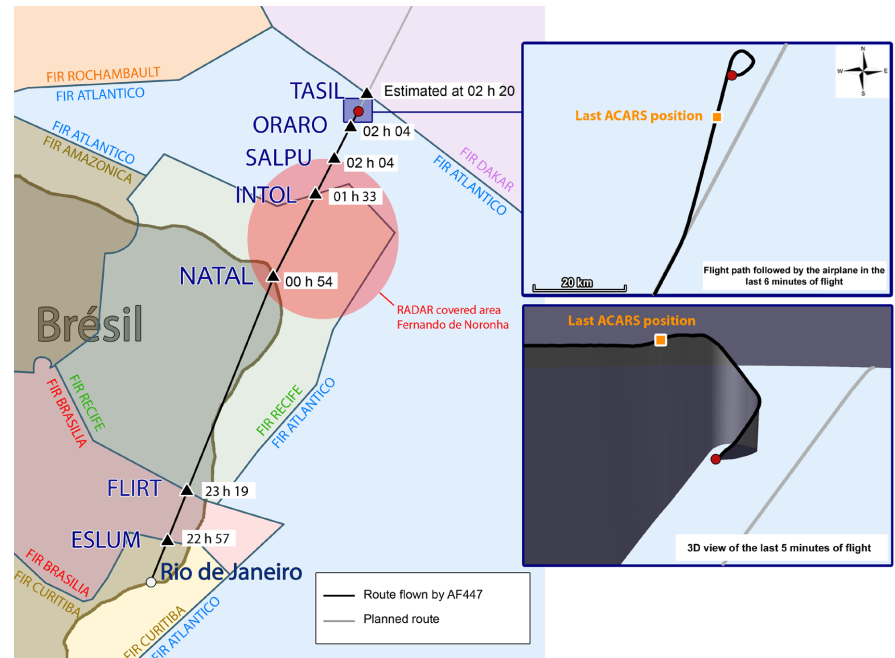


Air France Flight 447: Lessons from a Search and Rescue Operation

Analyzing the SAR
Challenges in the Search
for Flight AF 447





Incident Details

Date: 1 June 2009

Aircraft: Airbus A330-203, Flight AF 447

Location: Atlantic Ocean, en route from Rio de Janeiro to Paris

Outcome: 228 passengers and crew lost

Key SAR Challenge: Locating the wreckage in a remote oceanic area

SRR vs FIR



SAR Response Timeline

1:35 AM: Last radio contact with ATLANTICO.

2:47 – 5:30 AM: Control centers (ATLANTICO, DAKAR, SAL, CANARIAS) discuss AF 447's missed reporting points. No radar or radio contact.

4:18 AM: Air France OCC (Operations Control Center) sends an ACARS message to AF 447, but it's rejected.

4:59 AM: Air France OCC confirms with DAKAR that all ACARS messages to AF 447 were rejected.

5:23 AM: ATLANTICO controller informs the ARCC about AF 447's disappearance. SAR System initiated.

8:00 AM: Air France OCC sets up a crisis group.

8:22 AM: Madrid center issues ALERFA-INCERFA alert to various control centers.

9:09 AM: BREST center issues DETRESFA alert (distress phase).

9:31 AM: SAL center issues ALERFA-INCERFA message.

SAR Response Timeline

11:04 AM: First Brazilian aircraft departs for SAR operations.

11:07 AM: AF 447 is confirmed to have reached its fuel limit.

12:04 PM: ATLANTICO-RECIFE ARCC defines the last known position near the SALPU waypoint.

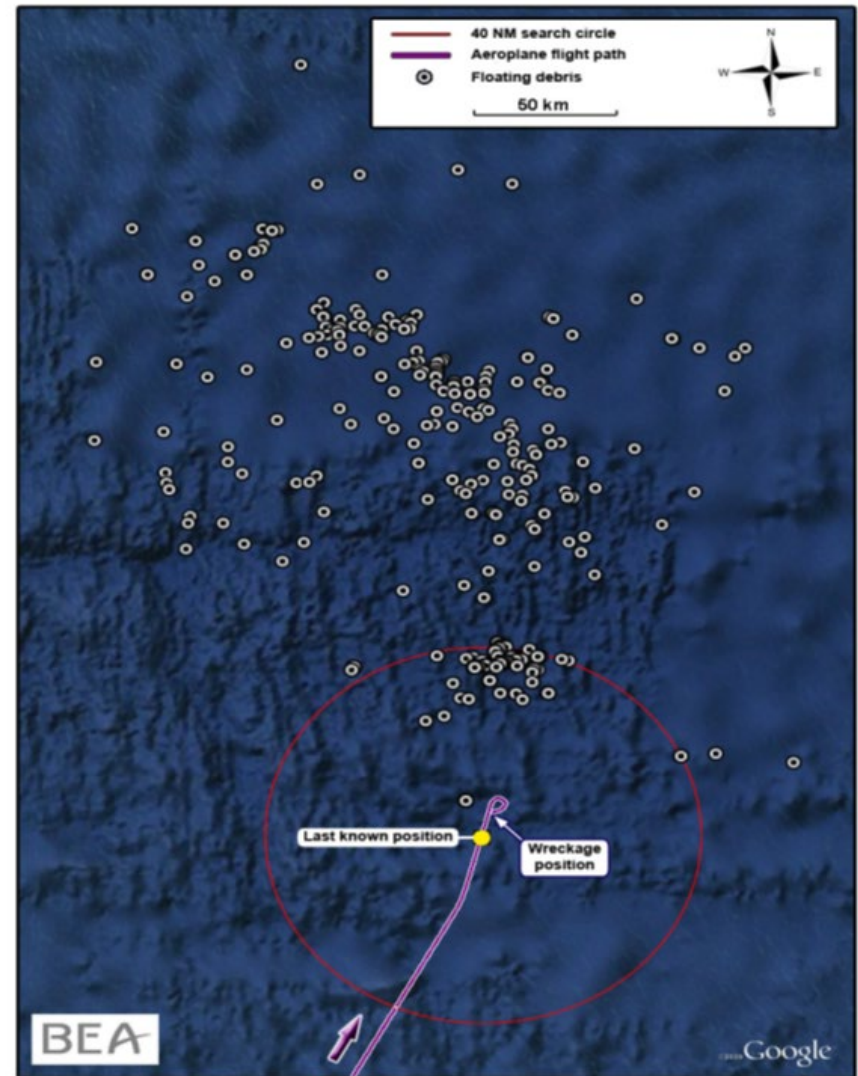
12:14 PM: A Bréguet Atlantique 2 aircraft departs from DAKAR to assist Brazilian SAR operations.

1:00 PM: ATLANTICO-RECIFE ARCC receives AF 447's last transmitted coordinates from Air France crisis group.

1:59 PM: Gris Nez MRCC confirms Natal MRCC as the coordinating body for SAR operations.

6 June: +5 days first debris located

Floating debris 6-26 June 2009



Challenges in SAR Coordination

- Normalcy Bias affected many personnel.
- Uncertainty which RCC should lead.
- Significant challenges in communication and information sharing.
- Fragmented SAR Efforts
 - Brazil and France did not coordinate search efforts.
- Lack of aircraft tracking for last known position



Consequences of Non-Compliance with SAR Standards



**DELAYED
RESPONSE**



**REPUTATIONAL
AND LEGAL RISKS**



**USOAP AUDIT
CONSIDERATIONS**

Lessons Learned from AF447 SAR Operations



Importance of SAR Standards



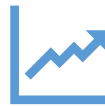
Preparedness in Remote Areas



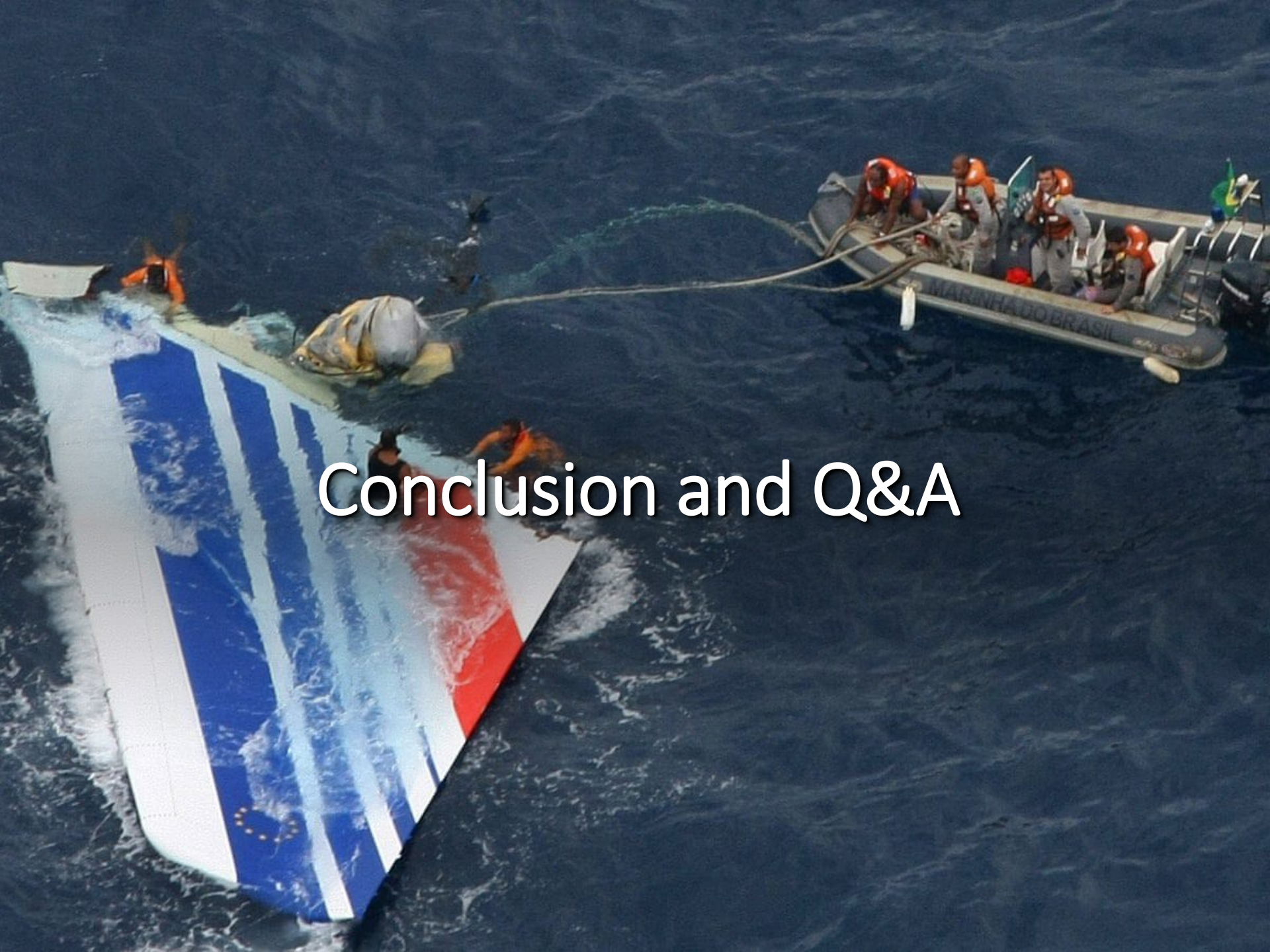
Interagency cooperation



SAR Agreements



Technological investments



Conclusion and Q&A