Training Topic:

Safety Culture

What is "Safety Culture?"

Does *Safety Culture* seem like just another "buzzword" thrown around the aviation community? It is much more; in fact it is a valuable concept whose understanding is critical to every flying operation. Many definitions of safety culture exist, here are just a few for us to begin our discussion with:

> *The overall attitude towards safety of a group and their perception of what safety is.*

> *Doing the right thing when no one is looking (Which can also be defined as being "professional.")*

> *Product of individual and group values, attitudes, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, the organization's management of safety.*

Where does it begin?

No matter which definition you choose, one thing is clear: safety culture is not tangible or easily identified within an organization. Often the tone of a safety culture must come from the top and cascade down to all employees. We all look for direction from authority figures in higher positions in an effort to gain approval or attain success. As a result, the actions of those people in leadership positions are often mimicked by employees, almost similar to the way young people revere sports figures. The salient point being, management's attitude and actions, combined with the existing foundation of standards, will dictate the state of safety culture in any organization. However, this does not absolve employees at the lower levels from taking action and accepting responsibility for developing a positive safety culture. NTSB Vice Chairman Robert Sumwalt stated at the Air Line Pilots Association International's 53rd Annual Air Safety & Security Forum in August 2007 that, "Just as it is incumbent on senior airline management

to establish and maintain a safety culture, it's also up to people on the front lines to carry out their responsibilities with precision and professionalism."

Failure to invoke a positive and productive safety culture may eventually contribute to an accident. In fact, the NTSB broke glass following the 1991 crash of Continental Express Flight 2574 when they cited the following as a contributing factor:

> *"The failure of Continental Express management to establish a corporate culture which encouraged and enforced adherence to approved maintenance and quality assurance procedures"* (NTSB/AAR-92/04)

In the case of this accident, bolts were removed from an EMB-120 horizontal stabilizer and were not replaced following a maintenance shift change. The EMB-120 subsequently crashed, killing 14. That's tangible.

Various organizational categories of safety culture

Pathological: "If it ain't broke, don't fix it." This type of organization consists of people primarily focused on getting the job done with little concern for safety, standards or regulations. If they continue to slide by without getting caught, it simply becomes their way of doing business. Employees may routinely exhibit typical hazardous attitudes such as macho, resignation, impulsivity, invulnerability, anti-authority, and impulsivity. These organizations may take-off a little over gross weight, abandon tool control, or perform approaches a little below minimums. No big deal right? To them it certainly isn't.
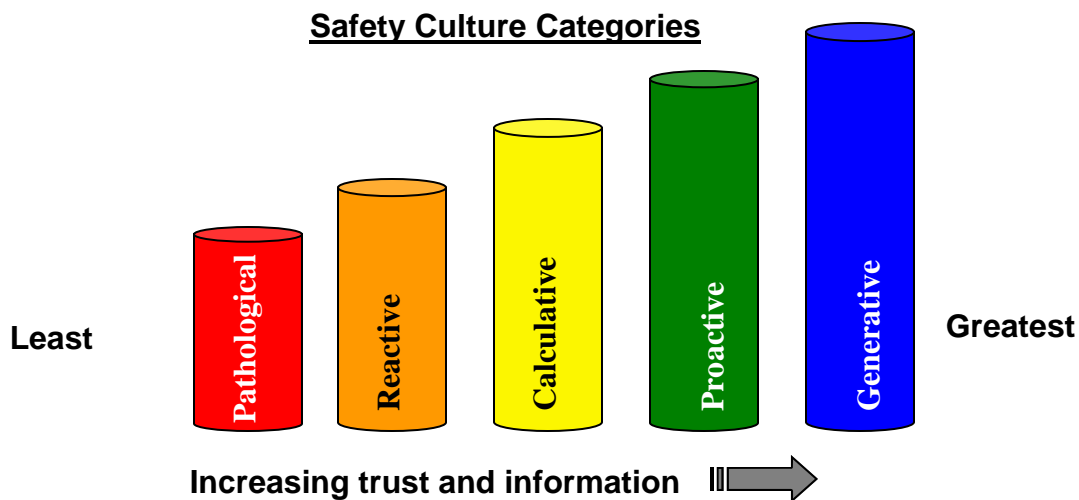
Reactive: "We really have to do something about those tires since we had an accident." This type of organization will seek solutions only after an undesirable event, accident or incident. This sort of "blind eye" head in the sand approach represents a complacent attitude; we only act when required. Reactive organizations are set in their ways, and typically do not accept change favorably.

Calculative: "We've read the book on the shelf and have made some effort." The calculative level is the first , albeit small, step to taking safety seriously. The organization may have a system in place to manage safety issues; however, the system may not be emphasized. Safety typically does not have active participation across the organization. Employees will know about the safety subjects, but may not understand completely or be able to explain it fully. Organizations are susceptible to getting 'stuck' in this phase. "We do have a safety program."

Proactive: The employees have a positive attitude and display dedication to the safety system in place. A genuine "system" approach is effectively constructed and perme-

ates throughout the organization. It is reviewed and improved consistently and new employees are trained upon hiring. Any problems are addressed and discussed regularly in meetings. A true safety culture begins here.

Generative: The overall culture here takes a serious stance on safety. They have zero-tolerance for unsafe acts. Leadership and employees are active, safety is promoted as commonplace, and the thought of any other less effective approaches are discarded. Employees have full confidence in management, are empowered, and have no fear in confiding in management on any safety issues. A true safety culture is present here.

Safety Culture Categories

Least

Pathological

Reactive

Calculative

Proactive

Generative

Greatest

Increasing trust and information

What makes a good safety culture?

A good safety culture is…

Informed: Gathering as much information about your company operations as possible is the primary goal. Asking "how did your day go?" does not suffice…. You've got to actively look for deficiencies. Here are some examples:

- Line Checks/Audits– Although these may not be representative of actual day-to-day pilot behavior, they still provide observance of crew performance and SOP adherence.

- Training/Simulator Evaluation– The primary source for information about pilot performance, ability, and responses to emergency situations.

- Surveys– The most common method to analyze a company's safety culture. The assessment may also include a safety audit with employee interviews and observations; a survey is by far the most un-biased approach. You will also receive honest information due to the anonymity (or confidentiality) of this approach. The survey

must be distributed to the entire workforce, and processed quickly. Accurately and objectively measuring safety culture is tough to accomplish; this will paint a pretty accurate picture. We'll talk more about survey's later.

- Hazard Reporting– This is truly essential, and participation must be actively and consistently encouraged. The process must be easy to use, and effective feedback will help ensure successful results. It is absolutely critical for every employee to embrace this concept and contribute.   There are ALWAYS things going on out there.

- FOQA– Flight Operations Quality Assurance- Tremendous value, but high cost. FOQA tracks flight parameters such as bank angle, speeds, unstabilized approaches, etc. It provides accurate, timely data on exactly how your airplanes and crews are operating.

- External Audit- It's extremely difficult for any organization to asses its own safety culture internally, there are just too many biases present. Utilize an external audit for the most accurate assessment, and don't wait until there is a self-perceived problem. At that point it may be too late.

Just: A just culture walks that fine line between reprisal and amnesty for actions. In most instances each occurrence must be examined on a case by case basis. Fortunately most reported events do not consist of willfully unacceptable behavior. In a just culture, employees understand there is leeway in their actions; however, acts of negligence are always discovered and never tolerated. They know any response by management will be fair and balanced, as long as their actions are not undertaken with extreme disregard for standards, regulations, and safety. A just culture is not achieved quickly; employee respect and trust must be earned .

Flexible: An organization must be able to adapt to change and not be firmly cemented in its ways. A successful, flexible culture will have methods in place to identify and embrace necessary change, and recognize and control the associated risk. Management in charge of changing policy must be engaged, have their hands in day-to-day operations. Employees are trained and ready to operate outside their normal duty requirements to create efficiencies.

Reporting: Employees must be willing to admit to their errors, and communicate them via a reporting system. Remember the "blind eye, head in the sand" problem? Without employee input, that's how it goes. Employees must have assurance defined in company policy defining the parameters for disciplinary action. The reporting process must be supported by a "just culture."

Culture Change

In an effort to create a more open safety culture industry-wide, programs such as the ASRS (Aviation Safety Reporting System) have been implemented as an open communication forum to report unsafe events. CRM (Crew Resource Management) training has also become ubiquitous, developing more effective communication skills and aiding in an industry-wide culture change.

The "can do, every time" attitude is being replaced with a more responsible, realistic attitude. There are, however, and perhaps always will be pilots and other employees that retain hazardous attitudes. Swift recognition of these attitudes remains important; they need to be addressed immediately to proactively prevent an undesirable event from occurring.

Creating awareness through training will help all employees identify a hazardous attitude in themselves and in others. Stop and think about what the NTSB/FAA report will look like if things go wrong because of an action or in-action. How will it read in the newspaper? We all know that after looking at some of the incident/accident reports we think: *Why in the world did they do that?!*

It's usually more difficult to change the safety culture of larger organizations due to the sheer amount of people and their varying attitudes towards safety. These organizations typically remain at the calculative stage unless active measures are taken to instill a safety conscious mindset. This may include focused training and regular discussions about safety issues, making it more comfortable for an employee to come forward with a concern.

A safety management system may be implemented, but a vibrant safety culture must exist for it to be effective. The successful execution of a safety management system is a key part of *maintaining* a strong safety culture. Consistent audits on the system will help evaluate the safety culture, and generate information and activity.

Employees should feel confident when making tough decisions that acknowledge risk and enhance safety. The company's safety policies must be clearly outlined to facilitate this type of employee empowerment. A pilot should be able to make the final go/no-go decision on a flight regardless of influence from management. If the aircraft is not ready, or the weather is bad, then the decision to delay or cancel a flight should be supported by management.

Identifying Hazardous Attitudes

Sometimes it's difficult to determine why an employee would deviate from a known and established safety practice. Some common and more obvious reasons include a hazardous attitude, lack of consequences, and a lack of a negative reaction from other employees. The following are some others as cited in a speech by David L. Huntzinger, vice president of safety and security for TAG Aviation USA.

- **Economic (in the financial interest of the individual or the company involved)**
- **Related to a sense of duty or pride (get the job done)**
- **Passenger-driven (give the customers what they want)**
- **Related to individual desires (get-home-itis)**
- **Related to interest in trying something new or exciting (maneuvers usually done by non-professional pilots)**

Note: According to FAA Line Operation Safety Audit findings, a crew who does not follow SOPs is three times as likely to make mistakes.

Aviation possesses a unique culture that sometimes can be viewed as (mainly by its members) elite or untouchable. This historically has led to a "can do" mindset towards every task, and a tendency to hide mistakes. There is occasionally an underlying fear of criticism from peers, or feelings of failure if the objective, or mission, is not completed. Following are descriptions of hazardous attitudes for pilots and support personnel:

Dominant: *"I can do anything I want"* This attitude results in taking unnecessary chances and poor decision making. This can be a characteristic of the most talented employee, a Superman (or woman) who is so talented the rules don't apply. This becomes a particularly dangerous scenario if the "dominant" individual commands abundant respect throughout the organization, or occupies a position of leadership. The attitude spreads, rules and standards wash away.

Resignation: *"Who cares, what's the use anyway"* Possessing this attitude, the employee believes they have no control over the situation. There is a perception that no one is in control, and supervision is lacking. Employees genuinely feel like they are on their own, with no support form the organization.

Impulsivity: *"Let's go now"* A consistent approach to just getting it done, doing whatever it takes, no matter what factors are introduced, and what regs or rules are broken. Flexibility is an important quality, but only when exercised within standards and regulations. A related attitude is plan bias: staying with the plan regardless of the ramifications. There's a safety zone between flexibility and rigidity.

Invulnerability: *"It's not going to happen to me, I've done it a thousand times"* This is quite possibly the most common hazardous attitude and most people may not even realize they exhibit it. An example could be a pilot flying an instrument approach below minimums because it's at their home base and they state they "know the area like the back of their hand." Every employee has to recognize the unthinkable could happen to them, and eventually it will if they continue to operate this way.

Anti-Authority: *"You can't tell me what to do"* An example of this may be an older pilot refusing to comply with additional training due to a lack of recent experience. They might respond by saying they don't need to practice in the simulator and prove they are still proficient. It's one thing to be legally current, and it's another thing to be proficient. The solution for this attitude is to simply follow the rules.

Sample Accidents

Space Shuttle Challenger: Let's take a look at what went wrong...The O-ring seals were in question and management insisted the launch happen.

An example of what NASA calls an "organizational failure" existed during the 1986 Space Shuttle Challenger explosion. The engineers were pressured to approve the launch even though they felt hesitant about the design holding up to the cold temperatures. In that time period, a "proof culture" existed in which the engineers had to prove that a safety issue warranted a shuttle launch delay. A "culture of acceptance" of deviations was also apparent. Previously successful missions with safety issues would provide justification for the continuance of operation with these safety issues due to the amount of time necessary for investigation. Furthermore, scheduling, political, and other pressures existed for everyone involved. In a conference call the night before launch, a hastily prepared, inaccurate, and confusing presentation was made by the engineers which included information from a previous Flight Readiness Report indicating the O-ring seals would be ok for launch. Eventually the majority of the engineers acquiesced, and approved the launch. This NASA has since improved its safety culture dramatically.

Pinnacle Airlines Flight 3701: A total break-down in safety culture.

To briefly summarize, the crew of a CRJ-200 was on a ferry flight when they decided to test the limits of the aircraft by climbing to FL410. A stall ensued, followed by a dual engine flame-out and ultimately a fatal crash. The crew had ignored multiple warning signs prior to the stall. They also had opportunities to remedy the situation by making full use of air traffic control aid, and gliding to a safe landing at an airport. The NTSB determined part of the probable cause of the accident to be, "the pilots' unprofessional behavior, deviation from standard operating procedures, and poor airmanship, which resulted in an in-flight emergency from which they were unable to recover, in part because of the pilots' inadequate training…"

This does not mean the previously mentioned organizations presented a poor attitude towards safety as a whole, however, it illustrates how there may be isolated areas of poor safety culture within the organization. Often, it is difficult to guard against such scenarios. However, if you proactively take initiative to nurture a positive safety culture employees may think twice about inappropriate actions. As NTSB Vice Chairman Robert Sumwalt stated at the ALPA conference in 2007:

"Leaders influence others. Whether you are a line pilot, check airman, VP of Flight Operations, or air safety representative, I challenge you to go out and influence professional behavior on the line. Insist on it. Accept nothing less."

Safety Survey

A safety survey is a means of taking the pulse of an operation. These surveys vary in detail and emphasis, so try to find an effective middle ground. If the survey is too long, people lose interest; if the survey is too short, you compromise response information quality. After conducting a survey it is crucial to process the responses quickly, and provide feedback to participants in a manner approved by company leadership.

Any survey you choose to utilize should target employee responses in the following areas:

"Organizational Commitment to Safety: The degree to which upper management promotes safety, as evidenced by safety-related policies and the commitment of resources to maintain and improve safe operations.

Managerial Involvement in Safety: The degree to which middle and lower-level managers are personally involved in safety activities and in promoting safety among their employees. (This dimension is labeled *Supervisory Involvement* in the maintenance survey, as front-line managers in maintenance are more commonly titled "supervisors").
Employee Empowerment: The degree to which employees are invited to participate in safety-related activities and decisions, and encouraged to take personal responsibility for safety.

Accountability System: The degree to which the organization rewards safe behavior and dispenses consequences for unsafe behavior.

Reporting System: The degree to which the organization possesses an effective, accessible means of reporting safety information that employees are willing to use.*"* - Commercial Aviation Safety Culture Survey (CASS).

The following is a sample survey you can measure your safety culture with...

ASOS Safety Culture Survey

All employees of a flight operation, irrespective of their position, are each personally responsible for contributing to a positive safety culture. The purpose of this survey is to obtain your opinions about safety within this organization. As professionals, we need to continually evaluate and improve the way we do business.

Please answer all of the questions as honestly as possible. You are not required to give your name, and all of your answers will remain anonymous.

QUESTIONNAIRE:

How well do you think each of the following statements applies to this flight operation?

Circle the appropriate number (1 to 5) in its box against each of the 25 questions.

If you **strongly disagree** with the statement, **circle 1.**
If you **strongly agree**, **circle 5**,.
If your opinion is somewhere in between these extremes, **circle 2**, **3** or **4** (for **disagree**, **unsure** or **agree**).

Please respond to every question. Adding all the responses gives a safety culture score for the company which is checked against known benchmarks.

Q	STATEMENT	RATING strongly disagree				strongly agree
1	Employees are given enough time and adequate training to perform their tasks safely and effectively.	1	2	3	4	5
2	Managers get personally involved in safety activities.	1	2	3	4	5
3	There are existing procedures to follow in the event of an emergency in my work area.	1	2	3	4	5
4	Managers often discuss safety issues with employees.	1	2	3	4	5
5	Employees are encouraged to stop any activities that may be unsafe.	1	2	3	4	5
6	Everyone is given sufficient opportunity to make suggestions regarding safety issues.	1	2	3	4	5
7	Employees often encourage each other to work safely.	1	2	3	4	5
8	Managers are engaged and aware of any safety problems in the workplace.	1	2	3	4	5
9	All new employees are provided with sufficient safety training before commencing work.	1	2	3	4	5
10	Managers often recognize employees they see working safely.	1	2	3	4	5
11	Everyone is kept informed of any changes which may affect safety.	1	2	3	4	5
12	Employees always follow rules, regulations, and standards.	1	2	3	4	5

Continued.

Q	STATEMENT	RATING				
		strongly disagree				strongly agree
13	Safety within this company is better than in most other flight operations.	**1**	**2**	**3**	**4**	**5**
14	Management is willing to invest time, effort, and money to improve safety and operating performance.	**1**	**2**	**3**	**4**	**5**
15	Incident investigations attempt to find the real causes of incidents, rather than just blame the people involved.	**1**	**2**	**3**	**4**	**5**
16	Managers recognize and take action when employees are working unsafely.	**1**	**2**	**3**	**4**	**5**
17	Any defects or hazards that are reported are rectified promptly.	**1**	**2**	**3**	**4**	**5**
18	I am familiar with the process for me to report hazards.	**1**	**2**	**3**	**4**	**5**
19	Managers stop unsafe operations or activities.	**1**	**2**	**3**	**4**	**5**
20	After an accident or incident has occurred, appropriate actions are taken to reduce the chance of a reoccurrence.	**1**	**2**	**3**	**4**	**5**
21	Everyone is given sufficient feedback regarding this company's safety performance.	**1**	**2**	**3**	**4**	**5**
22	Managers regard safety to be a very important part of all work activities.	**1**	**2**	**3**	**4**	**5**
23	Safety audits are carried out frequently.	**1**	**2**	**3**	**4**	**5**
24	Safety programs within this company are generally well organized and effective.	**1**	**2**	**3**	**4**	**5**
25	Employees report any dangerous work practices they see.	**1**	**2**	**3**	**4**	**5**
26	Standards of accountability are consistently applied to all employees.	**1**	**2**	**3**	**4**	**5**
27	Employees take pride in their individual and group work performance.	**1**	**2**	**3**	**4**	**5**
28	Employee proficiency is closely monitored.	**1**	**2**	**3**	**4**	**5**
29	This company is more concerned with operating safely than making money.	**1**	**2**	**3**	**4**	**5**
30	Human factors and limitations are taken into account when planning operations.	**1**	**2**	**3**	**4**	**5**
	Safety culture total score:					

Notes for Safety Managers.

The higher the value, the better the safety culture rating. Use the following as a guide:

- Poor safety culture   <80
- Bureaucratic safety culture   81-100
- Positive safety culture   >100

Organizations with a **poor safety culture** treat safety information in the following way:
- Information is hidden
- Messengers are shot
- Responsibility is avoided
- Dissemination is discouraged
- Failure is covered up
- New ideas are crushed

Organizations with a **bureaucratic safety culture** treat safety information in the following way:
- Information may be ignored
- Messengers are tolerated
- Responsibility is compartmentalized
- Dissemination is allowed but discouraged
- Failure leads to local repairs
- New ideas present problems

Organizations with a **positive safety culture** treat safety information in the following way:
- Information is actively sought
- Messengers are trained and encouraged
- Responsibility is shared
- Dissemination is rewarded
- Failure leads to inquiries and reforms
- New ideas are expected