture. Transformational leaders are also identified as being the most accepting of incident and close-call reporting by employees, further leading to increases in the organization's safety culture (McFadden, Henagen & Gowen, 2009). Martínez-Córcoles, et al. (2013), found that transformational leaders who encourage employees to participate in the decision making about safety within their organizations instill a sense of group belonging, as well as a greater commitment to safety from employees.

It may seem obvious, but supervisors and leaders who actively engage in the safety of their subordinates and work teams significantly contribute to reduced incident rates and an increase in positive safety culture (Kelloway, et al., 2006). Martínez-Córcoles, et al. (2013), found that leaders who support knowledge growth through training and participate in thought sharing between employees will increase employee knowledge and lead to a reduction in the propensity of those employees to engage in risk-taking behavior. Transformational leadership that takes an active role in supporting the organization's safety program by serving as a good role model of safe behavior and utilizing inspirational motivation can make the cleanest progress with safety culture. Being a leader who shows genuine concern for the well-being of employees, avoids faultfinding in the organization and is open to safety violation or hazard reporting will invite safer behavior and will positively influence the safety culture of the organization (Kelloway, et al.).

Transactional Leadership

Transactional leadership has also placed well as a leadership style known for setting clear objectives, monitoring objectives and achievements, imposing sanctions for failure to maintain standards, and by engaging employees in social and economic exchanges with leadership (Delegach, et al., 2017). Both transformational and transactional leaders monitor their followers' growth and development, although transactional leaders tend to monitor followers' behavior more aggressively, tend to focus those behaviors more toward personal responsibility and will elicit a more substantial focus on prevention (Delegach, et al.).

As Bass (as cited in Breevaart, Bakker, Hetland, et al., 2013) describes the differences with the two, "transactional leaders motivate their followers to fulfill their leaders' expectations, while transformational leaders motivate their followers to perform beyond what is expected of them" (p. 139). Both are acceptable forms of leadership depending on the situation in which the leader finds him/herself. Leaders and followers hold different expectations of leaders and leadership style contribution to safety under different circumstances; leadership styles that are valued and effective in one environment may be less desirable and less effective in another (Willis, Clarke & O'Connor, 2017). Active transactional leadership is known to initiate follower engagement and, with a faltering culture, may be the most pragmatic way to generate the initial steps for employee engagement (Breevaart, et al.). One difference between them is that transactional leadership is known for having both active and passive forms. Transactional leadership exists with three facets, contingent reward, active management-by-exception (MBE) and passive MBE (Hoffmeister, Gibbons, Johnson, et al., 2014).

In its active MBE form, transactional leadership provides many benefits to safety culture coming from active monitoring of employee performance and the detection of deviation to standards and procedures, as well as its promotion of more active safety behaviors and safety program participation (Hoffmeister, et al., 2014). Additionally, active transformational MBE creates an environment that elicits followers' compliance and enforces a commitment to safety based on identifying potential costs associated with failure to maintain safety standards (Delegach, et al., 2017). Active MBE transactional leaders also benefit safety culture by the practice of clarifying the details of what followers must do in order to achieve successes in safety and by exerting their influence on followers' attitudes toward the promotion of safety and incident prevention (Delegach, et al.). Hoffmeister, et al., identify that contingent reward and active MBE transactional leadership appear to have the most potential to influence employee safety compliance and appear to have the most direct link to injuries; although unexpectedly, their study provided minimal empirical evidence to support that. Where transformational and contingent reward transactional leadership showed a relationship with at least one safety outcome, active transactional MBE did not contribute a unique variance to any safety outcome (Hoffmeister, et al.).

In its contingent reward form, transactional leadership's use of promoting exchange with employees, rewards for increased performance or counselling, and corrective actions for failures in performance can lead to greater understanding and focus by followers toward promoting safety performance (Breevaart, et al., 2013). Permuth and Gazica (2014) report that the most effective way for increasing safety behaviors is by reinforcing the organization's climate through proactively recognizing and rewarding desirable safety behaviors. However, a potential drawback to this practice of contingent reward transactional leadership comes from inappropriately or thoughtlessly exchanging reward for specific compliance outcomes, which can have an unintentional countering effect to safety culture (Potter & Potter, 2007). Using reward too aggressively for safety performance has been seen to cause underreporting, particularly when the performance of the organization is determined by these safety metrics (Potter & Potter).

Democratic Leadership

Democratic leadership styles, primarily referred to as "leaderful practice" and as a participatory decision-making form of leadership, pose both benefits and risks to safety culture (Goethals, Sorenson & Burns, 2004). In many organizations and within many beliefs, leadership is considered as a specific individual in authority who mobilizes change and directs actions, whereas within truly democratically led organizations, the negotiation of shared understanding among a group of interacting individuals can be a source or form of leadership (Goethals, et al.). Considering that leadership, thus defined, is anything that can inspire people to want to do something and that results in the accomplishment of critical tasking such as setting a mission, accomplishing goals, sustaining commitment and reacting to changes, then collaboration between a group that leads to the same end result is inherently leadership displayed through group effort (Goethals, et al.).

This concept, seen through the definition of safety culture's set of shared attitudes, values, goals and practices that characterize an institution or organization is, in essence, leadership accomplished within cultural means and, therefore, will surely increase the coalescence of culture that leads to greater psychological safety, team participation and the trusting relationships that play a critical part in the development of positive safety culture.

The countering argument on democratic leadership presents that safety-critical environments demand more directive, less

inclusive prevention-focused leadership to support employee psychological safety (Willis, et al., 2017). Having a strong directive leader is preeminently important when critical decisions must be made quickly and cannot wait for collaborative decision making to occur. In safety-critical environments, an individual leader that can address issues of pragmatic problem solving, actively monitor safety practices and respond quickly with decisive actions is the preferred form of leadership, supporting both management and followers' psychological safety (Willis, et al.). This, in turn, can set the grounds for growth in safety culture.

Autocratic Leadership

Autocratic leadership, as characterized by the centralization of decision making and directive power coming from a single dominant leader, presents its own positive and negative impacts to organizational safety culture (De Hoogh, Greer & Den Hartog, 2015). In positive support of safety culture and employee security, autocratic leadership meets the fundamental human needs for hierarchical differentiation in social interaction and clarification of roles, enhances interpersonal predictability and supports the creation of structure within an organization that can enhance team performance (De Hoogh, et al.). However, this can only happen when there is little or no social power struggle evident in the organization (De Hoogh, et al.). In an environment with a power structure that is being challenged, autocratic leadership will clash with that competition and increase power struggles that lead to less structure, feelings of resentment and will strain the overall morale of the organization (De Hoogh, et al.). Therefore, the positive or negative impact of autocratic leadership on safety culture, team psychological safety and team performance is dependent on the existence and level of power struggle conflicts present in an organization (De Hoogh, et al.).

Examples of these negative effects arising in safety culture are shown in incidents occurring through the U.S. Navy 7th Fleet in 2017. U.S. Navy reported that in 2017(a), *USS John McCain* and *USS Fitzgerald* experienced fatal collisions with civilian ships resulting in the death of 17 sailors as well as four additional nonfatal operational incidents. Within these incidents, autocratic, single dominant leaders' behaviors led to reduced levels of psychological safety, fractured elements of command structure and negligence for regulation, instruction and orders from senior ranking personnel.

Autocratically imposed demands on fleet forces by executive, force-level leadership without serious democratic dialogue with those impacted presented a level of demand and pressure on the 7th Fleet forces that, combined with limited time to meet those expectations, led to degradation of safety culture, and caused an intentional insufficient focus on seeking out and solving problems in planning, training, drilling and performance of duties (U.S. Navy, 2017a). This accumulation of acceptance for inadequate planning, missed training, lack of drilling, inspection and the increasing practice of taking shortcuts to meet autocratically imposed mission tasking became normalized and accepted, and resulted in a declining safety culture throughout the 7th Fleet (U.S. Navy).

The military is an accepted autocratically led organization which, as described by Willis, et al. (2017), should be the prominent form of leadership in most safety-critical environments. Although, as seen in these incidents and others, alternate democratic and inclusive leadership styles are relevant and, depending on the situation, preferred. The structure and security provided by autocratic leadership is only possible in the right equal and cohesive environment. To gain the positive elements of autocratic leadership, any existing power struggle must be reduced and removed prior to the implementation of autocratic forms of leadership.

Leadership That Counters Safety Culture

Some leadership styles have been determined to have a countering and negative effect on safety culture, such as passive MBE and laissez-faire (absence of leadership behaviors) leadership styles (Clarke, 2012). Breevaart, et al. (2013), found that the passive forms of MBE are most likely to occur when leaders are placed in a position of having a larger span of control, making it difficult to monitor mistakes and maintain control over all, leading to passive-avoidant leadership behavior. These passive forms of leadership show no benefit to safety culture, significant relationship with regulatory motivation, nor arousing motivation among employees (Delegach, et al., 2017).

Even though passive MBE transactional leadership still discourages negative behavior, it fails to catch the issues prior to incidents occurring (Hoffmeister, et al., 2014). Kelloway, et al. (2006), and Clarke (2012) consider laissez-faire leadership the least effective style in relation to safety performance, workplace safety and safety culture. Passive leadership styles such as these have a negative effect rather than merely a null effect on safety outcomes, leading to the prioritization of productivity over safety, thus increasing injury rates, because passive leadership tends to ignore safety problems and fails to intervene until difficulties force them to do so (Clarke).

Without strong management and effective concerned leadership engaging with employees every day, safety culture can be countered and degraded by overly aggressive, toxic and bullying leadership styles. Many choose to lead by fear in a Machiavellian approach rather than by respect, quality of skill or leadership ability. Using fear adds the element of punishment, therefore, many leaders choose the aggressive, toxic leadership style over others, as it is easiest to employ to obtain the quickest results (Grint, 2014).

Leadership that consistently displays negative behaviors such as intimidation, manipulation, overly micromanaging, arrogance, or abusive and unethical behaviors can drastically degrade the culture and safety within any organization (Webster, Brough & Daly, 2014). In combating this, the presence of strong management, leadership and organizational support will better enable employees to deal with and report workplace bullying (Kwan, Tucker & Dollard, 2014). An organization or leadership that allows workplace bullying to occur risks degrading safety culture and increasing risk factors such as excessive pressure on employees, employee haste and increased workload per employee (Kwan, et al.). Also, when allowing toxic leadership and bullying in the workplace, leadership is, in turn, potentially causing depression, emotional exhaustion, post-traumatic stress and low morale in workers, all of which are known to result from such an environment (Kwan, et al.).

Leadership's Unintentional Effect on Safety Culture

Leadership support for identifying obvious hazards and risks within an organization, the concern for equipment safety, facility safety, fire safety, PPE and the standard hierarchy of controls is common, although concern for the individual worker may be overlooked by some. Within many organizations, support for worker psychological safety and health are not considered a priority and may be seen as not the responsibility of leadership, but of the individual suffering with such psychosocial issues.

Psychosocial issues evolving from toxic and bully leaders can lead to helplessness, chronic health issues and long-term psycho-

logical harm (Webster, et al., 2014). An environment that allows this behavior can expect to also encounter reduced productivity and increased absenteeism, presenteeism and employee turnover (Webster, et al.). Presenteeism (when employees are present physically but, due to illness or other psychological or medical condition, are not focused or able to function properly) not only reduces performance and productivity, but can increase risk and is known to cost companies billions of dollars annually (Hemp, 2014). Safety culture is directly related to a safe and healthful work environment that is free from this type of risk. Leadership should not be the source and therefore leadership is responsible to defend the workers from such behavior and mitigate its effects on safety culture. To do this, leaders must be aware of the psychosocial safety climate of their organization.

Psychosocial safety climate (PSC) is a facet-specific component of organizational climate and includes the policies, practices and procedures for the protection of worker psychological safety and health (Kwan et al., 2014). This component and practice protect the psychological safety and health of employees who can come from workplace bullying and other stress-inducing behaviors by leadership (Kwan, et al.). PSC protects against and moderates the impact of workplace bullying that can cause post-traumatic stress, psychological distress and emotional exhaustion (Kwan, et al.).

A few of the greatest elements of PSC are senior management support and commitment to issues that affect employees' psychological health, commitment to resolving issues about psychological safety and health, and organizational communication with employees about matters that affect psychological safety and health (Kwan, et al.). With a strong PSC environment, concerns of employees are expressed and corrective measures can be put in place, where with a weak PSC environment, the employees will use coping mechanisms that can lead to drug use, neglect of duties, exhaustion, post-traumatic stress and low morale, all of which lead to an unsafe environment and degradation of the safety culture (Kwan, et al.). An unintentional effect on safety culture with PSC is the absence of attention by leadership given to such an unfamiliar concept, allowing it to permeate the organization and degrade the safety culture within.

Unintentional degradation of safety culture can occur by many means, including unconscious factors of the human frailty of integrity. According to Grint (2014), Plato feared that even those who intended to lead in a moral way for the benefit of the community would be corrupted by the system and would inevitably destroy their own community. This shows that the same conflicts of integrity existed even in Plato's time. Today, many, even with best intentions, still find themselves more focused on production than on safety culture, the rapid completion of work, the avoidance of obstructions to production and meeting deadlines. There are others who take shortcuts, skip safety steps, subvert instruction and neglect safety responsibilities, yet meet their goals. Leadership-directed unintentional degradation of safety culture comes about through competing demands on workers, excessive pressure and failure of senior leadership to effectively exercise intelligent task management.

Another way that management fails to avoid degrading its own safety culture occurs through improper guidance of workers that can be misconstrued such that it unintentionally increases risk. According to Reason (as cited in Martínez-Córcoles, et al., 2013), nearly 70% of all human performance problems can be traced to improper, incorrectly written or misunderstood procedures. One example can be seen within the U.S. Navy (2017b) senior enlisted leadership and officer promotion recommendation board precepts, which states, "The Navy needs innovative and bold male and female leaders to lead, think creatively, challenge assumptions, and take well-calculated risks that maximize effectiveness" (p. A-4). This can be understood in many ways, good and bad, although in the author's experience, it is clear that many perceive this as a recommendation for leaders to go against regulation when required, take unnecessary risks and put personnel at risk when deemed appropriate for increasing effectiveness.

With knowledge of these promotion recommendations, many will determine that by taking risks and getting lucky with the outcome, they will be seen as innovative and more qualified for advancement. This is dangerous as a policy, as it can lead many to perceive that taking well-calculated risks is what they must do to meet promotion recommendations and to prove themselves creative enough to "get the job done." Having such a policy statement may bode well if offset with an additional recommendation emphasizing leadership's stringent support for safety compliance.

Another manner of unintentionally promoting a negative safety culture is by promoting a behavior that is known to cause incidents merely because it also improves performance. In a comprehensive evaluation of recent maritime fatal incidents, the U.S. Navy Fleet Forces Command determined that at the highest levels of command and planning an ingrained culture of a can-do attitude existed, resulting in negligence to recognize the accumulation of risks, along with leadership's deficiency in the ability to identify, mitigate and responsibly accept risks. Every case showed a degraded and declining level of safety culture, starting with top-down senior leadership responsible for the planning and management of the fleet, down to the individual command leadership neglecting the safety of their crew and disregarding instruction and regulation.

This culture is carried down to the bottom-up factor of behavior displayed by the individual ground-level worker or, as DeJoy (2005) puts it, down to the frontline employee who has allowed, accepted and become comfortable with a degraded level of standards and performance with operations and safety. Further complicating the performance of shipboard operations, failures of leadership to follow established standing orders and instructions greatly increased the risk of incident, as well as significant gaps in training, qualification and lack of a basic level of seamanship and navigation knowledge (U.S. Navy, 2017a). This accumulation of risk over time degraded the skills, knowledge, capabilities and processes that are all aspects of a positive safety culture and, combined with a negative can-do culture, led to an intentional neglect for positively and proactively identifying the encroaching risks (U.S. Navy). While many of the factors of these incidents were results of an overly aggressive can-do attitude, the U.S. Fleet Forces Command comprehensive review team cautioned that while safety is important, acceptance for promoting the changing of the can-do attitude is not (U.S. Navy).

This is a slippery slope to say the least; it is hard to promote a behavior that is known to cause incidents, while also trying to dissuade the incidents this behavior is known to cause. One cannot just cut a few roots of a weed and expect it to then stop growing. Therefore, great caution must be exercised when promoting behavior within an organization. Critical evaluation of recommendations must be clear and any potential statements promoting negative behavior should be removed, clarified or mitigated through significant countering statements in support of preferred safety behavior and improved safety culture. Leadership's personal responsibility toward safety culture and those

TABLE 1

EFFECTS OF LEADERSHIP ON SAFETY CULTURE RELATIVE TO PREFERRED LEADERSHIP STYLE

Study	Study's preferred leadership style	Safety culture aspect promoted by leadership style		
		Most prominent	***Prominent***	***Contributory***
Barling, et al. (2002)	Transformational	Communication	Engagement	Task management
Delegach, et al. (2017)	Transactional	Situational prevention	Continuance commitment	
	Transformational	Situational promotion	Affective commitment	
	Active transactional	Compliance	Commitment	Prevention
De Hoogh, et al. (2015)	Autocratic	Psychosocial safety climate (PSC)	Clarity of command	Hierarchal structure
Kwan, et al. (2014)	Engaged/ transformational	High PSC	High PSC and improved employee focus	Improved reporting and organizational communication
McFadden, et al. (2009)	Transformational	Communication	Reporting	Participation
Martínez-Córcoles, et al. (2013)	Transformational	Participation	Empowerment	Compliance
	Empowering	Safety behavior	Safety climate	Reduced risky behaviors
	Leaders member exchange (LMX)	Increased safety citizenship	Safety climate	
Kelloway, et al. (2006)	Transformational	Participation	Safety consciousness	Motivation
Hoffmeister, et al. (2014)	Transformational and transactional	Improved safety climate	Safety behavior	Decreased incident
Clarke (2012)	Transformational	Compliance	Participation	Safety climate
	Transactional	Safety climate	Compliance	Participation
Willis, et al. (2017)	Transformational	Promotion	Safety behavior	Compliance
	Transactional	Prevention	Compliance	Participation
	Active management by exception (MBE)	Safety performance	Safety participation	Prevention
Raelin (2012)	Democratic	PSC	Communication and dialog	Participation
U.S. Navy (2017a)	Democratic	Crew communication	Hazard identification	Team participation
Webster, et al. (2014)	Negative/toxic leadership	Psychological distress, harm and anxiety	Mistrust and anger	Physical health problems

they lead is prominently greater than their ability to complete the assigned task. That aspect can never be excessively stressed.

Safety Professional Representation

Within today's large corporations, industrial organizations and military branches, safety culture and leadership responsible for it are as critical a component of organizational health as most everything else. Yet still in many organizations, safety offices are regarded as having little value within their organization. These safety offices are dismissed as only another department within the many, merely responsible to provide reports on incidents, cover the organization against regulatory mistakes, provide training and mitigate litigatory action of those they employ, but not to play any crucial role in the management, review or evaluation of the safety or health within the organizations they serve.

In all 7th Fleet incidents, the ship's safety departments were not mentioned or identified in any report, and evidently played no role in any of the investigations (U.S. Navy, 2017a). Of the 33 direct contributors and six independent advisors of the 7th Fleet comprehensive incident report, none were identified from the Naval Safety Center or any military branch safety program, civilian safety certified personnel nor any certified safety perspective, yet the Naval Safety Center was identified as needing improvements to its safety programs and data analysis for predictive operational safety and risk information (U.S. Navy).

Utilizing a professional safety perspective could have identified the systems safety, in-depth human factors and safety culture aspect impact on these incidents that is missing from this comprehensive review. The comprehensive report acknowledges that while the Naval Surface Warfare Center Dahlgren is a center of excellence for human factors engineering within the Navy, its leading experts had not been involved in any human factors reviews during system modernizations or incident reviews (U.S. Navy, 2017a).

Leadership is critical to the creation, support and drive of an organization's safety culture and it must support and utilize the professional expertise found within the safety office of its organization. Safety professionals must be accepted as the experts they are and for the vast safety knowledge base that they offer. They must be respected for their specialized input, analysis and evaluation of all facets of an organization's operation. Otherwise, leadership and management cannot expect to have a positive safety culture in their organization or expect their employees to respect the occupational safety effort of the organization if they do not support and respect it themselves.

Leadership Forms & Impact on Safety

Table 1 presents a summary of the results of 13 studies on leadership's different forms and the measurable effect they have on the many qualities of safety culture. Transformational leadership is shown to be prominent in promoting organizational communication, engagement in safety programs, employee reporting, safety program participation, compliance and improved task management for organizational safety culture.

TABLE 2

LEADERSHIP STYLE & IMPACT ON SAFETY CULTURE

Study	Preferred positive	Alternate positive	Negative
Barling, et al. (2002)	Transformational		
Breevaart, et al. (2013)	Transformational	Transactional	Management by exception (MBE)
Delegach, et al. (2017)	Transformational	Transactional	MBE
Clarke (2012)	Transformational	Transactional	MBE
Hoffmeister, et al. (2014)	Transformational	Transactional	
Kelloway, et al. (2006)	Transformational	Transactional	Laissez-faire/abusive
Martínez-Córcoles, et al. (2013)	Empowering	Transformational	
McFadden, et al. (2009)	Transformational		Laissez-faire
Willis, et al. (2017)	Transactional	Transformational	Passive MBE
U.S. Navy (2017a)	Democratic leadership	Team leadership	Autocratic leadership

Transactional leadership specifically promotes improved safety compliance, prevention, safety program participation and improved safety climate.

Table 2 provides a compilation of leadership styles and the reported impact on safety culture (positive or negative). In these studies, transformational and transactional leadership were shown to provide a positive and obvious effect on safety culture and safety program performance. Leadership's negative effects on safety culture are reported primarily resulting from laissez-faire leadership, closely followed by passive and MBE forms of leadership, both displaying aspects of lack of safety leadership and lack of leadership toward safety overall.

This evaluation holds that the type of leadership practices and styles in an organization directly determine the safety culture, safety program participation and safety outcomes that can be expected within the organization. Even a lack of leadership or leadership that does not display leadership values, such as laissez-faire leadership, can still contribute to negative safety culture and have negative effects on safety outcomes. Transformational leadership is specifically and overwhelmingly the preferred leadership style for developing safety culture in seven of the 10 studies noted in Table 2, and transactional leadership is clearly the preferred alternate leadership form for the development and management of a positive safety culture.

Conclusion

Leadership is the antecedent to safety culture, it is the root by which that culture grows, and can also be the poison that causes safety culture to break down and cease to exist. Transformational and active transactional leadership, or engaged, energetic and proactive leadership has a direct effect on safety culture, safety program performance, safety compliance and participation. Democratic leadership in support of participatory organizational dialog and open discussion with equal responsibility and authority can provide an essence of leadership that can greatly improve safety culture, although it can also have a countering effect on safety culture in safety-critical environments. Autocratic leadership in limited or low-power-struggle environments is shown to establish structure, create power balance, establish clear hierarchy and develop psychologically safe teams, supporting the security and psychological safety of all. Whereas that same autocratic leadership style in high-power-struggle environments presents opposing results.

Understanding these different leadership forms and their functions, and knowing the relevant form most suited for the active environment can enhance leaders' relationship with their followers, build team cohesion and holistically shape the organizational safety culture. Understanding followers' needs and environmental factors, and capably, intelligently flexing to ebb and flow between leadership styles relative to the monthly, daily or hourly organizational follower environment poses the greatest promise for developing the most successful safety culture. Where one form may present positive results in one environment, it may become the improper form for safety culture in a different environment. Excessively passive forms of leadership such as management by exception and laissez-faire can destroy safety culture or gravely degrade its value to the organization and consistently show correlation with negative program performance and increases in injury rates.

Leadership serves to guide and direct the efforts of employees through experience, knowledge, skill, understanding and flexibility of the best course of action toward the accomplishment of tasking passed down by management. Leadership also serves to autonomously make decisions, develop cohesive working teams and guide the culture of subordinates toward achieving all goals of the organization and surpass those goals when possible. Those in pursuit of high-performance leadership systems would benefit from understanding the connection between leadership styles and the culture of safety within their organization. At a minimum, it would benefit decision makers to understand their management's and their own leadership styles and the effect those styles have on the organization's safety culture and crew performance.

Misjudging and displaying the wrong form of leadership at the wrong time can immediately degrade a good safety culture and put the wheels in motion for failure, whereas a knowledge-

able utilization of leadership, strategically executed at the right time, can shift an organization from failure to improved safety performance. Leadership must have the training, knowledge and understanding of what is required to support those goals, must exercise moral judgement in support of those goals and, in all cases, must allow the safety of all they lead to guide their leadership toward those goals. **PSJ**

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