

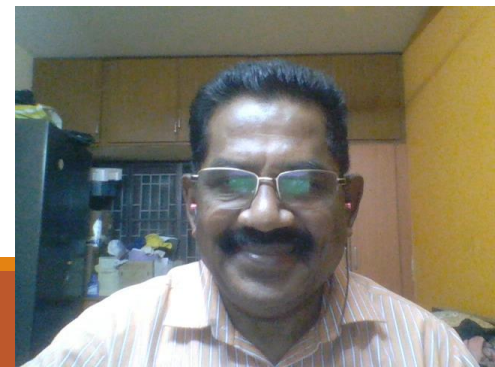


Case study on **JAL -516** crash Jan 2, 2024

DR.M. ELANGOVAN

DEPARTMENT OF AEROSPACE ENGINEERING

SNS COLLEGE OF TECHNOLOGY





The Case

On 2 January 2024, a [runway collision](#) occurred at [Haneda Airport](#) in [Tokyo, Japan](#), between an [Airbus A350-900](#), operating [Japan Airlines Flight 516](#) (JAL516), and a [De Havilland Canada Dash 8-Q300](#) operated by the [Japan Coast Guard](#).





The flights involved in the crash

JAL516 was a scheduled domestic passenger flight from [New Chitose Airport](#) near [Sapporo](#), Japan, to [Haneda Airport](#) in [Tokyo](#), and the Coast Guard plane was on a relief mission in response to the [2024 Noto earthquake](#) which had occurred the day before.





The Crash

16:27 [JST](#) : Japan Airlines Flight 516 ([ICAO](#) flight number JAL516) departed New Chitose Airport at en route to Haneda Airport.

The flight landed after dark with light and variable winds, visibility greater than 10 km (6.2 mi), few clouds at 2,000 feet (610 m), and a scattered cloud layer at 9,000 feet (2,700 m).

At approximately 17:47 JST, JAL516 collided with a Japan Coast Guard Dash 8, identified by its [call sign](#) and [registration number](#) JA722A, while landing on runway 34R at Haneda Airport.

[CCTV](#) footage shows a fireball erupting from the aircraft, with the plane leaving a fiery trail as it travelled down the runway for about 0.62 mi (0.62 mi) before coming to a stop on the grass apron beside the





The fate of the Coast Guard Aircraft

The Japan Coast Guard aircraft, carrying six crew members, was preparing to bring supplies to an airbase in Niigata in response to the 2024 Noto earthquake, which had occurred the day before.

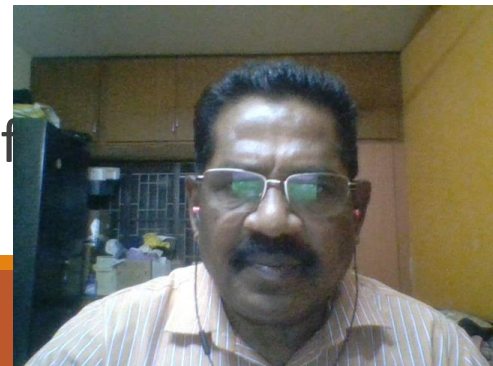
It was one of 4 aircraft deployed by the government to provide help to the affected areas.

The aircraft was stationary on the runway for around 40 seconds before the collision.

The captain reported that the back of the aircraft suddenly caught fire shortly after he had increased the engine power before exploding following the collision.

He survived with serious injuries, while the five remaining crew members were confirmed dead by the Tokyo Fire Department.

The wreckage of the Coast Guard aircraft was left several hundred metres from the stopping point of the JAL plane.





HOW DISASTER UNFOLDED



Departs 4:15pm local time

1
Japan Airlines flight 516 from Chitose, carrying 379 passengers, approaches Tokyo Haneda Airport

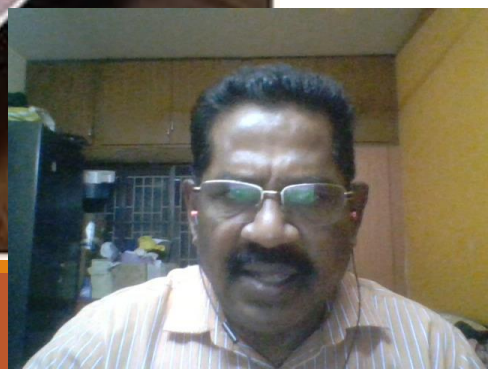
Landing at 5:47pm local time

4
The Airbus A350 bursts into flames and skids down the runway

2
Passenger jet collides with a coastguard plane that is preparing to take off on the same runway

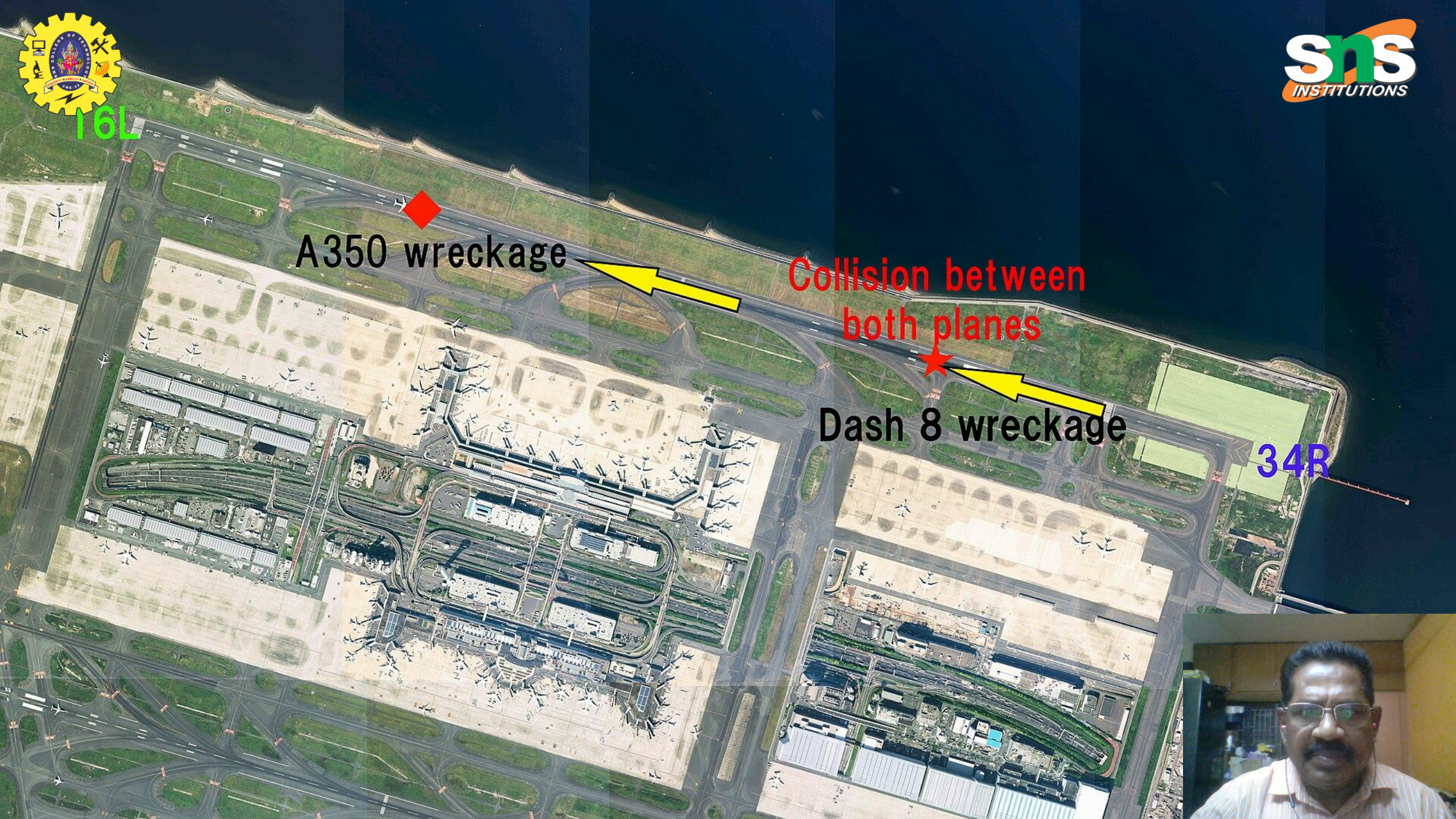
3
Five of the six crew members on the coastguard plane are killed

5 All 379 passengers and crew from the Airbus manage to escape





16L



A350 wreckage



Collision between both planes



Dash 8 wreckage



34R





The Evacuation

With the right engine still running, all 367 passengers and 12 crew members on board JAL516 evacuated through three of the plane's eight [evacuation slides](#), located at doors 1L, 1R and 4L.

JAL said the plane's in-flight announcement system had failed, leading the crew to give instructions through [megaphones](#) or by shouting.

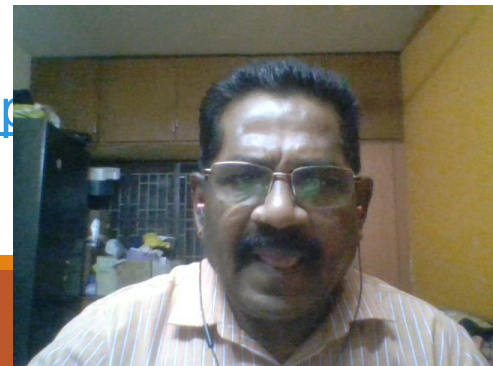
Forty-three foreign nationals and eight children were on board.

Two pets, a dog and a cat, were checked in on board and died.

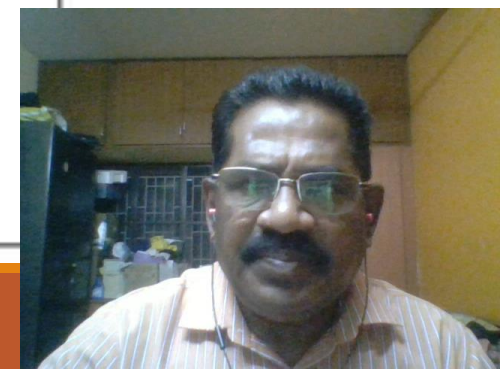
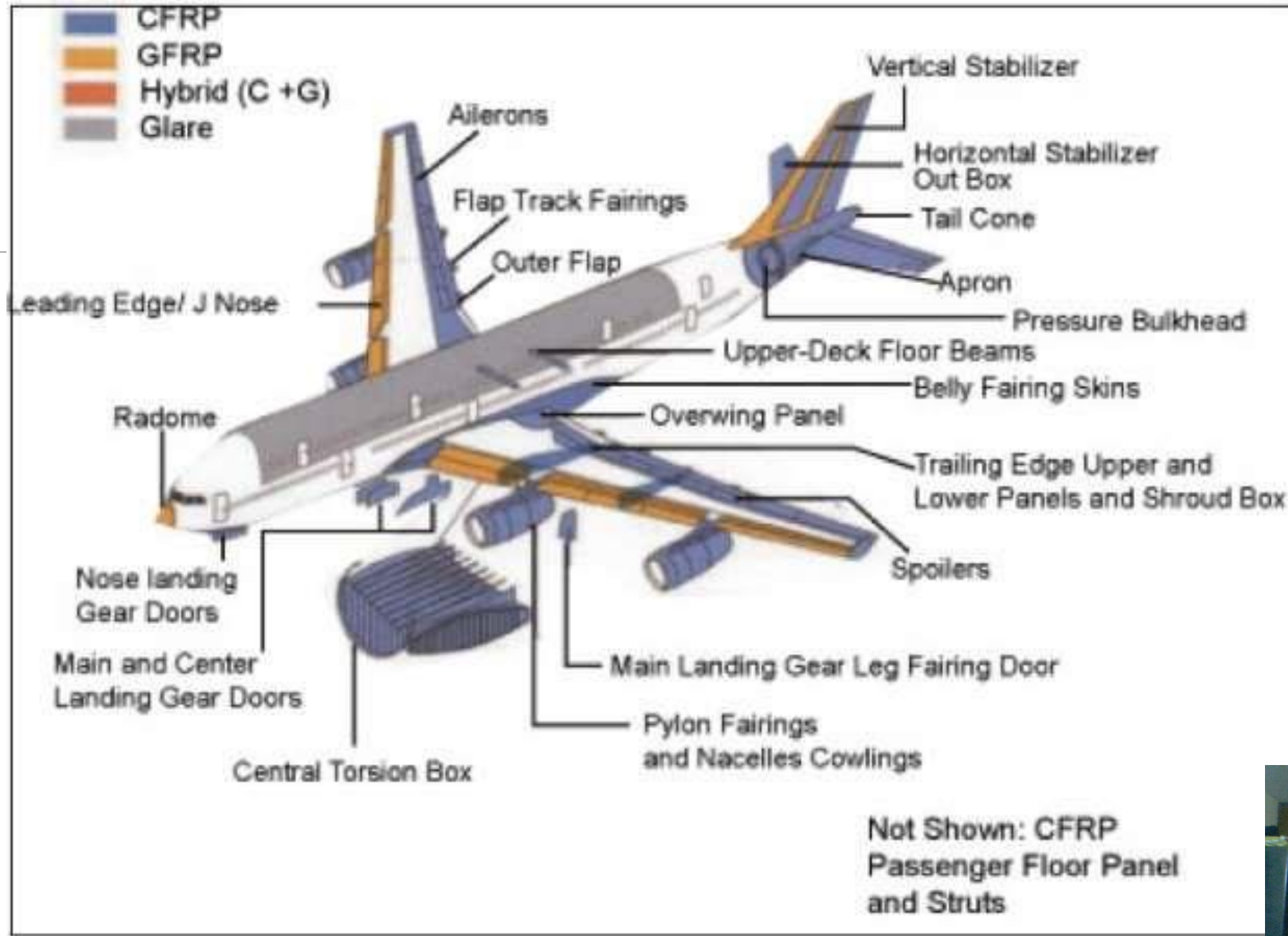
Fourteen people on board suffered minor injuries, four of whom were taken to hospital.

It was noted that no one exited with hand luggage, a factor that facilitated a smoother evacuation.

The plane was fully evacuated at 18:05 JST (09:05 UTC), 20 minutes after landing; according to Japan's public broadcaster [NHK](#), the captain was the [last to leave the plane](#).









Conclusion

Another factor cited in the survival of those on board was that the aircraft, one of the first commercial models to be made of composite **carbon fibre** materials, appeared to have withstood the initial impact of the collision and fire relatively well.

The plane did not explode, maybe it was carrying low amount of fuel

The materials of the internal of the plane was made of fire retardents

<https://www.ny-engineers.com/blog/reasons-why-carbon-fiber-is-preferred-for-manufacturing-aircraft>

https://en.wikipedia.org/wiki/2024_Haneda_Airport_runway_collision

