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In Airline Aviation

BY GEORGE H. SNYDER JR.

On Sept. 11, 1991, a commuter flight operating between cities in Texas crashed after a structural failure occurred during descent, killing all 14 people aboard the aircraft.

The U.S. National Transportation Safety Board (NTSB) investigation revealed that fasteners removed from the leading edge of the horizontal stabilizer during maintenance the night before had not been replaced before the aircraft was returned to revenue service. The aircraft crashed on its second flight of the day.¹

Immediately following the accident, the airline's maintenance program underwent a U.S. Federal Aviation Administration (FAA) National Aviation Safety Inspection Program (NASIP) evaluation. The inspection found very few deficiencies, and the FAA ultimately complimented the airline on its internal evaluation systems. Several months later, the same airline had a similar incident; one of its aircraft had to turn back when it was discovered that something was wrong. It appeared that bolts had been removed from a wing panel and not replaced. The NTSB later commented that even a fatal accident and an FAA NASIP were not enough to overcome what appears to have been a failure of corporate culture.²

There is nothing to indicate any fundamental flaws with the NASIP process or any other similar inspection process. Even the most comprehensive, well-executed inspection process captures only a snapshot of an organization's capabilities and performance. This process should be considered as one of many significant data points in determining the overall operational safety health of an airline.

The 1991 accident was seen as a turning point in assessing the importance of an airline safety culture by Meshkati (1997)³ and by then-NTSB member John Lauber, who suggested that the probable cause of the accident also should have included "the failure of [the airline's] management to establish a corporate culture which encouraged and enforced adherence to approved maintenance and quality assurance procedures."⁴

Issues involving corporate culture were contributory or causative to airline accidents long

before 1991, and, most likely, afterward. However, continuation of this negative influence on safety is by no means inevitable if global airline industry stakeholders continue to work together in a spirit of partnership and collaboration.

Defining Safety Culture

The challenge of defining airline safety culture became evident during the development of crew resource management (CRM) methodologies. In early versions of training courses in the mid-1980s, we were told that an organization's culture involved behaviors that were "encouraged, discouraged or tolerated." Many versions of these words followed, probably none readily understood by the line employees whose behavior most contributed to this concept.

High

Our collective confusion at that time, possibly extending to the present, is best explained by Pidgeon's (1998) informal observation that existing empirical efforts to study safety culture have been "unsystematic, fragmented and, in particular, underspecified in theoretical terms."⁵ It is no wonder that airline line managers and staff were not able to quickly grasp the importance of an organizational safety culture.

There is a common notion that while you may not be able to define something, you certainly can recognize it when you see it. Following on this thought, University of Illinois researchers Zhang, Wiegmann, von Thaden, Sharma and Mitchell, in a paper titled *Safety Culture: A*

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Aviation safety is not a goal unto itself; it is the most critical part of the journey. The accident rates of major commercial airlines and corporate aviation are statistically equivalent. A more universally effective safety culture could allow corporate aviation to become the least hazardous mode of air travel. A brash claim? Maybe not.

A review of accidents involving professionally flown aircraft shows that four out of five events included procedural intentional and/or procedural unintentional noncompliance (PINC, PUNC) by pilots. PINCs and PUNCs are reduced dramatically when an effective safety culture exists.

Building a safety culture in a corporate aviation operation is very different from

counterparts in corporate aviation have no need to know the business and operational issues of the aviation function.

- *Their operational standards are different.* The governing rules of commercial aviation, Federal Aviation Regulations (FARs) Parts 121, 135 and their international counterparts, are rigorous to protect the traveling public. Corporate aviation is held to the much lower standard of FARs Part 91 and international counterparts.

The challenge is to create and maintain an effective safety culture within a corporate aviation operation where there is an apparent potential for less focus and discipline. An effective corporate safety culture starts at the top, in the offices

The
art of creating and
sustaining a beneficial safety
culture in different settings.

Culture

building one in the commercial aviation arena, because:

- *The core businesses are different.* An airline's core business is aviation, while corporate aviation is routinely a supporting service of an enterprise whose core business is not aviation.
- *The goals of the businesses are different.* Commercial aircraft are operated solely for the purpose of revenue and profit. Corporate aviation is a service center in support of the core business.
- *The aviation knowledge of top executives is different.* The leaders and senior managers engaged in commercial aviation are usually aviation professionals. Their

of the executive officers, and permeates the entire organization all the way out to the airport. The safety culture comes in three parts: vision, co-responsibility and performance.

The Vision

An effective corporate aviation safety culture starts with a vision for safety. That vision comes in two modes — the grand vision of a powerful top executive and the focused vision of the aviation services unit leader.

It is imperative that the top corporate executives describe a vision of safety. Ideally, the chief safety officer (CSO) is also the company chairperson or the chief executive officer (CEO). If not,

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BY PETER V. AGUR JR.

In Corporate Aviation

the extent to which individuals and groups will commit to personal responsibility for safety; act to preserve, enhance, and communicate safety concerns; strive to actively learn, adapt and modify [both individual and organizational] behavior based on lessons learned from mistakes; and be rewarded in a manner consistent with these values.⁷

This definition brought together the need for personal commitment to safety, communication, learning, adapting, modifications and reward. These are the attributes that airline safety directors have been focusing on for years, recently finding their way into the precepts of modern safety management system (SMS) programs.

Categories

Any discussion of airline safety cultures must include the elements of national, organizational and professional differences.⁸ Everything that occurs within an airline — from employee hiring, establishment of standard operating procedures (SOPs), employee training, performance evaluations, managerial oversight, and ultimate levels of compliance and conformance — is driven in various ways by these important cultural components.

I have found no national, organizational or professional subculture that contains characteristics incompatible with the establishment of an effective airline safety culture. Clearly, every category brings differences to the table — both positive and less positive. But, at the end of the day, people are people, no matter where they live, what they do or whom they do it for. This is the single most important concept for a global airline safety manager to keep and use.

There is a tendency to equate national culture distinctions — specifically indi-

vidualism-collectivism, power distance, uncertainty avoidance and rules and order — with certain geopolitical regions.⁹ If allowed to progress, this thought process leads to the conclusion that the presence or absence of these group characteristics is incompatible with acceptable levels of operational safety.

However, through my experiences, I conclude that these generalizations are simplistic and counterproductive. Rather than indicating predetermined performance, they merely indicate that a variety of prescriptive measures, respectful of culture and tradition, may be required in order for assorted groups to achieve optimal safety performance.

Organizational culture distinctions can either mimic the national culture within which they exist or, alternatively, exist essentially unaltered across a wide expanse of geopolitical boundaries.¹⁰ This latter characteristic describes a global airline's multiple international airport station network. While the geopolitical location of an outstation may support individualistic cultural attributes, a strong spirit of collectivism often is found among the airline's home office and regional employees at that location that optimizes their collective safety performance.

Lastly, unique attributes exist within different professions that may be leveraged or compensated for to ensure the presence of an optimal safety culture. While experienced airline employees take great pride in their professionalism, they may at times overrate their abilities to counter the effects of stress and fatigue. This personal concept of invulnerability may actually impede, rather than optimize, their safety performance.¹¹

Modern airline organizations no longer exist in isolation but operate instead as a “system of systems, a culture

Concept in Chaos, cite some common elements of an airline safety culture:

- Shared values at a group level;
- Close relationship to management and supervisory systems;
- Emphasis on the contributions of everyone;
- Impact on the behavior of all employees in the workplace;
- Relationship between reward and performance;
- A corporate willingness to learn from errors, incidents and accidents; and,
- Stability.⁶

The University of Illinois team developed the following definition of safety culture, which I find to be pragmatic, understandable and useful to front-line airline employees:

The enduring value and priority placed on worker and public safety by everyone in every group at every level of an organization. It refers to

of cultures.” To establish and maintain a positive safety culture, airline management must take these complementary and conflicting dimensions into account in their selection of staff and creation of SOPs, training programs, evaluation processes and supervisory practices.

Culture Elements

The University of Illinois researchers described five general areas that compose the foundation of an organization’s safety culture.

The airline’s commitment is most clearly evidenced by the presence or absence of a prominently displayed safety policy signed by the president and chief executive officer, frequently updated or revalidated. This forms the basis of an explicit safety contract between management, employees and customers. The policy clearly establishes safety

as a core value, presents the company’s safety expectations, reinforces the commitment to provide employees with the necessary training and resources, and identifies the reporting of human errors as a corporate learning experience not subject to disciplinary action or retaliation, while stating that willful and deliberate noncompliance with laws, civil aviation regulations and company policies and procedures will not be tolerated.

Airline management cannot effectively promote a safety culture from behind closed doors. Safety bulletins and circulars are not credible to employees who observe their supervisors circumventing government regulations and company policies in favor of commercial advantages or, possibly worse, never see their supervisors at all. A chief pilot flying an unpopular trip on a weekend, at

night and in bad weather, demonstrating that SOPs are not merely daylight, clear-weather commodities, can exemplify the presence of an effective airline safety culture. Alternatively, an equally powerful indicator might be a maintenance foreman painstakingly troubleshooting a discrepancy in the rain and at night with an airplane full of passengers already an hour behind schedule.

Employees must view themselves as active participants in the airline safety culture rather than as disenfranchised observers. They must see, and management must support, a direct correlation between the quality of their work performance and the overarching safety performance of the airline as a whole. What they do or, more importantly, what they do not do, must be seen to make a critical difference. Rather than pass over an opportunity to perform an



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additional inspection, ask questions or seek clarification, the employee should feel empowered by his supervisors to take these actions without fear of negative consequences.

When cabin attendants immediately before takeoff passed to the cockpit a passenger's observations that the aircraft's ground spoilers were fully extended, that event became one of the most poignant indicators of a strong corporate safety culture that I have ever validated. In this case, there had been an unprecedented cable connection failure between the actuator handle in the cockpit and the spoiler panels, failing in a way that bypassed the takeoff configuration warning system. There is every indication that, absent that warning, the crew would have attempted a takeoff with potentially disastrous results. Repeating an earlier point, everyone must be an active participant in the safety culture concept.

While an airline safety culture must empower employees with the ability to take strong measures to ensure operational safety, it must also hold them accountable for their actions. Safety performance bonus programs are an integral part of an effective SMS.

In one memorable example, a contract ramp worker went above and beyond the scope of his responsibilities when he questioned a person running across the ramp to board a shuttle bus en route to the remote aircraft parking location. While it turned out that the person was an airport employee who had inappropriately used his airport ID to bypass normal check-in and security processes, the person's intent could have been far more sinister. The ramp worker's actions were formally recognized when the airline's head of safety and security rewarded him with two round-trip business-class tickets to a

destination of his choice. The impact of these types of corporate gestures cannot be understated when it comes to creating and maintaining a safety culture.

On the other hand, there are times when an employee deliberately disregards laws, regulations, policies or procedures and puts the airline, fellow employees and passengers at risk. Prior to making any type of final determination, the safety culture concept requires a comprehensive, objective investigation to determine if the act involved a willful disregard for safety.

There are several possible outcomes of such an investigation: It may be found that the employee is not fully suited to his or her job responsibilities, or that the airline's SOPs are not clearly stated or realistic, or that the training in support of these standards is not comprehensive, or that management and oversight of the employee's upholding of these standards is deficient.

My experience as head of safety for two major airlines showed me that a brutally honest review usually finds the organization, not the individual, in need of remedial action. In the unlikely event that such is not the case, the airline must move quickly and decisively to remove this behavior from the workplace.

Please note that I intentionally stated that the "behavior" must be removed from the workplace, not necessarily the "person." If management counseling, additional training and evaluation bring an employee's performance to required standards, the safety culture will have scored a decisive and overwhelming win. The rehabilitated employee most likely will become an extremely effective ambassador of the safety culture to the remainder of the work force. Unfortunately, in cases where the "behavior" cannot be successfully isolated from the

"person," the logical course of action for the airline to pursue is clear.

A final necessary element in an airline safety culture is an effective safety hazard reporting system. While word of mouth and informal reporting/advisory channels may appear to work well in smaller organizations, a formalized reporting process is invaluable. Today's airline safety culture requires an overarching company policy that provides indemnity for employees reporting safety hazards and inadvertent unsafe acts, identification of mandatory reporting events, reporting forms customized for each employee group, an effective investigation and analysis process, assignment of corrective action to the appropriate department or agency, follow-up to assure that corrective measures are delivering desired results, and, finally, a feedback loop to the reporting employee advising him that his concerns have been addressed and resolved. Information and communication are the lifeblood of an airline's safety culture.

Investigation and Analysis

It is difficult to question the safety benefits of a technically sound, open, honest and comprehensive accident investigation process. There are many areas of the world where independent investigation agencies provide comprehensive fact-finding, exhaustive root cause analysis and valuable safety recommendations. Likewise, some airline organizations have the technical expertise and corporate initiative to perform similar high-quality internal investigations of safety events below the threshold of state involvement; others should strive to achieve this capability. Further, other parties should be invited into the investigation, including appropriate labor organizations.

In a dysfunctional safety culture, formal and informal investigations are not undertaken in a spirit of openness and candor; rather, deception, secrecy and deflection of accountability are key precepts. In these cases, there are two separate tragedies — the first being the event itself where innocent people may have been injured or lost their lives, and the second, even greater tragedy, an opportunity is lost to identify root causes and develop lifesaving safety recommendations and future accident prevention strategies.

Internal safety investigations that are never completed, analysis that is either nonexistent or fundamentally flawed, and assignment of accountability that results in blame and punishment as a terminating action should be challenged rather than accepted. Whether the investigation is being conducted at either a governmental or organizational level, the truth is the truth, and the quest must not end until that truth is fully revealed.

Blame and Punishment

A June 2006 Australian Transport Safety Bureau (ATSB) report titled *Assessing Institutional Resilience: A Useful Guide for Airline Safety Managers* includes the thoughts of Professor James Reason on the concept of blame: “Disciplinary policies are based on an agreed (i.e., negotiated) distinction between acceptable and unacceptable behavior. It is recognized by all staff that a small proportion of unsafe acts are indeed reckless and warrant sanctions, but that the large majority of such acts should not attract punishment. The key determinant of blameworthiness is not so much the act itself — error or violation — as the nature of the behavior in which it was embedded. Did this behavior involve deliberate unwarranted risk-taking, or a course of action likely to produce avoidable errors? If so, then

the act would be culpable regardless of whether it is an error or a violation.”¹²

An effective airline safety department, and by default, its leader, is viewed as the creator and staunch defender of the corporate safety culture. The safety department must initiate investigations in an unbiased, open and responsive manner, providing those involved in the incident a good reason to feel comfortable in providing pertinent details. This comfort is further strengthened when safety department personnel are recognized as having high levels of technical expertise. While there is a general reluctance among technically oriented airline professionals to receive correction, such reluctance is minimized if those they respect deliver it.

With few exceptions, the concept of blame and punishment within an airline safety culture is simplistic and counterproductive. The assignment of blame artificially and prematurely restricts the investigation process, and the resultant pronouncement of punishment largely simulates a terminating action. When the specter of blame, discipline and retribution is removed from the investigation process, information and communication exchanges abound.

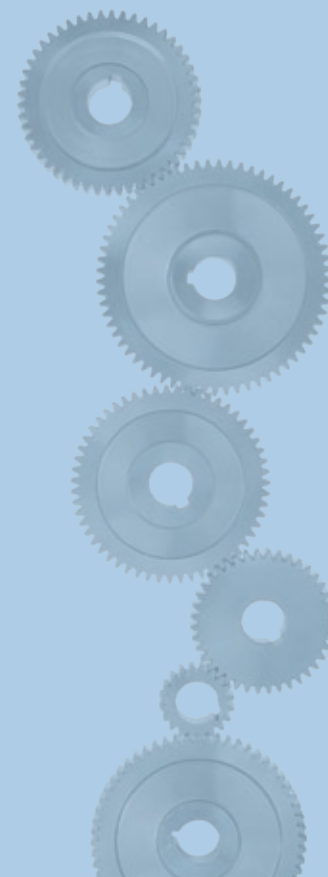
Commercial Interests

Risk management and a strong safety culture are in harmony with an airline’s commercial interests. Passengers have been increasingly subjected to crowded terminals, invasive security procedures, reduced in-flight amenities and periodic delays and cancellations. Surprisingly, these factors alone have not resulted in any appreciable declines in overall demand levels. However, demand levels for carriers or countries where questions of operational safety are raised are quite different. Passengers will tolerate many things, but they will

not tolerate a perception that an airline or specific region of the world is unsafe.

Aviation industry participants who feel that minimizing their safety investments improves their long-term commercial interests are sadly mistaken. Analysis of an airline’s market capitalization levels during a period of incidents or accidents clearly shows a downturn when other factors are held constant. When such safety perceptions improve, the airline’s financial picture gradually improves.

Drilling down a bit further, the argument of production versus protection, money versus safety¹³ becomes a little clearer in this story: Moments before the pushback of an international widebody flight, a late transfer bag appeared. With mistaken good intentions, a baggage handler jumped into his tug and drove as fast as he could across the ramp to the aircraft. In violation of established ramp procedures, he drove full-speed directly toward the aircraft’s bulk cargo door. It was raining, the ramp was wet, and he was unable to bring the tug to a stop. The collision rendered the aircraft



unserviceable for four days. The driver recovered from his injuries and returned to work.

High costs can accompany an event below the level of an accident or incident. For example, the absence of an effective cockpit window inspection program allowed electrical arcing from heater filaments to shatter the window. The flight was canceled, the aircraft was de-fueled, the passengers were re-accommodated, the catering supplies were unloaded and discarded, crewmembers were rescheduled, and cargo customers were paid performance penalties.

Had the airline's safety culture dictated in the first case that, regardless of circumstances, ramp personnel are strictly required to comply with airport driving regulations and bring their vehicle to a complete stop no closer than ten ft from the aircraft, the aircraft ground damage and employee injury would no doubt have been prevented with substantial savings to the company. Had chronic windshield arcing discrepancies been viewed as symptoms rather than root cause, a more comprehensive inspection program may have been instituted before the flight's cancellation, again saving a great deal of money.

Leadership

It is difficult to cite an example of a strong airline safety culture without an equally strong and committed leader. The influence of the top corporate officers cannot be understated. Regardless of the existence of safety policies, infrastructure or SOPs, if the safety culture is not explicitly supported at the highest levels of the company, all other safety management tools are rendered ineffective.

The head of safety is an equally critical position, as he or she must turn the

chairman's vision into a functional reality. The elements of a strong safety culture may resound with universal appeal in the corporate offices, but when placed up against longstanding company practices and short-term commercial interests, it is the head of safety working together with the operating department heads that ultimately must make it work.

Leadership within an airline safety culture does not have to be accompanied with a title or office. Each employee group normally has an informal designee to whom everyone looks for guidance and support. These informal leaders set the peer standards in the workplace that are either harmonized, or in direct contradiction, with established company policies and procedures. The results of either can easily be seen in the safety performance of the respective work groups.

Conclusion

We should remember that there is no preordained safety advantage or deficiency in national, organizational or professional cultural subsets, that there are important elements of a safety culture that must be present in order to optimize its performance, that investigation and analysis must be open and honest, that blame and punishment have little value in ensuring continued safety, that organizations focusing on safety enhance their commercial advantage rather than detract from it, and that strong leadership is critical to maintaining the safety culture.

Regardless of whether the airline is operating a fleet of Airbus 380s or Cessna 180s, the precepts and importance of a safety culture remain constant. ●

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Notes

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then the CSO must be someone who can look that highest of the high, the CEO, directly in the eye and say “no,” without it being a career modifier.

About 15 years ago, John Luke, Sr., then the CEO of what is now MeadWestvaco, a Fortune 500 company, told me he expected a standard of care from his aviation services that would allow anyone to feel perfectly at ease placing his or her children aboard the company aircraft, every day and every leg. He also said that he expected the standard of care to be the same for everyone.

Not every CEO understands the need for such a clear corporate aviation safety vision. Some take it for granted that the regulations and their pilots will protect them. One executive was candid enough to say, “I don’t think our pilots are suicidal. They sit in the seats with the best view. They can see it coming.” His optimism was admirable, but the greatest source of fatalities in professionally flown aircraft continues to be controlled flight into terrain (CFIT). In other words, his trust may have been misplaced.

It is essential that a CEO/CSO be the source and lead champion for the aviation safety vision. This gives the safety vision the powerful authentication of authority from the corner office. That is why Flight Safety Foundation and the National Business Aviation Association recommend that flight operations manuals contain a letter from the CEO declaring the corporate aviation safety vision and a clear statement of crew authority.

One CEO added the statement, “Any passenger who challenges the safety-based decisions of a crew during a trip will lose his or her corporate aircraft travel privileges.” His declaration made it perfectly clear to the entire organization that the responsibility for safety spanned from the corner office to the cockpit and cabin.

Co-Responsibility

The responsibility for safety is shared throughout the corporate organization, but it starts at the top. Bill Esrey, former chairman at Sprint, endorsed a policy that required all frequent corporate aircraft passengers to attend a half day of cabin safety training. Even though the program was mandatory, the participants were quickly infected with

the cultural importance of safety. The enthusiasm shown by newly appointed aircraft users to attend the course was strong evidence of how the previous graduates were assuming an informal responsibility to promote the program.

Unlike Esrey, some CEOs mistakenly believe the responsibility for aviation safety rests solely at the airport. They take their trust in their pilots’ survival instincts too far. The worst executive passengers mistakenly assume that the behaviors they use to achieve success within their core business — demanding more and more of their people and refusing to take “no” for an answer — also work at the airport. These hard-chargers push for 18-plus hour duty days, demand to go into challenging airports in high risk conditions and anything else that will accommodate their busy lives. The pressure they put on crews is rarely subtle. It is a no-win situation. That is why the CSO must be directly co-responsible for safety.

When there is no CSO, the role of chief safety champion falls to the corporate aviation manager. To be effective, an aviation manager must have his or her own clear and strong safety vision, as well as the strength of character to champion it despite the lack of authority endowed by a CSO.

To be most effective, co-responsibility for safety must be a core value of the entire aviation services organization. It is hugely egotistical or naive for an aviation department leader or safety officer to assume he or she can manage safety into all phases of the operation. No manager can be everywhere all the time to make sure everyone performs properly. No one manager has *all* the good ideas. The collective eyes, ears and wisdom of the entire team are far more powerful in assuring safe outcomes.

The power of co-responsibility for safety is fundamental. It is the foundation of crew resource management (CRM), the defining standard for teamwork among aviation professionals.

Performance

As I have said, safety involves all members of the organization. However, aviation professionals are primarily responsible for safe performance, and safe performance starts with leadership.

do most aviation professionals because, until recently, there was no practical definition of “best practices.” Standard practices are established by government regulations and manufacturers’ operational guidelines and limitations. These standards essentially prevent failure. They are a litany of “Thou Shalls” and “Thou Shalt Nots” designed to avoid bent metal and harmed bodies. Taking performance standards to the next level, to best practices, calls for the proactive achievement of intended outcomes, including the assurance of safety.

From a practitioner’s point of view, best practices call for the clear definition of intended outcomes and the ideal processes for creating them. The next step is to monitor the processes in action and proactively manage variances to assure that performance is maintained within the expected parameters.

A practical example of this occurred when Mike May was director of aviation for Southern Company. His operation included three U.S. bases; Atlanta, Georgia; Birmingham, Alabama; and Pensacola, Florida. During one particularly thunderstormy day, Mike overheard a conversation between a relatively new captain from Birmingham and one of his Atlanta-based senior captains. The youngster was describing how bad the weather was over the Atlanta-Birmingham route and that he planned to delay his return trip until things quieted down. The senior captain from Atlanta was boasting that he had flown hundreds of flights in identical conditions and he was sure he could leave soon, as scheduled.

Mike asked the senior captain to join him in his office. In private, Mike explained to the senior captain that he needed his help in urging young pilots not to exceed their capabilities, putting aircraft and people at risk. He then asked

the captain how they could do that. The ensuing conversation became the foundation for a new practice. When there is to be a judgment call, the most conservative perspective will prevail and it will be applied across the board until conditions change. In other words, on that particular day, nobody would fly between Birmingham and Atlanta until the weather improved enough to satisfy the young captain, and nobody could pressure him to change his mind.

The opposite of this safe and effective leadership behavior is a declaration by the director of aviation or maintenance that policies and standards may be amended with his or her approval. In other words, this is a declaration that the department’s policies and standards are variable. This approach may appear to be high service — standards can be adjusted to make it easier to complete the mission — but it has two major flaws: it can place service above safety in the hierarchy of performance, and it clearly undermines the authority of the safety delivery team — the crew.

Crews are a critical element of one of the most effective best practices that is gaining wide acceptance: the safety management system (SMS). The core of SMS’s success is the rigorous application of risk assessment and mitigation encompassing all facets of a trip. Texas Instruments (TI) uses an extremely effective multi-functional approach. Prior to each trip, the scheduler, lead aircraft technician and the crew, including the cabin safety attendant, meet to discuss the trip and all its parameters and variables — aircraft, equipment, maintenance status, passengers, cargo and baggage, times, catering, weather, airports, runways, fixed-base operators, ground transportation, etc. The goal of the meeting is at the heart of the SMS, to assure a safe and effective trip that is punctuated by no surprises. Upon

the aircraft’s return home, the trip is not complete until the same team debriefs the entire trip, every leg. TI has developed an effective and proactive management of the trip process that works well for them. It keeps the goals of safety, service and efficiency in appropriate order and focus. It identifies potential risks and variances, and then allows the power of team problem-solving to produce the most effective guidelines and solutions.

TI has the full complement of tools:

- A clear executive and organizational vision with a strong emphasis on safety;
- Culturally driven co-responsibility permitted by a pervasive authority to perform; and,
- Universally understood standards of performance couched in a well-documented operations manual, implemented effectively through a set of practices and processes structured around an SMS.

But TI is the exception. The vast majority of corporate aviation is being conducted with less than the complete set of tools. Even so, corporate aviation’s safety rate is equal to that of the major commercial airlines. How low will our accident rate be when the TI standard becomes the norm? Let’s find out together. Let’s build a widespread corporate aviation safety culture. It starts with your corporation and your aviation department. ●

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