Attributes of a Healthy Safety Culture

MESSAGES FROM NTSB CHAIRMAN
ROBERT L. SUMWALT

NTSB | National Transportation Safety Board

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Attribute 1:

Top-Level Management Commitment

You probably have a healthy safety culture when employees are doing the right thing, even when no one is watching. Perhaps counterintuitively, top management support and commitment is probably the single most important ingredient in reaching this state.

If leaders say safety is their top priority, but then turn a blind eye to safety concerns under pressure, employees will understand safety is not the most important value.

In 1999, the Flight Safety Foundation Icarus Committee published an article entitled, “The Dollars and Sense of Risk Management and Airline Safety.” Their bottom line:

> “Through its attitudes and actions, management influences the attitudes and actions of all others within a company: Management defines the safety culture of an organization. This safety culture extends all the way to the maintenance shop floor, to the ramp, to the cabin and to the cockpit.”

Sometimes I still meet top managers who think it gets them off the hook to portray employees as lax. With one poor performer, a leader looks at how that employee can improve. With a workplace full of them, a leader must look in the mirror.

Attribute 2:

Personal Accountability and Empowerment

Certain attributes appear in the literature on safety culture time and again; they seem to point to a healthy focus on safety. Last week I discussed one, top-down management commitment.

The second attribute works from the bottom up: personal accountability and empowerment. You see this attribute illustrated in commercials featuring line employees who can stop the job if something is wrong.

Douglas Wiegmann et al. noted this attribute in a 2002 FAA technical report, *A Synthesis of Safety Culture and Safety Climate Research*. With this attribute, employees recognize their role in safety promotion and actions, and hold themselves and others accountable.

"Within the context of safety culture, employee empowerment means that employees have a substantial voice in safety decisions, [and] have the leverage to initiate and achieve safety improvements," Wiegmann et al. wrote.

In 2004, Ron Westrum wrote in "A typology of organizational cultures" that one of the reasons for one airline's good safety record was, "a suggestion and reporting system that is strongly supported by a company culture with high empowerment."

Attribute 3:

Risk Awareness and Planning

Safety conscious organizations exhibit risk awareness and planning. They constantly seek out hazards. Once hazards are found, the risks associated with them are assessed. The organization places controls on unacceptable risks to reduce the risk to as low as reasonably practical.

The Nuclear Regulatory Commission's safety culture policy statement identifies this treatment of "Work Processes" as a trait of positive safety culture: "the process of planning and controlling work activities is implemented so that safety is maintained."

The NTSB has recently completed investigations into several accidents in which this process failed.

In Merrimack Valley, Mass., the gas company planning a job package for the removal of a cast iron main did not assess the hazard of sensing lines still attached to abandoned pipe.

The pipe was depressurized, so the sensing lines continually indicated that gas flow could be increased. The gas flow was increased, into the new pipe—where pressure was not measured. The low-pressure system was flooded with high-pressure gas; explosions and fires were the result.

How do you "think of everything?" Cast a broad net. All the necessary departments were not consulted.

Attribute 4:

Problem Identification and Resolution

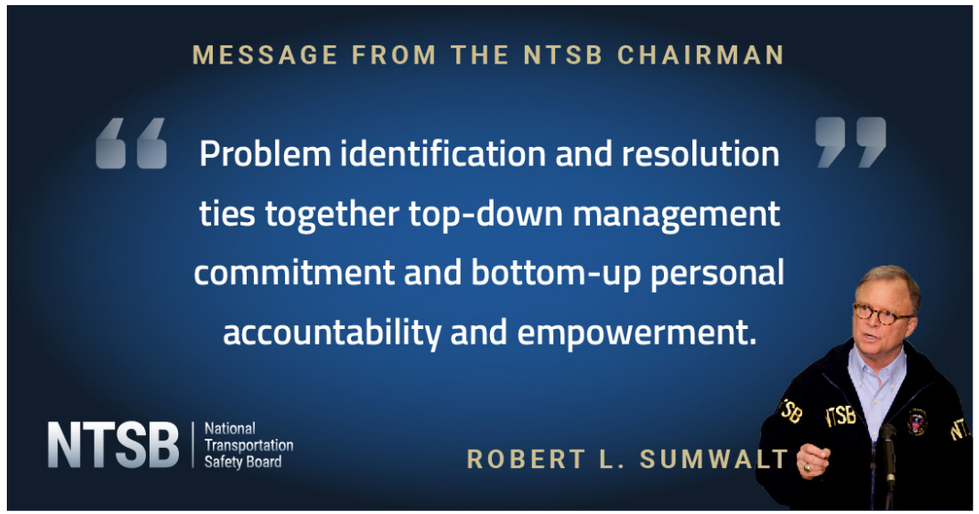
Problem identification and resolution ties together top-down management commitment and bottom-up personal accountability and empowerment.

Strong safety-oriented organizations remain keenly aware of potential problems. They realize that safety is a journey and not a destination, and that safety is a constant prevention effort.

In 2005's *Safety, Culture and Risk: The Organizational Causes of Disasters*, Andrew Hopkins wrote that safety-oriented organizations maintain a "collective mindfulness" for potential problems: "Mindful organizations understand that long periods of success breed complacency, and they are therefore wary of success."

On May 31, 2014, the pilots of a Gulfstream G-IV left a gust lock on while trying to take off from Bedford, Massachusetts. The airplane overran its runway and crashed, killing 7. A recorder provided data post-accident: complete flight control checks were neglected before 98% of the flight crew's previous 175 takeoffs.

But there was no routine Flight Data Monitoring program to identify the problem. Their audits were glowing. But commitment was missing from the top down; accountability was missing from the bottom up.



Attribute 5:

Promoting Open Reporting

The foremost experts on safety in your organization walk out the door at the end of every shift. They are your employees. Learn what they know. Gary Eiff wrote that “One of the foundations of a true safety culture is that it is a reporting culture.”

The NTSB recently completed an investigation into a helicopter ditching in which five passengers drowned, likely trapped by unsafe harnesses. The flight was operated by Liberty Helicopters, Inc., under contract with NYONair.

Liberty’s safety officer said that Liberty pilots’ safety concerns were “shut down” by NYONair. Liberty’s director of training said that, after a meeting in which Liberty pilots had raised various concerns, NYONair’s CEO told them they could no longer participate. (They were later invited back.)

Employees must know that their information will be treated confidentially and taken seriously. They must be confident they will not be ridiculed or retaliated against.

And to ensure that the reporting culture perseveres, provide feedback to the reporter. As James Reason wrote, “Apart from a lack (or loss) of trust, few things will stifle incident reporting more than the perceived absence of any useful outcome”

Attribute 6:

A Culture of Continuous Learning

After premiering last year, the HBO miniseries Chernobyl became the highest-rated TV series of all-time. So, what does an award-winning TV series have to do with a message about safety?

If you've ever used the term safety culture, that term was coined by the International Nuclear Safety Advisory Group (INSAG) in its report on the Chernobyl disaster.

Organizations with a healthy safety focus are constantly learning. They learn from their mistakes and those of others. Ideally, information regarding prior incidents and accidents is shared openly and not suppressed. It is not surprising that the concept of safety culture was broadened to the study of organizational accidents everywhere and has been further refined.

Safety is also a never-ending search for undetected hazards. It is not a destination but a journey. Every accident, whether our own or someone else's, while often tragic, points toward new solutions.

And the first step on the journey is the realization that it must continue. A culture of continuous learning is an indicator of a healthy focus on safety.

Attribute 7:

Using the Proper Metrics

If you can't measure it, you can't manage it. But, it's important to measure the right things.

However, in accident investigations, we see organizations measuring things that, while important, have nothing to do with predicting and thus preventing major accidents—and neglecting measures that could do so.

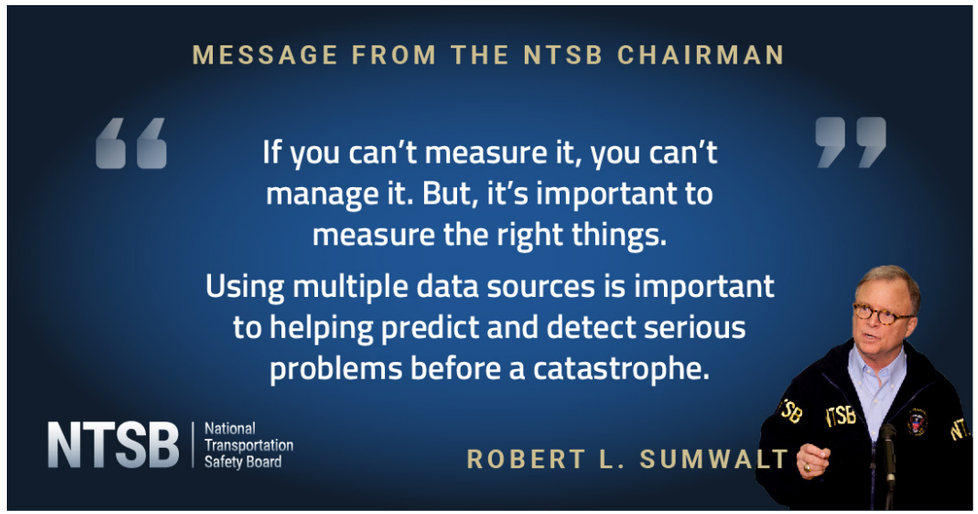
Some examples: a subway system carefully monitors occupational safety (such as slips, trips, and falls), escalator injuries, and crime in subway stations... but did not predict or detect the rail signaling anomalies that led to a collision between two trains.

A BP oil refinery at Texas City, Texas, takes its overall good industrial safety record to indicate good operational safety... but an explosion at the site claimed 15 lives.

As the US Chemical Safety and Hazard Investigation Board wrote in the accident report:

> "A very low personal injury rate at Texas City gave BP a misleading indicator of process safety performance. [While] most attention was focused on the [personal] injury rate, the overall safety culture and process safety management program had serious deficiencies."

Using multiple data sources is important to helping predict and detect serious problems before a catastrophe.



Attribute 8:

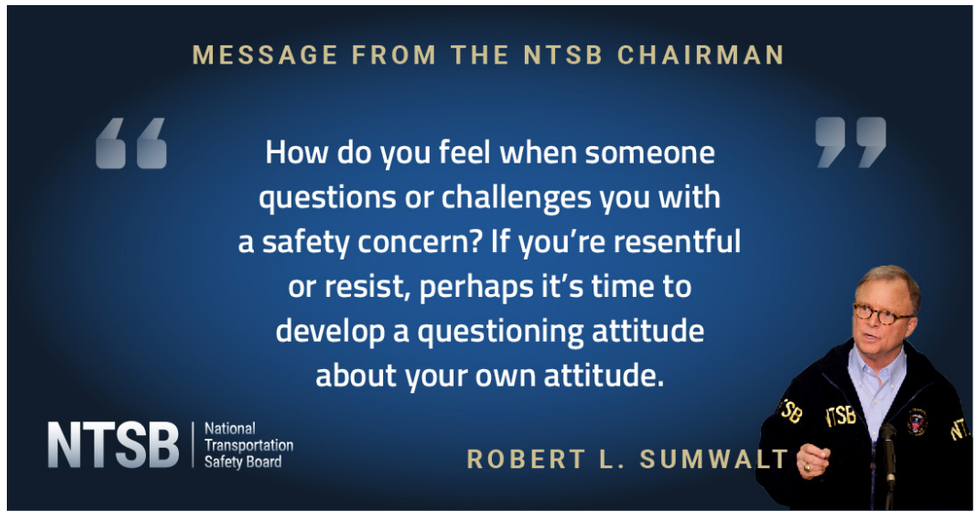
The Questioning Attitude

As the leader of an organization, one of the things I fear is that my fellow employees might not tell me when I'm wrong or when they disagree with me. I probably learned to respect this fear when I was an airline captain, where I was trained to use crew resource management. Through CRM, everyone was encouraged to speak up with safety concerns. It also taught us to recognize and appreciate when people were trying to tell us something important.

As it turns out, that same respect for, and promotion of, a "questioning attitude" is another important attribute of a healthy safety culture.

The National Academies of Sciences, Engineering and Medicine wrote that an organization "fostering strong safety culture would encourage employees to cultivate a questioning attitude and a rigorous and prudent approach to all aspects of their jobs and to set up necessary open communication between line workers and middle and upper management."

How do you feel when someone questions or challenges you with a safety concern? If you're resentful or resist, perhaps it's time to develop a questioning attitude about your own attitude.



Attribute 9:

Just Culture

James Reason describes just culture as “an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety-related information –but in which they are also clear about where the line must be drawn between acceptable and unacceptable behavior.”

A just culture is not a “get out of jail free card.” Rather, “honest mistakes” or errors committed by people who are trying to do the right things are typically not punished. But employees who are reckless or are involved in intentional misconduct are appropriately disciplined.

In 2017, the NTSB completed its investigation into the collision of an Amtrak train with a backhoe in Chester, Pennsylvania. Amtrak’s rules-based culture seemed no-nonsense, with penalties including dismissal for “cardinal” offenses.

But workers we interviewed cited instances in which they did not have the resources to comply with the rules. A culture of fear sprang up. Voluntary reporting was thwarted. Workers felt pressured to overlook unsafe conditions or change their reports.

What was missing? Just culture. If management punishes inadvertent errors by employees who are trying to do the right thing, how reliable will employee reporting be?

Epilogue

These messages have been about some attributes of healthy safety cultures. I hope readers have looked around, noted where an attribute is lacking from their organization's safety culture, and considered whether it represents an opportunity for improvement.

And I hope that readers who saw no such gaps in their organizations now believe they may have overlooked something. As James Reason said, "There are no final victories in the struggle for safety."

While writing these messages, I realized again how integrally enmeshed personal and organizational responsibility are in the safety journey. The active error committed by one employee might not have been committed by another. But the same employee who committed the error might not have done so in another organization.

An organization can cause an accident, and so can an individual. To continually improve safety takes both conscientiousness and boldness, to voluntarily identify what might go wrong, and to think through the thousand branching "what if" paths on the way to mitigating risk.

It is a tall order, and my hat is always off to those who accept the challenge—our safety professionals.