

Airlines analyze incidents to continuously redefine 'training to proficiency' for flight attendants.



# Advanced Qualification

BY WAYNE ROSENKRANS | FROM ORLANDO

Flight attendants appreciate proficiency-based, scenario-oriented training that mirrors concepts now applied to airline pilots — such as practicing and demonstrating skills without pass/fail jeopardy, cabin safety specialists say. When deficiencies in performance or procedures appear, such training also provides built-in corrective mechanisms, several presenters said during the World Aviation Training Conference and Tradeshow, April 19–21, in Orlando, Florida, U.S.

Southwest Airlines provided an example of how conventional flight attendant training prepared cabin crews

to respond successfully to rapid decompressions aboard two Boeing 737s — Southwest Airlines Flight 2294 on July 13, 2009, and Flight 812 on April 1, 2011. Larry Parrigin, Southwest Airlines' manager, curriculum and program development, presented cabin safety lessons learned from Flight 2294, noting that the final report on Flight 812 had not yet been published by the U.S. National Transportation Safety Board.

Other airlines focused on lessons from the first five years of implementing an advanced qualification program (AQP) for flight attendants. The U.S. Federal Aviation Administration (FAA)

describes AQP, under Subpart Y of Federal Aviation Regulations Part 121 which governs air carrier operations, as “an alternative method for developing training and testing materials for pilots, flight attendants and aircraft dispatchers based on instructional systems design, advanced simulation equipment and comprehensive data analysis to continuously validate curriculums.” One current motivation for U.S. airlines to adopt AQP for flight attendants is their anticipation that the FAA in 2011 will issue its final rule on conventional training “requiring flight attendants to complete ‘hands on’ performance drills every 12

months using emergency equipment and procedures” and “requiring trained and qualified flight attendant ground instructors and evaluators.”

### Decompression Lessons

Flight 2294 was en route from Nashville, Tennessee, to Baltimore at Flight Level 350 (approximately 35,000 ft) with two pilots, three flight attendants and 126 passengers when a rapid decompression occurred about 25 minutes after takeoff. “After an emergency descent, the aircraft landed safely at Charleston, West Virginia, [with] no injuries to the crew or passengers,” Parrigin said. Cabin pressure was lost because of fatigue cracking between rivets fastening the aluminum skin near the fuselage crown, creating an 18-in by 12-in (46-cm by 30-cm) opening just forward of the vertical stabilizer, he said.

The cabin crew told investigators that they had experienced a “textbook” decompression. “They followed the procedures on which they had been trained,” he said. “There was rapid air movement and condensation fogging, and they even remarked about the scorched smell ... from the oxygen-generating systems. All oxygen mask compartments opened as designed, and flight attendants reported no difficulty activating oxygen flow.”

Every airline faces obstacles in providing a realistic environment for decompression training, however. “Scenario-based training takes a significant amount of time [and more staff than conventional Part 121 training, ideally a one-to-one ratio of instructors to trainees] as opposed to lecture-based training,” Parrigin said. “It is also often impractical, and would be too costly, to depict things like wind blast, cabin temperature changes and condensation fogging.”

Some flight attendants later said they felt unprepared for the extremes of passenger behavior that they encountered. “Flight attendants saw active panic with screaming and yelling,” Parrigin said. “There were [passengers] who believed that the oxygen system wasn’t working, that oxygen wasn’t flowing [although oxygen was flowing]. Some were confused about how to activate the flow of oxygen and were afraid to break something if they pulled the lanyard. ... A lot of folks became

physically ill with airsickness symptoms. They also had negative panic with passengers taking no action whatsoever. A handful of folks actually had paid attention [to the preflight safety briefing] ... and correctly donned the oxygen masks.”

Other aspects of the emergency ran somewhat counter to the flight attendants’ expectations. The airplane pitch angle during the emergency descent was not as severe as expected, for example. “Flight attendants were not aware that, in the presence of structural damage, the flight crew would slow the [rate of] emergency descent [to prevent further structural damage]. The pilots assumed the flight attendants would remain seated from the outset of the emergency until landing.”

The shallow descent and passengers’ needs for assistance distracted one flight attendant, who performed his decompression-related duties without first breathing from the nearest oxygen mask or taking a seat and securing his restraints. “[This] flight attendant stated that he was in the cabin providing beverage service when the event occurred,” Parrigin said. “Instead of immediately stopping and taking oxygen where he was, he walked to the front part of the aircraft. He said he wasn’t aware of any hypoxic symptoms. ... At the onset of the emergency, the front flight attendant and the back flight attendant both used the drop-down masks by their jump seats. [Training] must drill the procedure until breathing oxygen is an automatic reflex anytime the masks deploy.”

The Southwest Airlines flight attendant manual also had stated that in a decompression, the flight crew will establish communication with the cabin crew, not vice versa. “We need to close that gap [by] saying there needs to be positive communication established either way,” he said.

### AQP Pioneer

In June 2006, Delta Air Lines was the first U.S. air carrier to apply for, and later adopt, an AQP for flight attendants, said Michelle Farkas, the company’s general manager, in-flight service advanced qualification program. “We have truly realized ... better crew performance through

German authorities were persuaded that Lufthansa’s experienced flight attendants can adequately familiarize themselves with details of the Airbus A380 via an interactive three-dimensional video that complements a cabin emergency evacuation trainer.

the scenario-based training,” she said. “Our flight attendants look forward to it because they are able to conduct scenarios in a ‘safe’ environment.” “Safe” in this context means that when flight attendants make mistakes, instructor-evaluators point out the mistakes solely to enhance proficiency, not to jeopardize the crew-member’s certification or employment status.

“Under AQP, the most important thing is to ensure that we are conducting our training in an environment that is as close to the [line] operation as possible,” Farkas said.

One AQP innovation at Delta has been follow-up training for new flight attendants, called continuing qualification, six to eight months after beginning to work in line operations. “Continuing qualification includes a high-level review of emergency equipment, preflight checks [and gaining] some more comfort around the doors because a lot of our flight attendants have the opportunity to fly all [nine] aircraft [types].” A multi-option requalification curriculum for flight attendants who have had prolonged time away from flight duty has been revamped similarly.

Proficiency data from the previous calendar year drives curriculum changes for the current year, she said. For example, “During the merger [with Northwest Airlines], with one aircraft in particular, we were noticing that our flight attendants were [unsuccessful] in some of the drills,” Farkas said. Proficiency data — combined with one-on-one coaching results and feedback about any procedural uncertainty from the flight attendant comment tracking system — help flight attendant trainer-evaluators develop solutions during monthly meetings with Delta’s health, safety and security team.

“We’ve also put together door operations videos, [video tours of aircraft and an] unanticipated-evacuation procedures video,” Farkas said. “Being able to convert [information] into a format that can be used on an [Apple] iPad, an iPod Touch or an iPhone [has led to] very high usage.”

### Post-Merger AQP

Airline mergers generate many threats, but under an AQP, cabin safety professionals are well

positioned to participate in risk assessment, said Vicki Jurgens, health, safety and security chair of the Master Executive Council, Association of Flight Attendants–Communication Workers of America, representing cabin crewmembers at United Airlines. United is in the process of merging with Continental Airlines.

Airline-level threat and error management (TEM) involves many factors outside the scope of influence of any individual aircraft crewmember. “The increased operational complexity requires [cabin] crewmember attention to maintain the safety margins,” Jurgens said. “[Our] job is to identify threats” that may be overlooked easily.

AQP principles require that the people responsible for a merger carefully review all the differences in processes, safety cultures, demographics and language/terminology to resolve areas of concern before problems, reduced safety margins or miscommunication appear in line operations, she added.

“We expect error, but we also expect to be able to identify, capture and resolve error,” Jurgens said, citing five aviation safety action programs (ASAPs) used for that purpose at United. “We have had a 360-degree view of every situation [for about six years]. ASAP is going to be crucial for us; it is a safety net.”

### Experiential Learning

The experiential learning aspect of AQP — also called hands-on training — now plays a critical role in cabin safety, said Jessica Reese, supervisor, in-flight development, SkyWest Airlines, one of many regional airlines working toward AQP approval. “It was no surprise that 65 percent of our surveyed cabin crewmembers said that they would prefer to learn in a hands-on environment, while lectures came in at 19 percent,” Reese said. “The reason is that flight attendants cannot replicate what they do in everyday [line operations by listening to] a lecture, reading their manuals or taking computer-based training [despite] advancements in virtual reality technology.”

The move toward AQP has led to tighter integration of crew resource management (CRM)



Farkas (top) and Reese

and TEM as all participants in cabin trainer scenarios work together to solve problems, Reese said. “In the Bombardier CRJ-200, we had experienced quite a few instances of smoke in the cabin due to an air conditioning packs issue,” Reese said, “We decided to bring that scenario into our recurrent training to see how flight attendants and pilots [perform].”

“I also observed a class a few weeks ago where a flight attendant forgot to stow her jump seat during an evacuation, so the pilots could not get out of the flight deck. She was so scared and embarrassed, realizing that the pilots were going to have to go out via the flight crew escape hatch, that I don’t think she will ever make that mistake out on the line.”

Other key aspects of SkyWest’s move toward AQP have been routine feedback to training staff from line check airmen and lead flight attendants who monitor line operations for safety-related weaknesses in individual performance, and safety data collection and analysis.

### Learning Cultures

Integrating mature-but-different learning cultures when two airlines merge poses safety challenges even under AQP, said Stephen Howell, director, in-flight services training, US Airways. The company’s 2005 merger with America West Airlines prompted a reassessment of corporate values and the treatment of safety professionals.

Howell defines *learning culture* as a set of beliefs and behaviors in which “learning individuals can reinterpret their world and their relationship to the world.”

“A true learning culture continuously challenges its own methods and ways of doing business,” he said. “That is continuous improvement.”

US Airways had a rare opportunity to reset its post-merger philosophy, he said. “First, we had to decide as an airline if we wanted to have an *execution culture* ... or if we wanted to take on more [characteristics] of a learning culture ... focusing on improvements [rather than] deliverables,” Howell said. Having chosen to operate as a learning culture, “we improve low performers rather than [fire] them ... diagnose

[causes] when errors occur ... analyze and discover what’s happened, and learn from customers,” he said.

US Airways also conducted a thorough analysis and identified many “East-West” differences in operations, from airplane call signs to flight attendant manuals. In revising standard operating procedures (SOPs) with best practices from both airlines, the first attempt was thorough but overdone. “We have since revised and refined [SOPs and flight attendant manuals covering all] East airplanes and West airplanes in about 20 different versions and configurations,” Howell said.

Flight attendant training also was revised under AQP so East and West flight attendants could focus on operational differences. “We spent time taking them through training that reset everyone at the same level of competence and confidence [using the new SOPs]. To blend the cultures and ‘walk the talk’ during six months of merger training, we brought East instructors to teach West flight attendants and brought West instructors to teach East flight attendants.”

### Virtual Aircraft Visits

After a major investment — without any guarantee of approval by the German civil aviation authority — Lufthansa recently succeeded in a plan to allow experienced flight attendants to receive their Airbus A380 familiarization training via virtual reality technology, said Frank Ciupka, head, emergency training, Lufthansa Flight Training.

A suitable three-dimensional (3-D) computer model of the Lufthansa-specified A380 aircraft already existed inside Airbus, but key questions were the method, cost and reliability of presentation. Discarding other options, and taking advantage of consumer-level, 3-D movie-watching technology, the company equipped trainee stations with a 55-in (1.4-m) diagonal display, a game controller pad, a headset and active-shutter eyewear — electronic liquid-crystal-display glasses that simulate 3-D vision by synchronized high-speed blocking of the video image reaching each eye.

**‘A flight attendant forgot to stow her jump seat during an evacuation ... I don’t think she will ever make that mistake out on the line.’**

Lufthansa also decided that the virtual aircraft visit and use of training devices should be separate, complementary parts of A380 familiarization training. “We asked the authority for approval to substitute for the real aircraft a visit to [our A380 cabin emergency evacuation trainer] in combination with a visit to the virtual aircraft,” he said. “We have 12 trainee stations and one instructor station for the teacher [in a classroom].”

Trainees first watch a 12-minute, 2-D introductory video showing an animated drawing of the aircraft. The animation reveals the layouts of the lower and upper passenger decks and the flight deck. Elements such as stairways, galleys, trolley lift (serving cart elevator), lavatories, crew rest facilities and seats “fly” into place on the drawing.

The nominally two-hour virtual aircraft visit requires each flight attendant to be responsible for navigating with the game controller through the entire cabin to discover all functions and equipment, including exactly where each item of emergency equipment is stowed.

From April 2010 to April 2011, Lufthansa trained more than 2,000 pilots and flight attendants using the virtual aircraft visit. “About 10 percent of the trainees have experienced problems with motion sickness,” Ciupka said. “This problem can be resolved with additional breaks and/or using the monitors in conventional mode without the 3-D feature. Younger crewmembers mostly found the virtual aircraft visit easy, and enjoyed it as they would enjoy playing a video game. Older crewmembers mostly had difficulties handling [the game controller] and therefore needed the full two hours.”

More than 50 percent of the first year’s trainees surveyed told the airline,

that, given a choice, they would prefer to visit a real A380. “A month ago, however, a senior cabin attendant criticized the virtual aircraft visit,” Ciupka said. “The next day, he came back to the instructor. He said that the evening before, he had had a conversation with his wife about his opinion that the virtual aircraft visit had been insufficient. Then he explained to her everything he had seen and done during the virtual aircraft visit. After listening awhile, his wife said, ‘This new method might not be so bad since you now can describe the entire airplane.’”

### New CPR Guidelines

Regardless of how flight attendants were trained to perform cardiopulmonary resuscitation (CPR) in the last decade, airlines worldwide in 2011 are introducing significant changes as national resuscitation bodies adopt the latest guidelines from the International Liaison Committee on Resuscitation (ICLR). The committee updates the guidelines every five years based on clinical studies, but national resuscitation councils determine what changes they will accept, said Richard Gomez, vice president education services and quality at MedAire. MedAire has updated its own curriculum by adapting the guidelines to train flight attendants to perform CPR in the aircraft cabin environment.

The latest ICLR guidelines essentially contain these changes: the new sequence of performing CPR is circulation–airway–breathing; checking breathing is now a quick visual scan of the victim for either no breathing or no normal breathing (i.e., no “look, listen and feel” step); the new rate of chest compressions is *at least* 100 per minute; the new depth for each chest compression is *at least* 2 in (5 cm); untrained or out-of-practice rescuers,



Flight attendants will still perform professional-level cardiopulmonary resuscitation under the latest guidelines.

or people unwilling/unable to give rescue breaths (ventilation), are now instructed to perform chest compressions only (also called *hands-only CPR*); rescuers who maintain current CPR certification — such as U.S. flight attendants trained to a national standard in compliance with Federal Aviation Regulations — normally should perform CPR with ventilation; and automated external defibrillators now can be used to shock the heart of an infant, using adult-size electrode pads with a modified method if pediatric-size pads are unavailable.

Flight attendant training has to include alternatives if a passenger, flight attendant or pilot for some reason cannot be given CPR on a galley floor or aisle floor. “Those are some of the considerations that trainers need to talk about, and trainers need to do some scenario-based training on the specific CPR [techniques for in-flight medical emergencies],” Gomez said. ➤