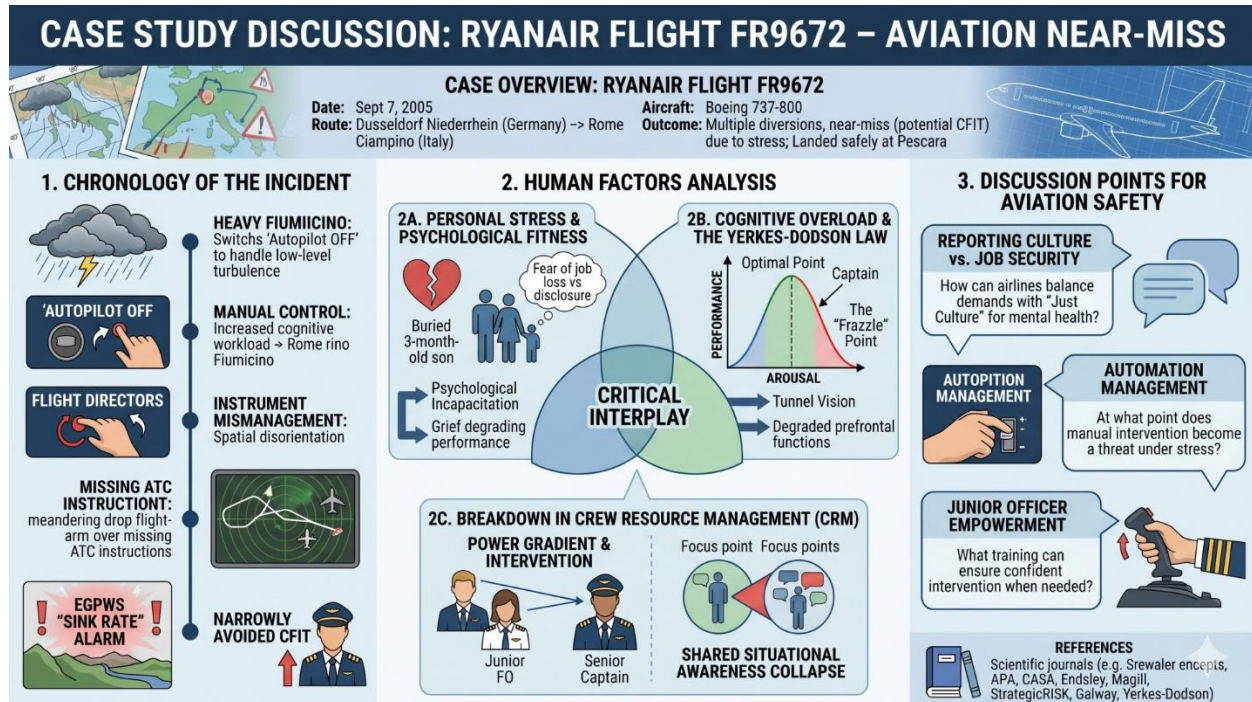


CRM Case Study Overview: Ryanair Flight FR9672



This case study discussion examines **Ryanair Flight FR9672**, a significant aviation near-miss that highlights the critical interplay between personal emotional stress, operational workload, and Crew Resource Management (CRM).

Case Overview: Ryanair Flight FR9672

- **Date:** September 7, 2005
- **Route:** Dusseldorf Niederrhein (Germany) to Rome Ciampino (Italy)
- **Aircraft:** Boeing 737-800
- **Outcome:** Multiple diversions and a near-miss (potential CFIT) due to crew incapacitation from stress; eventually landed safely at Pescara

Chronology of the Incident

During the flight, severe thunderstorms over Rome forced the crew to divert from their destination, Ciampino, to Rome Fiumicino. As the weather worsened and turbulence increased, the cockpit environment became increasingly chaotic:

- **Manual Control:** The Captain disengaged the autopilot to handle "low-level turbulence," a decision later criticized for unnecessarily increasing his cognitive workload during a high-stress phase.
- **Instrument Mismanagement:** The First Officer (FO) switched off the Flight Directors, believing they were distracting, which further contributed to the crew's spatial disorientation.
- **Operational Deviations:** The aircraft began missing Air Traffic Control (ATC) instructions, meandered above the airport, and descended below safe altitudes near hills.
- **The Near-Miss:** An "Enhanced Ground Proximity Warning System" (EGPWS) "sink rate" alarm sounded as the plane descended too fast at an unsafe altitude. The FO eventually intervened by increasing power and pulling the plane into a climb, narrowly avoiding **Controlled Flight Into Terrain (CFIT)**.

Human Factors Analysis

A. Personal Stress & Psychological Fitness

The investigation revealed a profound underlying factor: the Captain had buried his three-month-old son just days before the flight. He had failed to disclose this bereavement to the airline, fearing that taking extra leave would jeopardize his job security.

- **Psychological Incapacitation:** The grief and personal stress left the Captain "psychologically unfit to fly".
- **Mental Health in Aviation:** Research indicates that conditions like depression and severe grief can severely impact concentration, alertness, and decision-making—factors critical for pilot performance.

B. Cognitive Overload & The Yerkes-Dodson Law

The Captain's performance followed the **Yerkes-Dodson Law**, which suggests that performance improves with arousal only up to an optimal point.

- **The "Frazzle" Point:** When combined with severe weather and high-stakes diversion planning, the Captain's baseline emotional stress pushed him past his "sweet spot" into a state of "frazzle".
- **Degraded Performance:** Excessive arousal led to "tunnel vision" and the degradation of prefrontal functions like working memory, explaining why he ignored ATC and failed to maintain safe altitudes.

C. Breakdown in Crew Resource Management (CRM)

CRM is defined as the effective use of all available resources—information, equipment, and people—to achieve safe flight. In this case, CRM failed in two key areas:

- **Power Gradient & Intervention:** The FO was a junior pilot with limited experience. Despite "repeatedly prompting" the Captain to check for incapacitation, he hesitated to take full control until the aircraft was in a precarious state.
- **Shared Situational Awareness:** Situational Awareness (SA) involves the perception and projection of environmental elements. The crew's SA collapsed because they failed to maintain a shared mental model, with the FO focusing on instrument distractions while the Captain focused on manual flight.

Discussion Points for Aviation Safety

Reporting Culture vs. Job Security

The Captain's fear of losing his job highlights a failure in **Corporate Safety Culture**. A healthy safety culture must empower employees to report personal issues—such as exhaustion or grief—without fear of penalty.

Question for Discussion: How can airlines balance strict operational demands with the need for a "Just Culture" that supports pilot mental health?

Automation Management

The decision to hand-fly the aircraft in severe weather (turning off autopilot and flight directors) is a classic example of **workload mismanagement**.

Question for Discussion: At what point does manual intervention become a threat to safety rather than a solution, particularly when a pilot is already under high emotional stress?

Junior Officer Empowerment

The FO's late intervention suggests that "assertiveness training" within CRM is vital.

Question for Discussion: What specific training protocols can be implemented to ensure junior officers feel confident intervening when a senior Captain shows signs of "partial incapacitation"?

References

- American Psychological Association. (2014). *Safer air travel through crew resource management*. <https://www.apa.org/topics/safety-design/safer-air-travel-crew-resource-management>
- CASA. (2024). *Pilot health and wellbeing*. Civil Aviation Safety Authority. <https://www.casa.gov.au/operations-safety-and-travel/aviation-safety-and-security-pilots/pilot-health-and-wellbeing>
- Endsley, M. R. (1995). *Creating Scenarios for the Evaluation of Situational Awareness*. CORE Scholar. https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=1014&context=i_sap_2025
- Magill. (2006). *Crisis in a Ryanair cockpit*. <https://magill.ie/archive/crisis-ryanair-cockpit>
- StrategicRISK. (2023). *Lessons learnt when Ryanair flight FR-9672 avoided a fatal collision*. <https://www.strategic-risk-global.com/esg-risks/lessons-learnt-when-ryanair-flight-fr-9672-avoided-a-fatal-collision/1427384.article>
- University of Galway. (2025). *Crew resource management training for offshore teams*. <https://researchrepository.universityofgalway.ie/bitstreams/8d2f4180-6572-43cb-8c3f-f989520228c0/download>
- Yerkes, R. M., & Dodson, J. D. (1908). *Yerkes-Dodson Law of Arousal and Performance*. Simply Psychology. <https://www.simplypsychology.org/what-is-the-yerkes-dodson-law.html>