



Assigning Seats to Flight Attendants Requires Care in Business Aircraft

In the absence of regulations that require flight attendants, some operators of business aircraft have been influenced by training organizations and pilots to reconsider long-held policies. Precedents set by airlines may influence the resulting cabin-safety practices.

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FSF Editorial Staff

In many countries, operators of business aircraft are not required by civil aviation regulations to carry flight attendants in general aviation operations. Current standards and recommended practices of the International Civil Aviation Organization (ICAO) also provide limited guidance that pertains directly to using flight attendants in business aircraft. As a result, significant variations in cabin-safety practices exist, and some practices — such as routinely assigning a flight attendant to the cockpit-observer jump seat for takeoff and landing — show that there is no international consensus about them. Nevertheless, many operators of business aircraft voluntarily exceed official requirements based, in part, on the principles and precedents of air carriers.

If an operator's policies do not address cabin-safety issues adequately, cockpit crews may object to the inconsistent practices by citing safety concerns. For example, one U.S. pilot conducting flights under U.S. Federal Aviation Regulations (FARs) Part 135, *Commuter and On-demand Operations*, submitted the following report to the U.S. National Aeronautics and Space Administration Aviation Safety Reporting System: "I do not believe that all the problems are companywide. For the most part, I feel they are [in] our individual operation. There is a total disregard for training. [For example,] I have two [women] who are carried as flight attendants. Neither [flight attendant] has had a good initial course, much less a recurrent training program. Yet the airplane is operated [under] Part 135. The flight crew operates the majority of its flights



internationally. ... On one of our last flights, we were required to make an emergency return. Operations had stacked four computer-paper boxes of catering in the main doorway, thus blocking emergency egress. Our flight attendant is required to sit in a jump seat locked between the pilot [seat] and copilot [seat], thus blocking egress from the cockpit in an emergency. ... This operation is an accident waiting to happen."¹

In 1993, 31 U.S. operators of large business aircraft responded to questions about their policies and practices for utilization of flight attendants under FARs Part 91, *General Operating and Flight Rules*.²

Principal findings from the survey responses were that 71 percent of the operators said that they assigned flight attendants to domestic flights, and 87 percent said that they assigned flight attendants to international flights.

One-third of operators who used flight attendants said that they used maintenance technicians (called a "third crewmember" or "flight mechanic") who had received the same cabin-safety training as flight attendants. Some operators said that anecdotal experiences — in which a flight attendant conducted emergency procedures and controlled the situation while passengers showed signs of panic during incidents involving smoke, fire or emergency evacuation — had convinced the operators of the safety value of a flight attendant on business aircraft. Other operators said that flight attendants were used on all international flights but on no domestic flights.

The following reasons were cited by operators that did not use a flight attendant on any aircraft:

- Carrying a flight attendant would be inconsistent with the company's culture, style or employee morale. (For example, a corporate chairman believed that having a flight attendant on the aircraft would convey an inaccurate impression to employees about work conducted by the chairman on the company airplane);
- A flight attendant was deemed unnecessary because the same passengers traveled on all trips in the airplanes, and these passengers were trained in cabin safety; and,
- Flight attendants were considered helpful but not essential.

Three large U.S. airlines that also provided comments to researchers in the 1993 survey, however, said that a flight attendant in the cabin provides a shorter response time and a disciplined, knowledge-based response to emergency conditions, such as initiating immediate movement of passengers in an emergency evacuation to increase the probability of passenger survival. Actions that would be instinctive to untrained passengers — such as opening the nearest exit — could jeopardize safety, the airlines said. On the other hand, flight attendants frequently helped to manage an in-flight medical emergency and helped the captain to distinguish minor health incidents from those that required landing at the nearest suitable location that had appropriate medical care.

Worldwide, national requirements for carrying a flight attendant on commercial aircraft typically are based on the passenger-seating capacity (aircraft seats or passengers) of the aircraft, such as providing one flight attendant when more than 19 passengers are carried, said Donald Spruston, director general of the International Business Aviation Council (IBAC).³ IBAC represents 11 national associations and regional associations of business aircraft operators at the international level, has ICAO observer status and represents business aviation on most of the panels and the planning and implementation groups of ICAO.

“Requirements for carrying flight attendants are very similar; I am not aware of countries that vary significantly by requiring flight attendants in general aviation operations,” Spruston said. “Because business aircraft are becoming larger, have longer range and are used in more intercontinental operations, no doubt there is an increasing safety requirement for the use of flight attendants. Good communication and management of the cockpit and cabin have become more important during the past 10 years.”

Although IBAC has been involved in ICAO's flight-crew-licensing panel and the recently reactivated operations panel,

Spruston said, IBAC representatives have not reported any recent committee discussion of issues or work-agenda items related to flight attendants in business aircraft. IBAC has developed a set of performance-based standards for voluntary adoption by international operators of business aircraft that will influence indirectly how flight attendants function on business aircraft.

“Completed in 2002 and introduced by a number of flight departments, our International Standard for Business Aircraft Operations [IS–BAO] was developed and tested by IBAC members during a two-year period,” Spruston said. “These standards require that flight departments establish processes and documentation using principles of ISO 9000-series quality management.”⁴

Before issuing a voluntary certificate of registration, the IS–BAO program requires that member operators have specific processes for duty-time limitations and training, including training standards and recurrency training for flight attendants.

“Essentially, we have used the principles of ISO 9000, but have included only safety-related provisions in building an aviation-oriented safety standard,” Spruston said. “IS–BAO does not contain anything as to level of cabin service — nothing is included about whether a passenger is treated well in the back of the aircraft. This reinforces our position that every crewmember's primary responsibility is safety; therefore, anything else that a flight attendant may do in terms of customer service is an add-on benefit.”

To be registered in the program, operators must meet the requirements of ICAO Annex 6, *Operation of Aircraft, Part II, International General Aviation – Aeroplanes*, and satisfy all the national requirements of the state of registry for providing the nationally required number of cabin crewmembers, he said.

“If operators decide to have a flight attendant, they must have training for this person; IS–BAO does not stipulate the exact requirement,” Spruston said. “The standards are not prescriptive in details of what has to be provided or the seating assigned to a flight attendant, but are designed to ensure that the operator sets up the appropriate type of training, requires that all crewmembers meet the operator's standard and demonstrates that the operator has appropriate training for the cabin crew as well as the cockpit crew. There must be more focus on the related training requirements and crew resource management, which we have included as an important safety requirement in the IS–BAO program.” Revisions will be introduced annually in January by an IBAC standards board in response to the changing consensus on codes of practice and best practices, he said.

IBAC's member associations — such as the U.S. National Business Aviation Association (NBAA) — also consider

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cabin-safety practices at the national level or regional level. For example, NBAA emphasizes that the seating policy of operators of business aircraft should ensure that the flight attendant has access to passengers, can communicate with passengers and can conduct effectively cabin emergency procedures, including emergency evacuation, said Joe A. Evans, NBAA director of operations and staff liaison to the NBAA Flight Attendant Committee.⁵

“Flight attendants should be seated in a corporate aircraft so that they are prepared to assist the pilot-in-command in all cabin and passenger safety issues and security issues,” Evans said. “When a member company uses an assigned flight attendant on board a corporate aircraft, that person should possess the proper safety training and security training. We have listed voluntary recommended training practices in the *NBAA Management Guide*.”

No aircraft seat approved for occupancy during takeoff and landing is considered inherently more safe than another, said Nancy Claussen, a cabin safety inspector with the U.S. Federal Aviation Administration (FAA).⁶ Nevertheless, a seat equipped with a combined safety-belt and shoulder-harness unit — in a forward-facing seat or an aft-facing seat rather than in a side-facing seat — would be preferable for a crewmember who has been assigned safety-related duties, she said. This type of restraint system is required for flight attendants under FARs Part 121, *Domestic, Flag and Air Carrier Operations*, in transport category aircraft.

“Although FAA does not recognize the flight attendant as a required crewmember in FARs Part 91 operations, protecting every flight attendant is critical as a cabin-safety factor,” Claussen said. “Our cabin-safety regulations were written prior to such new industry dynamics as the increased use of business jets and fractional ownership. FAA is working to address many issues in these operations to ensure a high level of safety. We have concluded from several reports of experimental research that when one or more flight attendants was present in the cabin of a transport airplane, emergency egress times were significantly less than when passengers evacuated the aircraft without a flight attendant present. Some cabin-safety training organizations are trying to take Part 121 requirements for flight attendants as a guide and voluntarily parallel them; I support their efforts to increase the level of safety by having trained crewmembers aboard the aircraft to assist passengers in an emergency.”

One source of relevant safety principles is the European Joint Aviation Requirements, which say that a civil aviation authority may require an increased number of flight attendants in a transport airplane because of factors such as “the location of cabin crew seats, taking into account cabin crew duties in an emergency evacuation.” Considerations for seat assignment to a flight attendant in European transport aircraft also include the following factors: “When determining cabin crew seating positions, the operator should ensure that they are: close to a floor-level exit; provided with a good view of the area(s) of the

passenger cabin for which the cabin crewmember is responsible; and evenly distributed throughout the cabin, in the above order of priority. [The same factors apply to operators of helicopters in commercial air transportation.]”⁷

Another source of relevant safety principles is the airworthiness requirements for transport category airplanes in the following FARs:

- “Each seat, berth, safety belt, harness and adjacent part of the airplane at each station designated as occupiable during takeoff and landing must be designed so that a person making proper use of the facilities will not suffer serious injury in an emergency landing as a result of the inertia forces specified in [FARs Part 25, *Airworthiness Standards, Transport Category Airplanes*] 25.561 [General] and 25.562 [Emergency Landing Dynamic Conditions];”⁸
- “Each seat located in the passenger compartment and designated for use during takeoff and landing by a flight attendant required by the operating rules of this section [of the FARs] must be: near a required floor-level emergency exit, except that another location is acceptable if the emergency egress of passengers would be enhanced with that location. A flight attendant seat must be located adjacent to each Type A or [Type] B emergency exit. Other flight attendant seats must be evenly distributed among the required floor-level emergency exits to the extent feasible; to the extent possible, without compromising proximity to a required floor-level emergency exit, located to provide a direct view of the cabin area for which the flight attendant is responsible; positioned so that the seat will not interfere with the use of a passageway or exit when the seat is not in use; located to minimize the probability that occupants would suffer injury by being struck by items dislodged from service areas, stowage compartments, or service equipment; either forward [facing] or rearward facing with an energy-absorbing rest that is designed to support the arms, shoulders, head and spine; [and,] equipped with a restraint system consisting of a combined safety-belt and shoulder-harness unit with a single-point release. There must be a means to secure each restraint system when not in use to prevent interference with rapid egress during an emergency;”and,⁹
- “Each forward observer’s seat required by the operating rules must be shown to be suitable for use in conducting the necessary en route inspection.”¹⁰

Trainers of Flight Attendants Suggest Revised Practices

Representatives of two U.S. training companies that interact frequently with operators of business aircraft — FACTS

Training International and FlightSafety International — believe that these cabin-safety issues deserve greater attention.

Clients' cabin-safety practices often are discussed during procedures training that is specific to the operation of corporate/business aircraft, said Douglas B. Mykol, N.D., chief executive officer of FACTS Training International and AirCare International.¹¹

"I estimate that 50 percent of the cabin-class business jets and all of the heavy-jet corporate aircraft currently provide a flight attendant for every flight," Mykol said. "An additional 20 percent of business-aircraft operators include a flight attendant for their longer flights and for international flights. Over the years, there has been a slow change of attitude in regard to flight attendants in business aircraft. When practical for the size of the aircraft, a flight attendant should be considered a 'no go' checklist item [that is, the departure should not be conducted without a flight attendant] — similar to a vital part of the aircraft's emergency equipment.

"Many operators still consider assigning the flight attendant in terms of service-related issues. It has been an uphill battle for many years to get the flight attendant/third crewmember recognized as a valuable safety asset."

Proper training of personnel who are assigned to perform flight attendant duties is one of the most critical issues currently facing operators of business aircraft, he said.

"There are still many operators putting an untrained person aboard the aircraft as a third crewmember," he said. "We have been aware of examples of this practice such as using a pilot's friend, an executive's secretary or a restaurant employee who the pilot met the night before the flight. Obviously, a person acting as a flight attendant creates an immense liability — financially, ethically and morally because the passengers most likely will view a person who acts like a cabin crewmember as a trained flight attendant. In an emergency, the passengers will look to this crewmember for assistance."

Although Mykol believes that most operators of business/corporate jets currently assign the cabin crewmember to sit in the cockpit-observer jump seat for takeoff and landing, FACTS cabin safety specialists discourage this practice, he said.

"We estimate that 90 percent of U.S. cabin-class aircraft operators have the flight attendant sit in the cockpit-observer jump seat for takeoff and landing," Mykol said. "We believe that this common practice should be avoided because the flight

attendant primarily is on board for passenger-safety reasons. It is very difficult for a flight attendant who is sitting in a forward-facing jump seat — facing away from the passengers — to assist in the event of an emergency."

Some operators of business aircraft have established policies and procedures that assign the flight attendant to a specific seat in the cabin for takeoff and landing.

"We highly recommend this policy and also recommend that the cabin crewmember be seated in an aft-facing seat, which typically provides a view of the entire cabin and passengers," Mykol said. "From the cabin, the flight attendant can observe, assess, correct and respond to emergencies and safety issues in a much more timely fashion.

"In a planned emergency, the aft-facing brace position allows for both viewing the cabin and issuing voice commands to the passengers during impact. Most other forward-facing brace positions require the cabin crewmember to be bent over to grab the ankles with the head down. This position results in

the cabin crewmember not being able to see the cabin or passengers, and any voice commands will be directed toward the floor instead of toward the passengers." A flight attendant seated in a cockpit-observer jump seat similarly cannot issue voice commands directly toward the passengers.

Ideally, pilots and flight attendants will be trained to work together as a crew in problem-solving and to conduct routinely a preflight conference on unique safety factors of each flight such as seating, emergency evacuation and crew commands.

"Most professional flight attendants and training organizations would like to see regulations for training and minimum

qualifications for the flight attendant, but this concept causes much concern within NBAA and among some operators," Mykol said. "While standards are usually good for the industry and for safety, aircraft operators would incur costs to operate at this higher standard."

A positive trend in recent years has been improvement of procedures training on cabin emergencies for pilots.

"While emergency-procedures training is required for every Part 135 crewmember, including pilots, I have seen many Part 135 operators send their flight attendants to formal training, but conduct only a brief in-house safety meeting to train pilots," he said. "This is slowly changing. Currently, each of our cabin-safety classes typically consists of about 30 percent pilots, 20 percent flight engineers/maintenance technicians and 50 percent flight attendants. About 20 percent of our clients send their entire crews to cabin-emergency-procedures training. Usually,

"It is very difficult for a flight attendant who is sitting in a forward-facing jump seat — facing away from the passengers — to assist in the event of an emergency."

within the first two hours, pilots appreciate being empowered with new skills.”

Consciousness about these issues has been raised partly by the participation of pilots in cabin-safety training, said Colette Coley, cabin/flight attendant program manager for FlightSafety International.¹²

“Training provides pilots more hands-on experience with the equipment in the back of the airplane and what it is like to talk passengers through a planned emergency landing,” Coley said. “Whether the crewmember is in the cockpit or the cabin, there is better understanding. On occasion, pilots have gone back to their companies and discussed the value of flight attendants on business aircraft.”

On some business aircraft, however, operators have found using a flight attendant to be unfeasible or impractical primarily because of limited cabin space or unsuitable cabin configuration, Coley said.

“In the past, some operators who have used our training have placed the flight attendant on the cockpit-observer seat, which is not — in our opinion — the best position because the flight attendant is on board primarily for passenger safety,” she said. “Based on the types of business aircraft in which we have provided training, FlightSafety International does not recommend the use of the cockpit-observer seat. The best place for the flight attendant is in the cabin with the passengers, functioning as the safety backup for the cockpit crew.”

The flight attendant should occupy the closest aft-facing seat or closest forward-facing seat to the primary emergency exit; Coley said that she would not recommend any side-facing seat, even if that is the seat closest to the primary emergency exit. Some operators currently provide a combined seat-belt and shoulder-harness unit with a single-point release for all passenger seats.

“Typically, with contract flight attendants, discussion of seat assignment is done during the preflight briefing,” she said. “If the flight attendant knows ahead of time about the trip, he or she should take time to meet with the crew or the chief pilot and find out more about the operator’s standard operating procedures, what type of emergency equipment is on the airplane and where it is located, where the flight attendant will be seated, the scope of responsibilities — for example, some operators require the cockpit crew to conduct preflight checks of all cabin emergency equipment — and passenger load and catering details. We encourage flight attendants to learn as much as possible before the day of the flight — otherwise, they should meet the airplane earlier in the day of the flight to be briefed by the cockpit crew. Even if preflight equipment checks are not delegated to a contract flight attendant, flight attendants are trained to perform a preflight inspection to familiarize themselves with everything on that airplane and where everything is located.”

The flight attendant must know from experience what is required for safety; for example, if the galley is aft, an aft fire extinguisher and aft personal breathing equipment (PBE) will be required, she said. Flight attendants also know that one interior configuration may be significantly different than the interior of same aircraft type that an operator has parked nearby — for example, fire extinguishers may be placed at the forward bulkhead and the aft bulkhead in one airplane, but may be placed in a mid-cabin location and in the front of the cabin in another. Taking nothing for granted about emergency-equipment stowage is critical because some operators select the most inconspicuous cabin locations, Coley said.

“We definitely are influenced by lessons learned from Part 121 operations; there is nothing wrong with applying them to corporate aviation if it makes sense,” she said. “We have to consider every aspect of training based on its own merits but we are always watching and learning from other types of operations so that mistakes are not duplicated just because a practice is not required by regulations in business aircraft. In an emergency situation, a properly trained and qualified flight attendant will enhance the safety of every individual on the airplane.”

U.S. Operator Sets Policy, Provides Client Education

Cabin safety requires a continuing commitment after basic policies have been established, such as when to use flight attendants in a business aircraft and how the seat will be assigned to the flight attendant for optimal safety. Factors such as cost, resistance to change and clients’ misunderstanding of crew roles and responsibilities can affect implementation of the policies.

“We are using flight attendants on a regular basis for the Boeing 727 and the Boeing Business Jet; the Dassault Falcon 50, Falcon 900 and Falcon 2000; the Bombardier Global Express, Challenger 601 and Challenger 604; and the Gulfstream II, III, IV, V and 200. We rarely use flight attendants on Raytheon Hawker-series airplanes or smaller aircraft,” said Charles McLeran, chief operating officer for TAG Aviation USA.¹³

“One obstacle that we run into with some aircraft owners is cost. Typically, they will want a flight attendant in cabin-class airplanes, but for other aircraft — the Falcon 50 and the Challenger 601, for example — they may not want a flight attendant on the airplane. Other owners or clients ask for a flight attendant only for specific types of trips — such as for a long international trip, when entertaining guests or when providing an elaborate meal service. Otherwise, the issue may be that some customers would prefer to have the cabin all to themselves.”

Some advantages of assigning a flight attendant to a business aircraft are readily apparent, but others might not be obvious to

operators, owners and passengers, said Ann Holmes, director, cabin standards and services, for TAG Aviation USA.

Operators of business aircraft — especially cabin-class aircraft and large transport aircraft with executive interiors — increasingly subscribe to medical advice services that provide communication with a physician on the ground. When medical advice is required, the presence of a cabin crewmember enables the captain and first officer to focus first on safety of flight in handling the in-flight medical emergency, Holmes said.

If the operator is enrolled in MedAire's MedLink service, for example, and an injury or illness occurs, the flight attendant can communicate directly with the MedLink physician, provide information about the passenger, discuss with the pilots the physician's recommendation about landing as scheduled or diverting the flight for the nearest appropriate medical care, and apply the medical advice in the cabin while the cockpit crew conducts the diversion.

"Without a flight attendant, one of the pilots would have to assess the passenger's symptoms and discuss with MedLink any recommendation to divert," Holmes said. "All TAG Aviation flight attendants have training in cardiopulmonary resuscitation [CPR], use of the automated external defibrillator (AED) and first aid. All the aircraft that we operate carry a basic first aid kit, and many carry an enhanced medical kit."

All cabin equipment must be used correctly and safely; otherwise, there could be significant risk of distraction to pilots caused by a passenger's unfamiliarity with cabin equipment or the passenger's inability to resolve apparent malfunctions, McLeran said.

"This has been a significant issue among our customers because about 75 percent of the aircraft we use in on-demand operations are owned by private individuals," McLeran said. "The typical charter passenger will not know how to operate these systems. Even aircraft owners sometimes become confused about operating cabin equipment such as a satellite TV system or wireless local-area-network system for laptop computers, which may not be intuitively easy to operate. Apparent malfunctions often are operator-error issues. Moreover, if no flight attendant is aboard, a passenger sometimes will go to the cockpit for such assistance at the same time that the crew might be entering a high-density traffic environment, for example. While one pilot might be able to help a passenger with such problems in cruise, we have learned from experience that the flight attendant has a very important operational function aboard these airplanes."

As to where the flight attendant should be assigned to sit in a business aircraft, practices vary among operators, Holmes said.

"The assumption among many operators is that the flight attendant will sit in the cockpit-observer jump seat," Holmes said. "We concur with FACTS and FlightSafety International, which highly recommend that the flight attendant sit in the cabin — not in the jump seat. On many cabin-class airplanes such as the Falcon 900 series, Challenger series and Gulfstream series, the main entry door adjacent to the cockpit is not the primary emergency exit. Typically, the primary emergency exit is an overwing exit; therefore, a flight attendant seated at the cockpit is in a position farthest from the overwing exit."

Positioning a flight attendant in the cockpit-observer jump seat also runs counter to the well-developed practice of airlines, McLeran said.

"When I began flying business aircraft, experience in the airline industry caused me surprise to find that a vast majority of flight attendants ended up sitting on the jump seat," McLeran said. "We changed this practice when TAG began conducting line observations. Now, the vast majority of our flight attendants are sitting in the cabin."

The possibility that an injured flight attendant inadvertently could block an evacuation path also is a concern, McLeran said.

"A major problem could occur if during a serious unplanned emergency — such a runway excursion — the flight attendant suddenly became a serious obstacle to the cockpit crew in completing the duties they must perform," McLeran said. "That is a risk you take on a business jet — something to be concerned about 100 percent of the time — when you routinely use the cockpit-observer jump seat."

"Although aviation professionals may joke about the pilots being first to arrive at an accident scene, if they are incapacitated when the aircraft stops, the flight attendant is critical to getting the passengers off the airplane to a safe place on the ground. The flight attendant also has been trained on how to evacuate injured pilots. In safety demonstrations, we have asked the aircraft owner or passengers to assist pilots who are slumped over in the seat by getting the pilots out of their seats. Typically, they cannot figure out how to disconnect the belts by rotating the release mechanism of the single-point harness."

In the current environment, operators of business aircraft have many reasons to reassess their policies on flight attendants.

"TAG Aviation operates under a safety-policy memorandum that says that our preference is that flight attendants maintain a seating position in the cabin," McLeran said. "A new company flight attendant manual also will say that the flight attendant should occupy a cabin seat. With respect to aircraft owners, however, we are in a safety-consulting position and some owners are opposed to this policy. When these owners are aboard the aircraft, they

“Without a flight attendant, one of the pilots would have to assess the passenger’s symptoms and discuss with MedLink any recommendation to divert.”

want the flight attendant to occupy the cockpit-observer jump seat even for takeoff and landing. We say in print what our policy is and follow this policy with clients other than aircraft owners. If an aircraft owner overrides this policy, we will attempt to explain why this issue is so important — but the situation puts the crew in a difficult situation to resolve.”

The most persistent issue in seating a flight attendant on a business aircraft seems to be some passengers’ perceptions that comfort, cabin service and privacy are the highest priorities, Holmes said.

“Many clients want to fly with the same crewmembers on trips because they have developed confidence in them as individuals and in their expertise,” McLeran said. “Clients also should know that they can discuss private matters or proprietary business information without regard to the flight attendant’s presence or seat assignment in the cabin. When passengers have private conversations, the flight attendant will ‘hear nothing, see nothing, say nothing.’ The basis for this includes the confidentiality clause in their employment agreement, screening by clients and pre-employment checks of their references, and the reputation that they must earn in this business for being discreet and for assuming the demeanor of a trusted executive assistant and safety professional.”

Flight Safety Foundation has recognized the following additional principles of cabin safety, which have precedents in airline operations:

- Flight attendants have provided a first line of defense for detecting and enabling the cockpit crew to respond to unsafe conditions (such as unusual sounds, smoke, odors, fumes, visible equipment malfunctions, unsafe stowage of bags or relocation of equipment by passengers that would block emergency exits or an aisle, and securing loose articles);
- Some emergency tasks can be conducted most quickly when the flight attendant has eye contact with passengers (for example, to observe nonverbal passenger behavior and to determine that passengers are in the correct position after the brace command) to communicate with voice commands and hand signals, and rapid access to stowed equipment (such as flashlights, medical kit, oxygen-related devices or life raft);
- The flight attendant should have ready access to the galley at all times to stow items and/or to secure equipment under various flight conditions;
- The flight attendant should be in a position to help prevent an unnecessary or hazardous evacuation initiated by a passenger, including inappropriate activation of equipment such as an escape slide;
- In some aircraft, any cockpit-observer jump seat or folding cockpit-observer seat and any harness must be

stowed securely so that exit paths are not blocked for the flight crew during an emergency; operators should consider the extra time that would be required to secure a folding seat, belt and harness during an emergency evacuation; and,

- The comfort of the flight attendant’s assigned seat should be considered in terms of fatigue, which might affect a flight attendant’s performance during an emergency.

Comparison of comments in the 1993 survey¹⁴ with comments in 2003 showed that frequently mentioned issues have changed little in deciding when and how to assign flight attendants to business aircraft. If these issues continue receiving attention from operators, training organizations, regulators and safety specialists in industry associations, greater consensus could reduce the degree of inconsistency in current practices.♦

Notes

1. U.S. National Aeronautics and Space Administration (NASA) Aviation Safety Reporting System (ASRS). Report no. 356743, January 1997. NASA ASRS is a confidential incident-reporting system. The ASRS Program Overview said, “Pilots, air traffic controllers, flight attendants, mechanics, ground personnel and others involved in aviation operations submit reports to the ASRS when they are involved in, or observe, an incident or situation in which aviation safety was compromised. ... ASRS de-identifies reports before entering them into the incident database. All personal and organizational names are removed. Dates, times, and related information, which could be used to infer an identity, are either generalized or eliminated.” ASRS acknowledges that its data have certain limitations. ASRS *Directline* (December 1998) said, “Reporters to ASRS may introduce biases that result from a greater tendency to report serious events than minor ones; from organizational and geographic influences; and from many other factors. All of these potential influences reduce the confidence that can be attached to statistical findings based on ASRS data. However, the proportions of consistently reported incidents to ASRS, such as altitude deviations, have been remarkably stable over many years. Therefore, users of ASRS may presume that incident reports drawn from a time interval of several or more years will reflect patterns that are broadly representative of the total universe of aviation-safety incidents of that type.”
2. Speas, R. Dixon; Becker, Otto A.; Conte, John L. “Utilization of Flight Attendants, Business Aircraft Operations, Companies of Fortune 50 Category.” Tucson, Arizona, U.S.: PRC Aviation, February 1993. This report was distributed to Flight Safety Foundation and to members of the U.S. National Business Aircraft Association (now National Business Aviation Association). “Fortune 50” refers to the 50 largest U.S. companies as rated annually by *Fortune* magazine.

3. Spruston, Donald D. Interview with Rosenkrans, Wayne. Alexandria, Virginia, U.S. June 4, 2003. Flight Safety Foundation, Alexandria, Virginia, U.S. Joint Aviation Requirements—Operations (JAR—OPS) 1, *Commercial Air Transportation (Aeroplanes)*, Subpart O, Cabin Crew, 1.990, for example, says, “An operator shall not operate an aeroplane with a maximum approved passenger seating configuration of more than 19, when carrying one or more passengers, unless at least one cabin crewmember is included in the crew for the purpose of performing duties, specified in the operations manual, in the interests of the safety of passengers.”
4. The International Organization for Standardization (ISO) — a network of national standards institutes in 146 countries — developed ISO 9000-series standards as a voluntary international reference for quality requirements in business-to-business interactions. ISO 9000 provides generic quality-management system standards for organizational processes/activities that enhance and continually improve customer satisfaction by meeting customer requirements and by meeting applicable regulatory requirements.
5. Evans, Joe A. Interview and e-mail communication with Rosenkrans, Wayne. Alexandria, Virginia, U.S. March 12, 2003, and June 6, 2003. Flight Safety Foundation, Alexandria, Virginia, U.S.
6. Claussen, Nancy. Interview and e-mail communication with Rosenkrans, Wayne. Alexandria, Virginia, U.S. March 12, 2003, and June 3, 2003. Flight Safety Foundation, Alexandria, Virginia, U.S.
7. Joint Aviation Authorities. IEM OPS 1.990, *Number and Composition of Cabin Crew*, and IEM OPS 1.31(b), *Cabin Crew Seating Positions*.
8. U.S. Federal Aviation Regulations (FARs) 25.785(b).
9. FARs 25.785(h).
10. FARs 25.785(l).
11. Mykol, Douglas B. E-mail communication with Rosenkrans, Wayne. Alexandria, Virginia, U.S., March 22, 2003. Flight Safety Foundation, Alexandria, Virginia. Mykol is a member of the Flight Attendant Committee of the U.S. National Business Aviation Association.
12. Coley, Colette M. Interview with Rosenkrans, Wayne. Alexandria, Virginia, U.S. March 18, 2003. Flight Safety Foundation, Alexandria, Virginia, U.S.
13. McLeran, Charles; Holmes, Ann. Interview with Rosenkrans, Wayne. Alexandria, Virginia, U.S., March 21, 2003. Flight Safety Foundation, Alexandria, Virginia.
14. Speas et al.

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