

The big brief

Are Australia's passengers prepared for an evacuation?



Open sesame: The redesigned Boeing Type III exit, featuring the "up and over" door.

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On 1 February 1991, a Skywest Metroliner bound for Palmdale was cleared to line-up on runway 24L at Los Angeles Airport. While waiting to take-off, air traffic control incorrectly cleared a USAir Boeing 737 to land on the same runway.

The collision killed all 12 aboard the Metroliner, and sent the two aircraft skidding along the runway into a nearby building, where fire ensued. Of the 83 passengers and six crew aboard the 737, there were 20 fatalities. The bodies of one flight attendant and ten passengers were found within eight feet of the right overwing exit, where they most likely perished from smoke inhalation while waiting to evacuate.

The National Transportation Safety Board's (NTSB) investigation found there were difficulties in evacuating after the female passenger seated by the exit in 10F became paralysed with fright and was unable to open the exit door. As the cabin filled with smoke, the passenger from 11D was forced to climb over the seat next to the woman and open the door himself, pushing her

through. The evacuation was further delayed when a fight erupted between two male passengers at the exit, lasting several seconds. Though 37 people escaped through this door, the passenger seated in the exit row was not adequately prepared for an emergency, despite her location inevitably making her responsible for the safety of her fellow passengers.

Helping others to help themselves: Both regulators and manufacturers refer to the Type III exit (also known as an overwing, underwing, window, hatch type, or plug type exit) as a "self-help exit", designed for passengers to operate without formal safety training.

At the time of the USAir accident, the Federal Aviation Authority's (FAA) new CFR 121.585 on exit row seating had come into effect, requiring all Part 121 and 135 certificate holders to assess the suitability of any person occupying an exit seat, and provide them with a one-on-one briefing on the door's operation.

The rule became active on 5 October 1990, with all airlines required to submit a screening and briefing program for FAA approval. Unfortunately,

the approval for USAir's program didn't come until 22 May 1991 – nearly four months too late.

On that same flight however, passengers around row 10 recalled a flight attendant briefing a 17-year-old male in 10D, two seats away from the exit, on his responsibilities. The passenger indicated he understood and was capable of assisting if needed. Although he was not located immediately next to the exit, the survivors and the NTSB's report stated that these instructions aided the evacuation. The briefing did not help the woman in 10F.

Impending change: Australia has no regulation that requires cabin crews to brief passengers seated by Type III exits prior to take-off, although such a rule is being prepared as part of CASA's ongoing regulatory reforms. In a standard pre-flight safety briefing, passengers are informed en masse of the exits' location, and that those seated next to them may be required to operate them in an emergency.

But as the Los Angeles accident illustrates, there is no guarantee an individual will actually pay attention to any safety briefing or familiarise themselves with the exit's operation.

To date, at least five Australian airlines have

already adopted the policy of a one-on-one briefing: Eastern Australia Airlines, Sunstate Airlines, Air North, Virgin and Impulse. Melissa Drapes, Impulse's Head of Cabin Crew Training and Checking, says it has been a part of standard operating procedure from day one, "We wanted to enter the industry setting a high standard of safety, rather than just do the bare minimum that was required of us by CASA.

"In past accidents, people haven't even been aware they've been sitting at the emergency exit. The fact that we don't have a crew member seated there means we have to rely on the passengers."

Passenger problems: Because modern aviation is so safe, the rarity of serious accidents and incidents is often thought to breed passenger complacency. People forget the primary role of the cabin crew is to ensure their safety, not to provide hospitality.

A recent US survey reveals that 54 per cent of passengers do not watch the entirety of the cabin crew's pre-flight safety briefing. The survey of 457 passengers by the National Transportation Safety Board (NTSB), *Emergency Evacuation of Commercial Airplanes*, showed that 15 per cent of passengers did not watch the briefing at all. In addition, the study found that many passengers seated in exit rows do not read their safety briefing cards. The problem is exacerbated with further evidence that it is not always intuitively obvious to a passenger how a Type III exit operates.

Further delays: At Manchester Airport in 1985, a fire broke out during the aborted take-off of a British Airtours 737. After the aircraft came to a halt on the runway, a young woman sitting by the right overwing exit was asked by other passengers to open the door. She attempted to do so by pulling on the right-hand arm rest of her chair. The passenger next to her then reached across to pull the emergency handle. The exit fell inwards across the woman, leaving her pinned beneath. With another passenger's help, she was freed and the exit moved to a vacant seat. From the time the aircraft stopped till the survivors began evacuating through the right overwing exit took 45 seconds. There were similar delays at other exits, and of the 137 on board, 57 were killed because they were unable to evacuate the plane in time.

In the wake of this accident, the UK CAA initiated a research program which recommended changes to the configuration of Type III overwing exits, making them easier to access and operate. The result was an "up and over" design that was quicker to open, and eliminated the problem of exit disposal during evacuation. The design was implemented by Boeing on their 737 derivative.

Screening: Professor Helen Muir of Cranfield



Please proceed to the nearest exit: The wreck of a Boeing 737 that was gutted by fire at Manchester Airport in 1985.

University participated in this research, and has worked with the UK CAA, Transport Canada and European Joint Aviation Authorities since the mid-1980s, examining passenger behaviour, cabin evacuation and crash survivability. She supports the notion that better briefed passengers have an

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improved chance of survival, and goes further to recommend exit row seats be filled by fit and healthy males. Many airlines now screen their passengers to ensure able-bodied adults, fluent in the carrier's native language, occupy these seats.

Some Australian airlines have their own set of requirements in place, as Melissa Drapes explains, "There's a list of people who cannot sit at the exits: the disabled, pregnant women, children under 15, obese people, mothers with infants on their laps, or anyone with temporary injuries." The screening begins at the check-in counter where the operator has this list, and they are required to inform the passenger they will be seated in an exit row.

Air North is introducing passenger screening at the check-in counter. Flight Attendant Manager Deanne Farlow says the briefing system has been easy to introduce, since its implementation coincided with the airline's recent expansion.

"On boarding, they are told they've been allocated a seat in an exit row and we'd like them to read the safety-on-board card. If they have any questions they can ask, or they can be resealed if they wish," Deanne explains.

The NTSB's research indicates that passengers seated in exit rows can have problems performing the tasks required of them, the most serious being determining when it is appropriate to open the door. The NTSB has documented cases of passengers allowing smoke into the cabin, or opening doors onto flames. Deanne stresses that these situations are covered as part of the flight attendant's training, and that the briefing states passengers are not to initiate evacuation on their own.

Eastern Australia Airlines flight attendant manager Christine Williams says that most passengers seem to understand and appreciate the briefing, "The flight attendants did initially have some strange reactions from people. Now they're starting to get used to the fact that this is what we do. It's more time consuming for the flight attendants, but that's just something that we have to deal with."

With the new regulations on the horizon, and more airlines adopting the one-on-one briefing as standard operating procedure, passengers will have little choice but to get used to this new standard of safety. According to Melissa Drapes, the process of acceptance has already begun, "There seems to be a consensus with a lot of passengers who travel with us over and over again. They request those seats, and they're quite happy to sit through the briefing every time. It seems to be a good method of educating the public.