



OUT OF BOUNDS

BY WAYNE ROSENKRANS

Despite having the benefit of insights from 45 people of diverse expertise, the U.S. National Transportation Safety Board (NTSB) has not settled on systemic explanations for instances in which airline pilots and air traffic controllers flouted regulations and standard operating procedures (SOPs). Potential

elements of safety recommendations have emerged, however.

In remarks at the NTSB's Professionalism in Aviation Safety Forum on May 18–20 in Washington, Chairman Deborah A.P. Hersman cited seven U.S. accidents and serious incidents in 2004–2009 involving breakdowns in professionalism.

“We recognize that there are many industry professionals whose work, day-in and day-out, reflects the highest level of professionalism,” Hersman said. “While the Colgan Air [Flight 3407] accident investigation [ASW, 3/10, p. 20] was the impetus for this forum, many of the issues raised in that accident investigation were not new to the NTSB. ... The

NTSB delves into theories of why airline pilots and air traffic controllers strayed from professional behavior.

evidence is clear that when pilots and controllers drift away from their training, procedures and best practices, safety margins erode and inadvertent errors go uncorrected. Things are happening in industry that have led us to this point — errors and practices that warrant closer scrutiny. ... Defining professionalism and creating a culture of professionalism ... is what the NTSB will be focusing on over the weeks and months to come.”

Most forum panelists offered personal views, not positions of organizations, as the NTSB asked them about opportunities to strengthen defenses against deficiencies such as lapses of discipline, distractions and deviations, including flight crews engaged in conversations and activities not pertinent to aircraft operation during critical phases of flight; lax, casual or unfocused atmosphere on the flight deck; inexplicable deviations from SOPs; self-centered behavior; substandard airmanship; loss of situational or positional awareness; reluctance of pilots to challenge each other’s deviations; and equivalent behaviors in the air traffic control (ATC) profession.

Soft skills of discipline, responsibility, judgment, emotional stability, effectiveness under pressure and leadership are “what assures us that once that cabin door is closed, that cockpit crew is acting professionally and doing what we want them to do in a safe manner,” said Randall Hamilton, a captain and director of training at Compass Airlines.

Pilot Accountability

In the forum’s keynote presentation, Tony Kern, CEO and senior partner of Convergent Performance, suggested that the pendulum in safety theory has swung too far in accepting human error as uncontrollable, and has diminished personal accountability. He said he typically advises airline clients to increase their emphasis on personal flight discipline and airmanship.

“If you believe the researchers, hundreds — maybe thousands — of mistakes and casual noncompliance [instances occur] without a single negative outcome,” Kern said. “Is it any wonder that we have a slight erosion [of personal responsibility] in an industry that has

highly repetitive, highly automated systems where everything goes right nearly all the time, right up to the moment when it doesn’t?”

Aviation professionals have to be inspired and motivated to practice introspection, self-management and ethical behavior along with training to master technical systems, procedures, tactical skills and information, he said.

Some panelists echoed the importance of intangible personal qualities. “Professionalism really starts with the pilot’s value system ... early in life,” said John Rosenberg, a captain and check airman for Delta Air Lines and chair of the National Professional Standards Committee of the Air Line Pilots Association, International (ALPA). “It is a dedication to striving for mastery.”

Others framed each individual’s responsibility for professionalism based on their personal experience in applying the prevailing theories of aviation human factors. “There is no perfect flight; I have never done one,” said Ben Berman, a captain-rated first officer at Continental Airlines and senior research associate in flight crew human factors and cognition at the Ames Research Center of the U.S. National Aeronautics and Space Administration (NASA), who explained that most errors can be traced to human cognitive limitations. “I always try, but I have never seen one. ... Every flight has literally thousands of opportunities for flight crews to make errors in one way or another, and there is always an error that creeps in. ... And so these errors are, in a sense, related to the way we are wired and not so much to the way we handle ourselves in terms of professionalism. ... Even though we have the standards, we still make errors ... we self-correct, accept corrections by others and always strive to improve; that is professionalism for captains and first officers.”

The First Step

A number of panelists and NTSB members concurred that careful screening and selection of ab initio students and experienced airline pilots is the foundation of safe performance and professionalism. One challenge has been the difficulty



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Forum panelists from airline pilot and ATC communities sometimes characterized professionalism as complying with SOPs when no one is there to observe.

of finding legal and scientifically valid selection instruments — that is, tests and interview questions that can be used to deny employment to an applicant — to deselect people. Some “personality tests” have been discarded as no longer valid in a society as diverse as that in the United States, said Diane Damos, president of Damos Aviation Services.

Attributes of professionalism must be instilled long before pilots are hired for the flight deck of an airliner, Continental’s Berman said. “There are certain aspects of people that cannot be trained, and those need to be selected out,” he said. “They cannot be allowed to join or to continue with an airline. When they [most] need to act professionally — make professional decisions to do the right thing — will be in the heat of things [an emergency].”

Metrics of Professionalism

In major U.S. airlines, the likelihood of the same captain and first officer flying together more than once or twice has become remote. This makes excellent communication, trust and

adherence to SOPs essential but may make mentoring socially awkward, several presenters and NTSB members agreed. One byproduct of mergers has been more first officers who are captain-rated and who have more experience than the pilot-in-command.

NTSB Member Robert Sumwalt suggested that a new defense against lapses of professionalism might be increasing the social acceptance of mentoring among pilots. Ideally, any social discomfort would

not impede either pilot’s willingness to offer the other constructive input about best practices, compliance with SOPs or behavior.

A highly experienced pilot might fail to perform or behave as required because of diminished self-discipline, poor study habits or decline in personal motivation, said Paul Preidecker, chief instructor at Air Wisconsin. “If flight discipline and self-discipline are lacking, it will eventually show up in training,” he said. “The measuring tools that we have for [soft skills of] professionalism are ... not always clear.”

The NTSB’s Sumwalt asked for panelists’ opinions of the feasibility of identifying specific attributes of professionalism and behavioral markers, and reaching a government-industry consensus about how to measure and apply them. “We need the industry to agree upon those attributes and then come up with the behavioral markers for the continuum — this is excellent, this is substandard,” Sumwalt said. Such an agreement would enable pilots to be objective in assessing one another and in measuring themselves, he added.

‘Pro Stan’ Successes

Professional standards programs of pilot unions — open to all members but providing services relevant to the situations of very few — help pilots face professionalism issues through peer intervention by trained volunteer counselors. “Pro stan” services facilitate confidential discussion of a professional or ethical problem of any nature, including issues of attitude, motivation or compliance with procedures. Pilots typically, but not always, overcome such problems without entering a formal company process that may lead to disciplinary action, documentation in personnel records or termination of employment, said ALPA’s Rosenberg.

Robert McDonnell, an American Airlines captain representing the Allied Pilots Association, estimated that professional standards committees of U.S. major airlines interact with fewer than 1 percent of their unions’ members.

One serious safety issue addressed by counselors involved SOPs and compliance with the operating manual, and a pilot who repeatedly



refused to respond to communication from them, McDonnell recalled. “This pilot was a little deficient, but because this was definitely a safety issue, we went to the chief pilot, who told him he was either going to be fired or retire early,” McDonnell said. “The pilot decided to retire early. Once a chief pilot ... and issues that involve safety are involved, there is no recourse but to bring in the Federal Aviation Administration [FAA] for certificate action ... termination or early retirement.”

Model Captains

Several pilot panelists told the NTSB that nothing has been more influential in maintaining professionalism in their own careers than flying with captains who modeled the “right” attitudes and behaviors to operate safely. Captains must continue setting the standard of professionalism to influence others, they said.

Chris Keinath, a Horizon Air captain and director of safety, was among panelists who expressed concern that some soft skills for coping safely with the demands of airline flying may not be transmitted to a new generation of first officers and captains, given their varied backgrounds. “This generation of new [civilian] pilots, in particular, has not heard of the concept of compartmentalizing [as taught to naval aviators],” he said. “As one of the lessons learned from this forum, maybe we ... need to come up with an industry-accepted set of [skills] that should be added to the training curriculum.”

Active monitoring and challenging of each other are critical safety tasks for a captain and first officer, Continental’s Berman added. “To address the very tiny percentage of things not being done professionally, however, we have to make sure we don’t shut down the flow of communication. ... That would have more of a negative safety impact than all of the many safety threats out there that are not directly related to professionalism.”

Air Traffic Control

In the ATC domain, FAA Air Traffic Organization (ATO) managers and National Air Traffic Controllers Association (NATCA) representatives told the NTSB that organizational change

management — especially ongoing work to fully implement the Air Traffic Aviation Safety Action Program (ATSAP; ASW, 7/09, p. 9); a professional standards committee; a fatigue risk management system; and the Next Generation Air Transportation System (NextGen; ASW, 4/10, p. 30) — has a significant bearing on enhancing controller professionalism.

In April, teams from the FAA and NATCA began meeting to design the professional standards program. Plans call for its implementation in the third quarter of 2010 with termination in October 2012, subject afterward to collective bargaining, said Garth Koleszar, a NATCA representative and a controller at the Los Angeles Air Route Traffic Control Center.

In late 2010, the ATO also will institute an ATC quality control program, said Michael McCormick, acting executive director of the ATO Terminal Service Unit. “It will provide an ability to take a look at the performance of individuals, the organization and individual service delivery points to ensure [that the values, mission and level of professionalism are] consistent with our expectations of the organization,” he said.

Professionalism is instilled at the FAA Academy, in closely supervised initial experience in ATC facilities, and in recurrent training, said Jennifer Allen-Tallman, manager of the ATO crew resource management program. “We literally go through the traits of an expert controller ... the attributes of operating professionally in the control room.” she said. ➤

To read an enhanced version of this story, go to the FSF Web site <flightsafety.org/asw/jun10/professionalism.html>.



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Professional behavior is instilled in German student air traffic controllers, as in their U.S. counterparts at the FAA Academy, on the Langen campus of Deutsche Flugsicherung, the air traffic services provider.