Safety in the Air — What More Can Be Done?

The key to improvements in aircraft accident survival rates is in improved understanding by passengers of the equipment and procedures needed in an emergency.

by
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Manchester — Lockerbie — Kegworth. Grouped together, these United Kingdom locations ring a familiar resonance to those involved with aviation safety. They are all sites of passenger aircraft accidents that have taken place in recent years. The first, at Manchester Airport, happened during an attempted takeoff; the Lockerbie accident occurred as the aircraft was at altitude; the third, at Kegworth, happened while the aircraft was attempting to land.

There were no survivors in the Lockerbie disaster. Nor, by its nature, could an event of this kind be survivable. An explosion resulted in the disintegration of the airframe in flight with no survivors. However, some people survived the fire after an engine failure at Manchester and some survived the impact with the ground at Kegworth. This small sample of accidents reflects the more general picture; people involved in aircraft accidents are more likely than not to survive.

Given that the majority of passengers survive aircraft accidents, why do some fail to survive?

Accident investigators have shown that certain structural features of aircraft have contributed to the toll of death. Lives have been lost when seats failed to resist impact forces and broke away; insufficient space was provided in the vicinity of an exit to permit people to use it effectively; overhead lockers failed and heavy baggage was thrown violently on to those sitting beneath them. Recommendations concerning such design features often are incorporated into accident reports, and they are considered by the regulatory authorities in conjunction with manufacturers and the airlines.

Through the years, lessons from the accident record have been incorporated into the regulations governing aircraft design with the aim of increasing survivability. Recent changes include new seat strength standards, increased fire resistance of escape slides, and greater clearance around some exits.

However, progress in this area is considered too slow in some quarters and too slight in relation to the dimensions of the problem. There is, for example, a perennial demand for rearward-facing seats in passenger aircraft. Such seats are advocated on the grounds that passengers seated in them can tolerate higher deceleration forces.

However, simply to change the orientation of the seats is only the beginning of the exercise to provide a significant increase in survivability. Passengers would require, in addition to lap belts, full shoulder harnesses and energy-absorbing headrests. The strength of the seats and their tie-down structure would have to be increased considerably. In the event of an emergency landing, passengers would be facing in the direction of travel of unsecured objects launched by impact forces, and thus they would be vulnerable to injury from the objects.

In the wake of the Manchester accident, where numerous passengers were unable to evacuate the aircraft after it stopped and burned on the runway, there have been renewed calls, hitherto resisted, for the provision of smoke
It is necessary to recognize that behavior exhibited at the unpreparedness that leads to inappropriate action. And briefing cards, passengers in general demonstrate an incapability of action, is a more likely outcome. This type of response may be expected to occur when people, in stressful conditions of great stress, do not know what to do.

First, contrary to popular myth, panic (i.e. disorganized, anti-social, violent behavior) is not a common response; freezing, where passengers are overwhelmed by fear and incapable of action, is a more likely outcome. This type of response may be expected to occur when people, in conditions of great stress, do not know what to do.

The second conclusion is that, in spite of crew briefings and briefing cards, passengers in general demonstrate an unpreparedness that leads to inappropriate action.

It is necessary to recognize that behavior exhibited at the time of an emergency has its origin in attitudes, beliefs and habits that have developed during a long period of time. Attitudes toward safety, in society as a whole, do not give it a high priority. How many hotel guests check the escape routes from their rooms in case of fire? How many drivers accept that even small amounts of alcohol impair their skills? The aircraft cabin is regarded as a sitting room or a dining room where dangerous events are unlikely to occur.

Passengers’ beliefs are often at variance with the reality of the situation. For example, some passengers believe that the time available for escaping from a burning aircraft is far greater than actually is the case, while others believe that to read the safety briefing card before an emergency takes place is a waste of time. Yet, emergency conditions are not likely to be conducive to reading. Other passengers believe that a flight attendant will always be available to help them if an emergency arises, overlooking the ratio of attendants to passengers and the possibility of attendants being too injured to assist anyone.

Thus, the conclusion is that lack of preparedness on the part of passengers forms the greatest hazard to safety. Substantial increments in survival rates can only be obtained by improved understanding by passengers of the equipment and procedures necessary in the event of an emergency.

No single airline can be expected to pioneer such a change. Without concerted international effort, followed by statutory requirements, it seems inevitable that the present situation will continue.
Effective Cabin Crew Training

The precepts of cockpit resource management (CRM) might well be extended to the cabin crew.

by
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Cockpit resource management (CRM) training is designed to improve the ability of a cockpit crew to work together as a team and, to some degree, involves behavior modification.

Can the concept of CRM be applied to the cabin crew, and can it have a beneficial impact on creating improved teamwork and acceptance of responsibilities?

A full-fledged CRM-type program may not be appropriate for the cabin crew. However, there are definitely compatible applications with respect to the goals and objectives of CRM that can be effectively used in flight attendant training programs.

Significant issues for consideration include leadership, decision-making, work organization, delegation of responsibility, acceptance of responsibility, assertiveness, and crew interaction and communication.

In past years, as a training instructor, I taught flight attendants that, if one crew member was unable to handle a problem, complete a task or effectively interact with a passenger, another crew member should be called to resolve the situation. Today, a more progressive approach to such scenarios is taught; confrontation training equips the crew member to defuse people-related problems on their own, using skills fine-tuned in the classroom. Timing, interaction with the individuals involved and the specifics of a situation all can alter the ability to perform competently. No one is looking for heroes or heroines but only for methods of getting a job done — effectively and in the best way possible.

An opportunity to discuss actual difficult and challenging situations would be invaluable to the crew member involved, as well as to the other members of the crew. How was the situation perceived? Where was the breakdown? What could have been done differently? The ability to recognize...
where performance failed, or was impeded, could provide the guidance needed to create a greater awareness of one’s own behavior, performance level, stress tolerance and decision-making abilities.

The CRM concept might also lend itself to enhancement so the performance and effectiveness of those cabin crew members who function in a “lead” flight attendant capacity. The senior flight attendant can be invaluable in assuring routine in-cabin service and most importantly, in providing leadership in an emergency situation. During such a time, the ability to communicate, provide leadership and direction, make decisions, delegate responsibilities and maintain self-control are necessary to cope with an emergency no matter what its magnitude.

Cockpit crew members tend to be task oriented, but they also must be fully cognizant of the total environment, not just the problem or task at hand. The same is true in the cabin, and flight attendants must be adaptable and responsive to varied circumstances.

In CRM training, the ideas are borrowed directly from business management. Crews are taught to recognize how their individual styles can create communication blocks that can cause confusion, interference, non-performance, dysfunctional behavior and accidents. Individual resources are invaluable and must be protected, encouraged and allowed to develop to the fullest extent possible. Human resources are the greatest assets of any company and need to be recognized and nurtured.

The CRM concept is priceless in its recognition of human behavior, performance and crew interaction and, ultimately, in job performance. One cannot assume another individual’s level of knowledge, training or experience. This is the value of “focus” training, such as CRM, in identifying specific problem areas and providing workable solutions, or at least realistic guidance.

Ultimately, the most effective use of the CRM concept would be “coordinated crew training” where both cockpit and cabin crew members are provided a commonality in training to instill confidence and respect in each other’s responsibilities on the aircraft. In this way, crew coordination can assure the highest standards of safe and efficient operations.

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About The Author

Jeanne M. Elliott has been involved with the aviation industry for more than 25 years in varying capacities relative to cabin safety, crew member training, inflight supervision, in-cabin inspection/surveillance, and program development and management.

Her career includes early work with the U.S. Federal Aviation Administration (FAA) as an air carrier cabin safety specialist. This position was created to give the FAA a closer liaison with the airline industry in developing and enhancing the safety role of the flight attendant in the areas of crashworthiness and survivability.

Elliott has written on occupant/crew member safety and protection in publications distributed worldwide. She participates with industry organizations dedicated to cabin safety and occupant survival, and is affiliated with a major international air carrier.