

3. Case Studies of Accidents

(1) Emergency evacuation was conducted, because inside of the aircraft was filled with white smoke

Summary: On May 2, 1993, a Boeing 747-400, operated by Airline A, during taxiing after landing at Tokyo International Airport came to a stop and made an emergency evacuation close to Parking Spot 56.

In the emergency evacuation, nine passengers, out of a total of 490 persons consisting of 15 crew members and 475 passengers (including 7 infants), were seriously injured.

No fire occurred on the aircraft.

Lead up to emergency evacuation

Around 20:50

The aircraft landed at Tokyo International Airport.

Around 20:53

After landing the aircraft taxied towards Parking Spot 56, and then the cockpit and the cabin became rapidly filled with a white smoke-like substance.

Around 20:54

The aircraft came to a stop approximately 10 meters NE of the standing position of Parking Spot 56. The captain commanded the crew and passengers to execute an emergency evacuation.

Around 20:57

The emergency evacuation was conducted from all exits except for L3 using evacuation slides, and the evacuation of all persons on board was completed. During the evacuation, nine passengers were seriously injured and transported by ambulances to hospitals.

Breakdown of the seriously injured

- Male aged 58 sustained a compression fracture of the 12th thoracic spine, Exit: UL (door on the left side of the upper-deck)
After sliding down and losing balance, he hit the ground after being thrown several meters. He could not stand up because his left foot was numb.
- Female aged 68 sustained a compression fracture of the 12th thoracic spine and a fracture of the 4th carpal bone of her right hand, Exit: UL
Sliding down while sitting, she was thrown from the end of the evacuation slide, and could not stand up due to pain in her waist afterwards.
- Female aged 53 sustained a compression fracture of the 12th thoracic spine, Exit: UL
Sliding down while sitting, she was thrown from the end of the evacuation slide and could not stand up afterwards.
- Female aged 55 sustained a compression fracture of the 9th thoracic spine, Exit: UL
Sliding down while sitting with her pumps taken off, she held that posture and landed on her back. She could not move for a while due to pain around her waist.

- Female aged 72 sustained a compression fracture of the 12th thoracic spine, Exit: R2 (2nd door on the right side of the main-deck)
Sliding down while sitting, she was thrown from the end of the evacuation slide. She had pain around her waist.
- Female aged 51 fractured her left ankle, Exit: R3 (3rd door on the right side)
Slid down in a sitting posture. She landed and stood up normally, but was hit by a succeeding passenger behind them and fell down with her hands hitting the ground, at which time she had severe pain in her left ankle.
- Female aged 52 sustained a neck cervical sprain, and head and waist contusion, Exit: R3
Upon landing she sustained bruises on her head and waist by hitting the ground, after which time she could not walk due to pain.
- Female aged 62 sustained a compression fracture of the 12th thoracic spine, Exit: R5 (5th door on the right side)
Sliding down while holding a sitting posture, her back was struck at landing. She could not stand up due to pain in her back.
- Female aged 56 sustained a compression fracture of the 1st lumbar spine, Exit: L5 (5th door on the left side)
She landed on her back. She could not stand up due to pain around her waist.

The slightly injured persons suffered mainly bruises, sprains, and scratches.

Situation at evacuation

Cabin attendants loudly told passengers not to bring baggage, and took away the baggage at the exits, but there were some passengers who evacuated with baggage such as Boston bags and handbags anyway.

It is estimated that approximately 20 percent of the passengers evacuated carrying baggage, which is considered one of the causes of the injuries.

Out of the 58 passengers who evacuated from the upper-deck, the injured consisted of 4 seriously injured and 18 slightly injured, which is an injury rate of approximately 38%.

On the other hand, out of the 417 passengers who evacuated from the main-deck, the injured consisted of 5 seriously injured and 90 slightly injured, which is an injury rate of approximately 23%.

Exits on the upper-deck are located higher than those on the main-deck, and have a longer sliding distance so the posture during sliding tends to change, which seems to account for the higher injury rate.

At the time of the accident, it was raining at the site. Someone stated that the evacuation slides were slippery because they were wet with rain.

It seems that normal landing became difficult as the sliding speed increased and the deceleration effect at the end decreased.

Among the passengers over 50 years old, the ratio in terms of gender is almost the same between male and female. However, out of the nine seriously injured, eight were female.

The elderly are generally known to be physically weaker and less athletic than younger people, and their bones, especially in females, deteriorate with age. This tendency may have been one of factors contributing to the injuries.

The investigation report of this case is published on the Board's website.

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http://www.mlit.go.jp/jtsb/eng-air_report/JA8096.pdf