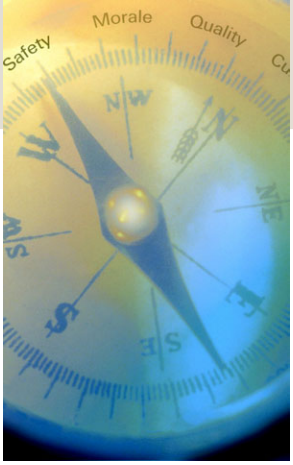

BST

Dramatically Improving U.S. Marine Corps Safety Performance

Leadership, Climate, Systems, and Behavior

Submitted to:

Marines
The Few. The Proud.

Final Document · March 2004

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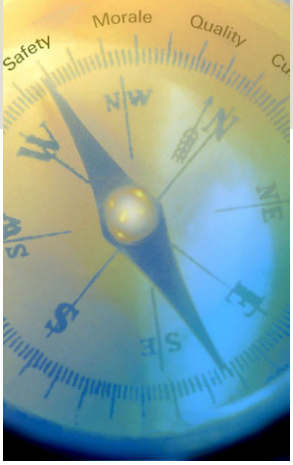


EXECUTIVE SUMMARY

The Context

This report assesses the USMC safety system, climate and culture, and presents a comprehensive set of behavioral and system focused initiatives tailored to improve significantly the Marine Corps' ground safety performance. The objectives of both this assessment and the proposed interventions are to build on the current achievements and strengths of the USMC and to identify the means necessary to capitalize on these strengths for strong and sustainable safety performance.

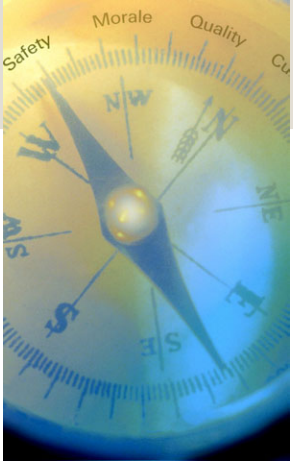
In recent years, the USMC has implemented a number of aggressive and innovative measures targeted at reducing mishaps. These measures include the formation of the Executive Safety Board (ESB), the deployment of the Core Safety Services concept as a means of improving accessibility to safety, the development and implementation of a successful safety marketing plan, and various ongoing efforts such as increasing staffing for safety in operational units and migrating the aviation-resident Anymouse Program to ground units.

As a result of the Marine Corps leadership's commitment to continuously advance its safety system to meet current and anticipated challenges, CMC (SD) commissioned Behavioral Science Technology, Inc. (BST), a leading behavioral science performance management consulting firm, to assess the Marine Corps' overall safety system and make specific intervention recommendations consistent with safety systems in high performance organizations.

Accordingly, this report looks to the future and purposefully assumes a hard and focused stance in order to identify gaps that might represent significant improvement opportunities. The purpose of this approach is not to neglect or criticize what has been accomplished, but to highlight opportunities to build on these accomplishments. Ultimately, the objective is to position the Marines to achieve the same level of excellence in safety that they achieve in combat.

Additionally, BST was chartered to give special focus to the acute problem of USMC PMV fatalities. "Do no harm" in terms of diminishing the *combat ethos* of the Marine Corps served as a guiding principle throughout this study.

BST's methodology consisted of interviewing selected personnel from all organizational levels and disciplines in terms of their perception of the USMC's safety culture and potential ways to improve it where needed. BST conducted safety culture surveys across a broad front and reviewed safety reports, data, special studies and training programs in detail, comparing them against similar programs in other military services and high performance organizations. Because of a leadership commitment to update and modernize their safety system to meet current and anticipated challenges, the US Marine Corps commissioned Behavioral Science Technology, Inc. (BST), a leading behavioral science performance management-consulting firm, to assess their overall safety system and make specific intervention recommendations consistent with safety systems in high performance organizations.



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The Culture

Critical aspects of the USMC's culture are extremely positive. In particular, the USMC's leadership environment is assessed internally and externally as strong, relatively fair and having the members' welfare at heart. Survey results put the USMC at the virtually highest level in assessment of leadership. Teamwork and "working together" attributes were also high. Safety related factors measured by the survey, however, revealed much lower results.

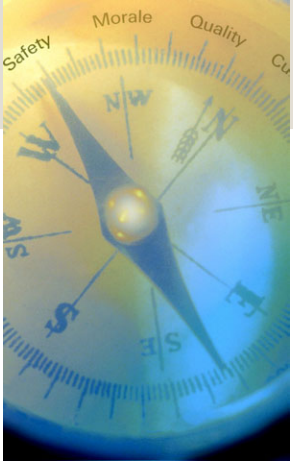
- ***The favorable perception of Marine Corps leadership is a very positive finding. It means the Marine Corps is in a position to make fast and effective changes to improve safety.***
- ***Safety factors, such as the organization's value for safety, upward communications and willingness to approach others about safety concerns were all rated extremely low.***
- ***Most symptomatic and troubling, but consistent with our observations in the field, willingness to report safety related mishaps was the lowest recorded in any of the 209 organizations in the BST database.***

Although leadership is very strong, it has not yet fully and effectively focused its efforts on building the culture and structures needed to successfully impact safety-critical behaviors.

In terms of the PMV fatality challenge, the overwhelming view of those surveyed and interviewed was that there was no cultural imperative for a Marine to be a Marine "24/7". Indeed, in some quarters it was felt there is a strong drive not to be. Most, but not all, believed PMV fatalities could be significantly reduced by expanding the cultural imprint embodied in the Marine Corps' values of Courage, Honor and Commitment—24/7 without impinging on their war-fighting capability. BST supports this view and throughout this report will offer a number of interventions with this objective in mind.

The System (structure, processes and data management)

Though the efforts of CMC (SD) have made headway over recent years much ground still needs to be covered to build a safety system that will effectively impact safety-critical behavior. Realization of leadership's aspirations for an improved safety culture and performance are not possible given the current state of the Marine Corps-wide safety system.



- Trained, committed, fulltime safety professionals are not available in some major commands, and are essentially non-existent at the tactical level, resulting in limited incident reporting and analysis as well as delayed development and deployment of programmatic responses. Some personnel slots are in the PR 2005 with more anticipated for POM 2006, but even these are insufficient to address this issue at the operational level.
- Personnel assignment and promotion processes are worse than safety neutral.
- Safety-related hardware, and associated software systems, are inadequate to meet the requirements of a modern, mobile fighting force.
- Safety initiatives are almost exclusively antecedent based, sometimes lack substance, and are pursued erratically. In many cases, mandated compliance is "pencil whipped."
- Organizational structure and processes between CMC (SD) and NSC are inadequate to the needs of the Marine Corps. The leadership and personnel will fight a battle they will always lose until the structure and supporting processes are significantly recast.
- Safety measurements are inadequate, and in some cases, incorrect.
- The reliance on special studies to assess safety performance within the Marine Corps is symptomatic of a safety data system that is insufficient to the needs.

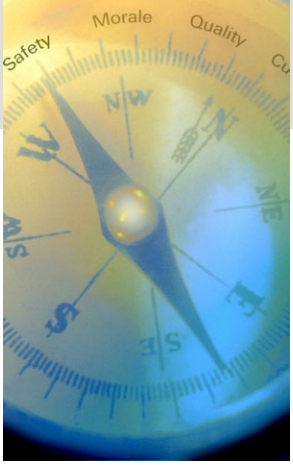
Intervention Planning

BST has identified a number of interrelated measures all designed to properly reinvigorate the Marine Corps' safety culture and performance consistent with its stated values. All of the recommended interventions are designed specifically to identify and impact safety-critical behaviors by increasing control over the natural antecedents and consequence that trigger and reinforce them. These measures are complex, comprehensive and cut across many intra-service, and some inter-service, boundaries.

Under the aegis of the Executive Safety Board (ESB), we propose the constitution of three general officer led teams charged with the refinement, coordination, resourcing, and deployment of these measures and others that will be identified throughout this process. Success of these measures will be dependent on the behavioral design of the interventions. The composition, reporting relationships, and areas of focus for these teams are discussed in detail in the body of this report.

Intervention Initiatives

- Implement a behavioral safety process at the lowest levels using internal resources trained, licensed and assisted by BST
- Develop and provide behavior-based safety leadership and Marine values courses that are mandatory requirements for advancements to certain grades and positions.



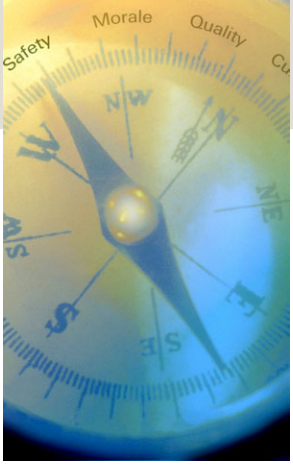
- Include safety as a Fitness Report category and define behaviorally specific leadership practices as rating anchors.
- Add competency-based Safety Learning Objectives (SLOs) for all TMI.
- Beginning at MCRD, use behavioral principles to incorporate proper development of risk management and a safety mindset appropriate to the mission.
- Provide an assigned safety professional to operational units (down to the battalion level). Consider either a deployable civilian (US Army model) or Marine with primary safety MOS for this duty. This person shall be trained in behavioral safety methodology.
- Elevate career status of those performing safety duties.
- Resolve structural and functional misalignment between NSC and USMC.
- Implement a real-time, web-based safety reporting system, and ensure it is used to report all accidents.
- Expand incident reporting to all classes of mishaps and refine the incident investigation process to capture root causes with special focus on behavioral elements.
- Define USMC safety measurements with appropriate "drill-down" capability such that USMC safety performance can be assessed and programmatic responses can be properly focused.
- Evaluate current safety practices and modify as necessary to ensure proper blend of antecedent and consequence based measures to actually control safety-critical behavior. Emphasis should be placed on those activities that reinforce the behavioral concept of soon-certain-positive consequences being the most powerful motivators of behavior and the quickest route to a strong organizational safety culture.

Special Situations

PMV Fatalities

The interventions cited above, as well as other initiatives detailed elsewhere in this report, were all designed to impact the organizational safety culture of the Marine Corps, and in doing so, they will have a significant impact on this most troublesome safety challenge. However, these additional measures should be seriously studied, and implemented whenever practical. Taken in sum, they are designed to foster the cultural imperative that a Marine is a Marine 24/7.

- Discontinue the practice of granting waivers for recruits with drug or serious vehicle violations unless they qualify on risk testing.
- Establish a behavior-based measurement system and use it to identify barriers to safe performance and an opportunity to provide appropriate feedback



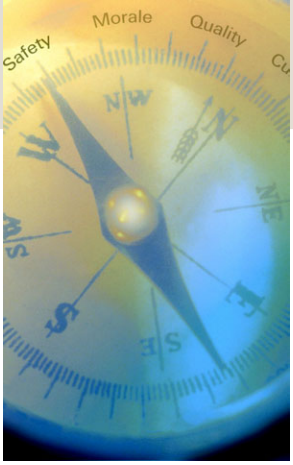
- Provide Automobile and Motorcycle "Combat Range Training" as a means to develop and hone driving skills and commitment to Marine Corps values when off-duty.
- Expand feedback mechanisms (HARP), and establish Buddy Care as a concept with application whether off or on duty.
- Design liberty/leave schedules to minimize fatigued driving.

Marine Corps Industrial Facilities

Over the past five years, Workers' Compensation payments alone have cost the USMC over $99 million. This cost is a direct result of safety programs based solely on traditional safety measures to the exclusion of behavioral elements. As a result, safety performance lags, and costs far exceed, those experienced in like industrial environments. Realistically, the costs savings realized here would more than pay for all of the intervention initiatives recommended in this report.

We are very appreciative of the distinctive and honorable service to our nation provided by the men and women of the United States Marine Corps. We respectfully submit this report mindful of the special burdens you carry and confident that our forthright approach will assist you in your consistent drive toward excellence in all you do.

Semper fi



OVERVIEW

This report is organized in the following major chapters:

Chapter 1:
Background

This is a brief description of the reasons for and context of this assessment.

Chapter 2:
Safety in High-Performing Organizations

This chapter briefly explains the model that best reflects current thinking on the variables that most powerfully influence organizational safety performance. This model structured our investigation, analysis, recommendations and this report.

Chapter 3:
Methodology, Current State and Gaps

This chapter presents the methodology used and our findings. There are four sections in this chapter, each addressing a core aspect of safety:

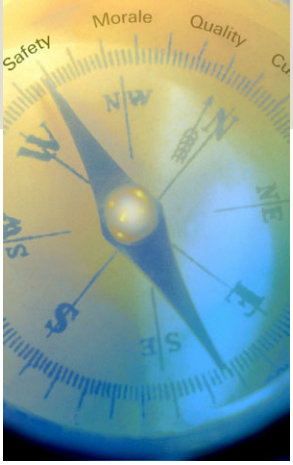
- Behavior
- Organizational Culture
- System and Organizational Structure
- Leadership

Each section of *Findings* begins with a summary of the most salient findings.

- Important conclusions are formatted as italicized bulleted text. This paragraph is an example of how these conclusions appear.

Chapter 4:
Rationale for Recommendations

In this chapter we discuss the behavioral science and organizational development issues that underlie the recommendations that follow in the next chapter.



Chapter 5:
Recommendations

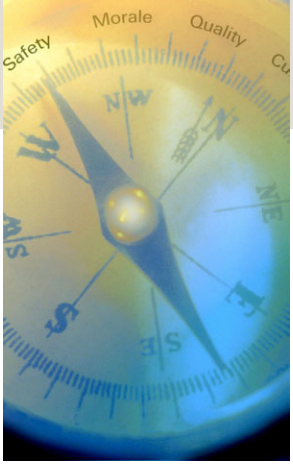
Here we describe three sets of interrelated interventions that are designed to maximally improve USMC safety performance without undermining its war-fighting ethos or capability. We discuss the measures that should be used to guide these interventions and measure their impact.

Chapter 6:
Special Situations

Here we discuss unique problem areas and opportunities faced by the USMC. These areas represent "low-hanging fruit" or special high-leverage opportunities for improvement.

Appendices:

These contain the more-detailed information referred to in the main body of the report.



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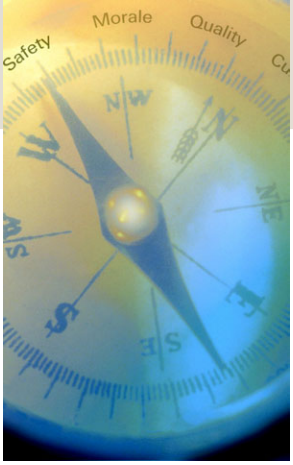


CHAPTER 1: BACKGROUND

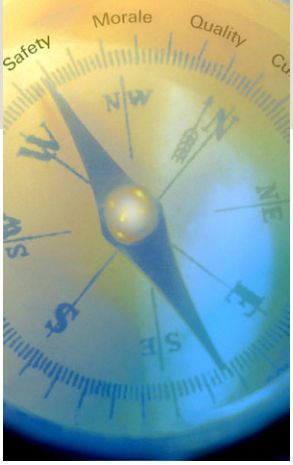
The United States Marine Corps Safety Division (CMC (SD)), located at the Navy Annex in Washington, DC, is responsible for Marine Corps safety worldwide. Safety is critical to the USMC as it enhances operational readiness and improves the quality of life for the Marines and their families. Although the USMC has unique challenges for safety—its ranks are the youngest and turnover the highest among the Armed Services—many aspects of the USMC culture align with the prudent risk management necessary for successful accident prevention, both on- and off-duty.

In 2000, the Commandant of the Marine Corps embarked on an unprecedented initiative by establishing a USMC Safety Campaign Plan outlining safety strategy and goals with support directly from the Commandant of the Marine Corps. Unfortunately, the effort did not deliver the accident and mishap reductions expected with total fatalities of 111 personnel for 2002, an increase over 2001. A major issue is the occurrence of fatalities involving Personal Motor Vehicles (PMVs.), claiming 65 Marine lives in 2002 and another 54 in 2003.

In May of 2003, Secretary Rumsfeld further challenged all Military Services to reduce mishaps and accident rates by 50% by the end of 2005. The USMC suffers the equivalent of a battalion of injuries and loses a company of Marines to fatalities annually. These injuries and losses, in addition to those not being reported, impair USMC readiness—all the more so because the USMC is a very lean organization. In addition, these injuries and loses are expensive and are inconsistent with Marine Corps values.

In the face of these challenges the Marine Corps has demonstrated significant commitment to improving safety and has a number of notable accomplishments and initiatives that point to this commitment. These include:

- The formation of the **Executive Safety Board** (ESB) to bring the appropriate level of attention and focus to safety questions. The ESB is chaired by ACMC and including 16 other General and Flag Officers and the Sergeant Major of the Marine Corps.
- The development and deployment of the **Core Safety Services** concept to provide critical safety skills resident at bases and stations for use by host and tenant organizations.
- The integration of safety and risk management topics into the **General Officers Symposium**, **Marine Corps Commander's Course**, **Sergeant Majors Symposium**, and the **Non-Commissioned Officers Symposium.**
- The institution of measures to benchmark with general industry to determine appropriate "best practices" for culture change and mishap reduction.
- The incorporation of driver improvement and risk management training in Marine Boot Camp.
- Ongoing efforts, such as increased staffing for safety professionals in operational units, migrating the aviation-resident Anymouse Program to ground units, and development of a Ground Command Climate Assessment Survey.



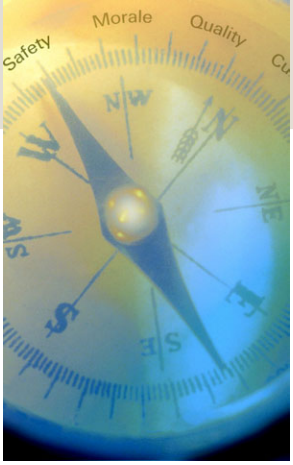
- The development and implementation of a safety marketing plan.
- Conducting a **table of organization study** to determine the best position for safety personnel at all levels of command.
- Increasing safety awareness throughout the Marine Corps through weekly **FLAGALL** messages and monthly mishap summary messages.
- Consideration of execution of the Marine Corps and the Commander's safety program in the evaluation of executive officers and deputies.
- Being the first service to draft and obtain Commandant signature on a **50% Mishap Reduction POA&M** in response to the Secretary of Defense's demand for reduced mishaps.

Under ESB stewardship, and as facilitated by the Marine Corps' Safety Division (CMC (SD)), the Marine Corps has energetically raised the level of awareness of the safety challenges throughout all levels of the organization, and has vigorously embarked on these efforts to address a broad front of safety issues. This work has created favorable conditions in which to move forward to a strong safety climate and organizational culture that sustain significant safety performance improvement.

In response to ongoing safety challenges, and to further the work already begun, the CMC (SD) took the initiative in August of 2003 to enlist the assistance of Behavioral Science Technology, Inc. (BST). The objective of this work is the development of an approach for applying behavior-based technology to reduce accidents and mishaps in all aspects of safety worldwide. Though many characteristics of the USMC culture align with a risk management approach, safety and war-fighting capability are often perceived as polarized objectives. The CMC (SD) clearly defined the constraint that any approach must improve or at least not negatively impact the operational readiness and war-fighting capability of the USMC. This constraint was confirmed throughout our assessment process.

For over 20-years, BST has been a leader in applying behavioral science methodology to solve safety problems. With more than 100 employees, BST's capability to provide solutions to organizations' safety issues is based on application of expertise in a variety of areas including behavioral and cognitive psychology, human factors, organizational development, safety management and statistical process control. To assist BST in the safety data management analysis and recommendations, BST utilized Efficient Engineering Enterprises, Inc. (Ex3), a leading expert in enterprise-wide implementation of effective data management systems.

Our approach was to look for significant improvement opportunities. As such, this report addresses problem areas by summarizing the findings and recommendations of phase I. It gives very little attention to the many positive steps the Marine Corps has already taken in dealing with Marine safety.



CHAPTER 2: SAFETY IN HIGH-PERFORMING ORGANIZATIONS

There are four variables that impact an organization's ability to achieve world-class safety performance. We briefly review each of these below because together they constitute the model we are working from and provide the basis for the analysis and recommendations contained in this report. The four variables are Behavior, Culture, Systems and Leadership.

Personal Behavior

Behavior is where the rubber meets the road in safety. Usually when an accident happens, someone has inadvertently done something that puts him or her in harm's way. Alternatively, they have failed to do what was necessary to minimize a hazard. A bystander could easily have spotted the accident about to happen. These observable acts—safe or unsafe—are what we mean by critical safety-related behavior.

In organizations with consistently high mission and safety performance, behaviors that are safety-critical are performed in a safe manner most of the time. An important question is, *How have organizations that are safety leaders achieved these high levels of behavioral reliability?*

Behavioral science teaches us that whether an individual elects to perform a critical behavior in the safe or at-risk way is driven by how the antecedents and consequences that trigger and reinforce the alternatives line up for the individual.

- Antecedents are things or events that precede a behavior, set the stage for the behavior and/or trigger it.
- Consequences follow the behavior and either reinforce or punish it thereby making it more or less likely to occur again in the future.

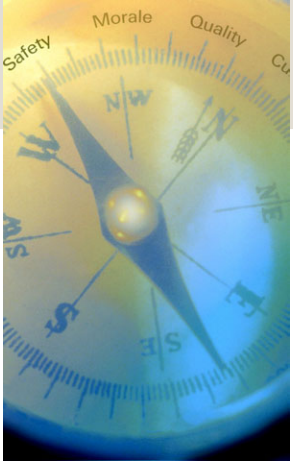
In a high functioning organization, more often than not the antecedents and consequences line up in favor of doing the behavior safely.

This is not an accident. High-functioning organizations actively manage these antecedents and consequences. To understand how they do that one must realize that the source of the critical antecedents and consequences is the organization's culture and its systems and structure.

Organizational Culture

Extensive research performed during the last 10 years shows that certain elements of organizational culture predict safety performance. Three predictive factors in culture measures are germane. They are:

- Leadership culture
- Team culture
- Safety culture



When these are aligned the organization's culture consistently provides the antecedents and consequences needed to drive safe behavior.

Culture vs. Climate

It is essential to understand the distinction between culture and climate. Both concepts are important to organizational improvement as a whole, and influence improvement efforts in different ways:

- **Climate** refers to the perception of expectations, rewards and responses to safety performance. It is the set of conditions around improvement. Climate applies to a specific area of functioning, is "stated" and in the foreground, and is quick to change.
- **Culture** refers to shared values that drive performance. It is essentially "how we do things around here." Culture applies to many areas of functioning, is usually "unstated" and in the background, and is slow to change.

Improvement in climate often precedes improvement in culture because it is easier to influence on a surface level. A favorable climate can establish a sense of urgency around safety issues and create a window of opportunity in which to effect a deeper and longer-lasting change in culture. Many organizations experience what they think is a change in culture, when in fact they have simply changed climate. The difficulty with relying on climate is that when unexpected events arise, such as the events of September 11, new activities and shifting priorities can quickly evaporate gains. Culture, on the other hand, is deeper and longer lasting, relies less on personalities and individuals for momentum, and can better weather "real world" disruptions and changes in activities.

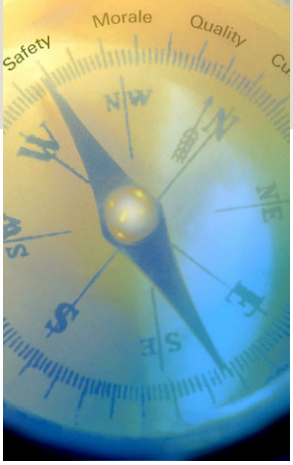
Organizational Structure and Systems

Another organizational element that provides significant antecedents and consequences for or against safe behavior is the structure and work systems of the organization. How systems and structure influence behavior may be tested by asking:

- Does the necessary infrastructure exist to support safety?
- Are the resources available to reinforce it?
- Do the organization's systems facilitate safe behavior or make doing the safe thing difficult or even impossible?

How these three variables interact is illustrated in Figure 1 below.

- As we have already discussed, both culture and systems impact behavior by way of the antecedents and consequences they generate.
- But the relationship goes the other way as well: How people act creates culture and determines the effectiveness of systems.



- If safety is always discussed as part of planning an operation, for example, safety becomes a more prominent value in the culture.
- If a new incident investigation system looks great on paper and is instituted, but people don't like it and don't use it, it becomes a dysfunctional system no matter how appealing it looked on paper.

- Systems and culture also interact:
  - For example, cumbersome and inefficient systems can foster a culture of frustration.
  - A Can-Do culture may result in people working outside the system "in order to get things done," thereby rendering the system irrelevant or dysfunctional.

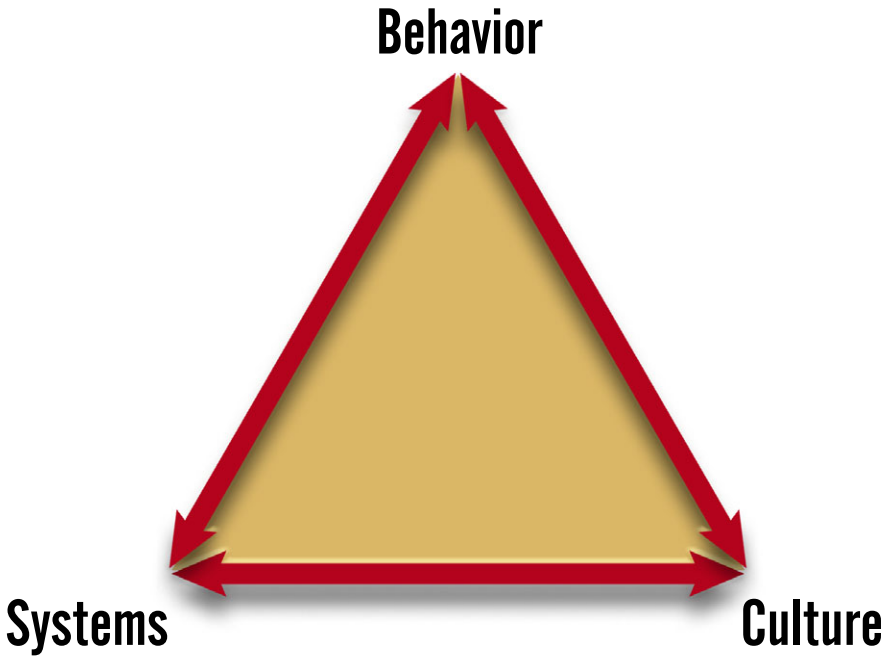
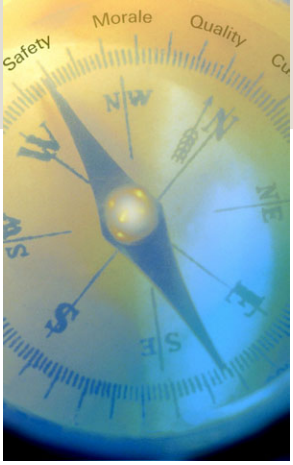


Figure 1

This brings us to the fourth variable, Leadership.



Leadership

Not surprisingly, research shows that organizational leadership is the most important variable in determining the overall effectiveness and sustainability of high-performing safety efforts. This is because leaders…

- Create and resource the organization's structure and systems
- Forge the organization's culture through creating its values and direction
- Model what the organization's values look like in practice, thereby setting and exemplifying the standards for organizational behavior.
- Embody the authority of the organization in recognizing and reinforcing safety performance and achievements.

The relationship between Leadership and the other three variables is shown in Figure 2. Leadership stands above the other three, sets the stage for their successful impact on safety performance and assures the longevity of high performance levels. Thus, leadership plays a central and critical role in creating the conditions in which safety achievement can shine.

The relationship between organizational Culture, Systems/Structure, Behavior and Leadership constitutes the model of organizational safety performance against which we examined the USMC. In the next section we discuss what we discovered during the assessment process.

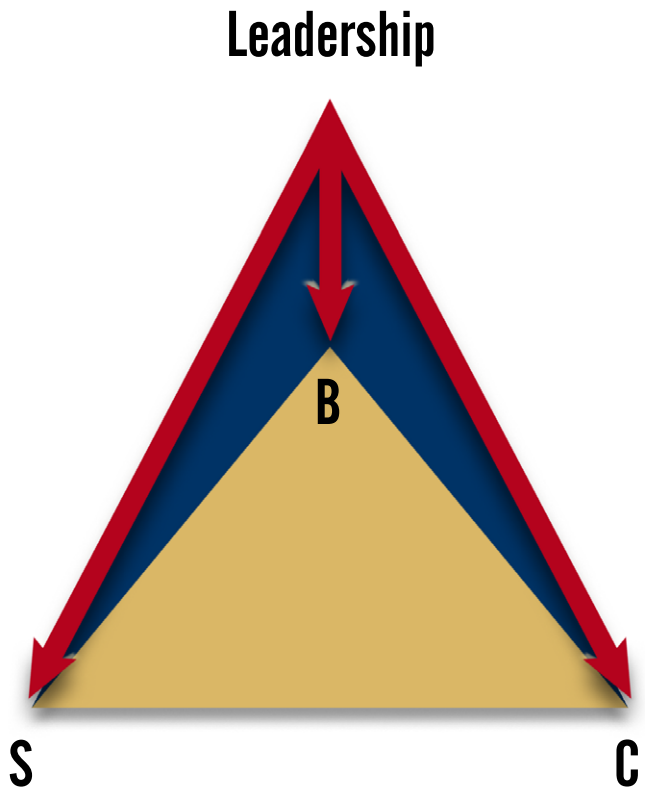
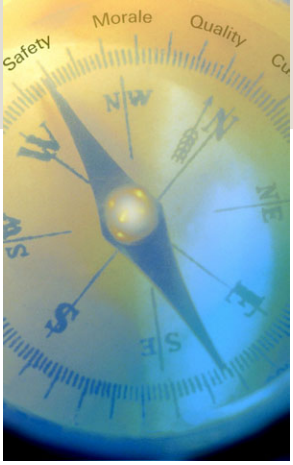


Figure 2



CHAPTER 3: METHODOLOGY, CURRENT STATE & THE GAPS

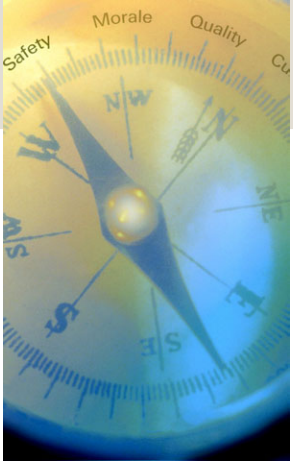
In approaching organizational development it is beneficial to start by identifying the current state of the organization and determining the gaps between the current state and the organizational attributes you want to achieve. This approach leads to actionable recommendations aimed specifically at moving the organization in the direction of the senior leaders' vision.

Methodology

To determine where the USMC is now with regard to safety and identify the gaps that must be addressed to substantially move the USMC in the direction of becoming a world-class leader in safety performance, we did the following:

- Reviewed USMC documentation
- Reviewed USMC mishap reports and Class A accident data
- Reviewed USMC current safety training programs
- Interviewed selected USMC personnel at all levels from the Commandant to E1s. Interviews used a semi-structured interview protocol suited to gathering information about factors known to impact safety performance as well as allowing the latitude to explore unanticipated findings as they arose. The format involved individual conversations as well as discussions with groups of Marines. In some cases, Marines who had been involved in accidents or serious mishaps were specifically selected. Interviews were conducted at numerous locations and with varied groups throughout the United States (See Appendix A.) In all, roughly 300 individuals were interviewed.
- Administered BST's safety culture survey to Marines at Marine Corps Recruit Depot San Diego, MCB Camp Pendleton, MCB Camp Lejeune, MCAS Miramar and selected Marine Forces Reserve. We analyzed by the survey results by MCB/MCAS command, and rank. 1,268 surveys were returned from these organizations (net of Reserves) for a 50% return rate.

Each of these methods sheds light on several aspects of the USMC's organizational safety performance.



Findings—Behavior

Summary of Findings

- For each of the many jobs and activities Marines engage in, the few behaviors that are critical to safety should be systematically identified and made explicit.
- Safety expectations for each rank and position should be specified in relation to these critical behaviors.
- Mechanisms should be developed to monitor and reinforce positive safety behavior with accurate and timely feedback.
- Small group leaders, NCOs and SNCOs can critically impact Junior Marine behavior through the nature of the relationships they build with the Marines that report to them. Some of them need skills training in this regard.

Few behavioral tools for safety are in use

To apply behavior-based tools to improve safety performance…

- Safety-critical behavior must be identified, defined explicitly, bought into, monitored and reinforced.
- The consequences that drive at-risk behaviors must be identified and effectively countered.
- Barriers to safe behavior must be removed.

Though some of these tools are at use informally here and there, they are not being used systematically or comprehensively.

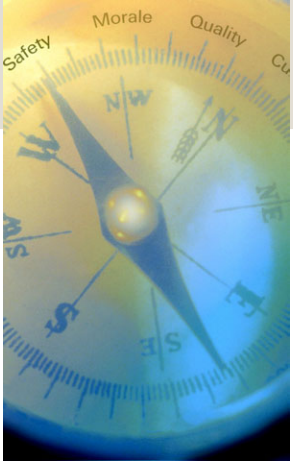
The need for accurate feedback

Behavior is central to safety and behavior is controlled by consequences. Feedback is one of the most readily available and powerful forms of consequence.

Marines are performance-driven individuals. They need feedback. Imagine how motivated they would be on the rifle range if they did nothing but dry fire. Marines thrive on the muzzle flash, the kick, the crack of the bullet, the smell of the cordite and the bulls-eye. In short, they thrive on feedback.

Generally, the USMC is a feedback-rich environment. Marine Corps success is built on feedback saturation. It starts in boot camp with success on the confidence course and swimming pool and culminates with the Crucible and graduation. Feedback continues on the firing range and extends to everything Marines do: deploy, fight, return, and everything that happens in the process.

The stand out aspect of all of this is that in the midst of all this feedback, little to no feedback is focused on safety performance as such.



- ***Building systems to supply accurate and frequent feedback on safety performance represents a tremendous missed opportunity.***

Where it comes to developing a strong safety culture, feedback that is soon, certain, positive and delivered by someone who has a meaningful relationship to the individual is optimal. This is consistent with what many Marines told us they have found to work. Unfortunately, many safety efforts hope to rely on negative consequences.

This is not to say that there is no place for negative consequences in safety. Rather, consequences are only powerful in reinforcing behavior to the extent that they are accurate. Since most behavior is safe behavior, most consequences should be positive. This is not the case.

- ***More often than not, safety is experienced as a game you can lose but not one you can win.***

The need for less reliance on antecedents

Antecedents are relevant to behavior only to the extent that they accurately predict consequences. If the environment is rich in antecedents but poor in consequences, people, at best, tune out the antecedents. At worst, the antecedents provoke resentment or defiance.

In the absence of a consequence-rich environment for safety, the Marine Corps is relying heavily on antecedents. Many Marines are beginning to experience this negatively and it represents a potential threat to the good will that is required for a comprehensive safety solution.

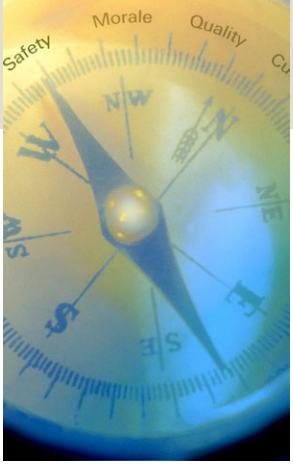
The need to eliminate misdirected feedback

Officers, particularly middle to upper level officers, generally believe that when a Marine uses a safety system like Arrive Alive or reports a safety problem to a superior, they experience no punishment as a consequence.

Junior Marines have the opposite opinion. They say that informal negative consequences are frequent in these circumstances and that Marines learn quickly to not expose themselves to these problems even when it means behaving unsafely or creating an unsafe condition for other Marines. A frequently cited example of the latter is issuing an unsafe vehicle rather than speaking up about its condition.

- ***Leadership alignment around how to reward troops' successful application of their expectations and standards would be a powerful leadership intervention.***
- ***Further, identifying and countering the consequences that encourage at-risk behaviors is critical.***

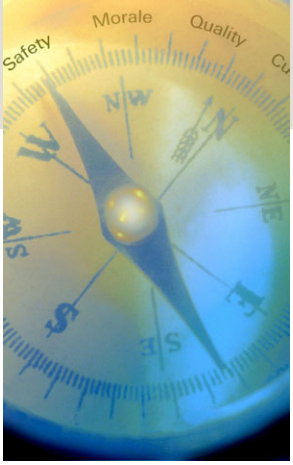
Much more will be said about the sources of problematic antecedents and consequences in the sections below on organizational culture and systems and we will return to the issue of behavior at the end in recommendations.



Findings—Organizational Culture

Summary of Findings

- Leadership has a very high value and is perceived to be very effective within the Marine Corps overall.
- There is high visibility for the safety issue and a great deal of effort going into dealing with it.
- Within the culture of the USMC, safety does not have a high value; to the contrary, it's status is low and working in safety is perceived as dangerous to career advancement. It is not viewed as being a part of being a good Marine. This significantly impairs the Marine Corp's ability to implement improvements in safety performance.
- Safety is not seen as integral to USMC values or mission; rather, it is viewed as a big top-down push, driven by specific individuals (rather than by the system) and essentially an add-on.
- Marines do not feel that they are Marines 24/7 and this impacts the behaviors they engage in and condone "off-duty." The on- *vs.* off-duty distinction is itself accepted as legitimizing at-risk behavior when off-duty.
- Accountability in safety is seen as weak and at times not administered fairly.
- Upward communication about safety issues, which is essential to safety performance in a strongly top-down organization, is very poor.
- Although some high in the chain of command are concerned that improving safety performance might impair the USMC's warrior ethos, this fear is not shared by those lower in the organization.
- The small group leader, NCO and SNCO are seen as key players in influencing the behavior of Junior Marines. Those who feel successful at this say that they are successful because they care about their Marines as individuals, know what's going on in their lives, make expectations clear, hold them to a high standard and treat them like adults. They say that if you relate to them like this, they will perform admirably and this includes behaving safely and looking out for each other.



Organizational Functioning Survey (OFS) Data

BST quantitatively assessed the USMC organizational culture by administering its proprietary culture survey that examines all culture variables that have been demonstrated in the scientific literature to predict safety performance. Organizations that score high on these variables are typically high-performers generally because the variables capture much of what it means for an organization to have a high-performance culture. But more specifically, these nine variables are known to impact safety. They are grouped into three factors as shown in Table 1.

Leadership Factor		
PJ	Procedural Justice	Are the procedures that my superiors use to make decisions that impact me fair?
LMX	Leader-Member Exchange	Is there a two-way street between my superiors and me such that they will go to bat for me?
MC	Management Credibility	Do my superiors walk the talk? Are they believable?
POS	Perceived Organizational Support	Does the USMC have my interests at heart?
Team Factor		
TW	Teamwork	Does my work group function together to get the job done?
WGR	Workgroup Relations	Do the people in my work group get along ok?
Safety Factor		
OVS	Organizational Value for Safety	Does the USMC really value safety?
UC	Upward Communication	Am I willing to communicate to my superiors about my safety concerns? Is such communication welcome?
AO	Approaching Others	Am I willing to communicate to my peers that what they are doing jeopardizes their safety?

Table 1

Another variable, SE (Social Efficacy), will appear in the OFS results but it is for research purposes. It has not yet been shown to directly impact safety performance.

Our own research shows that these factors have the relation to safety outcomes represented by the size of the arrows in Figure 3 where the larger the arrow, the greater the impact.

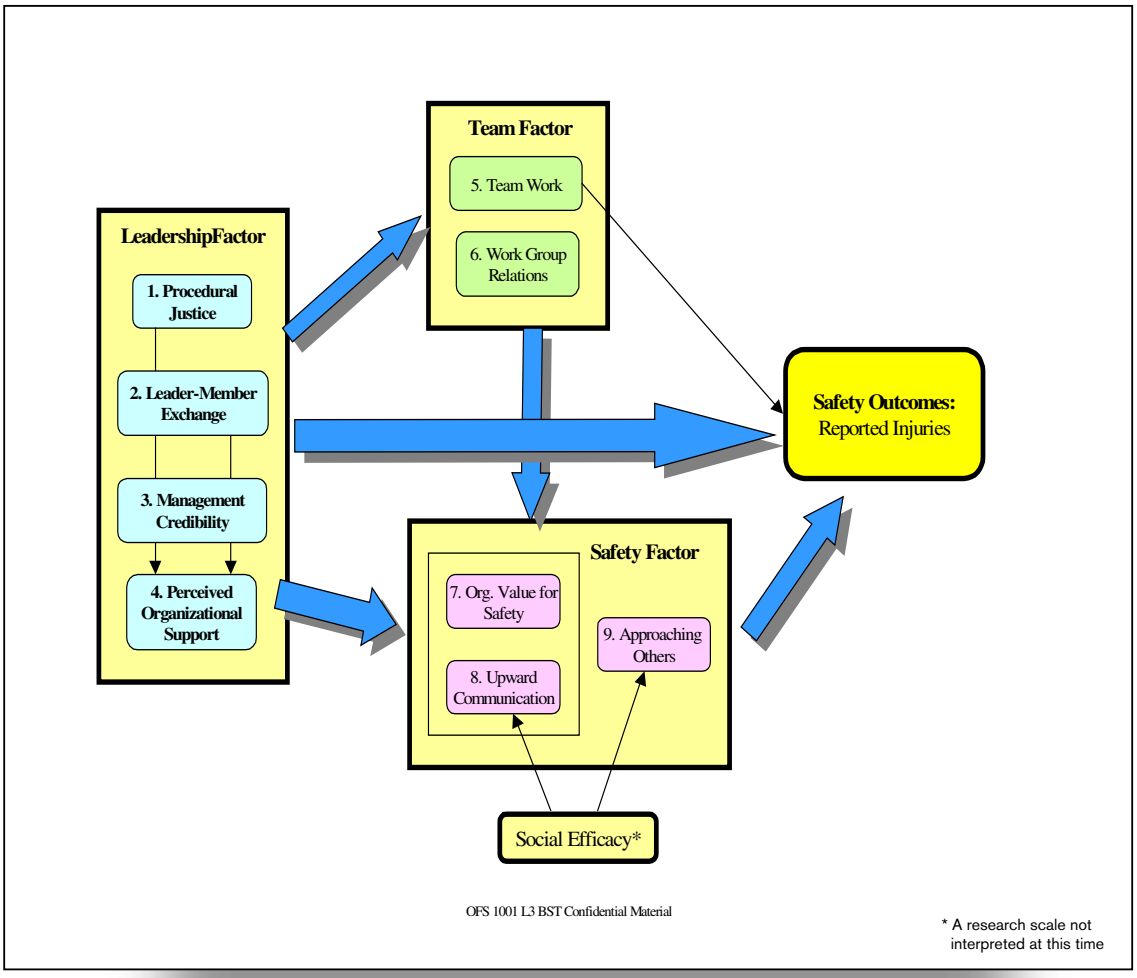


Figure 3

Figure 4 shows the USMC overall results (net of reserves) on the Organizational Functioning Survey (OFS).

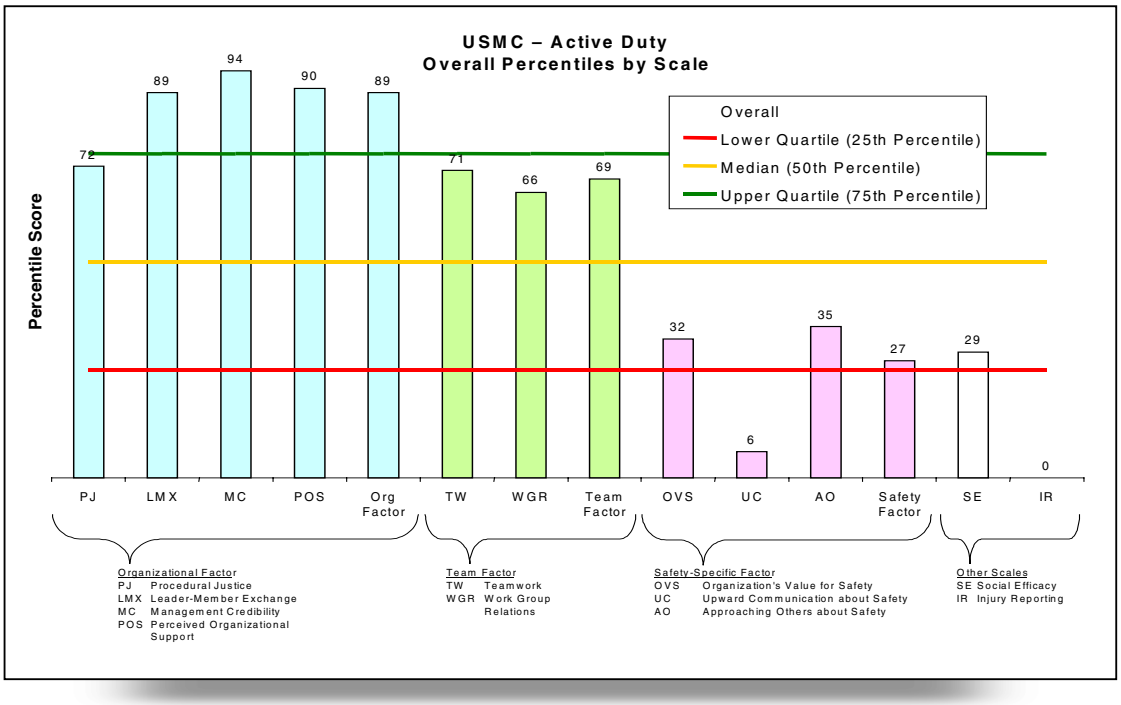
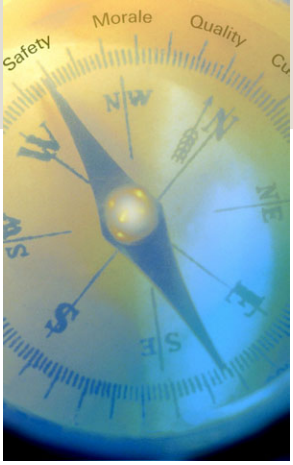


Figure 4

Here's an overview of what the chart shows:

- The first four bars represent the scales that make up the Leadership Factor (light blue), and they are summarized in the 5th bar.
- Bars 6 and 7 make up the Team Factor (green) and are summarized in the 8th bar.
- The next three bars constitute the Safety Factor (purple) and are summarized in the 12th bar.
- As mentioned above, the SE is a research bar.
- The last bar, IR, (0) is for Incident Reporting and it indicates the perception of how well safety incidents are actually reported.

Percentiles are calculated against the BST database of client organizations that have taken this survey. There are currently 209 organizations in the database and data from more than 53,000 respondents. The survey is designed to uncover the deep levels of an organization's culture that drive its performance independently of the organization's uniqueness. The upper (green) horizontal line is placed at the 75th percentile. The PJ bar (the first component of the Leadership factor) scores just below this line (72 percentile) which mean, for example, that the USMC overall is better on PJ than 72% of the other organizations in the database. The other 2 horizontal percentile lines are placed at the 50th (yellow) and 25th (red) percentiles respectively.



- ***The OFS scores show that, as expected, the USMC is way out ahead on Leadership. This is a very positive finding. It means that the USMC is in a position to make fast and effective changes to improve safety.***

Of the Leadership scales, the lowest is PJ, Procedural Justice. This scale is substantially lower at some of the particular locations surveyed (See Appendix B). Low scores on this scale mean that people perceive that decision-making processes are unjust. For example, if a leader practices favoritism or overlooks violations because of rank, Procedural Justice will be low. We will discuss this further in the section on leadership below.

The next set of scales measure the Team Factor which is made of the TW (Teamwork) and WGR (Workgroup Relations) scales. These measure the perception of how Marines work together to accomplish goals and how well they feel they get along with those in their workgroup.

- ***Overall, Team Factor scores are high enough to support good safety performance and provide a resource that an intervention plan can build on.***

On the other hand, it is clear from the next set of scales that Marine leadership has not yet effectively directed it efforts at safety performance. The Safety factor is extremely low. This means that the Marines, as an organization, have historically placed very little explicit value on safety performance; this is still perceived to hamper their ability to effectively manage this area.

The Safety Factor is made of three scales, all of which are very low, but the lowest is UC (Upward Communication).

- ***When it comes to safety, Marines do not tell their superiors the truth if it represents bad news. This is consistent with interview findings and will be discussed further below.***

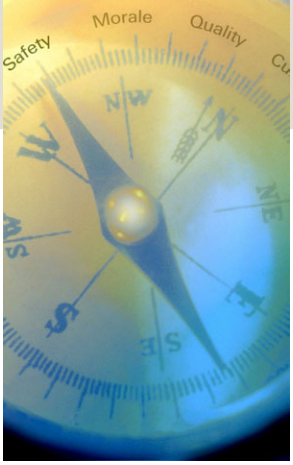
The OVS (Organizational Value for Safety) scale is also very low. Though somewhat mitigated by the fact that safety procedures are built into USMC operations, this result tells us that Marines do not perceive that safety is important to their organization. The interview data also validates this finding.

- ***Organizations that don't effectively convey a real value for safety are spinning their wheels when they introduce safety effort because people know what is really expected of them and that's what they do. It doesn't really pay for them to do otherwise.***

Lastly, AO (Approaching Others) is low. Fortunately it is not as low as the other two Safety Factor scores and this too is consistent with the interview data. This scale reports on an individual's willingness to intervene with their peers over safety issues.

- ***IR (Incident Reporting) is the lowest we have ever seen it in any of the organizations we have surveyed.***

This is a confirming symptom of the low importance the Marines perceive to be placed on safety by the USMC. This low score means that USMC leadership will not have the data it needs to accurately diagnose safety performance issues and direct corrective or preventive action. More on this when we discuss systems.



These results clearly reveal the organizational development challenge the USMC leadership faces and point to things on which to focus to achieve leading safety performance:

- ***Leaders must turn around the perception of safety's value to the organization, build and nurture healthy upward and lateral communication mechanisms, and create the expectation of prompt, complete and accurate reporting of all incidents. Units must be provided with the means to meet these expectations.***

Drilling further down into the data does not change this picture. In other words, although the culture is stronger or weaker in some units than in others, the pattern does not change: strong Leadership but weak Safety. (Appendix B presents detailed analyses of the OFS data showing, for example, some differences between East/West, Commands and Rank.)

These results are net of Marine Forces Reserve because, due to deployment, Reserve data was not back in time to include in this report.

In addition to our standard OFS questions we asked the Marines who took the OFS to respond to four additional statements. For enlisted these were:

Q96: My SNCO/NCO is concerned about my off-duty activities.

Q97: My Command reviews my leave travel plans before I depart.

Q98: I would stop a fellow Marine from taking a risk off-duty.

Q99: I know of situations where a fellow Marine has stopped another fellow Marine from taking an off-duty risk.

Officers responded to a similar set of questions that focused on their perceptions of how the Marines under them behaved. For example, on the officers' version of the survey statement 98 reads *A Marine would stop a fellow Marine from taking a risk off-duty.*

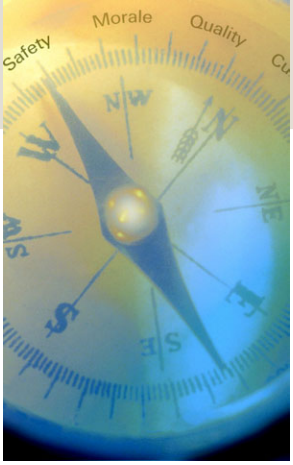
The scale and anchors are:

1 = Strongly Disagree
2 = Disagree
3 = Neither Agree or Disagree
4 = Agree
5 = Strongly Agree

Table 2 shows how the Marines responded by rank. Since there is no database for these statements, percentiles are not available. Instead Table 2 reports average raw scores.

Group	Q96	Q97	Q98	Q99
E1 - E4	3.37	3.83	3.84	3.67
SNCO/NCOS	3.56	3.88	3.55	3.60
Officers	3.71	4.29	3.66	3.68

Table 2



These results are quite revealing. Question 96 and Q97 bear on the issue of whether a Junior Marine has a strong sense that he is cared about by his superiors and the USMC when "off-duty." On the whole this sense does not appear to extend very strongly into "off-duty" time. Furthermore, NCOs and officers feel they are doing a better job at this than the Junior Marines feel they are doing.

Q98 and Q99 bear on the question of a Junior Marine's willingness to take the initiative to act on behalf of a fellow Marine when "off-duty." Here the pattern is reversed: The Junior Marine thinks more highly of his willingness to do so than do his superiors. Nevertheless, the Junior Marine does not report a particularly strong inclination to act in this way.

These are important findings. They tell us that…

- ***A Marine is not a Marine 24/7.***

This is an important failing and a great improvement opportunity because, of course, Marines can be Marines 24/7.

Interview Data

What we heard in the interviews is consistent with what we learned from the OFS. Interview findings flesh out that picture and add some valuable detail as well as some additional insights.

Interview findings are grouped below under four major topics:

- How do Marines think about the safety issue?
- How do Marines experience safety?
- Who is accountable for safety?
- What works?

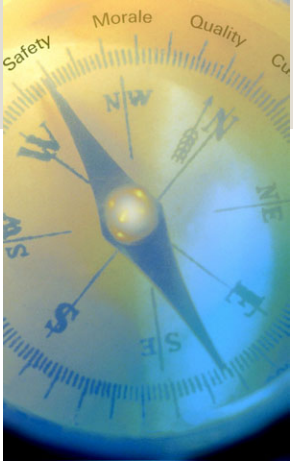
How do Marines think about the safety issue?

No one wants to see a Marine injured or killed. Few think that making Marines better at hazard recognition or risk management would impair their war fighting capability. On the contrary, most think that it would make them more fit for the mission.

- ***To the extent that the concern about a conflict about the warrior ethos and safety exists, it exists at the more senior levels of USMC leadership much more than at the lower levels.***

"People are just stupid"

Many people feel perplexed about preventing accidents and some have concluded that, *If someone is going to do something stupid, you're probably not going to be able to stop them.*



This notion that accidents happen because "people are stupid" is pervasive among Marines. Reasons given by officers at various levels for why Marines are willing to "do something stupid" include…

- They are immature
- We select them to be aggressive; these are people that like to go fast and blow things up
- We train them to feel indestructible and they believe they are bullet-proof
- They need to blow off steam
- Heavy drinking is just how it's always been in the Marines
- Safety is boring
- We are pushing against strong trends in the pop-culture of the country: video-games, music and movies which promote violence, speed, risk-taking, drugs, alcohol and a sense that no consequence is forever or even real.

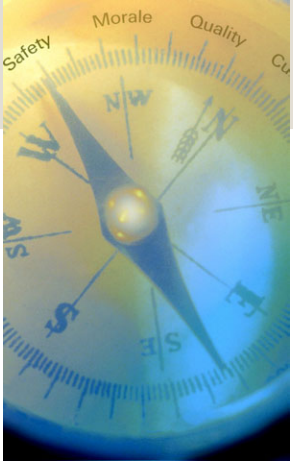
Junior Marines provide essentially the same list of reasons for accidents:

- Alcohol abuse is the biggest problem
- Rebellion against being over-controlled
- People do stupid things; act first, think later
- People have to get out of here and find some action; people get depressed
- Marines are going to be Marines and do what Marines do. If you do, you'll get hurt.

Nothing can/should be done

This way of thinking is particularly unfortunate because it predisposes people toward several related mistakes:

- It promotes the notion that there is an intrinsic conflict between being a Marine and not having accidents.
- This makes any solution to the supposed dilemma appear implausible like finding a way to "flip a switch to turn Marines into good, safety conscious citizens when off-duty."
- This line of thought also leads to the conclusion that accidents are inevitable. Marines, being the kind of people they are, are bound to get themselves hurt.
- And if this is true, what's the point of trying to do something to prevent it?



There is a culture that views accidents as inevitable at the level of the Junior Marine. One interviewee put it like this, *It's just the odds. You can't change them.*

This line of thought is both false and paralyzing. It proceeds from false or unsupported premises to erroneous conclusions.

- There is ample evidence that Marines are not stupid. In fact, there is a lot of evidence that they have a lot of the kind of intelligence that enables them to accomplish incredibly impressive goals.
- No valid reason has been put forward to suppose that there is an intrinsic conflict between safety and Marine values or the demands of the Marine combat ethos. Rather, this view appears to express a conservative instinct: "Don't mess with a good thing. Marines are the best fighting force in the world. Don't mess it up." Operational excellence is critical to the USMC mission, but this perceived conflict should not justify inaction in the face of unacceptable, needless loss of combat Marines.
- Injuries to Marines are not inevitable: Not all Marines get injured or killed, only a small minority.

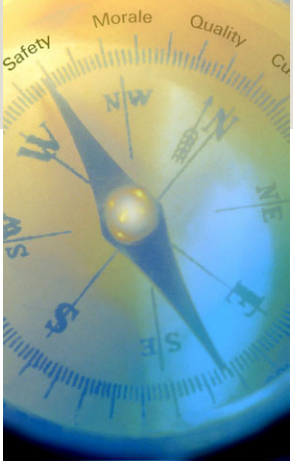
Nevertheless, there is a grain of truth in this line of thought. It is that some Marines appear inclined to push the limits and sometimes to act without thinking. Interviews with Marines who had been involved in a significant injury or behavioral problem revealed two themes:

- Acting without anticipating the consequences, often in the service of mission accomplishment (whether it be a personal or a USMC objective)
- Overestimating one's ability to deal with a situation successfully, pushing beyond one's limits

These inclinations are said to be intensified by the cultural imperatives to *Suck it up!* and *Be hard!* Any solution to these inclinations must obviously not impair the power of these imperatives.

We interviewed only one Marine who felt that his accident was due to the same traits or qualities that made him a good Marine. None of the people we interviewed saw any contradiction between safety and the Marine core values of Honor, Courage and Commitment. None of the lower level officers, NCOs or Junior Marines felt that concern for safety performance would decrease combat readiness or undermine the combat ethos.

Everyone we interviewed agreed that allowing a fellow Marine to be injured when intervention was possible was in direct conflict with the core values. The core values were the key element on which the recruit's moral foundation was built. The values were evident in everything a Marine does on duty. Most wondered why the values were not applied to mishap prevention: Why, for example, would three Marines all be party to reckless driving and not wearing their seatbelts? This was a perplexing mystery to most people we interviewed.



- ***Rather than accidents being an inevitable consequence of Marines being what Marines are and their combat ethos, Marine safety appears to be a matter of Marines learning to handle the situations Marines find themselves in, supervised or not. This is as true of their safety in a PMV as it is of their safety in combat.***
- ***This most critically consists of learning to anticipate consequences and more accurately evaluate their capability while maintaining pride in the ability to Suck it up! and Be hard! In this way a Marine would be a good citizen off-duty just as he is a fearsome war fighter on the battlefield. This is in fact the vision of the DIs we interviewed.***

Safety is just common sense or ORM

On one hand there is an appeal to common sense and on the other, there is the more formal Operational Risk Management (ORM) approach.

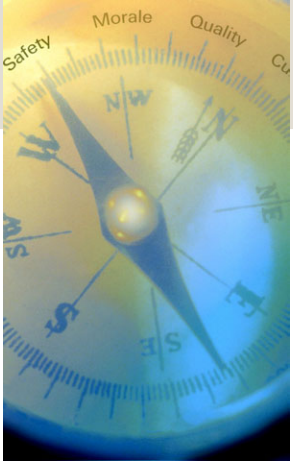
The problem with trying to motivate safety by appeal to common sense is that, at bottom, safety is an issue of performing safety-critical behaviors the right way at the right time. As a behavioral issue, it rests on antecedents and consequences and these are often naturally lined up in favor of the at-risk behavior rather than the safe one. It may be common sense to drive your buddy back to the barracks if he's too intoxicated to drive, but if you have just picked up a girl, your buddy's ride home may just have become his problem. Managing behavior means managing the antecedents and consequences of critical behaviors. ORM is one USMC-endorsed decision-making process with that capability.

Operational Risk Management is a widely known safety thought process. Some say that the name is being changed to "Risk Management" (as the U.S. Army did in 1998) in an effort to encourage wider use. Despite being widely known, actual rigorous use appears rare. We encountered more than one instance in which training would have been altered if a time-critical or deliberate ORM risk assessment had been performed. No one knew whether a formal risk assessment had been performed or, if it had, what the results were.

The higher in the organization, the more value the Risk Management thought process is said to have. NCOs tend to see it as not very useful to them but feel that it would be useful for the officers who should be using it. Junior Marines don't have a great deal of formal exposure to ORM and don't see a lot of value in it. The most meaningful aspect of it for them is perhaps the Holiday Accident Reduction Program (HARP), a form used by some locations to plan extended liberty or leave. Some feel this is useful; others say it is just burdensome and that it is pencil whipped more often than not. There is no reported follow-up or positive recognition for good use of HARP or other ORM tools.

Lack of follow-up by NCOs is consistent with the extra questions on the OFS that report only a moderate degree of concern by NCOs and the USMC about the off-duty welfare of their Marines.

- ***Better defining when and how the ORM thought process is to be used and reinforcing its use represents a significant improvement opportunity.***



- ***More particularly, ORM represents an opportunity to better enlist the Junior Marine in safety thought processes and make him feel that the USMC cares about his welfare and that this concern extends to how his immediate leader relates to him.***

How do Marines experience safety?

Safety is invisible

The important point of how safety is experienced in the Marine Corps is that it is not experienced at all. Rather, it is engineered in. Lessons from fatal battlefield errors, superior tactics and life-preserving skills have been built by ten generations of "Devil Dogs" and tightly integrated into the procedures for doing the various jobs that Marines do. This *modus operandi* starts with boot camp and appears to continue through all subsequent training.

- ***When a Marine learns to do a job, he learns to do it the safe way. What he doesn't learn is to have a feel for the safety issues involved or to think these through for himself. Safety is essentially invisible to him.***

More on this when we discuss Systems.

"Off-duty safety is a pain"

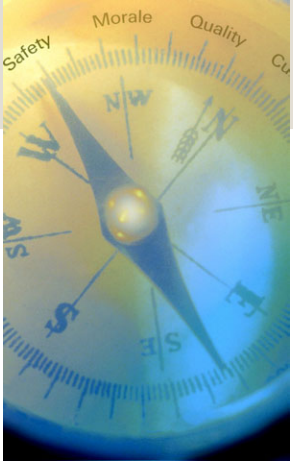
The invisibility of safety pertains to operational safety. Off-duty safety is another matter.

- ***"Off-duty" safety is pushed hard and is often a sore point for those at the bottom and a source of frustration for those above who feel they are doing all they know how to do but not having the impact they would like to have.***

Marines are people who like to make things happen. Making off-duty safety happen is frustrating and clearly may require new tools rather than "doing more of the same things louder." Their statements and conversations suggest a group in despair that their proven leadership tools do not adequately impact PMV mishaps. When asked how to intervene, to a person they made statement like, *If I knew that we would not be having this conversation* or *If we had an idea we would be doing it.* The frustration was evident. Marines at lower levels openly acknowledged that they did not feel that a 50% reduction was obtainable; they felt it was just unrealistic.

Efforts to improve off-duty safety are making many of the most Junior Marines angry. This is because these efforts are primarily antecedent-based interventions such as training, signs, lectures, reminders, stand-downs, and wrecked cars placed in prominent locations, etc.

Antecedents are weak interventions and can be counter-productive. Unless antecedents accurately predict consequences—which none of these do since accidents are rare events— they are perceived as false or unnecessary. They make a person feel nagged, hassled, cajoled or threatened. Many Marines resent being inconvenienced and the amount of time and effort being "wasted" on this issue. Managing by antecedents runs the risk of losing the good will required to solve this problem. NCOs and Junior Marines said things like…



- The Marines are trying to make us too safe.
- They treat Marines like children.

On-Duty / Off-duty Dichotomy

As the discussion in the two preceding sections makes clear, the Marines describe a clear dichotomy in how they think about and experience two different safety contexts: on and off-duty. The On- *vs.* Off-duty distinction is consistent with the notion that a Marine is not a Marine 24/7 but only while on duty. It is also another window into the fact that within the USMC, safety is peripheral not integral to the mission. It is tied neither to the Marine values of Honor, Courage and Commitment, nor to the war fighting mission through combat readiness.

- ***The on- vs. off- duty distinction should be replaced with the truth that a Marine is always a Marine. This requires developing terminology that does not leave room to not be a Marine just because you're not at work.***
- ***Safety needs to be understood as an integral part of being a good Marine by articulating its true linkages to both Marine values and mission. Identifying these links requires a process of discovery.***

Safety is Top Down

It was obvious during the interviews that safety is something that "they" are trying to make happen. All significant Marine safety efforts are top down: There are essentially no efforts to capitalize on involvement of the lower ranks as safety leaders.

- ***Safety has been mandated and is being pushed hard, but those it is pushed at have little opportunity for audience participation. Their role is to listen passively and obey negative commands; e.g., Don't drink and drive!***

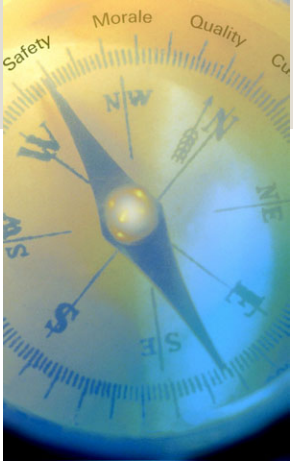
Another aspect of the top-down nature of the effort is that it is an add-on. It's not part of the mission as presently conceived. It's a big push. This means that it is often perceived as likely not here to stay.

Status of Safety

Related to safety's being an add-on is that it has low status. Whereas there is a very tight integration of the safe way to do a job into job training, there is not a corresponding conscious integration of the idea of eliminating needless risk 24/7 with the idea of being a good Marine.

- ***Doing safety is not seen as contributing something of central importance for the Marines.***

More on this when we discuss Systems.



Who is accountable for safety?

Awareness

To have a sense of responsibility about anything, one must believe it warrants the intention to act.

Marines at all levels were familiar with some of the conclusions of the CNA report, even down to the Junior Marines. People at all levels have gotten the message that the USMC must substantially reduce ground accidents. Most take this to mean PMV mishaps.

An XO at one of the units we visited said that his eyes were opened to the significance of the issue when he took the time to read all of the Class A reports.

- ***This experience and information has more widespread applicability and it can be used as part of an ongoing communications campaign for safe behavior (rather than as a one-off awareness campaign.)***

Acceptance of responsibility

All senior-most Marine leaders agreed they were responsible for the welfare of their Marines including safety. They were very sure they could carry out that responsibility operationally but not off-duty if responsibility is defined as their Unit having no Class A or B mishaps.

Perspectives differ on the issue depending on organizational level. The higher one is in the organization, the more one is likely to speak about this issue as though it is worth tackling. However, our difficulty getting meetings scheduled and attended by highest-level people at the bases stood in contrast to this expressed conviction. Some senior leaders also stated the conviction that leadership determination, Marine training, and (negative) consequences will prevail but that there will always be the exceptional incident. Others felt that they were doing everything they knew how to do but were losing the battle.

The lower one is in the organization the more likely one is to deny the issue's significance.

Most people who acknowledge responsibility for PMV mishaps tend to see these mishaps as occasions of both personal loss and detrimental impact on mission capability, though there do not appear to be any good measures of the latter in place. One unit had lost three Marines in a single PMV mishap. All interviewed said the loss was devastating to unit morale and operational capability. Some said the unit was still not over it; as a young Marine described the event, his sense of personal loss was evident.

People at all levels share a great deal of energy and frustration over, if not the problem, then their inability to successfully solve it, being held accountable for something they don't know how to control or their suffering at being subject to the efforts to solve it.

Some of the mid-level commanders expressed doubts about the value of the time and energy devoted to the safety effort. They did not disagree that the deaths/injuries were occurring. Their disagreement was with the amount of effort devoted to a problem that affected only a few. One said he had 900 people and if one were killed due to their stupidity doing something they knew

was wrong it was their individual responsibility. Some questioned just how serious Command could really be about safety if they are unwilling to adequately resource it. When asked what would be the consequences of not meeting the challenge of a 50% reduction, most felt that ultimately there would be no consequences.

Lower level NCOs and Junior Marines tend to feel the problem is no worse than in the civilian population and that if comparisons were made fairly, USMC safety performance is no worse than that of the other services.

- ***This speaks to the need to provide accurate, timely data, training on how to interpret data and meaningful involvement opportunities beyond a 'big push' approach.***

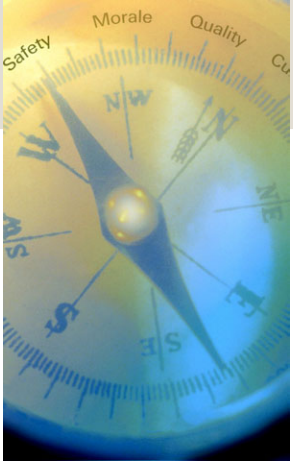
Despite their misgivings about the "big push" approach, many lower level Marines say they would intervene to prevent an injury if they thought someone were about to get hurt. A significant number said that they had asked for someone's keys when the Marine was too intoxicated to drive.

Marines who said that they had intervened in this way reported no significant negative consequences from their peers (and some received appreciation) but they also reported that there was no positive recognition by anyone else. Willingness to intervene was said to be a function of…

- The quality of the relationships between peers in the workgroup or barracks. This was reported to be a function of the behavior of the NCOs and SNCOs.
- Willingness to do the right thing no matter what.
  - ***Here is a clear example of the need to integrate Marine core values with safety, defining pro-safety behavior in terms of Courage, Honor and Commitment and making it a clear expectation 24/7. It should be clear that safe behavior is the right thing for a Marine to do.***
  - ***There need to be mechanisms in place to formalize these kinds of behaviors by Marines and make them count for something within the USMC community.***
  - ***This also points to the critical role of the NCO and SNCO as the key to successfully changing the behavior of the Junior Marines. It also says that some of these NCOs and SNCOs may need skill training on how to foster the kinds of relationships that build the desired performance in their Junior Marines.***

On the other hand, several Junior Marines said that if they had to choose between spending time with a girl that they had just met and driving an intoxicated fellow Marine back to base, they'd go with the girl because the Marine had "brought it on himself."

- ***This individualistic sense that the other person's being at fault absolves me from responsibility is a barrier that must be countered effectively for any buddy system to be successful. Marines must look out for Marines.***



Upward communication

If command is ultimately responsible for safety and all significant safety efforts come from the top down, upward communication becomes an essential pre-condition for safety performance and accountability.

Generally, the interviews revealed that there is not a free flow of safety-related information up the chain of command. This information is often explicitly unwelcome if it implies any potential threat to mission accomplishment. This attribute of the USMC culture was directly involved in a number of incidents that were discussed in the interviews, including some Class A mishaps. This finding is consistent with OFS scores on the UC (Upward Communication) scale and reflects deep-seated misgivings about the compatibility of this kind of communication with the ability to accomplish the mission.

Nevertheless, in high-risk areas of functional safety—range safety, amphibious assault vehicle (AAV) movement and certain operations in aviation, for example—there is a culture that encourages upward communication without compromising the combat ethos or mission accomplishment.

Programs designed to encourage upward communication outside of the chain of command (e.g., the Anymouse Program) are being introduced but it is too soon to determine how well they will be embraced by the troops.

- ***Finding ways to enable upward communication within the chain of command (as opposed to going around it or just not doing such communication) without impairing the mission or the ethic is critical for USMC safety improvement.***

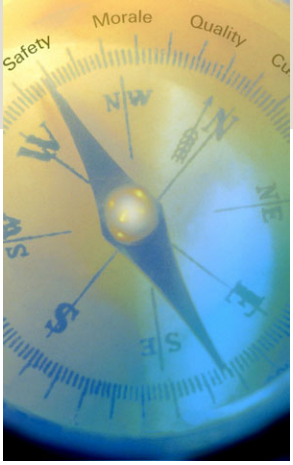
Fairness

There is the strong perception among some Junior Marines and even some NCOs and SNCOs that decisions about accountability are not made fairly. The perception is that Rank is protected and the blame goes to the lowest person involved.

What works?

Many Marines had ideas about what might help improve safety in the USMC but there was one suggestion that came up most often, appeared to be most believed in and was proclaimed especially by those who felt that they were successful at dealing with the problem. That message was that troop safety on and off-duty was a function of interpersonal relationships, particularly relationship with one's NCO, SNCO or Lance Corporal.

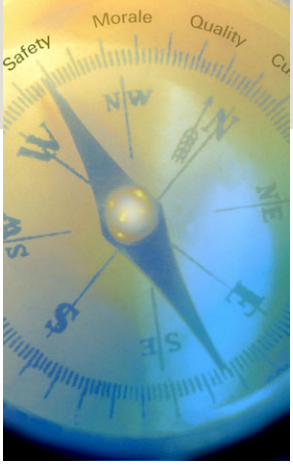
- ***The message was that if…***
- ***you really care about your Marines as individuals,***
- ***know what's going on in their lives,***
- ***let them know what's expected of them (as opposed to nagging them about what not to do),***



- ***hold them to a high standard, and***
- ***treat them as adults…***
- ***They perform admirably and this includes behaving safely and looking out for each other.***

This prescription is consistent with behavioral science research findings.

(See Appendix C for a listing of the additional ideas suggested by Marines for improving Marine safety.)



Organizational Structure and Systems

Summary of Findings

- A comprehensive and coherent USMC – wide safety system needs to be created. It should not have to rely for success on personalities or situational *big pushes.*
- Staffing and reporting relationships need to be re-evaluated and made appropriate to USMC safety performance objectives.
- At the lowest unit level a dedicated safety budget should be considered.
- Safety needs to be visibly and meaningfully included in the standard USMC performance evaluation processes and expectations aligned with USMC objectives regarding the impact on career advancement of working in the safety field. Some of this work has already started with the inclusion of execution of Marine Corps and Commander's safety program in the evaluation of executive officers and deputies.
- Improved accident reporting, investigation, data analysis and use of data for fact-based decision-making are critically needed for improvement. This will require many things. One of which is response to more than Class A mishaps. Another is resolution of difficulties between CMC (SD) and the NSC.
- New training needs to be undertaken for key groups covering behavioral safety leadership skills and safety values.

Interview Data

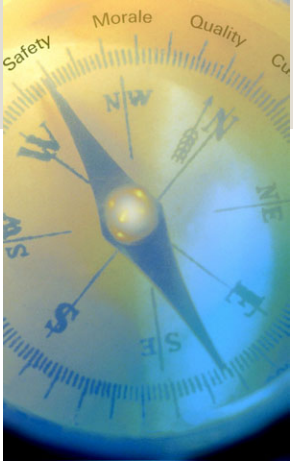
A lot of information provided during the interviews pointed at specific system and organizational issue that impede safety performance in the USMC. We list these themes below and flesh out some of the most important ones by examining the safety data system in some detail.

Safety Programs

We reviewed the USMC safety programs at the beginning of this project and during the interviews we listened for how these programs are perceived and what impact they appear to be having as antecedents and consequences of safety-critical behavior.

What we heard from the lowest levels (presumably, the primary targets of these programs) is that most of the programs are experienced as either temporarily meaningful or as aversive. Few are experienced as significantly consequential for safety-related behavior. Rather, the consequences often drive unanticipated and counterproductive behaviors. For example,

- Very few people are said to use programs that pay for a taxi back to base when the Marine is too intoxicated drive because of fear of the unofficial reprisal of being hassled for needing this kind of help.



- Trip planning checklist is said to be often "pencil whipped."
- Stand downs often drive not listening "because we've heard it all before."

In most cases the true value of these programs—namely, that they provide opportunities for small group leaders to monitor and reinforce pro-safe behavior—is being missed. There is no systematic use of these programs as opportunities to provide soon, certain and positive consequences for doing the right thing. This is unfortunate because this is where their true potential lies.

On the positive side, these programs have raised the awareness of Marines about the issue and generated a great deal of activity. This is a two-edged sword. The positive side is that safety will not improve without awareness and these programs have put it in the spotlight. The negative side is that this increased awareness is beginning to turn sour and be regarded as overkill by some up to the Battalion commander level.

This is largely due to the antecedent nature of most of these interventions (which means that they are not intrinsically very strong and are prone to being easily experienced as negative) and the fact that they are often not undertaken with an eye toward buy-in but rather as something imposed.

Accountability for performance

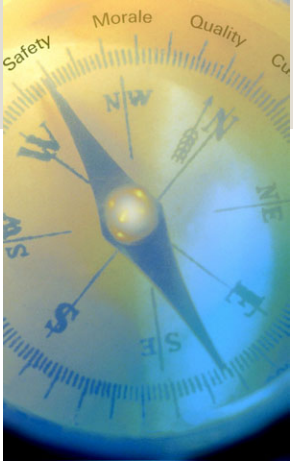
People interviewed could sometimes give examples of someone else having been held accountable for egregious safety performance but there was clearly no systematic evaluation of safety performance.

- ***Safety needs to be included visibly and meaningfully in the standard USMC performance evaluation mechanisms.***

Inadequate staffing

Battalion commanders and many others repeatedly made the point that safety staffing is inadequate. They raised the issue that if the USMC is serious about safety performance, it needs to staff safety accordingly.

Many people in various positions and ranks recommended a full-time safety person in each operational unit down to the battalion level, stressing that this person should be deployable and of sufficient stature to command the respect of the officer to whom he reports. It was estimated that doing this would require in the neighborhood of about 200 people and that they could be adequately trained in 2 months if their responsibilities included HAZMAT, Radiation, Civil Safety, Mishap investigation and proactive behavior-based safety. Naturally, if Marines filled these positions, they would be "trigger pullers" as well. The justification is that the USMC is losing a company of Marines a year at the present time and this would take less than one company; i.e., the payback would be quite rapid.



They said that there should be a primary safety MOS. They also said that safety as collateral duty…

- Not only sends the wrong message, but
- Means that in the real world, critical safety activities are not performed, safety expertise is not included in decision-making (as it must be if performance is to significantly improve) and there is a lack of continuity in the safety function.
  - ***Actual staffing needs must be determined and staffing resourced accordingly.***

Safety is dangerous to your career

Marines said that being assigned to a safety job was detrimental one's career advancement for two reasons.

- You are then not working in your primary MOS and the board is more likely to advance someone who is.
- Unlike working in Recruiting or as a DI, working in safety is not viewed as adding much value to the Marines. It is more like working in a non-essential area. Safety is not regarded as a mission-critical function.
  - ***The value of safety to the USMC must be re-evaluated and ways found to make it have a favorable impact on career.***

Reporting relations

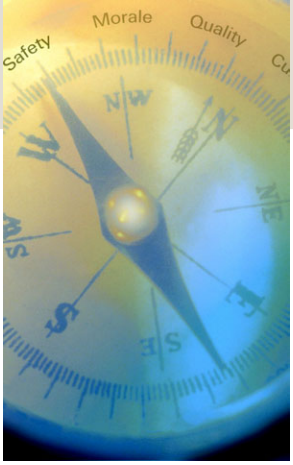
Safety appears to typically report to the XO. Sometimes it reports considerably below which was not the intent in the Commandant's Safety Campaign Plan. This is apparently at the discretion of the Commander/Commanding Officer.

This is not an optimal relationship compared to industry standards where safety often reports at the highest level and that level is accountable for safety performance. Reporting below the highest level undermines safety's status, runs the real danger of safety information being minimized or misrepresented in critical decisions and renders critical safety goals more difficult to achieve.

- ***Safety should report at the highest local level at which safety accountability resides.***

Commander's discretion

Numerous instances were mentioned in which commander's discretion resulted in deviations from actual USMC safety policy; e.g., reporting structure and non-compliance with required safety training. While commander's discretion is essential to combat success, choosing expedience over safety procedures proven during decades of experience waters down safety status and the impact of command efforts to enforce safety as a USMC value or objective. It makes safety performance dependent on personalities and individual preferences and thus peripheral to the mission.



- ***The USMC safety system should function independently of personalities and individual commander preferences. It needs to be part of the intrinsic, obligatory structure of the Marines.***

Safety budget

Despite being mandated in MCO 5100.8F, most USMC units lack a dedicated safety budget. This makes safety dependent on local discretion, an unwelcome competitor for scarce programmed dollars already considered essential to the mission. This makes safety peripheral to mission and safety improvements unsustainable.

- ***Safety should have a dedicated budget line item.***

Safety data

Often SNCOs and below evaluated their unit's safety performance based on gut feel which is driven by whether or not their unit has had an injury recently. Even this could be skewed, however. There were cases where Marines had been injured or even killed in mishaps within the previous year, yet the leaders felt the unit's safety performance was good.

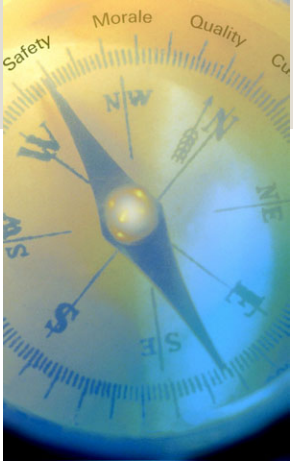
In addition to sometimes lacking real information about their local performance, decision-makers lack the big picture in safety. Finally, local commanders say they don't have any real measure of how well their message is being carried out below them: only whether or not there are serious accidents.

Incident reporting is said to be minimal. This is consistent with the extremely low IR (Incident Reporting) scale on the OFS, which we discussed earlier. Upward reporting of safety information is said to be cumbersome and people complain that they get little of value back for their efforts. Safety information on the USMC web site is reported to be sometimes not current.

Currently MARTRAK is a desktop application. Although it is a significant improvement from previous paper systems and was born in a the face of a compelling need and systematic vacuum in this area, it is not up to the job of providing the data management capability the large organization requires. The USMC is currently developing MARTRAK 2.0, which is designed to be web-based. The Naval Safety Center is developing the Web-Enabled Safety System (WESS II). WESS II is currently set to be deployed on 1 June 2004. There is a great possibility that this system will not meet its deployment deadline. The way in which the WESS II application is modeled (Turbo-Tax questioning methodology) may inhibit its acceptance among personnel.

- ***Minimal reporting impairs the ability to learn from mistakes and makes statistical analyses difficult at best and sometimes even misleading. MARTRAK is perceived by some users interviewed as time-consuming and thereby discourages reporting.***

Because good data is essential to informed decision-making, we examined the condition of the USMC safety data system more directly.



A direct look at the USMC safety data systems

MARTRAK

MARTRAK presents the user with 158 fields to choose from to report every type of non-aviation Marine mishap. A legacy version exists where database files are snail-mailed and otherwise passed up the chain of command to the Naval Safety Center MARTRAK database manager. Version 1 data entries in any field data can be modified or deleted by anyone who can open a MARTRAK file. Marines and Safety Center employees alike state that many mishaps from Class A downward are entered very late, incompletely or not at all. Statistical reporting capability is limited both in metrics available and by poor data quality. It should be noted that there are a number of systems from private vendors that could be tailored to meet USMC needs. However in the face of the cost of implementing these by a single branch of the service CMC (SD) is pursuing to meet its needs by developing an enhanced web-based version of MARTRAK. (See Appendix D for additional discussion.)

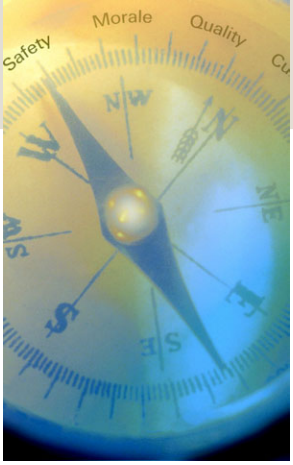
Data Safety System Summary

- ***USMC decision-makers <u>at all levels</u> are seriously handicapped by lack of comprehensive safety system in terms of data collection, analysis and program determinations. As a result, throughout all USMC organizational levels, the ability of leaders to provide carefully targeted, actionable and responsive guidance is limited and far too dependent on anecdotal information, flawed measurements, and gut feel. I n sum, the Marine Corps-wide safety system is a combination of disconnected horizontal and vertical processes that are inadequate for identifying safety issues and developing programmatic solutions.***

Naval Safety Center

The current organizational alignment of the USMC's safety effort is severely limiting to the point of being dysfunctional. While CMC (SD) is properly grounded by reporting directly the Assistant Commandant, its personnel lack an effective data collection system, are insufficiently manned (8 military/8 civilians) to do anything but the most rudimentary analysis of safety data, and are thus severely handicapped in providing adequate programmatic guidance and oversight. Nonetheless, when an accident occurs the USMC's leadership looks to Safety Division to provide this analysis.

Conversely, the Naval Safety Center is manned (USMC billets) to provide this type of support, but for a variety of complex reasons, the USMC perceives little evidence that it is actually being provided. At one point in the data collection phase of this study, when asked if they provided analytical support to the USMC, NSC staff members indicated they "<u>did not have enough time.</u>" CMC (SD) personnel have repeatedly expressed their frustration with this circumstance and made a number of attempts to improve it, but with little apparent result. However, the new NSC Commander is trying to be more responsive though it has yet to yield significant fruit at the staff level.



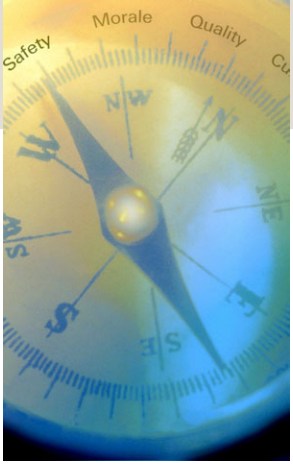
Though progress is apparently being made here, an organizational structure that relies on force of personality to perform optimally will eventually fall victim to time and changes in personnel. Specific items of relevance to this arrangement are:

- NSC Commander is always a navy flag officer who reports to the Vice-Chief of Naval Operations. As far as we could determine, there is no provision for a fitness report input for anyone outside of the US Navy chain-of-command.
- NSC Deputy Commander/Director of Aviation Programs (a USMC Colonel) is generally confined to items surrounding aviation safety (an area outside of this study's focus).
- Symbols are vitally important considerations in any organizational environment, particularly a military one. Rank and organizational insignia, uniforms, letterheads, assignment of quarters, etc. all convey special meaning and status to members—and even outsiders. Most of the symbols associated with the NSC are Navy as opposed to Marine Corps. Technically, though the term "naval" includes maritime forces, its usage at the NSC is clearly *pro forma* and generally exclusive of the Marine Corps.
- In large measure due to the factors mentioned above, NSC research, reporting and program efforts seem confined to US Navy channels.
- NSC safety efforts are routinely without USMC involvement. When the USMC is engaged, it is in the later stages.
- Despite the existence of a MOA that specifies NSC service support requirements to the USMC, when asked if they provided data analysis to the USMC, NSC personnel stated, *We do not have the time to do it.* Further, the BST USMC Team was unable to discover significant evidence of USMC support, and in fact experienced considerable initial difficulty in obtaining information from the USN database.

Safety Professionals

Accident reporting is compromised to the point that the USMC does not have an accurate picture of their safety performance (See OFS IR scale above). As non-aviation and non-depot units generally lack safety professionals, there is nobody who consistently takes seriously the accountability for reporting all classes of accidents (A, B, C & D). Survey and interview data reveal that D-class mishaps are not reported. Most C-class mishaps go unreported as do a significant number of class B accidents. This denies the USMC of relevant information on which to base programmatic measures designed to alleviate future occurrences. Class A accidents are reported, but then again, they are hard to miss.

- ***There are positive consequences for not reporting Class B, C and D accidents, which include creating the perception that safety performance is good.***
- ***Poor investigation and reporting is a good example of how systems can cause consequences that drive undesirable behavior.***



Currently, sixty-three (63) civilian manpower authorizations slots are funded (FY 2005) to partially address this shortfall and an additional thirty-seven (37) slots are under consideration (FY 2006). These are facility-oriented authorizations, and assuming all the funded and unfunded additions actually occur, the USMC will not attain the requisite staffing of having a safety professional (military or civilian) assigned to the battalion organizational level and above.

Data Management System:

The NSC and CMC (SD) are pursuing two separate and distinct safety data collection and analysis systems. The USMC, sensing lack of support adequate to their needs, took the initiative and developed MARTRAK. MARTRAK currently lacks the advantage of being "web based" and lags in sophistication to similar off-the-shelf systems. However it was perceived as a financially viable alternative to meet immediate needs.

Interviews indicate that field units generally lack the computer assets needed to participate meaningfully in any safety data management system. It is not enough to direct subordinate units to report safety information if they do not have the means to deliver it.

(See Appendix D for a more detailed and technical assessment of the Data Management System performed by Ex3, Incorporated.)

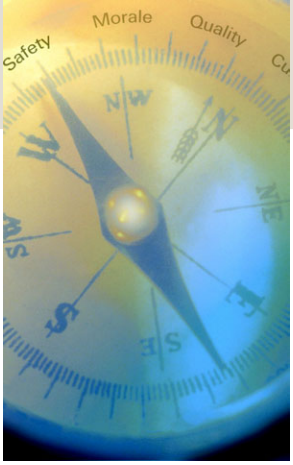
- ***Safety analysis is negatively impacted by the variety of fragmented sources, databases and programs, rendering that analysis inadequate, and in some cases, inaccurate. Furthermore, there is an insufficient computer hardware infrastructure to support an adequate safety data management system.***

Metrics

A good measurement matrix enables regular and accurate assessment of system/process performance. Periodic audit and review should be necessary only to substantiate the validity of the measures.

- ***The USMC safety system is so sparse that it does not provide sufficient data to accurately assess system performance, and in some instances, actually provides misleading information. Audits and special studies are used to fill this gap, but they are too infrequent to meet system assessment requirements.***

For example, the Commandant receives a bi-weekly report and a similarly sourced weekly OPS INTEL briefing. These reports are timely and provide good basic information but due to the lack of source data, don't provide the level of accuracy and detail needed to systematically improve performance.



Metric Definitions

Current reporting is primarily limited to those defined by DOD. These measures, though standardized and adequate for high level analysis, limit the ability to drill down to a level necessary for proactive safety management and intervention design. Clear definitions of some current and recommended measurements beyond those required by DOD will be necessary before reliance on data will be possible.

Poorly Normalized Data (the exposure denominator)

Fact-based management has become an industry standard since the 1980s, and for good reason. Properly gathered, depicted and analyzed, data provide the only real avenue to assess the performance of a system or process, and thereby, make proper management decisions based on the results. Thus, assuming an organization is actually seeking to "manage by fact" the decisions of what precisely is measured and how it will be portrayed are of crucial importance. It is here that there seems to be a problem of some significance for the Marine Corps.

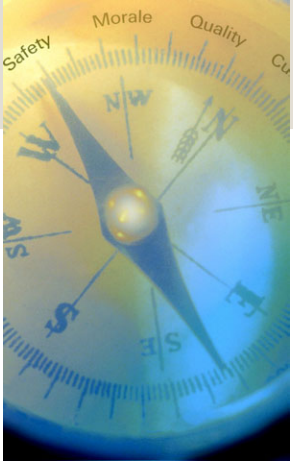
In particular, PMV accident data are portrayed as both a gross number per quarter/year and as a yearly rate per 100,000 members. The rates are based on USMC active duty end strength (minus activated reserves) for the year in question, which remains relatively constant from one year to the next (Table 3). Using this approach, end strength is incorrectly being equated with exposure. Table 3 also depicts a more accurate and meaningful way to arrive at a better exposure denominator by subtracting Marines who have no PMV exposure: End Strength less MCRD trainees less Deployed Marines equals Marine PMV exposure. This is a basic formula that could be refined to include other groups that have different degrees of PMV exposure, such as those assigned to Okinawa. However, for purposes of this discussion, it is not necessary to carry this effort to a level of detail beyond the general categories listed below.

USMC PMV Exposure

Year	1997	1998	1999	2000	2001	2002	2003
End Strength	171,429	173,124	171,575	171,658	172,158	173,427	176,815
Less MCRD	-1,666	-1,666	-1,666	-1,666	-1,666	-1,666	-1,666
Less Deployed	-27,354	-27,199	-27,913	-28,191	-28,348	-37,276	-50,938
PMV Exposure	142,409	144,259	141,997	141,801	142,144	134,485	124,211
% Exposure Change	-17%	-17%	-17%	-17%	-17%	-22%	-30%

Data Source: HQMC Manpower and Safety Center

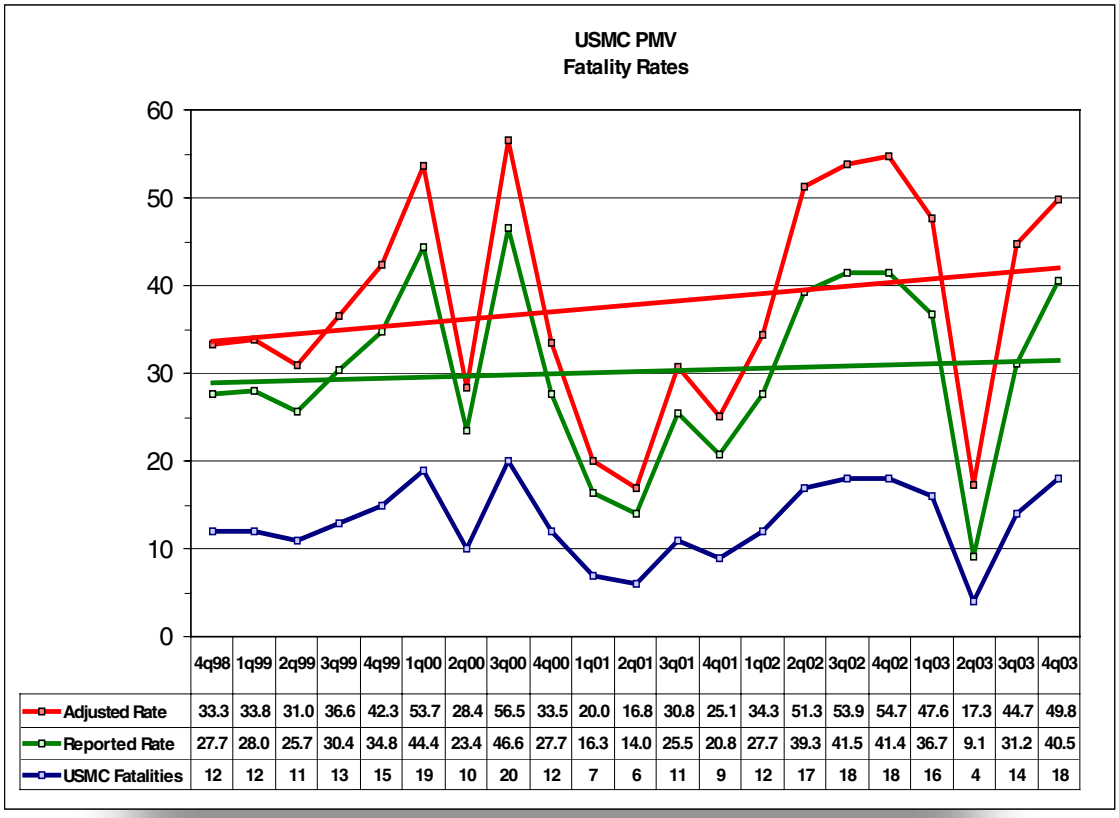
Table 3



Using End Strength as a proxy for PMV exposure, Figure 5 shows fatality numbers and rates moving in parallel since fluctuations in End Strength are negligible. This information has been commonly taken to mean that USMC performance is…

- Poor, but better than comparable groups in the civilian community.
- Generally level over time.

However, this is not a complete picture of the situation because End Strength is not actually a good proxy for PMV exposure, as deployed Marines essentially do not have access to PMVs, and for the most part, neither do Marines in boot camp.



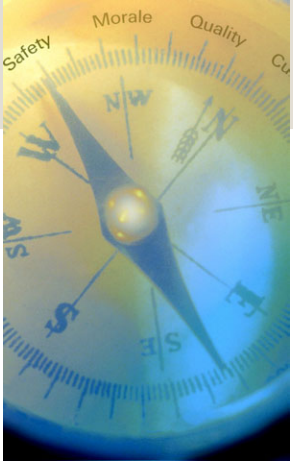
	4q98	1q99	2q99	3q99	4q99	1q00	2q00	3q00	4q00	1q01	2q01	3q01	4q01	1q02	2q02	3q02	4q02	1q03	2q03	3q03	4q03
Adjusted Rate	33.3	33.8	31.0	36.6	42.3	53.7	28.4	56.5	33.5	20.0	16.8	30.8	25.1	34.3	51.3	53.9	54.7	47.6	17.3	44.7	49.8
Reported Rate	27.7	28.0	25.7	30.4	34.8	44.4	23.4	46.6	27.7	16.3	14.0	25.5	20.8	27.7	39.3	41.5	41.4	36.7	9.1	31.2	40.5
USMC Fatalities	12	12	11	13	15	19	10	20	12	7	6	11	9	12	17	18	18	16	4	14	18

Figure 5

Thus, under the current method if you had a circumstance where the accident rate of exposed individuals remained constant, the depicted rate would fluctuate significantly as combat deployments and redeployments took place, rendering this method a less than ideal management tool.

The Adjusted Rate in Figure 5 was computed using the actual USMC PMV exposure data depicted in Table 3, and expanded by FY Quarter. However, in this instance, the fatality exposure data has been adjusted by subtracting the numbers of Marines in MCRD training and deployed before calculating the rates. Note that the trend line for the Adjusted Rate is higher than the trend line for the Reported Rate and it appears to be getting worse over the full five-year period. This is in contrast to the Reported Rate trend, which is much flatter. Nevertheless, the Adjusted Rate trend does not reach statistical significance (correlation coefficient 0.20, $p = 0.37$).

Based on the downward trend after 3Q00, we can speculate that in 2000 the efforts of the USMC Safety Campaign Plan increased safety awareness. However, because these initiatives did not impact the deeper culture, it is likely that the significant events of 9/11 accelerated the end of their effectiveness, resulting in the increases seen in early 2002.



Note also the dramatic dip in fatalities during 2Q FY03 (only 4 fatalities). This doubtless reflects the special circumstances surrounding deployment including such things as cancelled leave and liberty. These things reduced the number of Marines driving PMVs during this period and therefore their exposure. If this quarter is dropped as an outlier, the trend approaches statistical significance (the correlation coefficient increases to 0.36 and $p = 0.12$). Looking at only the most recent quarters beginning with 1Q01, the trend again approaches statistical significance (correlation coefficient 0.56, $p = 0.06$).

Thus, based on this more accurate assessment of exposure, USMC performance further validated as an appropriate area of focus for the USMC. The point here in not about the trend itself but about the fact that without better data, we don't really know what's happening.

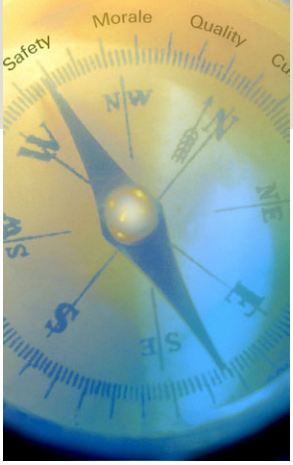
This inability to adequately normalize the data is exacerbated by the fact that combat deployments do not take place uniformly across the population. We assume that younger Marines deploy at a higher rate than the general USMC population and there is lack of symmetry between individuals with a different MOS. If these assumptions are correct, their implication is particularly important when developing management actions designed to target specific audiences.

- ***The concern expressed by some USMC leaders that they are not getting accurate data with which to manage USMC safety challenges appears to be valid. In fact, to the extent management decisions are being made based the information currently available, the Marine Corps is responding to both random variation and special cause.***

Safety Audits

Due to the lack of analytical data, audits, special studies and anecdotal information have become the main source of assessing system performance in the USMC. Even so, they are limited by the paucity of accurate safety data available.

- ***Audits should be used primarily to validate the fidelity of system measurements and expand performance analyses where necessary. Unfortunately, the aforementioned limitations of current safety measurements render this validation approach unworkable at this time.***



Leadership

Summary of Findings

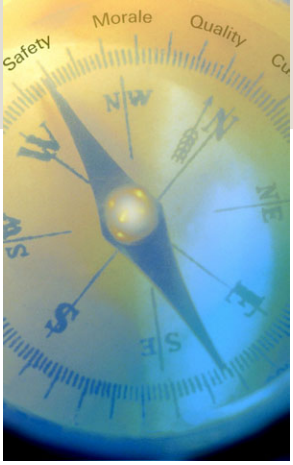
- USMC has outstanding leadership capability but this capability is not yet effectively directed at safety. CMC (SD) and senior-most leadership have established the Executive Safety Board (ESB); this represents a tremendous move forward. The ESB provides the potential for resources and focus at the right level to be able to successfully spearhead effective safety improvement throughout USMC culture, systems and behavior.
- Leadership should undertake a systematic approach to safety culture development. This needs to start by getting leadership aligned about the role and value of safety performance to the USMC. Senior leaders need to think through the relation between safety and USMC values and mission and clarify their expectations in terms of concrete leadership practices and behaviors.
- Leadership should also undertake a systematic overhaul of USMC safety systems. This should start by evaluating the recommendation of this report for safety system improvement. A critical step will be to establish visible safety accountability. Even the mere perception of going through the motions, failing to model critical leadership practices, unjust application of standards and policy, or poor safety decision-making should not be tolerated.
- Safety is an area that can be leveraged to provide real and meaningful opportunities for young Marines to develop and demonstrate leadership. This should be systematically exploited by providing them opportunities for engagement in this area and recognizing performance.

Outstanding Leadership

As mentioned earlier, the OFS results show that USMC leadership is outstanding. This very strong finding bodes well for the Marine Corp's ability to achieve its safety objectives.

The interviews revealed another powerful positive leadership finding. Specifically, most interviewees believed the issue of Marine safety could be successfully addressed without harming the combat ethos on which the Marine Corps is so dependent. The view that mishaps and injuries are merely a cost of doing business was seldom expressed though when it was, it came from more senior elements of the Marine Corps. Fortunately, the Commandant and several of his key staff members are convinced these mishaps are not inevitable and leaders at all levels would welcome answers about what to do to prevent them.

Some leaders said they would be willing to participate on an intervention design team and others would be willing to evaluate a proposed intervention for unanticipated consequences. Still others would be willing to pilot it. Only a few wanted to avoid the issue entirely.



Exceptions and Opportunities

Although extremely strong, Marine leadership has room for improvement, and areas of actual or perceived weakness represent opportunities to improve performance.

Alignment

Everyone at all levels believes safety is a good thing. Not everyone believes it can be achieved without disturbing the combat ethos. This concern is much stronger at the top of the leadership structure than it is below. It is practically non-existent at the SNCO level and below.

The message that safety is being emphasized has permeated the organization. Everyone is aware of the issue. Not everyone agrees that it's a good idea. Some feel it does not warrant the time and energy being spent on it. This appears to be result of four interrelated factors:

- Leaders' frustration about difficulty getting results
- Pushback from Junior Marines against some things done in the name of safety
- A lack of understanding about the reasons to demand high safety performance
- A lack of clarity about how safety relates to the USMC values and mission
  - ***Clarification and alignment around the role of safety in the Marine Corps and these attendant issues, provide leadership with an opportunity to have a significant positive impact.***

Accountability

As mentioned in the culture and system sections, there is not visible, clear accountability in safety.

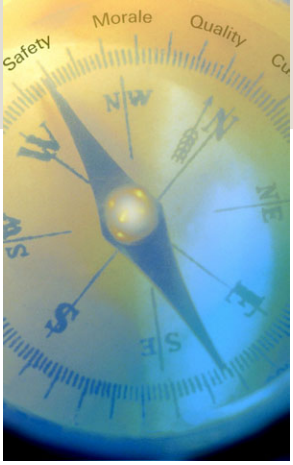
- ***Establishing visible safety accountability is an important leadership opportunity.***

Poor leadership examples

Junior officers say that some "salty" senior leaders set a poor example and either don't know or care that their behavior is visible to and impacts Junior Marines. Poor behavior on the part of these leaders disillusions Junior Marines about the supposed high standards of conduct expected of Marines.

A particularly damaging way this manifests itself is when a more senior Marine does safety "to create a paper trail for CYA purposes" rather than because safety is important. Many low-level Marines had the perception that this is not an uncommon occurrence.

- ***Only meaningful safety activities should be required. Going through the motions should not be tolerated.***



Related to this, Marines are said to leave boot camp imbued with Marine values and eager to demonstrate that they too are great Marines. However many of them grow disillusioned as they see how the "real world" of the USMC works and that there is less opportunity to live the USMC values than they had thought.

- ***Safety is an area perfectly suited to providing real and meaningful opportunities for young Marines to live their ideals and demonstrate their leadership.***
- ***This is an opportunity that we should capitalize on in designing interventions.***

Double standards

Among low-level Marines and some Marine safety people there is the perception that when it comes to safety discipline exceptions are sometimes made for rank.

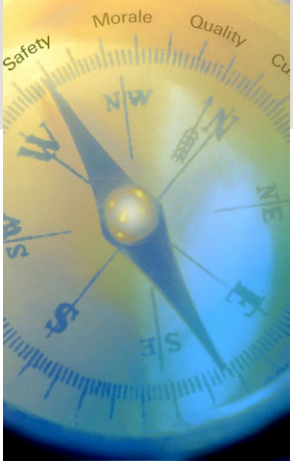
To the extent that this perception is pervasive, it impacts a Junior Marine's judgement about USMC's procedural justice and low procedural justice predicts poor performance.

- ***Obviously, disciplinary matters should not be transparent or public, but actions need to be taken to make it clear that there is only one standard and that it is applied even-handedly.***

Undermining NCO status

Junior officers express the view that prior leadership decisions at headquarters have undermined NCO status and ability to influence Junior Marines. This was done, they say, by minimizing the separation of ranks, decreasing the perks of the NCOs, instituting a feel-good value system, promoting too fast and decreasing the leadership training of NCOs.

This is said to negatively impact safety because everyone agrees that the NCO is the key mentor to Junior Marines.



Chapter 4: RATIONALE FOR RECOMMENDATIONS

In chapter 2 we discussed the model of high-performing organizations that underlies this assessment. We said that the four elements of the model—behavior, culture, systems and leadership—work together; they interact as a system to determine the level of an organization's performance.

In this chapter we will discuss these relationships in more detail to establish the rationale for the recommendations we make in the next chapter. This rationale is based on behavioral science and organizational development research and on our own experience of more than 20 years working successfully to help organizations improve their safety performance.

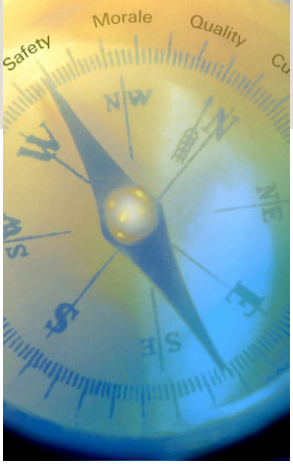
The USMC Culture

When individuals live and work within an organization with a strong culture, it puts its stamp on them. The culture of the United States Marine Corps is very strong indeed. It distinguishes those who are successfully able to become Marines.

Culture's function

- Culture guides individual behavior. At a deep level, culture consists of the unwritten rules of conduct, the implicit, unspoken standards that exist in an organization. It tells people how to act in the gray areas where there are no explicit rules. Actually, it is often stronger than the explicit rules and may tell people to act contrary to the rules. For example, the rules may prohibit drinking and driving but the culture may condone it. The individual will often listen to the culture rather than the rule.
- Culture facilitates communication. By establishing a common ground of assumptions, culture lays the groundwork I need in order to understand you. It tells me where you're coming from. This can make it hard for new approaches to take root because they may be misunderstood in terms of the old. People will say, *We've already tried that and it didn't work.*
- Culture moderates change. Culture is deeply conservative. The culture we have today is a historical phenomenon, derived on the basis of what worked in the past. Because it is based on what worked, it is self-sustaining and resists change. This is why you cannot change culture simply by mandating a new policy or procedure.

Culture is "How we do things around here." Culture primarily addresses the question of How? Each of the branches of the service trains recruits, but how they do that varies. The differences reflect some of the cultural differences between the services. The USMC culture consists of how Marines get things done. As such, it manifests itself in the behavior of individual Marines.



- ***It is counter-cultural, somewhat contradictory and counter-productive for the Marine Corps to expect Marines to value safety off-duty more than the culture values safety on duty. Thus, as a decisive early step in taking more effective control of mishaps, the Marines must strengthen the role of safety within the USMC culture.***

The Leader's Role

Changing culture is an organizational development task. As such, leadership plays a crucial role in many ways:

- Establishing the need for the change and its level of urgency
- Articulating a very clear and unambiguous vision of what the desired state looks like
- Clarifying expectations for what will be different for each level within the organization
- Approving the organizational structure and system changes needed to support the new culture
- Resourcing the changes entailed
- Establishing mechanisms to drive the change and metrics with which to evaluate the progress of the change and whether it is having the anticipated impacts
  - ***Significant organizational change cannot be successfully implemented and definitely will not be sustained without leadership involvement and oversight. These are not functions that can be effectively delegated to lower levels in the organization.***

The Role of Behavior

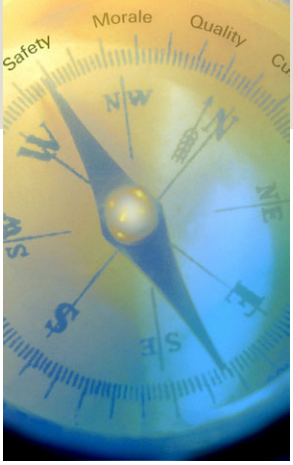
Nevertheless, although necessary, leadership is not sufficient. Ultimately, success in safety rests on the willing behavior of people all the way down the organization. This is because whether an accident happens is usually the result of the behavior of individuals at the very lowest levels.

This means that interventions need to be grounded in the behavioral sciences, which tell us what makes people willing to accept behavioral change.

Why people behave the way they do

Behavioral analysis is a model of the factors controlling behavior that is derived and validated by years of research in every imaginable environment. It is deceptively simple but very powerful when it comes to understanding why an individual chooses to act in unsafe ways. Thus, it is a powerful guide to designing effective interventions.

Behavioral analysis says that all you need to do to understand a person's behavior is to identify the antecedents that set the stage for and trigger the behavior and the consequences that reinforce it. In the example below, the telephone's ring is an antecedent that triggers the behavior of answering the phone (Figure 6).



Antecedents
Telephone rings

Behavior
Answer the phone

Consequences
Talk to the caller

What Controls Behavior?

Figure 6

Without the ringing, we don't answer the phone. You would take it as a sure sign that something were wrong with a person who answered phones that didn't ring!

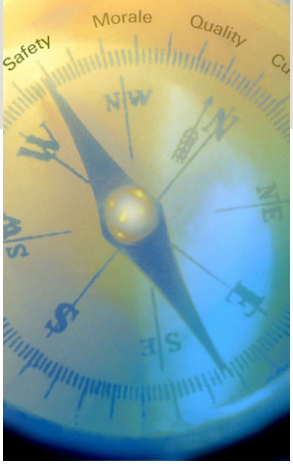
Nevertheless, the antecedent is not really where the power lies. It is the consequence that really controls the behavior. Think about what happens when you answer the phone and it's not for you. Say, for example, you have teenage children. Despite the antecedent, you don't answer it. You can see this even more dramatically if you imagine that every time it rings, you get a dial tone. After a couple of times you stop answering it.

Why does it work like this? Because the antecedent only has power to trigger behavior to the extent it accurately predicts the consequence.

- *Consequences control behavior.*
- *To the extent people do things in ways that are unsafe, they do them that way because the naturally occurring consequences are lined up in favor of doing them that way.*
- *To effectively manage safety-related behavior, one must take charge of the antecedents and consequences that trigger and control it.*

To do this we need to understand a little more about consequences.

There are different kinds of consequences and they have different implications for both behavior and culture.



Charge: Consequences that are negative from the point of view of the person performing the behavior are very effective at stopping the behavior. They have little power to form new behavior however. For that, positive consequences are required.

Predictability: Consequences that are certain to happen are more powerful than those that are uncertain, at least during initial learning.

Timing: Consequences that occur soon after the behavior are more powerful than those that are delayed until later.

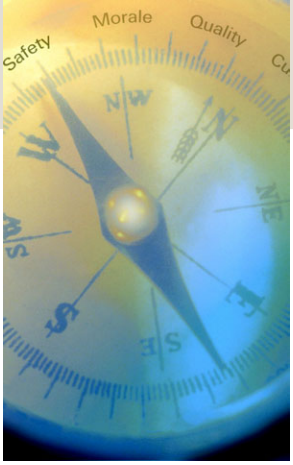
Consequences and culture

High performing organizations are consequence rich, but they are not rich in just any kind of consequence. They are rich in accurate, relevant and fair consequences because these are the qualities of consequences that incline a person to accept them as consequences.

- Accuracy: If you are given recognition for something you didn't really do, it does not reinforce the behavior. On the other hand, it may have the unintended consequence of reinforcing deceit; e.g., receiving a safety award when one didn't really perform safely but did fail to report mishaps. Consequences need to be administered on the basis of real and accurate data.
- Relevance: If I am given feedback on a behavior that I don't care about, the feedback will be, at best, irrelevant. If given repeatedly, it will be irritating. For example, if I don't believe that wearing a burn apron when welding makes sense, I won't be open to feedback on how good I am at wearing it. This means that it is necessary to obtain the involvement and buy-in of those whose behaviors are being changed.
- Fairness: The consequence must represent a fair and even-handed evaluation of performance. For example, I will not respond favorably to a consequence administered because I didn't wear my personal protective equipment when the person giving me the consequence doesn't wear his or often overlooks the violation.

The effect of relying heavily on negative, inaccurate, irrelevant or unfair consequences is that it creates a culture of fear and injustice. People then hold their cards close to their chests, decrease their willingness to communicate and in the worst case become covertly oppositional. The culture becomes rigid and uncooperative.

The cultural effect of relying heavily on positive, inaccurate, irrelevant or unfair consequences is that it creates a culture of unrealistic expectations, a false sense of entitlement, and jealousy and resentment of those seen as favorites. It too is uncooperative when demands for improvement are made because improvement threatens entitlement.



How is accuracy achieved?

- ***Specifically, with regard to safety performance, because most people most often do the safe thing, the overwhelming weight of the consequences needs to be soon, certain and positive and they need to be accurate, relevant and fair. Unfortunately, currently in the Marine Corps there is little recognition for safe behavior and no systematic approach to doing so.***

Where do antecedents and consequences come from?

To improve the situation, we need to actively manage the antecedents and consequences of safety-critical behavior. We said earlier that behavior, culture, systems and leadership are a system. The thing that ties these four elements together and makes them a system is antecedents and consequences.

Culture provides an external guide to behavior precisely because it supplies antecedents and consequences. As a person learns to be a Marine, he is internalizing these behavioral standards. If he steps out of line, the Marine culture lets him know it, and because these standards become internalized, so does his own conscience. If he lives up to the standards, he is accepted as a fellow Marine and he is rewarded from the internalized standards by a sense of pride.

- ***Culture gets its power by supplying a rich context of, usually unspoken but exceptionally powerful, antecedents and consequences.***

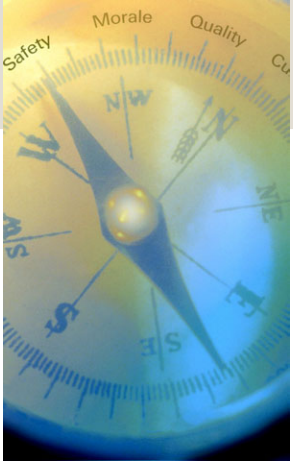
Organizational systems also provide antecedents and consequences. In this case they are usually more explicit. For example, the system tells a Marine what is required for promotion. If he behaves in those ways, the consequence is advancement. Systems can be less overt as well. For example, if a system is inefficient or ineffective its very use punishes the person who has to use it.

Leadership impacts both culture and systems by the directions and standards it reinforces, the systems it underwrites and the recognition and sanctions it provides. By impacting USMC culture and systems, leadership impacts the antecedents and consequences the Marine experiences.

The two-way relation between behavior and culture

The way I learn to fit into a new culture is by watching how things are done around here. This tells me what goes and doesn't go, what is acceptable behavior and what is not. Doing this gives me the "real-world scoop" as opposed to the official line. I don't even have to watch consciously. In boot camp I learn one thing. At my first assignment I may learn something else and never even notice the conflict.

The fact that I absorb culture reveals the powerful role behavior plays in transmitting culture. This makes sense if culture is how we do things. Do means behavior.



This tells us what we must do to build a strong safety culture:

- ***To build culture, focus on the behaviors that reflect the culture you intend to build because the more these behaviors are performed, the more they will become the cultural norm.***
- ***Doing this requires creating a positive and cooperative atmosphere that is rich in the consequences that trigger and reinforce the desired behaviors.***
- ***It also requires identifying and eliminating or minimizing the impact of the antecedents and consequences that trigger and reinforce undesirable behaviors.***

The theory and the recommendations

The recommendations that follow are based on the principles we have discussed here. They are designed specifically to tightly integrate safety into what is important in the day-to-day life of Marines. These recommendations address system barriers that both send the wrong message about the importance of safety and provide consequences against behaving safely. Finally, they provide specific behavior-focused mechanisms at the lowest levels to create ongoing opportunities be recognized for safety leadership by becoming engaged in a process of identifying and reinforcing safe behavior. These mechanisms all involve five steps, though the steps look different in different applications. These five steps constitute a systematic approach to developing buy-in and providing soon, certain and positive reinforcement for safe behavior. They are:

- Identify and define the critical few safe behaviors
- Measure the percent of time these critical behaviors are done safely
- Use this information as feedback (a powerful consequence) to drive improvement
- Use it to point to system and cultural barriers to safety performance
- Remove these barriers

We have found that rather than simply telling clients what they should do to improve their safety performance, it is far more effective for us to work with them. This way we work together through a process of discovering the best ways to adapt the recommendations to their organization's unique needs. By walking them through critical steps, their implementation is not only more efficient and effective, but they learn to be self-supporting and gain skills needed to sustain success and apply the technology more broadly to other performance areas. Many of the recommendations we present in the next chapter are shaped with this in mind.

The results

We have used this behavior-based approach in more than 1,600 organizations in six different languages. Figure 7 below illustrates the kinds of results that can be expected.

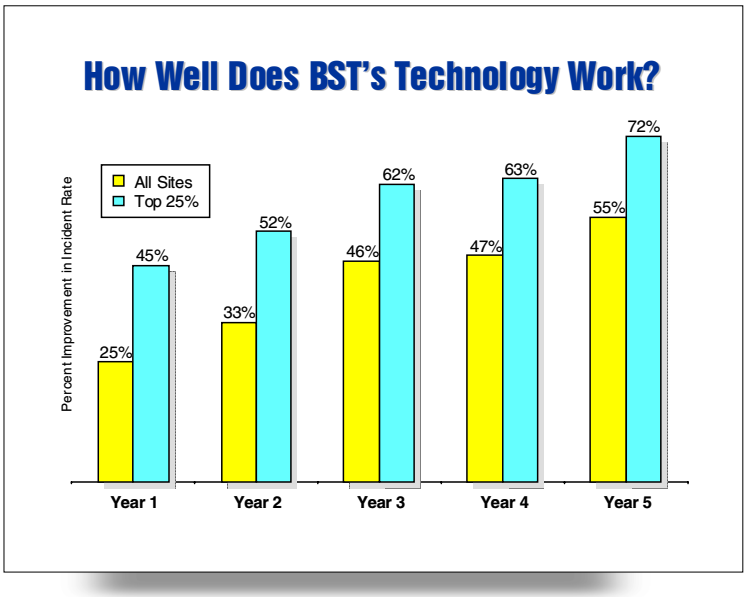
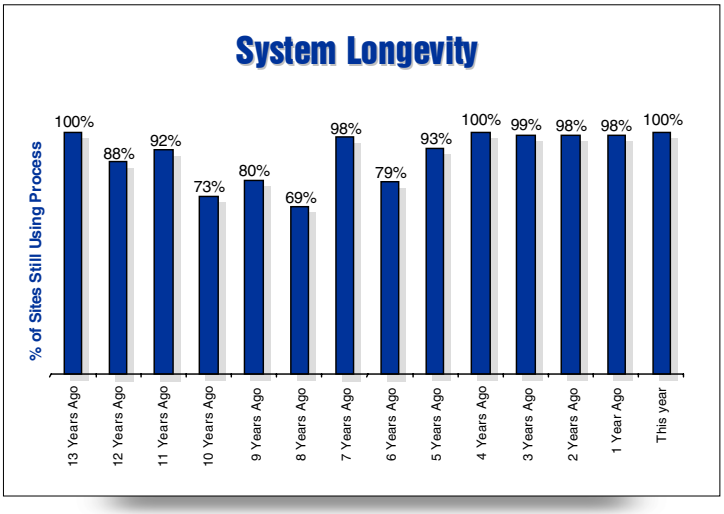
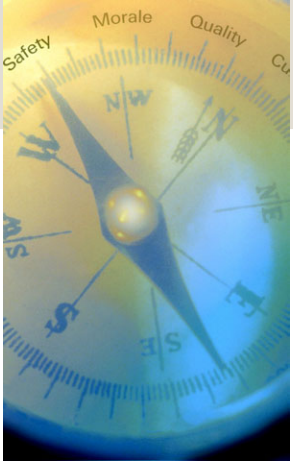


Figure 7

These results are very sustainable because they deal with the fundamental drivers of organizational safety performance. Figure 8 shows data that bears on this point.

Figure 8





Chapter 5: RECOMMENDATIONS

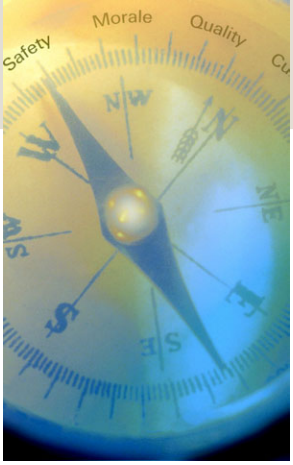
The recommendations below are based on the model of organizational functioning that we have used throughout this assessment and on the principles derived in the last chapter. They start with the recognition of leadership's key role in organizational development and functioning.

The first set of recommendations, those that the senior-most leaders will take on themselves, targets the safety culture. It is critical that the culture be substantially improved because without higher status and a more integrated role for safety in the Marine Corps, improvement efforts are bound to be only partially successful at best. If safety is not a real value and an integral part of Marine life on base, how can the USMC expect it to be off-duty? Changing the culture is most effectively accomplished by leveraging the USMC's existing leadership strengths through the application of behavioral leadership tools.

Secondly we recommend use of behavior-based approaches to reduce exposure, thereby reducing injuries. As described earlier in this report, behavioral approaches are an effective way to get to the next level of performance.

Simultaneously, we recommend interventions that will improve safety systems. Safety system improvement is crucial because the functionality of the safety system is a reflection of safety's place in the USMC and good, fact-based safety decision-making cannot occur without systems to supply the facts. Unless safety systems are staffed and aligned to USMC safety objectives, there will not be the resources to carry out leadership's decisions and improvements will not be sustained. Strong systems will also support the desired safe behaviors.

In other words, we recommend starting with leadership and focusing explicitly on culture, systems and critical behaviors to support desired behavioral changes in a drive toward the final objective of fewer accidents, both on and off-duty.



1.0 Integrate safety into USMC Values, Mission and Systems

1.1 USMC Leadership -
Develop and Deploy Safety Vision aligned with USMC Values, Mission and Systems:

- The Commandant, and his key staff, as facilitated by BST, will reaffirm and elaborate the USMC Safety Vision in proper alignment with USMC core values - Honor, Courage and Commitment.
- A Safety Culture and Implementation Steering Team, under the aegis of the Executive Safety Board (ESB), will be appointed along with two subordinate teams:
  - Safety Systems Design and Implementation Team
  - Behavioral Safety Design and Implementation Team

  These three teams will be constituted and chartered as described below.

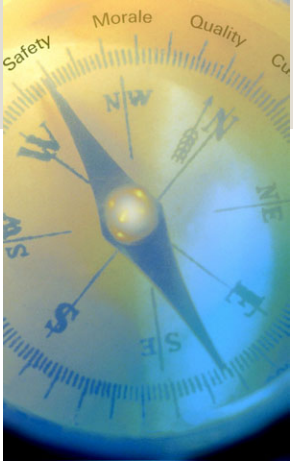
Safety Culture Implementation Steering Team

This team is responsible for making the USMC's safety vision a reality. Its task is to resource, communicate, implement and nurture the deployment of the USMC safety culture by guiding the efforts of both the Safety Systems Design and Implementation Team and the Behavioral Safety Design and Implementation Team. (The function and composition of these two teams is discussed in paragraphs 2.0 and 3.0 below.)

Team Membership: Assistant Commandant, Deputy Commandant for Programs and Resources; Leader, Safety Systems Design and Implementation Team; Leader, Behavioral Safety Design and Implementation Team; Sergeant Major of the Marine Corps; Safety representative; BST facilitator and other resources as required.

Functions: This team's efforts will include, but not be limited to, the following specific issues:

- Chartering and overseeing the work of the other two teams and determining the…
  - Desirability of setting in motion some or all of BST's recommendations for Behavioral Safety Interventions. (See recommendation in 2.0 below).
  - Desirability of setting in motion a process to create a coherent USMC safety system by implementing some or all of BST's recommendations for system improvement. (See recommendation in 3.0 below).
- Determining how much of this report to share with the troops and how best to do that
- Devising the internal USMC communication and deployment plans for this overall effort
- Making decisions about specific culture-related issues and on what these decisions mean in terms of the leadership practices and behaviors required from Marine Corps Leaders. Among the specific issues that this team should consider are:
  - Whether one is a Marine 24/7 and, if so, what that looks like in practice
  - Whether there is to be transparency in communications about accident statistics



- The perceived double standard for mishap reporting and discipline and how to reconcile it
- Whether or in what ways there is to be Commander's discretion about implementing safety policy
- How should sub-par performance be dealt with?
- What is to be the response when a Marine does the right thing for safety but this results in disclosure of some other problem; e.g., uses the Arrive Alive program? More generally, what should be the relationship between two seemingly contradictory small group leader SNCO/NCO roles: Safety disciplinarian vs. Caring safety coach and mentor?
- In what ways should the USMC formally and informally recognize exemplary safety performance?
- What principles should guide the decision between needful and needless risk?

Expected Benefits and Impacts

Culture: Clarification of expectations regarding USMC values and mission in practical behavioral terms; elimination or reduction of significant barriers to safety that exist in the current USMC culture.

Behavior: Elevation of status of safety-critical behaviors through alignment to larger USMC objectives; institution of a mechanism to install behavior-based special applications for the various environments in which Marines function, both on and off-duty.

Systems: Institution of a mechanism to drive selected system changes.

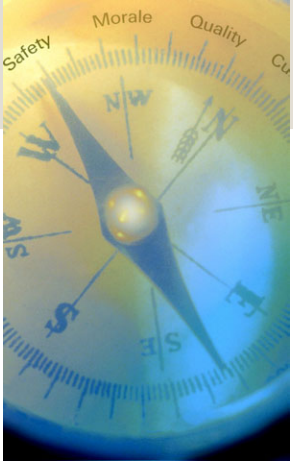
2.0 Behavioral Safety Design and Implementation Team

This team is responsible to design and oversee the implementation of specific applications of behavioral safety tools for the various on- and off-base environments in which Marines operate as described below.

Team Membership: General Officer; Field Grade Officer; Company Grade Officer; NCO; Drill Sergeant (current or former); Junior Marine; Safety Representative; Technical Expert(s) (as required), BST facilitator and other resources as required.

2.1 Managing Safety-Critical Behaviors On Base

Behavior is critical to safety performance. Fortunately, it is measurable and manageable. In any task there is a small set of behaviors that are critical to the safe performance of that task. And across many tasks, generic critical behaviors can be identified. Safety performance is a function of the percentage of the time these critical behaviors are performed safety. For the USMC to be effective in improving its safety performance, it must improve its percent safe behavior. To do this, these critical behaviors these need to be…



- Identified by the Marines who perform the tasks
- Periodically measured to provide a proactive measure of safety performance, % Safe behavior
- Percent safe behavior data used as performance feedback to guide and reinforce improvement behavior
- Barriers to safe performance need to be identified and removed. Many such barriers have been identified in the culture and systems sections of this report, but as Marines work to perform identified critical behaviors safely, more barriers will come to light.

With the active support of leaders, this process needs to be undertaken by the lowest stable level within the USMC and involve the small group leaders, NCOs and SNCOs. It must also provide opportunities for the most Junior Marines to develop, demonstrate and be recognized for their safety leadership capability. It must be implemented in such a way as to promote acceptance and buy-in by Junior Marines. Overall, this process provides positive recognition and reinforcement for doing the right thing.

Developing and installing this process will be undertaken by a selected group of USMC trainers who have in turn been trained, supported and licensed by BST to sustain the behavioral based safety approach in concert with more traditional safety practices.

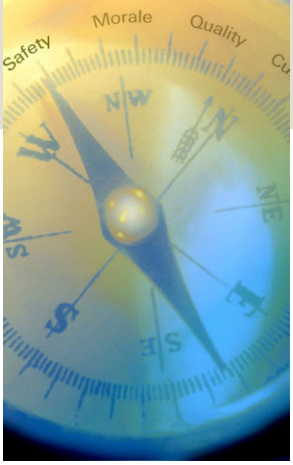
Expected Benefits and Impacts

Leadership: The data generated by measuring the % safe performance of critical behaviors will provide the local leaders upstream indicators of their level of exposure and will enable them to act proactively to prevent injuries.

Culture: Observation and positive feedback provides success experience at doing the right thing. This builds a positive experience base for safety and provides an opportunity for the small group leader, SNCO and NCO to build the kind of relationships that foster safe behavior off-duty. Making safety an important lived value in the day-to-day work life of the Marines creates the safety culture that justifies and legitimizes the expectation that off-duty safety is important to being a Marine 24/7.

Behavior: Feedback helps to increase hazard recognition skills and performance levels of safety-critical behaviors.

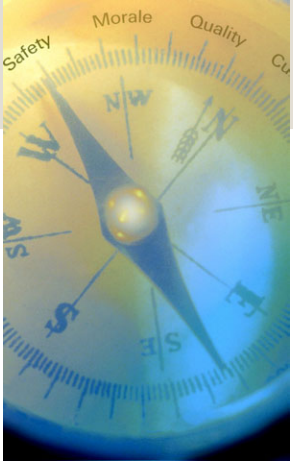
System: Requires the creation of a new safety system. Leader support is required for success and USMC implementers will need to be trained.



2.2 Managing Off-Base Safety: PMV Safety

This intervention process will involve several elements, some of which will proceed naturally as an outgrowth and extension of 2.1. It uses the same behavioral methodology as outlined in 2.1 but in a different configuration:

- **Screening**:
  - **JCP**: Accept no recruits on waiver of drugs or serious vehicle violation unless they qualify on JCP testing. (JCP is a computer-based test that identifies individuals with a high likelihood of mishap.)
  - **Web-based Software**: Small Group leaders will use the CNA-developed web-based software, which was built off of the USMC database, or software similar to the system currently being used by the US Army, to identify at-risk Marines. Those identified as "high risk" will be given special assistance including risk assessment/trip planning counseling, leave telephone monitoring and mandatory, random use of black-box monitoring of their PMVs. (The team will require JAG input here). The special assistance programs will be designed to be consistent with positive behavior-based improvement principles.
- **Identify and Gain Buy-In to Critical Behaviors**
  - **Automobile Combat Range Training**: Critical PMV behaviors are learned and skills are developed and honed. This training will also make the practical connections between PMV safety and USMC values and mission as articulated by USMC senior-most leaders. It will promote the theme, Be the Marine you signed up to be! It will involve instructor-led video simulation training and hands-on, in-the-field work to experientially demonstrate the negative impact of fatigue and intoxication on driving ability. This training will be provided at MCT or SOI before permanent unit assignment.
  - Motorcycle Combat Range Training: Automobile Combat Range Training SLOs (Safety Learning Objectives) are reviewed and motorcycle critical safety behaviors taught. This training will be available at permanent assignment with no waiting. It will be followed up by a period of mandatory behavioral observation, feedback and coaching by the base motorcycle club. Club members will receive observation and feedback training to assure their effectiveness.
- **Monitoring and Feedback Mechanisms:** Expansion of the process described in 2.1 above to the off-base environment through the use of self-monitoring and feedback skills development, enlisting relatives and friends in Buddy Care observations and feedback. HARP follow-up will be practiced by concerned group leaders, NCOs and SNCOs and this will be integrated with a Junior Marine-developed call-in program that provides the opportunity for recognition and positive feedback. Nominal payments will be made to Marines whose leave or liberty requires long drives and who voluntarily agree to install black boxes and receive feedback on the read out.



- **Remove Barriers:** Time liberty and holiday 72 and 96 schedules to discourage late afternoon departures (which leads to insufficient rest) and arrange expiration of leave and liberty to allow Marines to make muster after driving in daylight, sober and rested. Several bases, (e.g., Camp Lejeune) have large populations and challenging driving conditions to get on and off base. Stagger the departure and return times of large working units to control traffic volume and reduce traffic jams, frustration and road rage.

Expected Benefits and Impacts

Leadership: This intervention provides leaders with a natural opportunity to build the kind of relationship with their troops that fosters safe behavior.

Culture: Extends the safety values of the new USMC culture into off-duty time and increases the tangible opportunities to be recognized for living by these values while off-duty.

Behavior: Improved PMV hazard recognition skills and performance levels on safety-critical behaviors.

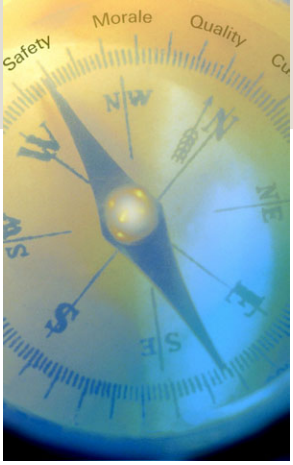
System: Requires the creation of a new safety system. Leader support is required for success and USMC implementers will need to be trained.

2.3 Marine Corps Logistics Command Maintenance Center

This intervention provides an immediate realization of the behavior-based approach to safety improvement in USMC industrial facilities.

- Maintenance Centers appear to have an established safety organization
- The Centers value safety
- The Centers have continuous programs in place
- Mishaps continue to occur creating lost time and workers' compensation costs
- Mishaps are investigated and recorded
- Employees are accustomed to observation by supervisors
- A checklist of safety-critical behaviors can be developed by lowest-level employees
- This checklist can form the basis for peer-based involvement in safety observations

Leadership: Marine Corps Leaders can demonstrate an immediate success for their expanded safety approach. Behavior-based safety addition to a Maintenance Center also meets a DSOC objective, and based on the results from extensive deployments in similar industrial settings, will allow the USMC to achieve significant cost-reductions. Over the past 5-years, the USMC has expended $99.8 million on Workers' Compensation losses. Conservatively anticipating a 60 % performance improvement in this area over a similar period, the USMC will save $60 million in the Workers' Compensation area alone.



Culture: This application improves the already positive safety culture.

Behavior: This establishes a system to monitor and reinforce the use of safe behaviors in a Marine Corps industrial setting.

Systems: This approach expands the effective continuous improvement systems that are in place. This expansion uses a system that has proven successful in industries worldwide.

3.0 Safety Systems Design and Implementation Team

This team's job is to design and oversee the implementation of selected safety system changes cited below and others as may be directed by the Safety Culture Implementation Steering Team.

Team Membership: General Officer; Field Grade Officer; Company Grade Officer; NCO; Drill Sergeant (current or former) Junior Marine, Safety Representative; Technical Expert(s) (as required), BST facilitator and other resources as required.

BST works with the Safety Systems team to design and implements some or all of the following recommendations:

3.1 Competency-based Safety Learning Objectives (SLOs)

TECOM and BST add a SLO to the current two learning objectives for all TMI. These will include safety discussion topics on the safety issues relevant to the training topic. These specific safety learning objectives must be framed and competencies tested for in behavioral terms. The new skills needed to deliver on the SLOs will be incorporated into instructor training.

Expected Benefits and Impacts

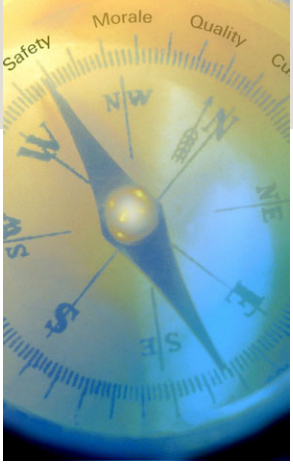
Systems: Revised approach to training; behavioral skills for instructors.

Culture: Increased visibility and importance of safety.

Behavior: Increased awareness of critical safety behaviors for each job; increased hazard recognition skills.

3.2 Make explicit and share risk management thought processes with recruits using behavioral principles

DIs will use existing training events to brief, debrief and discuss with recruits the safety thought processes that are critical to the successful completion of the event. Successful means mission completion without injury. BST will assist the USMC in designing DI skills training for leading these discussions, briefs and debriefs so that they apply behavioral principles in providing effective consequences to reinforce the recruits' development of a safety mind-set appropriate to the mission. TECOM and BST will also devise a training event for DIs and other instructors on how to train, monitor and reinforce appropriate thought processes and behaviors that support USMC values and mission.



Expected Benefits and Impacts

Systems: Revised approach to how recruit training is conducted without significant modification of its content or time requirement.

Culture: Increased visibility and importance of safety.

Behavior: Increased awareness of critical safety behaviors and increased hazard recognition skills and risk management thought processes.

3.3 Establish a Safety Requirement for Career Advancement

Currently, though no formal enlisted safety billets exist for the USMC, personnel are assigned these duties outside of their primary MOS at various organizational levels. This results in significant performance variability and lack of continuity. It contributes to the perception of diminished promotion opportunity when competing with personnel assigned duties within their primary MOS. It sends an unintended negative signal in terms of safety's lack of priority within the Marine Corps.

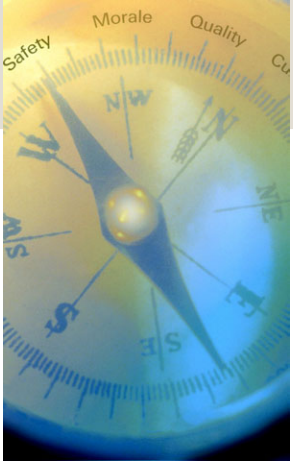
This needs to be remedied by requiring significant behavioral safety training, experience and performance as a condition of advancement or accelerated advancement. The first step in this training would be the material covered in recommendation 3.4 below but throughout a person's career there must be touchstone events in which they participate or lead to demonstrate their safety leadership ability. Recommendation 3.5 is such an event.

Expected Benefits and Impacts

Leadership: Defines safety leadership as critical to Marine leadership. Such assignments will instill a safety mind-set in leaders who rotate through these kinds of assignments if they are understood to be career enhancers and make them better equipped to lead safety as they advance in their careers.

Systems: This requires the creation of a new set of advancement criteria and training for advancement board participants. Opportunities to meet these criteria need to be created and documented (see recommendations 3.4, 3.5, and 3.6 below).

Culture: Having young, fast-track leaders rotate through significant safety assignments is a common practice among world-class safety performers. This kind of intervention sends a strong message about the place of safety in the USMC.



3.4 Behavioral Safety Leadership Training

TECOM, HQMC SD and BST develop an MCI course on behavioral safety leadership that is mandatory for promotion to corporal and a more advanced course as a requirement for promotion to Staff Sergeant. This training will focus on…

- How to build and support the kind of relationship with reports that fosters high performance
- How to use behavioral science tools to build and support a local behavioral safety process among reports
- How to foster self-monitoring behaviors for safety
- How to foster upward communication

In addition, safety discussion topics on the safety issues and behaviors relevant to that training need to be integrated into all formal leadership schools. (See 3.1 above.)

Expected Benefits and Impacts

Systems: New training event required for promotion. New material in all formal leadership training.

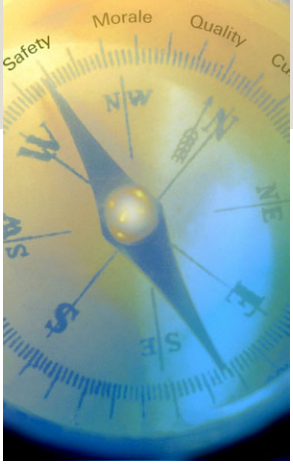
Culture: Increased visibility and importance of safety and clarifies its relation to leadership.

Behavior: Increased awareness by leader of safety issues and critical safety behaviors as well as increased behavioral performance management skills.

3.5 Primary Safety MOS Position

A primary safety MOS will be created for operational positions that will report to the Battalion Commander and provide him a full-time, committed safety resource that deploys with the troops. We envision this as a position that is often in the field and integrally involved in both planning and getting things done, not hidden away in a closet doing paperwork. This position will be a touchstone for advancement in the USMC, just as are the DI and Recruiter positions now. Proper selection and training will be critical for success in this position: People who fill this MOS must have sufficient stature to interact successfully with the Battalion commander as well as the credibility to command respect from lower-level troops. Serious consideration should be given to whether this should be an officer position. This position will have at least the following duties:

- Safety trainer and driving improvement instructor; conduct safety briefs at critical points
- Risk assessor/ORM technical expert/hazard tracking and resolution
- Technical safety advisor (advises training/operational planners, for example)
- Tactical safety and command safety educator; analyzes "After-action" reports; trains and applies risk management lessons learned
- Mishap investigation and reporting including OSHA reporting; Data analyst
- Leadership sponsor for behavioral safety processes implemented by lower levels (See para 2.0 above); application of behavioral analysis tools to remove barriers to safe behavior



- Provide an upward communications channel
- Liaises with other units and civil organizations to preclude mishaps

As an alternative, the USMC may wish to accomplish this manning with fulltime, deployable civilian authorizations, similar to the solution adopted by the US Army.

Expected Benefits and Impacts

Leadership: Battalion commander gets expert advice on policy based on accurate data, risk is put into proper combat perspective and a resource is created for organizational change. This resource's activities give the leader assurance that the command's people and equipment are in optimum working order for safe operations. Risk management is integrated into planning instead of added as an afterthought.

Systems: The new MOS will need to be created including appropriate selection criteria and training. We anticipate that this training will cover several things in addition to what's covered in the current training for the secondary MOS:

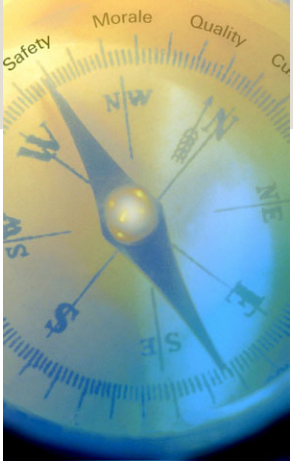
- Organizational change methods and skills
- Behavioral management and leadership
- Mishap investigation for four categories of root causes.

Culture: This intervention will blow apart the widespread conviction that work in safety is detrimental to one's career. This person will function in the Battalion as an organizational change agent who strongly impacts the safety culture. He also functions as a key resource in moving the organization from an essentially reactive mode to being successfully proactive.

Behavior: This person will establish a system to monitor and reinforce the use of behavioral tools by small group leader and others to increase the percent of the time critical behaviors are performed safely.

3.6 Include Safety as a Fitness Report Category

Safety performance criteria for each rank will be specified in behavioral terms and a category to rate performance will be added to the fitness report. For example, criteria for selection on the command list might include such things as establishing a meaningful safety plan and successful execution and adherence to it, even-handed enforcement of safety policy and discipline, assuring continuity at safety-rep change-over, prompt and thorough incident investigation and reporting, effective follow-up on safety action items, etc.



Expected Benefits and Impacts

Leadership: Puts teeth into the idea that safety leadership is part of Marine leadership and provides practical guidelines. Successfully implementing this change may require that the Commandant take steps necessary to foster meaningful and accurate compliance. It may also require that the Commandant communicate new expectations and guidelines regarding the safety responsibilities of each rank or position.

Systems: Criteria must be created and people trained on how to use them; selection board members must use these ratings appropriately and this may require some direction and auditing, at least initially.

Culture: This sends a very strong symbolic message about the importance of safety as well as providing consequences for performance.

Behavior: The consequence of having safety performance routinely evaluated against known criteria will help Marines perform to standard and reinforce them for doing so.

3.7 Refine Incident Investigation Process to Capture Root Causes

Incident investigation is one of the two critical sources of data that constitutes the foundation upon which a fact-based decision making process rests (the other being behavioral observations). An incident investigation process that penetrates to the culture, system, behavioral and leadership roots of incidents will be instituted. How extensively an incident will be investigated will depend on its severity and what it will yield in the way of information that can be used for prevention. Results of the investigation will be widely and promptly shared. Recommendations developed on the basis of these investigations will be tracked. This is to assure that they are acted upon in a timely manner and that they have the impacts that were anticipated. Mishap investigators will be utilized when appropriate. Accountability for investigation, reporting, communicating and follow-up will be defined.

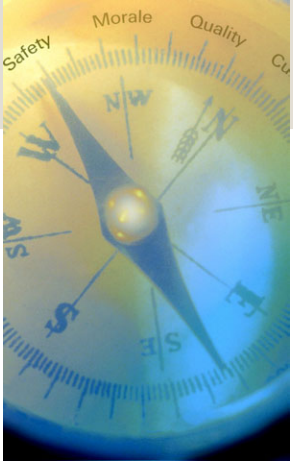
Expected Benefits and Impacts

Leadership: Leadership will have the data it needs for informed decision-making.

Systems: How to perform these kinds of investigations will need to be part of the training for the new primary safety MOS. Success of this recommendation is intimately tied to recommendation 3.9 below.

Culture: Visible and prompt investigation of incidents heightens the impact of findings and safety's visibility. When it is done in the proper spirit and involves troops at all relevant levels it becomes a vehicle for promoting and expressing concern for the health and safety of Marines and for training in hazard recognition.

Behavior: Proper incident investigation is an important tool for identification of safety-critical behaviors and it lends credibility with the troops to their importance to safety. Unsupervised, off-base decisions by young Marines become more responsible and PMV mishaps dissipate.



3.8 Implement a Real-Time, Web-Based Reporting System

We recommend a role-based data system distributed over the World Wide Web for reporting all safety incidents. Appropriate metrics will be determined and defined. The initial record should be able to be created in seconds with a minimum of data and training. Later, personnel required to complete critical data fields and/or implement hazard controls should be able to input data from other locations. Administrators and leaders should be able to review the data in real-time at either the case level or as a broader statistical analysis. A wide range of leading/lagging indicators should be captured using both preformatted and flexible, user-defined report products. Legacy data should be accessible to the extent that sound statistical conclusions can be derived. Accountability for data use, analysis and entry will be defined.

Expected Benefits and Impacts

Leadership: Leadership will have the data it needs for informed decision-making. Time-critical hazard abatement is system-driven versus personality-driven.

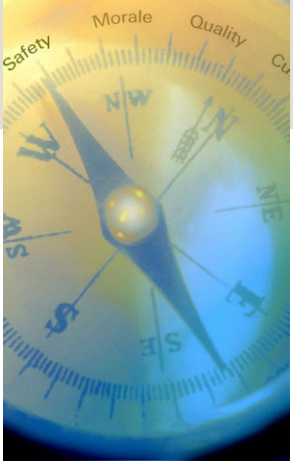
Systems: Requires the design and implementation of a new user-friendly and efficient data system and the availability of web-enabled computers for safety MOS personnel. Both Ex3 and BST will consult to the project team involved in this recommendation to ensure the system meets the needs of a high-functioning safety process. During some phases, this team should include system users to assure that it is user friendly and to serve as resources in promoting buy-in.

Culture: Better-informed resource decisions driven by readily available statistical trends boost morale; shared lessons learned and system-driven elimination of needless risk integrates safety with combat readiness.

Behavior: Ease of use increases reporting to real-world level (if leadership understands and reinforces it) to accurately gauge root causes of training, recreational and operational loss. Marines communicate better and understand the combat consequences to the unit of eliminating illegal/needless at-risk behaviors whether on or off-duty.

3.9 NSC and CMC (SD) Alignment

The USMC is the only service that does not have its own safety center. CMC (SD) was formed as a means to meet the compelling need of the Commandant and his staff to provide safety policy and oversight of USMC safety programs. The USMC needs the services of a safety center that is committed to its requirements and can serve as the institutional focal point for collection of relevant safety data, interpreting it, and designing appropriate programmatic responses. However, these necessary services are currently divided between the Naval Safety Center and CMC (SD) with little agreement being evident over which organization has responsibility for what. There are many potential solutions to this situation that entail various sensitive and resource allocation issues. Two of which are offered and have been variously considered in the past:



1. Appropriately resource CMC (SD) to serve as a Marine Corps Safety Center.

2. NSC could be conjoined with the USMC and USN with the expectation that each service would receive co-equal levels of service consistent with their needs. If this option is selected minimum requirements for success include the following:

- A recast and reinvigorated MOU
- NSC name that reflects Marine Corps as strongly as it does Navy
- Formal Fitness Report input by ACMC on Commander, NSC
- Rotation of Commander and Deputy commander positions between maritime services
- Review of organizational symbols to ensure both USN and USMC are represented appropriately.
- Other issues designed to allow the NSC to meet its obligations to the USMC and USN

Clearly the Marine Corps needs the committed services of safety center as the current situation does not meet the safety system imperatives of the USMC. It is a very complex issue. Nevertheless, taking the initiative to repair this misalignment by one of the above recommendations or a variant thereof is important for making significant improvements in the Marine Corps's safety performance.

Expected Benefits and Impacts

Leadership: USMC leadership will have ready access to required safety expertise. Clarity of expectations and responsibilities will increase effectiveness.

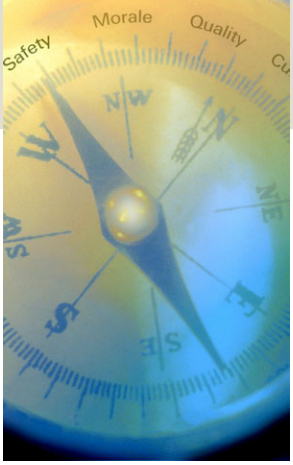
Systems: Essential for direction, management and sustainability of USMC safety processes.

3.10 Phase-out antecedant-based efforts

As with most organizations BST works with, many of the efforts that are being tried for safety improvement are primarily antecedent-based and some are negative. These endanger the goodwill that is necessary to deal effectively with the USMC safety issue. Such efforts should be systematically identified and discontinued. We have not named specific programs that should be stopped in this report because this is very situational. Some still have shelf life remaining and others first need replacement processes. What is accepted and working should be kept. What is not working or is creating more frustration than it has the potential to create benefit, should be discontinued.

This must be done with an explanation that the program's being discontinued is not an expression of the USMC's decreasing its focus on safety but of the recognition that a better, more comprehensive approach is needed and will be forthcoming.

Sharing some of the findings and recommendations of this report could be used beneficially in making this transition. The danger is the potential message, We are no longer stressing safety. Consequence-based, positive initiatives as described in 2.0 above should be implemented beforehand or simultaneously.



Expected Benefits and Impacts

Leadership: Increased leadership credibility and decreased time spent on under-productive activities.

Culture: Improved morale around the issue in preparation for the acceptance of some of the newer approaches outlined here.

4.0 Measures

There are three classes of metrics relevant to these interventions. One is useful for guiding the implementation of the intervention. The second is useful predictively. The last is for judging whether the intervention achieved its objectives. Sometimes the same measure can play more than one of these roles. Each of them has a place in building meaningful safety roles and accountabilities.

Guiding Measures

Guiding measures consist primarily of execution against plan. Thus, they require a well-developed plan. It will be the responsibility of the various Teams to work with BST to develop appropriate measures for each of the interventions they undertake.

The Organizational Functioning Survey scores also serve as guiding measures because they identify areas in the culture that interventions should target. Consequently, the OFS is also an outcome measure for these interventions. If they are successful, we should see increases in Safety Factor scores.

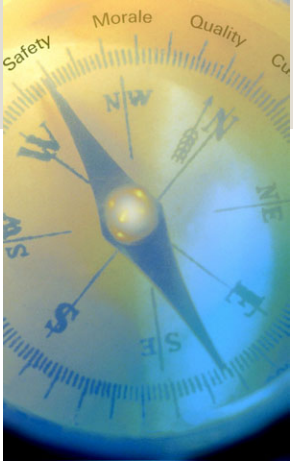
Thus, the OFS should be re-administered in about a year after culture-directed implementation efforts begin.

Predictive Measure

Because the culture predicts performance, the OFS scores are predictive measures of the final outcome, USMC safety performance.

Other predictive measures include the many measures associated with behavioral safety processes like:

- Percent safe performance
- Observations against target
- Barriers removed



Outcome Measures

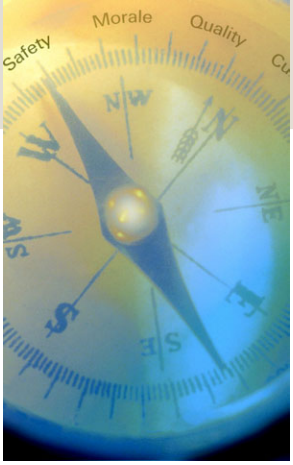
The final outcome measure is safety performance.

Unfortunately, at this time there are no good historical measures of this because of the many problems outlined in the findings of this report. As these problems are remedied, we would expect to see the number of Class B, C and D mishaps increase, as they become more visible. This will be all to the good because it will provide real information about safety performance. Over time, these numbers will decrease as the interventions take hold. However, as all the fatalities are captured by the current system, we would expect to see significant and relatively early reduction in this vital area-using the Adjusted Fatality Rate data.

As a more useful database is developed, civilian Worker Compensation costs and more accurate estimates of improved USMC readiness will also provide outcome measures of value.

Finally, immediate benefits are outcome measures. For example…

- Investigating root causes and improved reporting will provide more and better data to guide decisions. Measuring this formally or informally provides a sense of whether the intervention has achieved its objective. Are leaders more satisfied with the clarity, timeliness and utility of the information the system is providing? If so, the intervention was successful.
- The same thing goes for building safety competency into the leadership career path. If leaders that go through that process are performing better, the intervention has achieved its objective.



Chapter 6: SPECIAL SITUATIONS

Some situations offer special opportunities for safety improvement. In this section we discuss two. The first, Marine Corps Logistics Bases/Depots and Industrial Safety represent low-hanging fruit:

- A relatively small effort in this area will have a major payoff, and

The second special situation is Private Motor Vehicle Accidents.

Marine Corps Logistics Bases / Depots and Industrial Safety

Marine Corps Logistic Center Albany had about 660 active duty Marines and 1550 DOD civilian industrial workers. The Marine Corps Logistic Base Albany (the landlord) Manager, Risk Management Office exercises safety responsibility for the Base and tenant units although the tenant units also have an internal safety organization. The Risk Management Office is well organized, connected and respected. The Manager receives and reports all injuries, Class A through Class D. The manager said it is a one-way flow, nothing in the way of trends comes to him from CMC (SD) or the Naval Safety Center. He does maintain contact with other Depots and the challenges they may be having.

In spite of a very good safety organization the units including the Maintenance Center, has an OSHA Recordable Rate in statistical control with an average rate of 5.6 which leaves considerable room for improvement. Behavior is a factor in most of the injuries. The Maintenance Center Leaders were proud of their accomplishment in cost reduction, Lean Manufacturing and safety with no lost time injuries in over three months. This is the typical high performing organization in which BAPP® Technology flourishes. The Maintenance Center is ready to take the next step toward world class performance.

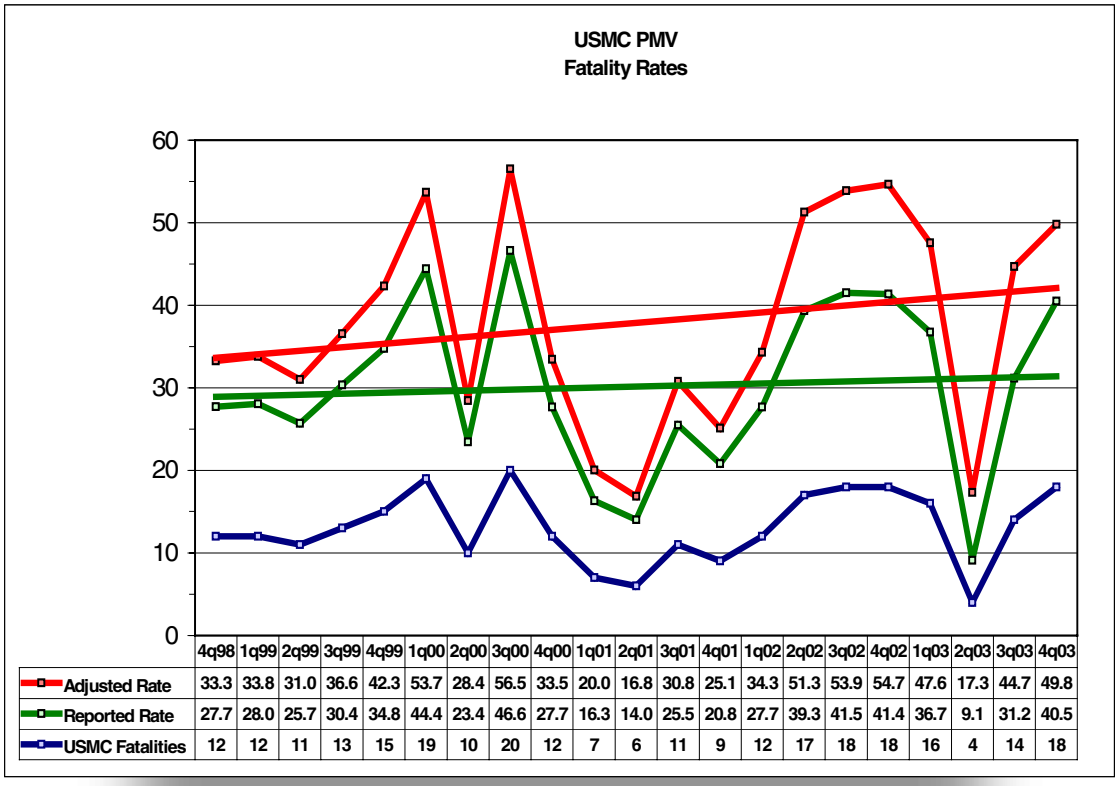
Private Motor Vehicle (PMV) Accidents

The good news is that the Marine Corps' senior leadership has a genuine understanding that PMV accidents represent their toughest safety challenge. Additionally, without exception, Marines interviewed during this study cited PMV accidents as their most important safety issue. Deaths are hard to miss.

Nonetheless, there are a number of misconceptions that partially mask the significance of this problem.

As seen in Figure 9 (below), USMC PMV Fatalities are occurring at a rising rate, and the adjusted trend is upwards. Since 1997, the actual rate is on average 20% worse than previously depicted and in 2003, the difference is 31% worse. As discussed earlier in this report, the significant dip (only 4 fatalities) recorded in 2Q FY03 likely was impacted by the circumstance that a number of pre-deployment activities (cancelled leaves, cancelled liberty, etc.) took place which reduced the

number of Marines driving PMVs. However, because of flawed exposure data, several Marines have concluded that USMC performance in this area is acceptable because it is better than that of comparable age groups in the civilian population as a whole. Several others did not say it, but intimated as much. These statements do not reflect a callous disregard for the lives of Marines. Rather, they are expressions of the concern voiced during some interviews that in order to alleviate this problem, it will be necessary in some way to diminish the combat ethos that Marines have been so successful at instilling in their people. A solution that extends the concept of being a "good Marine" means being one 24/7 will help alleviate this fear.



	4q98	1q99	2q99	3q99	4q99	1q00	2q00	3q00	4q00	1q01	2q01	3q01	4q01	1q02	2q02	3q02	4q02	1q03	2q03	3q03	4q03
Adjusted Rate	33.3	33.8	31.0	36.6	42.3	53.7	28.4	56.5	33.5	20.0	16.8	30.8	25.1	34.3	51.3	53.9	54.7	47.6	17.3	44.7	49.8
Reported Rate	27.7	28.0	25.7	30.4	34.8	44.4	23.4	46.6	27.7	16.3	14.0	25.5	20.8	27.7	39.3	41.5	41.4	36.7	9.1	31.2	40.5
USMC Fatalities	12	12	11	13	15	19	10	20	12	7	6	11	9	12	17	18	18	16	4	14	18

Figure 9

Benchmark comparisons can be useful when used appropriately, but the most relevant measure is comparing the Marine Corps to itself over time. For an organization that aspires to exemplary ("world class") safety performance, comparison to the general population is at best an entering argument and point of departure. Moreover, a more accurate depiction of USMC fatalities per 100,000 population (adjusted for the larger segments of non-driving Marines) demonstrates that they generally fall short of even this benchmark.

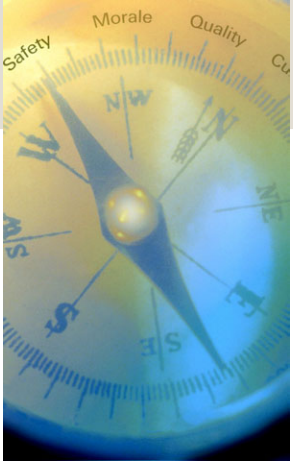


Table 4 (below) compares the US motor vehicle fatality rate (per 100,000 population) for 15 through 29 year olds (Center for Disease Control) for 1997 through 2001 with the total USMC PMV fatality rate for the same period. Admittedly, these comparisons fail to compensate for the high concentration of Marines between the ages of 18 and 26. However, the Marine Corps rate is substantially higher for every year in this comparison. In 2002 and 2003 the Marine Corps rate becomes even higher, although no data is available for comparison.

US Total Motor Vehicle Fatality Rate vs. USMC PMV Fatality Rate (Adjusted Rate)							
	1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
US Motor Vehicle Rate	24.8	23.9	23.5	24.4	24.5	N/A	N/A
USMC PMV Fatality Rate *(Adjusted)*	42.1	29.3	44.4	34.0	27.4	48.8	44.7

Table 4

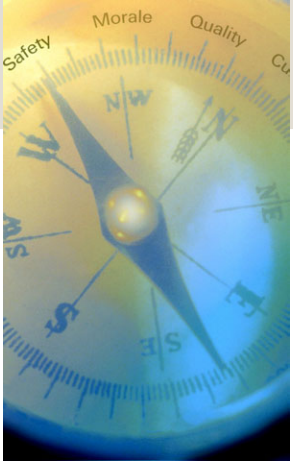
This again highlights the validity of the concern this area has drawn from personnel in CMC (SD) and the Marine Corps' senior leadership.

It is not necessary here to review the totality of data on the PMV accident challenge. Sufficient data are available to conclude these deaths generally occur off-duty with alcohol, fatigued driving, lack of seatbelt/helmet use and speed being disproportionate contributors. These behaviors are inconsistent with Marine Corps values and mission. Unfortunately, many people at various levels in the USMC felt that these behaviors are not inconsistent with what it means to be a Marine "off-duty."

- ***Identifying PMV safety-critical behaviors and how they relate to being a good Marine; the USMC values of Honor, Courage and Commitment; and the USMC Mission represent important intervention opportunities for both leadership and Junior Marine involvement.***
- ***A similar opportunity for leadership is represented by the need to clarify whether one is or is not a Marine 24/7 and what this actually looks like behaviorally in practice.***

At our request, the NSC (with considerable effort) discovered how many Marine PMV drivers died alone, with another passenger, or with a Marine passenger. It is interesting to note that over the past five-years that 38% of the fatalities occurred when Marine passengers accompanied Marine drivers. As collected, this information is too incomplete for causal analysis. However, it does point to opportunities for intervention strategies built on application of "buddy care" as practiced on the battlefield.

- ***Extending the USMC concept of "buddy care" on the battlefield to PMV situations offers an opportunity for a significant intervention. To be effective, such an intervention must be supported by leadership, adequately trained, behaviorally focused and positively reinforced.***



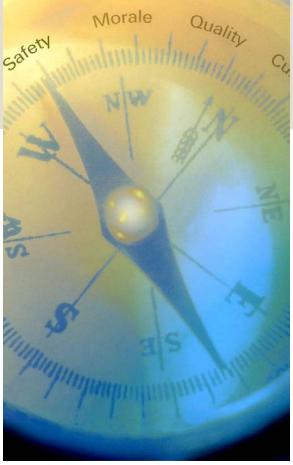
Unfortunately, as the USMC accident database does not address fatalities that almost occurred (avoided only by luck), we are denied the best opportunity to get at the behaviors, which are at the root cause of this high fatality rate. If Class B and C PMV mishaps had been investigated for root causes, the survivors could tell us whether passengers distracted drivers. Then, leadership could tell Marines, for example, how to team up to defeat road hazards without creating deadly, new hazards. This kind of effort might link to the USMC Ground Crew Coordination initiative. Unfortunately, the critical information is lacking because of the currently low level of reporting and investigation.

Nonetheless, we manually extracted behavioral data from the sparse textual summaries of fatality accidents and it was clear that these events are essentially behavioral. One or more of the following critical behaviors appeared to have been most frequently involved (See Appendix E for the complete listing with frequencies.):

- Speeding
- Not controlling the vehicle
- Not maintaining alertness; fatigue
- Failing to use seatbelt or helmet
- Alcohol use

The National Highway Transportation Safety Agency (NHTSA) has looked into this issue in detail and documented the central role of various behaviors in these types of accidents (Appendix F). The Marine Corps' resource-driven inability to investigate or report many of their accidents and the paucity of information collected on accidents that do occur, render behavioral analysis to a comparable level of detail impossible.

- ***Based on demographics, a comparison between the USMC fatality data and the statistics cited in the NHTSA surveys suggests that certain of these behaviors are more prevalent in the Marine Corps than in the general population. A method could be devised to identify those behaviors that are most germane to the USMC safety improvement process using the NHTSA data as a starting point and thereby shortening the time to implementation.***



Appendix A: Locations at which Interviews were conducted and Senior-Ranking Interviewees

Interviewee & Position

General Michael W. Hagee · *Commandant*

Lieutenant General Jan C. Huly · *Deputy Commandant for Plans, Policies, and Operations*

Lieutenant General Robert Magnus · *Deputy Commandant for Programs and Resources*

Brigadier General Huck · *Director, Marine Corps Personnel*

Brigadier General Duane D. Thiessen · *Inspector General of the Marine Corps*

Brigadier General George J. Flynn · *Commanding General, Training Command*

Colonels Favors/Yanello/Mugno/Grotzky · *Operational Unit Commanders*

Sergeant Major John L. Estrada · *Sergeant Major of the Marine Corps*

Organization and Location

Army Safety Center · *Ft. Rucker, AL*

Naval Safety Center (Commander & key staff)

Headquarters US Marine Corps · *Washington, DC*

MCB · *Quantico, VA*

Marine Corps recruit Depot · *San Diego, CA*

MCB · *Camp Lejeune, NC*

MCB · *Camp Pendleton · CA*

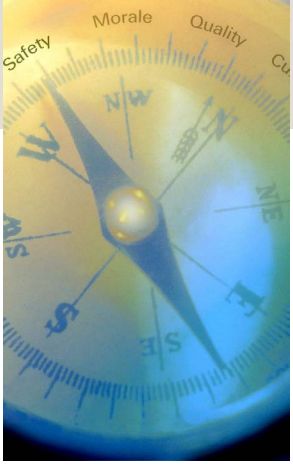
MCAS · *Miramar, CA*

Headquarter Commander Marine Forces Reserve · *New Orleans, LA*

JRB · *Ft. Worth, TX*

Reserve Center · *Houston, TX*

Marine Corps Logistic Base · *Albany GA*



Appendix B: Organizational Functioning Survey Details

Overview of the BST® Organizational Functioning Survey

It has long been recognized that safety climate (or culture) is a key element in safety performance improvement. While training, awareness, and incentive programs can result in short-term changes to reported safety results, it is the underlying climate that must be supportive for sustainable improvement to occur. The BST Organizational Functioning Survey measures and reports on these underlying organizational determinants of safety climate.

The survey is based on research by BST and others on aspects of organizational functioning that influence safety outcomes.

There are two versions of the survey:

- Junior Marines (Non-supervisory E-4 and below)
- NCOs and Above

The two versions have the same content, but from different points of view. In general, the questions on the junior Marine form ask about the junior Marine's perceptions regarding his or her own unit or supervisor. The Leader version asks about perceptions of Junior Marines, unit, or supervisors in general. In the final analysis, safety outcomes are largely determined at the junior Marine level—the perceptions of the Marines about key organizational factors influence safety outcomes. Responses to the survey from Leaders are a measure of how well those groups are in tune with the perceptions of their Marines.

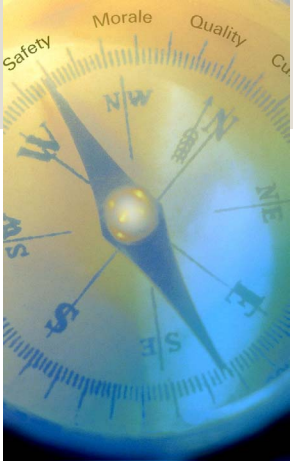
The items on the survey are organized into 11 scales, or groups of items that measure a particular aspect of organizational functioning. Nine of these scales are also grouped into three general factors. The factors and scales are described in the pages that follow.

Leadership Factor

The variables included in this factor directly influence safety outcomes. They also affect team functioning (Team Factor) and the variables included in the Safety Specific Factor. The scores on this factor are the mean of the four scales described below:

Procedural Justice. Addresses perceived fairness in actions by first level supervisors that impact Marines. This factor is a fundamental influence on other aspects of organizational life. For instance, perceptions of fairness affect Marines' beliefs about the organization's concern for them as individuals. Supervisor fairness is also related to effectiveness of team functioning, Marine communication of safety concerns, perceptions of the organization's value for safety, and Marine willingness to contribute above and beyond immediate job duties such as in voluntary safety roles.

Leader-Member Exchange. Measures beliefs about the strength of Marines' working relationships with the supervisor, such as the supervisor's willingness to "go to bat" for the Marine. Marines who believe they have a good relationship with the supervisor are more likely to be cooperative, and live up to the spirit, rather than the letter, of organizational objectives. Marine-supervisor relationships influence work group effectiveness, inter-group relationships, and Marine communication about safety concerns.



Management Credibility. Measures perceptions about leader's judgement, honesty, consistency, fairness, and openness in dealing with Marines. Perceptions of fairness influence beliefs about the value of safety, and the extent to which individuals feel responsible for safety. Perceptions of fairness also influence beliefs about the organization's concern for Marines, and the willingness of Marines to raise safety concerns, and to report injuries.

Perceived Organizational Support. Measures perceptions of the organization's concern for the needs and interests of Marines, and the availability of support. Individuals' perceptions of organizational concern for them influence beliefs about the organization's values for safety. That is, Marines who believe that the organization is concerned about their needs in general are also likely to believe that the organization values safety. Perceptions about organizational support are also related to effectiveness of group functioning, and the willingness of Marines to raise safety concerns.

Team Factor

Work group functioning is influenced by the variables in the Organization Factor. In turn, work group functioning affects the willingness of Marines to raise safety concerns, to speak up to one another about safety, and perceptions about the organization's value for safety. Scores on this factor are the mean of the scores on the two scales described below.

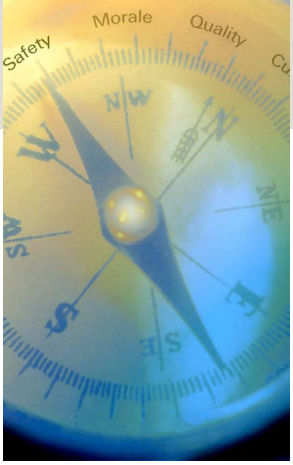
Teamwork. Measures the perceived effectiveness of work groups to function as an effective team. Group process affects whether people will talk to one another about safety, and is directly related to safety outcomes such as level of at-risk behavior and injury reporting. It also influences perceptions of communication around safety, and organizational values for safety.

Work Group Relations. Measures perceptions about the degree to which Marines treat each other with respect, listen to each other's ideas, help one another out, and follow through on commitments made. Work group relations are related to supervisor fairness, and Marine-supervisor relationships. These beliefs influence whether Marines will speak up to one another about safety issues, and raise safety concerns with the supervisor.

Safety Specific Factor

The three dimensions included in this factor have a direct influence on safety outcomes (level of safe behavior, injuries, and injury reporting). The scores for this factor are the average of the scores for the three scales described below.

Organizational Value for Safety. Measures perceptions of the extent to which the organization values safety as represented by the priority of safety compared to other concerns, how informed leadership is about safety issues, and the willingness of leaders to invest time, energy, and/or money in addressing safety issues. The higher the perceived value for safety, the more likely it is that Marines will raise safety issues, work safely, and not cover up incidents and injuries.



Upward Communication. Measures perceptions of the quality and quantity of upward communications about safety, the extent to which people feel encouraged to bring up safety concerns, and the level of comfort in discussing safety-related issues with the supervisor. The climate around communication influences the willingness of Marines to speak up to one another about safety, the level of at-risk behavior, and reported injuries.

Approaching Others. Measures beliefs about the likelihood that Marines will speak up to a fellow Marine whom they think is at risk for injury, pass along information about safety, or step up to help a fellow Marine do a job more safely. The more likely Marines are to speak up with each other, the higher the level of safe behavior in a work group.

Additional Scales

Social Efficacy. Measures beliefs about the ability of Marines to relate effectively with others, to advocate a position within the workgroup, and to stick to their point of view despite opposition. Higher scores on this scale are associated with approaching others, and with raising safety concerns but at this point, this is purely a research scale and not demonstrated to be predictive of performance.

Injury Reporting. Measures tendency of Marines to report injuries and incidents, and the general climate around reporting.

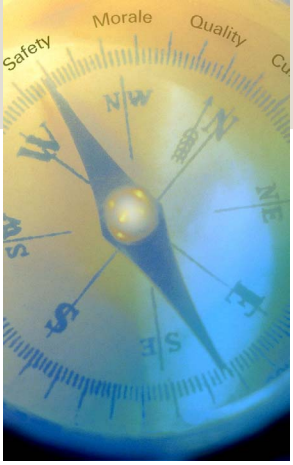
OFS Modification and Administration

Marines of all ranks at four active duty and randomly selected Marine Forces Reserve units completed the Organizational Functioning Survey. The OFS consists of 99 questions including four questions dealing with off duty activities that were added. Scoring the survey produces eleven individual scales and three summary factors that are validated to reflect safety outcomes. Prior to administering the OFS some language and terms were changed to reflect Marine Corps' organizational structure; "Plant" to "Command" and "Manager" to "Commanding Officer" are examples. Headquarters Us Marine Corps Safety Division approved the final version prior to administration to Marine units.

A Precaution

Results are presented in two formats; Percentile and Raw Scores. The percentile scores compare USMC scores to all other organizations (about 209) that have completed the OFS. In some cases it was not possible to compare USMC to other organizations because there were no comparable categories between the USMC and the other organizations. In these case the data are presented as raw scores.

When data is presented as raw scores, statistical tests are used to look for differences within members of a category. Thus, for example, in the USMC Active Duty section of this appendix, the Levels table shows statistically significant differences between SNCOs and below and many of the Officer groups on most of the scales. The raw scores are of special interest where, as in this



case, there is a statistically significant difference between group perceptions. Statistically significant means the difference did not happen by random chance. For reasons of statistical validity, the raw scores a group with less than five respondents is not reported upon.

- Percentile tables: Overall, Version (Enlisted vs. Officers)
- Raw data tables: Levels, Command, Work Groups

Report Layout

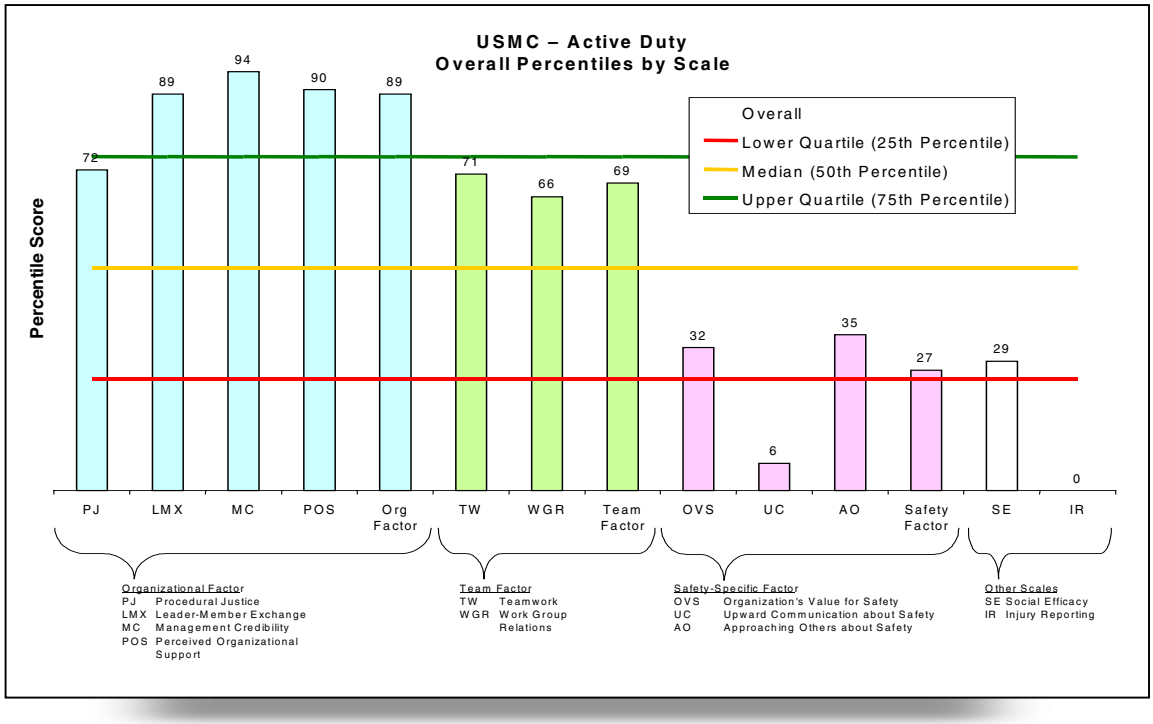
The tables in each of the OFS reports are presented from summary 1ST and then they move into progressively more detail.

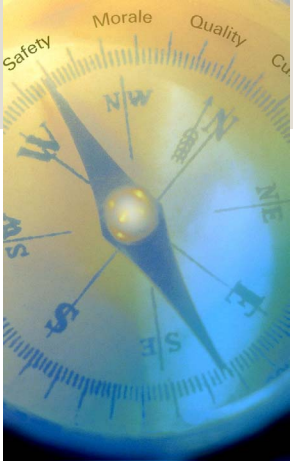
Clarification about Terminology

In the text of the report we called the first OFS factor the Leadership Factor. In the tables presented here the same group of scales is called the Organizational Factor. These are just two names for the same thing.

USMC Active Duty

You have seen this chart before. It is presented here for convenience of comparison with other charts below.





Percentile Scores. Active Duty Marines percentile scores suggests the Marine Corps is very strong in the Leadership Factor and strong in the Team Factor Scales. These results are probably the result of the premium the Marine Corps places on leadership, taking care of your people and the team accomplishing the mission. The Safety Factor Scales, and Injury Reporting are very low compared to other organizations that have completed the OFS. This pattern for all active duty Marines is repeated for all Bases/Units that completed the OFS. Any single unit with a large sample size does not dominate the scores. The scores suggest that overall Marines are not as likely to communicate safety concerns upward or report injuries.

Raw Scores. The raw scores point to significant differences that reflect the overall safety culture.

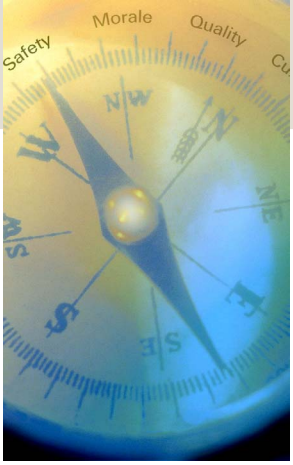
Procedural Justice and Leader-Member Exchange: While the raw scores have significant differences there is close alignment where the scales are most significant, between SNCO/NCO and junior Marines. The significant difference between SNCO/NCO and Unit Officers (Major and Captain) suggests there is a perception gap between the two levels that should be very closely aligned. This was evident in one interview of Company Commanding Officers who suggested that NCOs needed to spend more time with their troops and know more about them and what they are doing.

The *Management Credibility and Perceived Organizational Support* scales suggests there is a major disconnect between Officers of all ranks and those they lead, the NCO's and Junior Marines. The impact will likely be that Leadership may espouse a particular safety message, it will be heard but not necessarily believed and carried through to desired behaviors such as responsible off duty PMV use.

Team Factor Scales had significant differences in alignment between Officers and SNCOs and junior Marines. Of interest is the differences that exist in perception between those that are likely to be in command and those in their units. The perception differences suggest that Commanders/ Commanding Officers might expect results from their team that are unrealistic.

The *Safety Specific Factor Scales* all have significant differences. The differences are generally between the Officers and the NCOs and below with Commanders/Senior Commanding Officers always scoring the highest. This suggests the perceptions and expectations around safety between Leaders and their Marines is not aligned. This suggests that the transmitted message my not be believed or filtered out and safety related problems are not likely to be communicated up the chain. This was evident during interviews with NCOs and Junior Marines, the off duty safety briefs were said to be tuned out. The scores also suggest that intervention for safety between junior Marines may occur. However it is not certain to occur. This was evident in several PMV incidents and interview statements.

Injury Reporting scores suggest the Leaders do not expect that all injuries be reported and they are not likely to be reported. USMC mishap data (Sketchy Class A, limited Class B and nothing below) and interviews are aligned with this scale score.



The scores are also reported by Command, most as self-explanatory. "Battalion" is generally the Marine division(s). Each of the Base/Station groupings that completed the OFS will be discussed individually. The most significant difference between Commands the Battalion East significantly lower on 9 of 11 scales with the lowest score on 10 of 11 scales. This suggests that the safety culture is less positive than at the other Commands surveyed.

Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
USMC Active Duty	1268	72	89	94	90	89	71	66	69	32	6	35	27	29	0
Version of Survey															
Enlisted	556	69	78	85	76	76	43	33	40	23	5	32	13	25	0
Officers	712	45	89	81	75	78	86	85	85	11	3	58	20	72	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commanger/CO	60	**71**	77	**87**	**86**	**82**	**83**	**82**	**83**	**80**	**74**	**78**	**78**	**81**	49
Staff Officer	70	68	76	**81**	**79**	77	80	78	**79**	**76**	71	75	**74**	76	49
Unit Officer	116	**71**	**79**	**82**	**81**	79	**83**	81	**82**	**78**	73	76	**76**	80	51
Junior Officer	132	69	76	**78**	**75**	75	79	77	78	75	69	73	73	76	51
SNCO/NCOS	298	68	73	71	70	70	76	74	75	73	70	71	71	73	**57**
E1	53	65	69	69	64	67	72	71	72	69	68	73	71	76	**56**
E2	88	68	72	71	67	70	74	72	73	70	67	72	70	75	50
E3	270	65	70	66	62	65	72	69	70	68	67	73	70	74	52
Non Super E4	68	68	74	70	66	69	75	71	73	70	68	75	72	78	50

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number of surveys.

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Results by Command

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Percentile Scores by Command															
MCRD	35	67	85	87	82	85	69	39	54	24	26	36	26	78	4
Fixed Wing	23	87	96	97	92	96	78	75	78	62	15	57	52	74	1
Rotary Wing	30	90	93	97	93	96	92	86	90	54	15	66	53	76	1
MALS	8	63	75	74	46	65	21	15	18	28	8	75	40	71	0
Battalion	99	20	19	34	20	22	18	10	13	6	1	24	4	7	2
FSSG	127	62	62	79	66	71	40	41	40	26	16	36	25	36	2
MC Base	133	61	74	71	64	70	30	34	31	18	9	25	13	23	2
Staff MAW	11	81	83	84	71	81	67	67	66	23	9	52	27	87	1
MC Air Station	57	77	83	87	69	81	60	58	59	41	14	42	34	49	1
Raw Scores by Command															
MCRD	35	68	74	**72**	70	71	77	71	74	70	**71**	73	72	79	**59**
Fixed Wing	23	**73**	**79**	**78**	74	**76**	78	76	77	**76**	69	77	**75**	79	51
Rotary Wing	30	**74**	**77**	**79**	**75**	**77**	**81**	**79**	**80**	**75**	69	78	**75**	79	47
MALS	8	68	72	68	61	67	69	66	68	70	68	79	**73**	78	41
Battalion	99	59	63	58	55	58	69	64	67	63	62	71	66	71	55
FSSG	127	67	70	69	65	68	73	71	72	70	70	73	71	75	55
MC Base	133	67	72	67	65	68	71	70	71	68	68	71	69	74	52
Staff MAW	11	72	74	**71**	67	70	76	75	76	69	68	76	72	80	46
MC Air Station	57	70	74	**72**	66	70	75	74	75	**73**	69	74	**73**	77	46

- Command scores are based on worker-version surveys only.
- Scores for commands with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Raw scores range from 20 to 100.
- Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number of surveys.

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Comparisons between Work Groups

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Mean	Teamwork	Work Group Relations	Mean	Org. Value for Safety	Upward Comm-unication	Approaching Others	Mean	Social Efficacy	Injury Reporting
Work Group															
MCRD (West)	33	68	74	**72**	70	71	77	71	74	69	**71**	73	71	79	58
Fixed Wing (West)	23	**73**	**79**	**78**	**74**	**76**	78	76	77	**76**	69	77	**75**	79	51
Rotary Wing (West)	29	**74**	**77**	**79**	**75**	**77**	**81**	**78**	**80**	**75**	**70**	77	**75**	79	47
MALS (West)	8	68	72	68	61	67	69	66	68	70	68	79	73	78	41
Battalion (East)	71	57	60	56	52	56	68	62	65	61	60	70	65	68	57
Battalion (West)	27	65	69	65	62	65	71	69	70	69	66	72	69	77	51
FSSG (East)	77	68	71	**70**	65	68	74	72	73	70	69	75	72	74	53
FSSG (West)	48	67	69	68	65	67	70	69	70	69	**70**	71	70	77	57
MC Base (East)	128	66	72	67	65	67	71	70	71	68	68	71	69	74	52
MC Base (West)	5	**82**	**82**	67	66	73	73	63	69	**73**	66	77	73	72	**62**
Staff MAW (West)	11	72	74	**71**	67	70	76	75	76	69	68	76	72	**80**	46
MC Air Station (West)	57	70	74	**72**	66	70	75	74	75	**73**	69	74	73	77	46

- Scores for levels with fewer than 5 surveys are not shown.
- Scores are based on the worker version of the survey only.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Raw scores range from 20 to 100.
- Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number o surveys.

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Appendix B

BST Organizational Functioning Survey - Report Summary

This Appendix describes each scale and factor on the Organizational Functioning Survey along with a summary description of the results provided in Appendix 1. Your BST consultant will help you with the interpretation, discuss implications, and make recommendations.

Organizational Factor

The variables included in the Organizational factor (Procedural Justice, Leader-Member Exchange, Management Credibility, and Perceived Organizational Support) directly influence safety outcomes. They also affect team functioning (Team Factor) and the variables included in the Safety Specific Factor.

Procedural Justice

The Procedural Justice scale measures perceptions of fairness of first level supervisors' actions that impact Marines. This factor is a fundamental influence on other aspects of organizational life. For instance, perceptions of fairness affect Marines beliefs about the organization's concern for them as individuals. Supervisor fairness is also related to effectiveness of team functioning, Marine communication of safety concerns, perceptions of the organization's value for safety, and Marine willingness to contribute above and beyond immediate job duties such as in voluntary safety roles.

- Marines' from different commands hold different views of the fairness of supervisor actions and decisions.
- Marines at different levels of the organization vary in their perceptions of the fairness of supervisors' actions.
- Hourly Marines scored in the 69th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 45th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 72nd percentile of all organizations that have completed the survey.

Leader-Member Exchange

The Leader-Member Exchange scale measures beliefs about the strength of Marines' working relationships with the supervisor, such as the supervisor's willingness to "go to bat" for the Marine. Marines who believe they have a good relationship with the supervisor are more likely to be cooperative, and live up to the spirit, rather than the letter, of organizational objectives. Worker-supervisor relationships influence work group effectiveness, inter-worker relationships, and Marine communication about safety concerns.

- Marines' from different commands hold different views of the relationships with their supervisors.
- Marines at different levels of the organization vary in their perceptions of the relationships between hourly Marines and their supervisors.
- Hourly Marines scored in the 78th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 89th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 89th percentile of all organizations that have completed the survey.

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Management Credibility

The Management Credibility scale measures perceptions about management's judgement, honesty, consistency, fairness, and openness in dealing with workers. Perceptions of fairness influence beliefs about the value of safety, and the extent to which individuals feel responsible for safety. Perceptions of fairness also influence beliefs about the organization's concern for Marines, and the willingness of Marines to raise safety concerns, and to report injuries.

- Marines from different commands hold different views of management's judgement, honesty, consistency, and openness.
- Marines at different levels of the organization vary in their perceptions of management's judgement, honesty, consistency, and openness in dealing with workers.
- Hourly Marines scored in the 85th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 81st percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 94th percentile of all organizations that have completed the survey.

Perceived Organizational Support

The Perceived Organizational Support scale measures perceptions of the organization's concern for the needs and interests of Marines, and the availability of support. Individuals' perceptions of organizational concern for them influence beliefs about the organization's values for safety. That is, Marines who believe that the organization is concerned about their needs in general are also likely to believe that the organization values safety. Perceptions about organizational support are also related to effectiveness of group functioning, and the willingness of workers to raise safety concerns.

- Marines from different commands hold different views about the company's concern for them and the availability of support.
- Marines at different levels of the organization vary in their perceptions of the organization's concern for the needs and interests of Marines.
- Hourly Marines scored in the 76th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 75th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 90th percentile of all organizations that have completed the survey.

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Team Factor

The Team factor includes two scales: Teamwork and Work Group Relations. The variables in the Organizational factor influence the Team factor, which in turn, affects the willingness of workers to raise safety concerns, to speak up to one another about safety, and perceptions about the organization's value for safety.

Teamwork

The Teamwork scale measures the perceived effectiveness of work groups to function as an effective team. Group process affects whether people will talk to one another about safety, and is directly related to safety outcomes such as level of at-risk behavior and injury reporting. It also influences perceptions of communication around safety, and organizational values for safety.

- Commands differ in their perceptions of teamwork and the effectiveness of their own work groups.
- Marines at different levels of the organization hold different perceptions of teamwork within workgroups.
- Hourly Marines scored in the 43rd percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 86th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 71st percentile of all organizations that have completed the survey.

Workgroup Relations

The Work Group Relations scale measures the degree to which coworkers treat each other with respect, listen to each other's ideas, help one another out, and follow through on commitments made. Work group relations are related to supervisor fairness, and worker-supervisor relationships. These beliefs influence whether Marines will speak up to one another about safety issues, and raise safety concerns with the supervisor.

- Commands differ in their perceptions of work group relations and the degree to which Marines are respectful of and helpful to one another.
- Marines at different levels of the organization vary in their perceptions of the strength of relationships between coworkers.
- Hourly Marines scored in the 33rd percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 85th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 66th percentile of all organizations that have completed the survey.

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Safety Specific Factor

The three dimensions included in the Safety Specific factor (Organization's Value for Safety, Upward Communication, and Approaching Others) directly influence safety outcomes such as the level of safe behavior, injuries, and injury reporting.

Organizational Value for Safety

The Organizational Value for Safety scale measures perceptions of the extent to which the organization values safety as represented by the priority of safety compared to other concerns, how informed management is about safety issues, and the willingness of management to invest time, energy, and/or money in addressing safety issues. The higher the perceived value for safety, the more likely it is that workers will raise safety issues, work safely, and not cover up incidents and injuries.

- Hourly Marines across commands differ in their perceptions of the organization's commitment to safety.
- Marines at different levels of the organization vary in their perceptions of the organization's commitment to safety.
- Hourly Marines scored in the 23rd percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 11th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 32nd percentile of all organizations that have completed the survey.

Upward Communication

The Upward Communication scale measures perceptions of the quality and quantity of upward communications about safety, the extent to which people feel encouraged to bring up safety concerns, and the level of comfort in discussing safety-related issues with the supervisor. The climate around communication influences the willingness of workers to speak up to one another about safety, the level of at-risk behavior, and reported injuries.

- Differences exist between commands in hourly Marines' perceptions of the overall quantity and quality of upward communications about safety.
- Marines at different levels of the organization vary in their perceptions of the amount and quality of upward communication about safety.
- Hourly Marines scored in the 5th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 3th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 6th percentile of all organizations that have completed the survey.

Approaching Others

The Approaching Others scale measures beliefs about the likelihood that workers will speak up to a co-worker whom they think is at risk for injury, pass along information about safety, or step up to help a co-worker do a job more safely. The more likely workers are to speak up with each other, the higher the level of safe behavior in a work group.

- Hourly Marines across commands are aligned in their willingness to speak up to coworkers about safety.
- Marines at different levels of the organization vary in their perceptions of hourly Marines' willingness to approach one another about safety.
- Hourly Marines scored in the 32nd percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 58th percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 35th percentile of all organizations that have completed the survey.

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Other Scales

Social Efficacy

The Social Efficacy scale measures beliefs about the ability of workers to relate effectively with others, to advocate a position within the workgroup, and to stick to their point of view despite opposition. Higher scores on this scale are associated with approaching others, and with raising safety concerns.

- Commands are similar in hourly Marines' perceptions of their ability to advocate a position within their work groups.
- Marines at different levels of the organization vary in their perceptions of hourly Marines' ability to advocate a position within their work groups.
- Hourly Marines scored in the 25th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 72nd percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 29th percentile of all organizations that have completed the survey.

Injury Reporting

Stand-alone scale (doesn't load on any factor). The Injury Reporting scale measures the tendency of workers to report injuries and incidents, and the general climate around reporting.

- Marines from different departments differ in their propensity to report injuries and incidents.
- Marines at different levels of the organization vary in their perceptions of injury reporting.
- Hourly Marines scored in the 0th percentile of all hourly Marines who have completed the survey.
- Salaried Marines scored in the 2nd percentile of all salaried Marines who have completed the survey.
- The overall score on this scale ranked in the 0th percentile of all organizations that have completed the survey.

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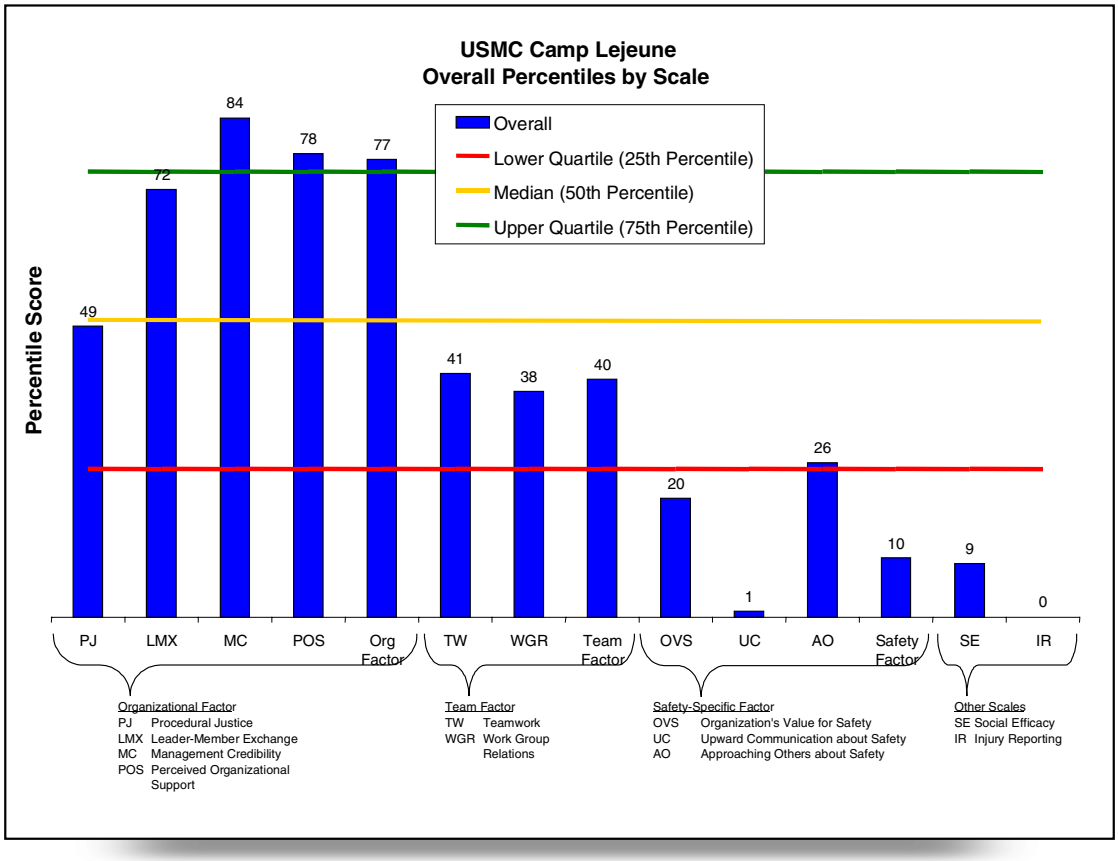
Marine Corps Base Camp Lejeune

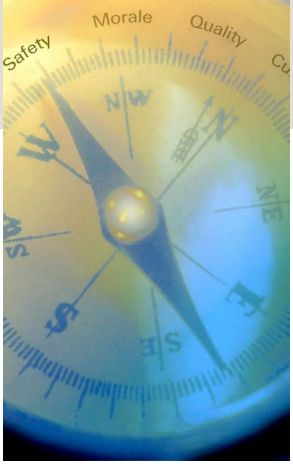
As the chart below shows, Camp Lejeune is low not only on the Safety Factor but on the Team Factor as well. It also has a relatively low score on the PJ (Procedural Justice) scale of the Leadership Factor.



Percentile. The percentile scores were the lowest of all activity duty Base Groups that completed the OFS suggesting the safety culture is the least positive. The scores follow the same pattern as the overall scores but with much lower values. Procedural Justice is at 49 percentile as compared to a USMC average of 72 percentile. All but three scales are below the 50% percentile line. The overall MCB Camp Lejeune scores are driven by the Battalion (Division) scale scores, all but 2 of which are below 50 percentile. This suggests that safety is not as strong a value or priority in the Division as it is in other USMC Units surveyed.

Raw Scores. By command, the Battalion (Division) scored the lowest on all scales with significant differences on 7 of 11 scales. They also had the least number of surveys completed, and included in the results. This suggests that safety is not valued as highly as in other USMC units surveyed.

Leadership Factor: The Procedural Justice scored a low percentile, all ranks were in agreement on this. The other three scales had significant difference between Officers and NCOs and below. This suggests that Junior Marines may doubt the message Leadership is sending about safety and they don't feel their leadership will meet their personal safety needs. This was evident in interviews where junior Marines said they had heard it all before, over and over. Also they said



Leaders preach safety but then release all Marines at one time for holidays which creates a mad dash for the gates and the freeways.

Organizational Value for Safety: There were significant differences between more senior Officers and junior Marines. This suggest the junior Marines do not believe the Command values safety regardless of how many times they have a safety stand down or brief. This perception difference suggests that the disconnect junior Marines feel between duty performance and off duty performance is OK.

Less than five senior Commanders/Commanding Officers had completed, scanned and valid surveys in the data. It is not possible to compare their perceptions with the Marines they command.

With minor exceptions there are no significant differences in FSSG and Marine Corps Base raw scores.

Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
USMC Camp Lejuene	588	49	72	84	78	77	41	38	40	20	1	26	10	9	0
Version of Survey															
Enlisted	298	46	54	76	58	66	27	20	25	14	1	24	8	9	1
Officers	290	16	75	59	56	50	64	62	61	7	0	49	11	31	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	23	68	76	**84**	**83**	**79**	**82**	**81**	**81**	**79**	**74**	**80**	**78**	**79**	47
Staff Officer	37	66	76	**79**	**78**	76	79	78	**78**	75	70	74	74	75	48
Unit Officer	37	71	**79**	**82**	**82**	**79**	**83**	**80**	**81**	**79**	73	77	**77**	**79**	51
Junior Officer	53	65	75	**76**	74	73	76	73	75	73	66	72	71	74	50
SNCO/NCOS	124	63	69	66	66	66	73	70	72	70	67	69	69	70	56
E1	24	66	67	68	63	66	72	69	70	67	68	70	69	75	**62**
E2	42	65	70	66	65	66	71	69	70	65	65	71	67	72	54
E3	182	63	67	63	60	63	70	67	69	66	66	72	69	72	53
Non Super E4	17	**75**	**79**	**76**	72	76	80	77	**78**	73	70	**79**	75	**81**	44

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number of surveys.

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Results by Command

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Percentile Scores by Command															
Battalion	71	12	10	23	11	12	15	6	9	4	1	22	3	2	3
FSSG	77	63	66	81	65	73	50	49	50	28	15	46	29	25	2
MC Base	128	58	72	71	64	69	29	35	31	17	9	24	12	23	2
Raw Scores by Command															
Battalion	71	57	60	56	52	56	68	62	65	61	60	70	65	68	57
FSSG	77	**68**	**71**	**70**	**65**	**68**	74	**72**	**73**	**70**	**69**	75	**72**	74	53
MC Base	128	**66**	**72**	**67**	**65**	**67**	71	**70**	**71**	**68**	**68**	71	**69**	74	52

- Command scores are based on worker-version surveys only.
- Scores for commands with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Raw scores range from 20 to 100.
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Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Camp Lejuene- Battalion	152	19	39	69	47	52	41	24	32	13	0	26	6	2	1
Version of Survey															
Enlisted	71	9	5	28	9	10	11	2	4	1	0	14	1	0	1
Officers	81	12	83	66	46	50	74	70	72	9	0	58	11	44	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Camp Lejuene Battalion

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Staff Officer	5	64	**80**	**79**	**79**	76	**83**	**78**	**81**	**81**	73	78	**78**	75	54
Unit Officer	19	69	**79**	**84**	**83**	**80**	**82**	**81**	**82**	**79**	72	75	76	79	52
Junior Officer	25	64	**75**	**77**	**74**	74	75	74	75	74	64	74	72	74	51
SNCO/NCOS	29	61	68	63	59	63	73	70	72	69	65	69	68	70	55
E1	6	52	55	52	46	51	67	58	63	53	57	65	59	67	64
E2	11	61	65	65	61	63	72	67	70	62	63	65	64	72	56
E3	52	56	59	54	50	54	67	61	64	61	60	72	65	67	57

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		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Camp Lejuene- FSSG	150	65	83	94	88	89	61	56	57	39	15	45	37	19	0
Version of Survey															
Enlisted	77	75	78	90	76	82	52	49	49	29	9	49	33	16	0
Officers	73	27	83	81	79	78	74	62	72	11	6	58	20	60	2

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• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Camp Lejuene FSSG

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	5	59	72	80	82	75	77	74	76	76	73	74	75	75	51
Staff Officer	14	67	76	80	79	76	78	78	78	74	74	73	74	77	50
Unit Officer	8	72	80	82	**84**	80	84	79	82	81	74	80	79	78	46
Junior Officer	14	64	75	75	72	72	75	73	74	74	68	71	72	74	50
SNCO/NCOS	28	68	72	72	73	71	76	73	75	75	72	73	73	74	58
E1	14	70	71	74	70	72	73	72	72	73	73	73	73	78	**67**
E2	10	75	73	73	72	73	76	75	76	71	72	78	74	76	52
E3	45	65	71	68	62	66	75	72	74	70	68	75	72	73	48

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
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Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Camp Lejuene- MC Base	201	49	72	77	72	71	23	31	32	13	1	15	6	5	0
Version of Survey															
Enlisted	128	61	84	83	76	76	27	33	33	19	5	19	8	16	0
Officers	73	10	28	23	25	19	17	14	12	2	0	25	3	9	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Camp Lejuene MC Base

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Junior Officer	9	67	71	75	74	72	77	71	74	66	66	70	68	70	49
SNCO/NCOS	57	63	67	65	67	66	71	69	70	68	66	68	68	70	55
E2	19	62	71	64	64	65	69	67	68	63	63	70	66	68	55
E3	79	66	72	66	64	67	70	69	70	68	68	71	69	75	52
Non Super E4	15	75	78	76	71	75	79	78	79	73	71	78	75	**82**	44

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
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		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Camp Lejuene- Staff MEF	51	57	97	100	100	99	97	97	97	56	6	53	47	46	0
Version of Survey															
Enlisted	3	0	11	3	19	3	5	0	0	0	0	0	0	0	2
Officers	48	27	89	93	86	86	95	96	95	17	2	80	36	72	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Camp Lejuene Staff MEF

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	15	71	78	86	84	81	84	83	83	80	74	82	79	81	44
Staff Officer	15	66	75	81	80	77	81	80	81	75	66	76	74	76	46
Unit Officer	6	76	81	82	81	80	86	87	86	79	78	77	78	**83**	52
SNCO/NCOS	9	59	68	66	66	65	74	72	73	72	69	69	70	65	67

• Scores represent the percentage of maximum possible score.
• Scores for levels with fewer than 5 surveys are not shown.
• Bold values are statistically significantly higher than underlined values (probability < .01).
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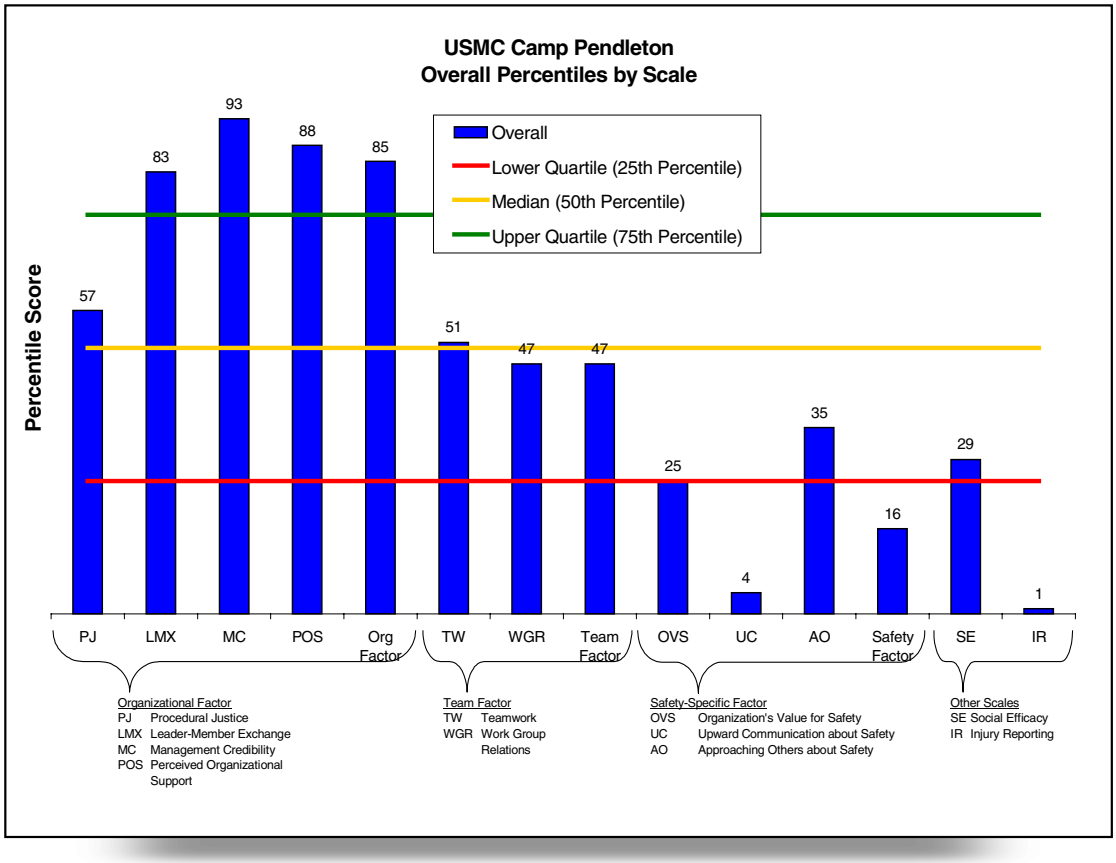
Marine Corps Base Camp Pendleton, CA

Pendleton also has relatively low scores on the PJ scale and the Team Factor but less so than Lejeune.



Percentile. The scores follow the pattern of the overall active duty scores with five individual scales above 50 percentile. Safety factor was the lowest factor suggesting safety is the least developed value among those surveyed.

Raw scores. There are five scales with significant differences. Three scales, Management Credibility, Perceived Organization Support and Organizational Value for Safety have significant perception differences between Senior Commanders/Commanding Officers and junior Marines. The differences suggest that junior Marines don't believe their Command has their best interests at heart and although the Command espouses a strong value for safety the Leadership does not have the credibility around safety to get junior Marines to embrace the espoused value. The Team Factor Scales had significant differences between Senior Commanders/Commanding Officers and junior Marines suggesting the team may not be as strong around safety as the Leaders would like.

The FSSG scores closely mirror the Camp Pendleton overall scores.

The Battalion (Division) OFS scores were of limited value due to small valid sample size, 21 surveys. The Battalion Group (Division) had less than 5 Officers and SNCO/NCOs respondents in each group so no perception comparison between the Leaders and junior Marines can be made.

Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
USMC Camp Pendleton	159	57	83	93	88	85	51	47	47	25	4	35	16	29	1
Version of Survey															
Enlisted	86	61	63	80	71	72	20	14	16	19	5	24	13	39	1
Officers	73	27	89	91	84	84	86	89	85	11	0	67	20	60	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	12	70	78	**89**	**88**	**83**	**83**	**84**	**83**	**81**	73	79	78	81	48
Staff Officer	5	67	72	83	78	76	80	76	78	79	67	83	78	78	51
Unit Officer	12	63	72	79	79	74	77	75	76	74	67	74	72	73	48
Junior Officer	15	67	76	78	74	74	78	78	78	73	68	73	72	76	51
SNCO/NCOS	20	65	76	71	71	71	77	75	76	73	67	70	70	72	54
E1	13	63	65	66	65	65	69	70	69	67	69	74	70	77	56
E2	10	59	67	63	61	62	62	59	60	68	62	68	67	74	48
E3	27	67	69	65	61	65	69	65	67	67	67	72	69	77	52
Non Super E4	17	67	71	65	63	66	73	69	71	69	70	71	70	75	60

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
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Results by Command

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Percentile Scores by Command															
Battalion	20	34	48	48	31	39	11	12	11	12	2	31	8	28	1
FSSG	50	60	57	76	66	69	27	29	27	23	17	24	17	51	3
Raw Scores by Command															
Battalion	20	62	68	61	58	62	67	65	66	66	63	72	68	75	49
FSSG	50	67	69	68	65	67	71	69	70	69	70	71	70	77	57

- Command scores are based on worker-version surveys only.
- Scores for commands with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Raw scores range from 20 to 100.
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Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Camp Pendleton-Battalion	34	29	72	81	68	66	18	24	22	17	0	35	10	9	0
Version of Survey															
Enlisted	20	31	54	58	36	47	7	7	6	10	0	24	5	25	0
Officers	14	10	75	84	69	61	50	78	61	7	0	67	11	14	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Camp Pendleton Battalion

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Junior Officer	5	67	76	80	76	76	76	**81**	**78**	74	68	71	71	74	55
E2	6	54	63	61	58	59	57	52	55	64	57	64	62	70	41
E3	10	70	74	68	63	68	73	**72**	**73**	68	66	79	72	76	52

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Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Camp Pendleton- FSSG	100	65	89	94	90	89	61	56	57	32	6	35	27	65	1
Version of Survey															
Enlisted	50	69	63	85	76	76	27	26	25	23	15	19	13	55	1
Officers	50	27	94	87	84	84	86	85	85	11	1	67	20	72	2

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Comparisons between Levels - Camp Pendleton FSSG

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	9	71	80	**89**	**88**	**83**	**85**	**84**	**85**	81	74	78	78	83	48
Unit Officer	9	60	73	78	78	74	77	75	76	75	68	76	73	73	51
Junior Officer	10	67	75	77	74	74	78	76	77	73	69	73	72	77	49
SNCO/NCOS	14	69	77	71	72	72	77	76	76	72	67	68	69	74	54
E1	11	67	69	70	69	69	71	73	72	69	70	74	71	77	58
E3	15	64	66	63	60	63	67	62	65	67	70	69	69	79	52
Non Super E4	13	67	70	69	65	68	72	70	71	69	69	70	69	74	60

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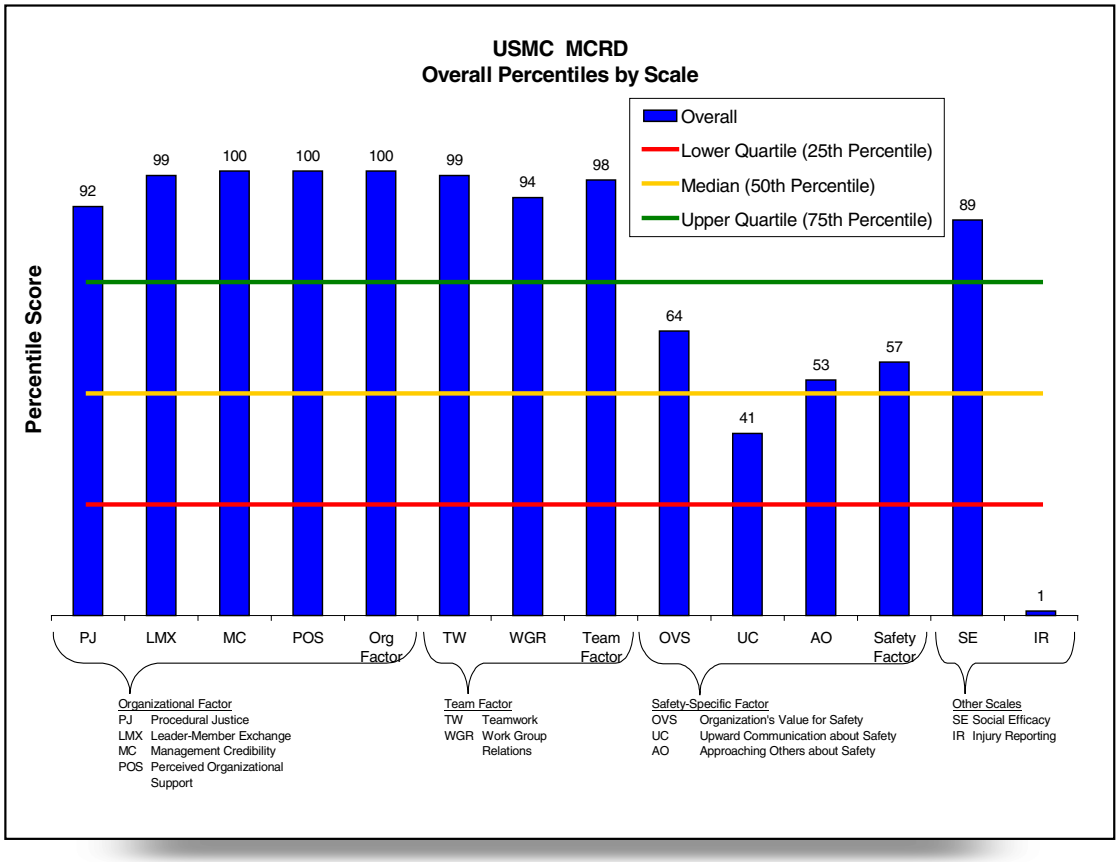
Marine Corps Recruit Deport San Diego, CA



Percentile MCRD had the highest scores of a units completing the survey with 9 of 11 scales above 50 percentile. The scales associated with Leadership and Teamwork all scored above 90 percentile. These are very positive findings as this is where a Marine has his first contact with leadership and teamwork. And this is where safety begins. Upward Communications about Safety scored 41% suggesting when compared to other sites that have completed the OFS MCRD can improve. However the scale exceeds the USMC Activity Duty average by 35% percentile.

Raw Scores. While quite high Management Credibility, Perceived Organizational Support and Organizational Value for Safety scale scores have significant differences between Senior Commanders and enlisted Marines. This suggests the enlisted Marines may not feel supported by their Leaders to the level the Leaders think they are meeting their personal needs. Also Leaders are espousing a strong safety value but they lack the credibility around safety to get junior Marines to embrace that value. During interviews junior Marines solidified this with the following "They say the same thing over and over, don't———, don't ——— and don't ——. In one ear and out the other." This comment summary was generally associated with off duty PMV safety.

Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
USMC MCRD	163	92	99	100	100	100	99	94	98	64	41	53	57	89	1
Version of Survey															
Enlisted	34	79	97	96	95	94	80	49	69	29	31	32	33	92	1
Officers	129	78	100	91	86	93	97	96	97	25	20	73	44	92	6

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• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - MCRD

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	5	78	82	**96**	**92**	**88**	**90**	**89**	**90**	**87**	77	83	83	84	52
Unit Officer	26	73	82	85	82	81	**88**	84	86	**80**	77	75	77	84	57
Junior Officer	8	74	77	80	80	78	79	80	80	78	74	68	72	79	64
SNCO/NCOS	83	73	78	76	75	76	81	78	79	76	74	75	75	77	60
E3	8	70	80	76	71	74	80	73	77	68	67	77	71	83	52
Non Super E4	9	64	76	69	67	69	78	68	73	64	67	72	68	84	43

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Results by Command

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Percentile Scores by Command															
MCRD	33	69	88	89	86	88	75	44	59	26	27	38	28	85	4
Raw Scores by Command															
MCRD	33	69	75	72	71	72	77	72	75	70	72	73	72	80	58

•Command scores are based on worker-version surveys only.
• Scores for Commands with fewer than 5 surveys are not shown.
• Bold values are statistically significantly higher than underlined values (probability < .005).
• Raw scores range from 20 to 100.
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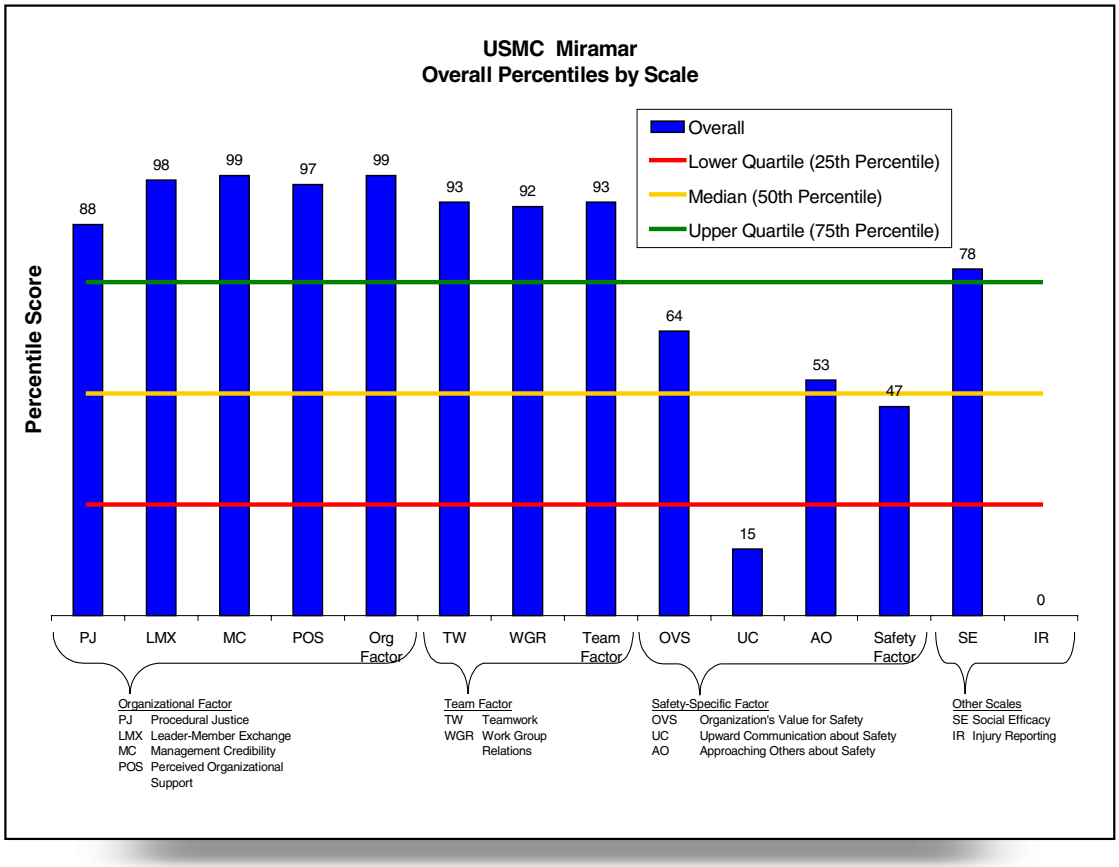
Marine Corps Air Station Miramar, CA



Percentile. 8 of 11 scales were above 50 percentile with 7 scales above 75 percentile. The Organizational Factor, Team Factor and Organizational Value for Safety percentiles suggest MCAS Miramar Commands have a well developed and positive safety culture that values safety.

The Upward Communications about Safety Scale suggests that some Marines are more reluctant to raise safety issues than other units surveyed. Also the Marines do not see value in reporting minor injuries.

Raw Scores. The raw scores were very closely aligned with no significant differences present in any Command group. The only significant differences are present in the rolled up Miramar data. These are on scales with very high percentile scores. These few perception differences suggest that those E-4's in a non-supervisory role may feel on the outside.

Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
USMC Miramar	358	88	98	99	97	99	93	92	93	64	15	53	47	78	0
Version of Survey															
Enlisted	138	93	97	98	90	96	88	76	86	57	9	54	51	69	0
Officers	220	67	94	87	84	86	92	89	90	25	6	67	28	81	2

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Comparisons between Levels - USMC Miramar

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	20	74	77	**87**	**88**	**83**	**82**	**82**	**82**	81	75	74	77	81	52
Staff Officer	26	72	76	83	**80**	78	**81**	**79**	**80**	77	72	73	74	78	50
Unit Officer	41	73	78	80	**79**	78	**82**	**80**	**81**	77	72	77	76	79	49
Junior Officer	56	72	78	79	**76**	76	**82**	**80**	**81**	77	72	74	75	78	50
SNCO/NCOS	71	70	74	73	71	72	77	75	76	74	70	71	72	74	54
E1	16	66	74	73	65	70	76	75	75	74	68	77	74	78	47
E2	35	75	78	79	74	76	**81**	**80**	**81**	76	71	76	75	81	47
E3	53	73	76	74	70	73	77	75	76	74	70	74	73	78	48
Non Super E4	25	66	71	69	65	68	72	70	71	70	66	77	72	75	49

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
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Results by Command - USMC Miramar

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Percentile Scores by Command															
Fixed Wing	21	83	94	96	89	94	72	71	71	57	9	59	48	62	2
Rotary Wing	29	90	93	97	94	96	92	85	90	54	15	63	51	73	1
MALS	7	69	89	87	65	80	53	39	45	56	19	79	60	86	0
Battalion	8	80	81	93	86	90	93	89	92	64	33	24	39	95	2
Staff MAW	11	81	83	84	71	81	67	67	66	23	9	52	27	87	1
MC Air Station	57	77	83	87	69	81	60	58	59	41	14	42	34	49	1
Raw Scores by Command															
Fixed Wing	21	72	78	77	73	75	77	76	76	76	68	77	74	78	52
Rotary Wing	29	74	77	79	75	77	81	78	80	75	70	77	75	79	47
MALS	7	69	76	72	65	70	75	71	73	75	70	80	76	80	40
Battalion	8	71	74	75	72	73	82	79	81	77	73	71	73	83	53
Staff MAW	11	72	74	71	67	70	76	75	76	69	68	76	72	80	46
MC Air Station	57	70	74	72	66	70	75	74	75	73	69	74	73	77	46

- Command scores are based on worker-version surveys only.
- Scores for commands with fewer than 5 surveys are not shown.
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BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Miramar - Battalion	19	92	98	100	100	100	99	97	98	77	25	26	47	78	1
Version of Survey															
Enlisted	8	89	95	99	95	96	99	98	99	78	42	19	43	100	0
Officers	11	72	98	96	94	95	95	96	95	33	6	49	28	60	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - USMC Miramar Battalion

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
E3	5	86	85	90	84	86	94	93	94	89	82	75	82	94	50

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BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Miramar - Fixed Wing	61	92	99	100	97	100	97	97	97	72	15	61	57	78	0
Version of Survey															
Enlisted	21	93	99	100	97	100	80	85	79	71	5	62	51	69	0
Officers	40	78	98	91	75	89	97	96	97	25	10	73	36	88	1

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
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Comparisons between Levels - USMC Miramar Fixed Wing

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Unit Officer	15	74	78	84	81	80	83	82	82	81	74	77	78	80	48
Junior Officer	13	72	80	80	75	77	85	83	84	77	74	75	76	79	53
SNCO/NCOS	10	73	77	69	65	71	78	74	76	71	71	71	71	74	50
E2	6	74	83	81	76	79	85	85	85	82	73	78	78	80	48
E3	9	68	78	74	71	73	72	69	71	72	64	77	73	76	54
Non Super E4	5	76	73	78	72	75	77	78	77	74	69	76	74	78	52

• Scores represent the percentage of maximum possible score.
• Scores for levels with fewer than 5 surveys are not shown.
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BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Miramar - MALS	17	88	99	98	96	97	89	75	87	72	10	80	66	89	0
Version of Survey															
Enlisted	7	79	97	94	76	89	64	39	49	64	15	89	69	92	0
Officers	10	72	100	87	86	89	92	89	90	39	1	80	44	88	2

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Appendix B

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Miramar - MC Air Station	104	88	97	96	88	95	89	87	87	47	10	35	37	65	0
Version of Survey															
Enlisted	57	85	95	94	80	89	64	67	69	49	9	39	43	55	0
Officers	47	72	94	84	75	84	95	89	95	17	3	49	20	72	2

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Comparisons between Levels - USMC Miramar MC Air Station

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Junior Officer	12	75	80	80	77	78	84	81	83	75	69	71	72	80	47
SNCO/NCOS	23	69	74	71	70	71	78	75	77	75	71	72	73	73	55
E1	7	63	72	66	54	63	72	71	71	72	68	77	73	76	46
E2	15	74	76	77	73	75	79	78	78	75	71	71	73	79	47
E3	25	72	76	73	68	72	77	73	75	73	70	74	72	78	45
Non Super E4	9	64	69	65	60	64	69	69	69	69	65	78	72	71	48

• Scores represent the percentage of maximum possible score.
• Scores for levels with fewer than 5 surveys are not shown.
• Bold values are statistically significantly higher than underlined values (probability < .01).
• Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number of surveys.

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		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Miramar - Rotary Wing	102	88	97	100	99	99	93	92	93	64	15	53	47	65	0
Version of Survey															
Enlisted	29	97	99	100	99	100	98	95	98	64	15	62	61	81	0
Officers	73	57	83	84	79	84	81	78	80	17	3	67	28	72	2

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Comparisons between Levels - USMC Miramar Rotary Wing

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	6	75	75	85	86	81	76	77	76	78	74	75	76	81	57
Staff Officer	12	71	75	83	80	78	81	78	80	81	73	72	75	79	52
Unit Officer	12	71	77	76	76	75	79	78	78	73	71	74	73	76	49
Junior Officer	19	69	75	76	77	75	80	78	79	79	73	77	76	77	51
SNCO/NCOS	22	68	71	72	71	71	74	74	74	73	67	69	70	73	54
E1	8	68	76	82	76	76	79	79	79	75	69	79	75	78	48
E2	8	81	82	83	77	81	88	87	87	77	71	79	76	86	42
E3	6	77	71	71	71	72	77	74	76	75	69	68	70	69	50
Non Super E4	5	69	77	73	71	72	76	68	72	69	64	80	73	76	50

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		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Miramar - Staff MAW	43	88	98	99	99	100	97	97	98	47	10	45	37	89	0
Version of Survey															
Enlisted	11	93	95	91	83	89	72	76	79	23	5	54	33	92	0
Officers	32	67	96	93	89	89	97	98	97	17	3	67	28	92	1

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• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - USMC Miramar Staff MAW

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commander	6	71	74	84	86	80	81	81	81	76	73	67	71	77	50
Staff Officer	6	74	80	84	81	81	84	84	84	77	74	74	75	81	42
Junior Officer	6	73	77	80	76	77	80	80	80	78	70	74	74	80	47
SNCO/NCOS	10	68	76	74	74	73	81	78	80	73	70	73	72	76	50
E3	7	69	73	69	65	69	75	75	75	67	67	75	70	79	44

• Scores represent the percentage of maximum possible score.
• Scores for levels with fewer than 5 surveys are not shown.
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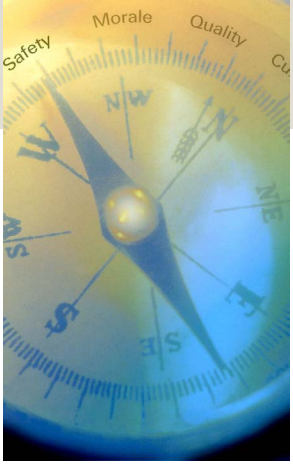
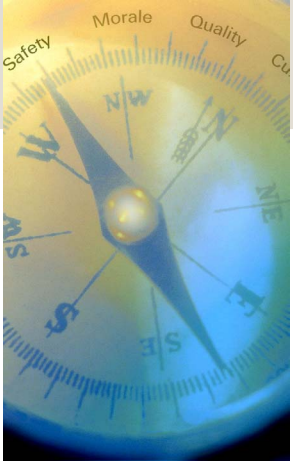
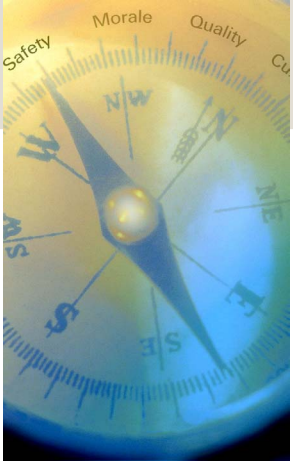


Appendix C: Improvement Suggestions Proposed by USMC Personnel

- Outreach: share info with law enforcement, involve the family involvement, etc.
- Officially change ORM to RM
- Junior Marines said,
  - *Trust us*
  - *Hold us to high standards*
  - *Recognize that we do right some of the time*
  - *Stop all of the BS waste of time and negativity*
  - *Relieve barracks pressures*
  - *Move safety actions to sections away from larger groups*
  - *Identify repeaters and help them.*
  - *Don't punish everyone for a few bad apples.*
  - *Make sure the use of Arrive Alive, calling in for ride, calling in for permission to sleep on drive back are not punished unless abused.*
  - *Make Arrive Alive available to under age Marines and make it free.*
- NCO's and SNCOs said,
  - *Make special programs available for high-risk Marines*
  - *We do know who the stupid ones are*
  - *Make it easier to find out who came in on a waver.*
  - *Marry up problem people with good performers and make it a project for the good per former so that it benefits both of them if they succeed*
  - *Pick up and deal with small deviations from procedure, not only the big ones*
  - *Reinforce their (Junior Marine's) common sense*
- Check returning cars for DUI
- Stop playing favorites; impartial application of rules and evaluation
- Create clear leadership standards and performance metrics for every level and do courageous, accurate performance evaluations rather than cutting slack and making exceptions; create a roadmap for being a successful Marine and train/lead/manage to it.
- Provide recognition for NCOs who are doing the right thing
- Create a USMC-specific acronym for safety.
- Have SNCO/NCO and even Junior Marines lead small group discussions of safety issues.
- Punish Marines for being too sleepy upon return from 72, 96, etc.
- Create a process of annual re-certification in which you have to prove you're a safe person by attending training, negative drug and alcohol tests, no violations, etc.
- Consider safety in design of equipment; e.g., rigidity of seats in 7-ton trucks produces fatigue; these trucks need roll protection, etc.



- Involve troops in some decision making or make some things less rigid; e.g., flack jacket and Kevlar helmet use in Iraq while driving truck
- Use corpsmen and QA people as proactive agents whenever they are in the field.
- Create aggressive Contact Teams that go out from the safety function and offer battalion commanders analysis and help. Work with them. Make sure the information these teams generate does not go to others.
- Cost/Benefit ORM decisions that involve safety: the person who makes the decision should be held accountable for the consequences. If you make a calculated risk decision, you loose if you're wrong.
- Don't require sleep deprivation where it is unnecessary as a means to teach them not to do this to themselves and to protect them in training.
- Relieve commanders who themselves exhibit risky behavior.
- Investigate Class C & D at local level and share learnings.
- Make proper PPE readily available, in good condition and enforce its use.
- Improve sharing of information—lessons learned—don't wait for completion of investigation before sharing starts.
- Include safety explicitly in Individual Training Standards, ITSs
- Do the safety standowns a day or two before the leave so people can leave on time without anger and rush.
- Provide someone for Marines to talk to in confidence other than the Chaplain, someone with some counseling experience.
- Provide anonymous way to report on bad safety conditions in a shop or situations with an NCO, an 800-number for example. Actively investigate and respond rather than cover up.
- Begin instilling safety values and standards in recruits during Delayed Entry Program processing and training.



Appendix D: Ex3, Incorporated ~~Assessment~~ of Data Management System

Ex3, Incorporated received an impromptu briefing and demonstration of some of the capabilities of the Naval Safety Center's Web-Enabled Safety System (WESS II) on January 6, 2004 from Naval Safety Center developers. The project is scheduled to go online in its first phase on June 1, 2004. An additional phase will be launched in December 2004. By December 2005, the system should be complete in that it will also incorporate all of naval aviation.

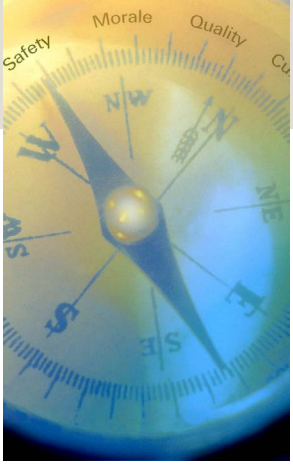
The inception stage of the WESS II project consisted of creating a new, single guiding directive for reporting safety incidents throughout the Department of the Navy. This project was an outgrowth of an earlier project that combined all Navy and Marine data points. It is unclear whether WESS II has been cross-pollinated from both departments, but the Navy feels that they can currently or with little effort accommodate all of the Marine Corp's needs.

The WESS II project manager (an SRA International Inc employee), over the course of 10 weeks and in conjunction with a team of consultants, developed a System Specification Document, from which WESS II is being developed. A team of 13 developers dedicated to WESS II is now under her direction. These developers are using KEEL (a meta framework tool) to integrate several different components, including database connection to the WESS II Informix database, and at least seven other legacy databases on different platforms. They are confident that they will be able to meet their June 1 deadline for delivering the application.

The system is built around the TurboTax interview method to gather information, creating reports that can be filled out over the course of one-to-many web sessions. The report is then routed through an approval process until it is finalized. The system can prompt the novice user what type of report to file, or the user can choose from a specific report format. Each form routes the user through a different series of questions, requiring some data in the initial screen, but allowing other fields to be filled in at a later time (but are still required for completion of the report).

The system distributes accessibility to different parts of the system based on login role. The system also forces data continuity by means of drop-downs and pick lists. The system uses look-up screens when drop-down lists would be too long, and uses radio buttons where there are fewer than six items in a drop-down list. The system will have the ability to create reports. They are using a Jinfonet product called JReports to create canned reports and offer ad-hoc reporting tools to users on a specific level. The output of JReports is impressive and similar in capability to Crystal Reports used by E*x*3. XML, XL, HTML, RTF, and PDF outputs are all exportable from the same report, and the ability to schedule creation and distribution of versions of that report.

The proposed system is vast is scope and is being handled by competent, even gifted developers. However, the end result is modally driven, taking the user through a lengthy interview process. The system's general logic would have to be rethought before it could migrate to a tab-based system. Currently, MARTRAK reports received at the Naval Safety Center are manually entered into the WESS I database.



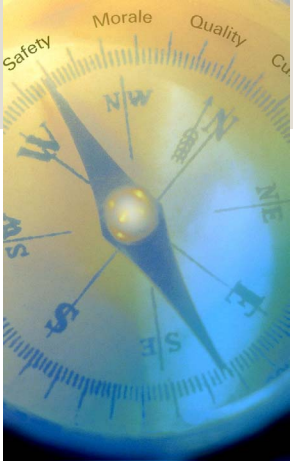
Appendix E: Behaviors in USMC Vehicle Fatalities

Off Duty PMVs

Behavior	Frequency
Excessive Speed	63.46
Loss of Control	46.15
Seatbelt Use	23.08
Fatigue	17.31
Helmet	13.46
Alcohol	13.46
Failure to Intervene	13.46
Other Vehicle	7.69
Left Lane/Roadway	5.77
Over Control	5.77
In Roadway	3.85
Driving in Rain	1.92
Failure to Yield	1.92
Response to Animal	1.92

Operations Vehicle

Behavior	Frequency
Physical Condition	18.92
Line of Fire	16.22
Weapon Use	16.22
Vehicle Operations	16.22
Eyes on Path	16.22
Weapons use -Safety Switch	8.11
Loss of Control	8.11
Avoid Water	5.41
Ordnance Handling	5.41
Excessive Speed	5.41
Buddy System	2.70
Sleeping by Vehicle	2.70
Right of Way	2.70
Eyes on Work	2.70
Sar Response	2.70
Response to Heat	2.70
Fall PPE	2.70
Alcohol	2.70
Friendly Fire	2.70
Seatbelt	2.70
Helmet	2.70
Left Lane	2.70
Equipment Condition/Use	2.70



Appendix F: National Highway Transportation Safety Agency

NHTSA National Survey of Distracted and Drowsy Driving Attitudes and Behaviors 2002

Talking with other passengers (81% *self-report)*
Reading a map or directions while driving (12%)
Changing radio stations or looking for CD'S/tapes (66%)
Personal Grooming (8%)
Eat or drink while driving (49%)
Reading printed material (4%)
Making outgoing calls on a cell phone (25%)
Responding to a beeper or pager (3%)
Taking incoming calls on a cell phone (26%)
Using wireless remote Internet access (2%)
Dealing with children riding in the rear seat (24%)
Using telematics such as in-car navigation or crash avoidance systems (2%)

NHTSA National Survey of Speeding and Unsafe Driving Attitudes and Behavior 2002

Speeding on non-interstate multi-lane roads (83%)
Making an illegal U-turn (7%)
Speeding on Interstate (78%)
Driving through stop sign without slowing (4%)
Speeding on two-lane roads (78%)
Running a red traffic light (4%)
Speeding on neighborhood, city or town streets (73%)
Racing another driver (3%)
Running a yellow traffic light (40%)
Crossing railroad tracks with signals activated (3%)
Rolling through a stop sign (30%)
Drunken driving (2%)
Tailgating (10%)

NHTSA National Survey of Drinking and Driving Attitudes and Behavior 2001

Driving within two hours of alcohol consumption (28% of 21-29 yrs, 32% male)
Refrained from driving when drunk (50%)
Riding with a significantly impaired drunk driver (11%)
Ridden with a designated driver (33%)
Successfully kept a drunk friend from driving (75%)
Arrested for drunk driving (1%)

NTSA Motor Vehicle Occupant Safety Survey 2002

Use seatbelts (75%)
Use helmet (58%)

Appendix G

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
USMC Reserves	161	91	98	100	97	99	96	97	96	48	6	70	47	95	0
Version of Survey															
Enlisted	87	89	97	98	87	94	93	90	93	36	3	62	42	81	0
Officers	74	72	94	97	98	95	95	96	97	26	3	85	45	98	1

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Comparisons between Levels USMC Reserves

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commanger/CO	18	72	76	**86**	**83**	80	81	79	80	76	70	75	74	78	48
Staff Officer	14	73	78	**86**	**87**	82	84	84	84	80	75	82	80	84	47
Unit Officer	14	72	75	**84**	**83**	80	79	82	81	78	72	77	76	83	47
Junior Officer	7	71	77	**85**	**85**	80	82	80	81	80	67	84	79	80	46
SNCO/NCOS	21	71	75	77	78	76	81	78	79	75	70	74	73	79	48
E1	8	73	74	72	64	70	77	71	74	68	62	79	71	77	38
E2	28	72	75	78	72	75	80	80	80	75	68	79	75	79	43
E3	27	72	78	74	68	73	81	79	80	72	68	77	73	80	42
Non Super E4	11	66	71	69	60	66	71	68	70	67	65	71	68	76	47

- Scores represent the percentage of maximum possible score.
- Scores for levels with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
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Results by Command

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Percentile Scores by Command															
Fixed Wing	7	84	93	92	60	87	95	89	93	37	6	81	49	74	1
Rotary Wing	6	75	73	86	33	70	30	56	41	22	3	61	25	83	1
Battalion	42	83	93	92	81	90	90	88	89	39	9	70	45	85	0
FSSG	14	84	83	92	77	88	84	69	78	38	9	44	31	85	1
Staff MAW	10	76	87	92	76	87	56	71	64	14	6	64	24	34	0
Raw Scores by Command															
Fixed Wing	7	72	78	74	64	72	83	79	81	72	67	81	74	79	42
Rotary Wing	6	70	72	71	59	68	71	73	72	69	65	77	71	80	42
Battalion	42	72	77	74	69	73	81	79	80	73	68	79	74	80	40
FSSG	14	72	74	75	69	72	79	75	77	72	68	75	72	80	48
Staff MAW	10	70	75	74	68	72	75	76	75	67	67	78	71	75	41

- Command scores are based on worker-version surveys only.
- Scores for commands with fewer than 5 surveys are not shown.
- Bold values are statistically significantly higher than underlined values (probability < .005).
- Raw scores range from 20 to 100.
- Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number of surveys.

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Overall															
Reserves - Battalion	85	88	99	100	99	100	98	99	98	48	6	87	57	98	0
Version of Survey															
Enlisted	42	93	98	98	90	96	98	98	98	49	5	81	50	91	0
Officers	43	66	94	95	95	93	95	98	97	18	3	91	45	98	1

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Comparisons between Levels - Reserves-Battalion

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commanger/CO	8	70	76	85	81	79	81	81	81	74	68	77	74	78	48
Staff Officer	8	72	79	85	86	81	85	84	84	82	75	84	81	83	48
Unit Officer	9	71	74	83	81	78	79	84	81	78	72	79	77	82	47
SNCO/NCOS	14	70	76	75	77	75	81	78	80	73	71	75	73	80	46
E1	5	77	76	78	70	75	76	73	75	73	64	84	75	78	34
E2	16	69	74	76	72	73	79	78	78	75	69	78	75	78	42
E3	13	73	79	76	70	74	84	83	83	73	68	79	75	81	39
Non Super E4	5	72	79	76	72	75	77	72	75	70	67	73	71	82	39

- Scores represent the percentage of maximum possible score.
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	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Reserves - Fixed Wing	11	82	98	100	93	99	96	94	96	64	1	80	47	78	0
Version of Survey															
Enlisted	7	93	99	98	71	94	100	98	99	41	3	93	50	81	0
Officers	4	28	68	100	99	97	38	62	50	65	0	49	29	60	0

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• Overall percentile scores based on comparisons to all surveys from other organizations.

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Appendix G

BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Reserves - FSSG	22	91	97	99	97	99	96	92	96	56	9	61	47	95	0
Version of Survey															
Enlisted	14	93	94	99	90	94	93	76	86	41	5	48	33	91	0
Officers	8	66	94	96	97	95	95	96	97	41	10	88	54	95	1

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Reserves -FSSG

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
SNCO/NCOS	5	70	71	78	77	75	76	75	76	76	69	77	75	75	54
E2	5	81	81	88	82	84	84	86	85	84	74	81	80	85	45

• Scores represent the percentage of maximum possible score.
• Scores for levels with fewer than 5 surveys are not shown.
• Bold values are statistically significantly higher than underlined values (probability < .01).
• Unless all respondents provided their demographic information, the number of surveys within each section of this table will not add up to the total number of surveys.

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BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Reserves - Rotary Wing	7	82	83	94	53	81	41	66	46	20	0	80	27	95	0
Version of Survey															
Enlisted	6	85	84	91	41	82	26	57	39	23	0	62	23	91	0
Officers	1	28	84	96	100	95	92	96	95	9	3	99	64	95	0

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BST Organizational Functioning Survey Results

Percentile Scores Overall and by Version

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Overall															
Reserves - Staff MAW	27	91	98	100	100	100	93	94	96	40	9	52	37	88	0
Version of Survey															
Enlisted	10	85	96	98	87	94	63	85	69	14	3	71	23	25	0
Officers	17	78	94	99	99	98	95	96	95	26	3	67	29	98	1

• Percentile scores for each version of the survey are based on comparisons to the same survey version from other organizations.
• Overall percentile scores based on comparisons to all surveys from other organizations.

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Comparisons between Levels - Reserves - Staff MAW

		Organizational Factor					Team Factor			Safety Specific Factor				Other Scales	
	# Surveys	Procedural Justice	Leader-Member Exchange	Management Credibility	Perceived Org. Support	Org Factor	Teamwork	Work Group Relations	Team Factor	Org. Value for Safety	Upward Comm-unication	Approaching Others	Safety Factor	Social Efficacy	Injury Reporting
Level															
Senior Commanger/CO	8	74	76	85	83	81	81	76	79	76	70	73	74	79	49
Staff Officer	6	73	78	88	87	83	83	85	84	78	75	80	78	84	47
E3	5	65	75	72	66	70	76	75	76	70	66	78	72	77	39

• Scores represent the percentage of maximum possible score.
• Scores for levels with fewer than 5 surveys are not shown.
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