

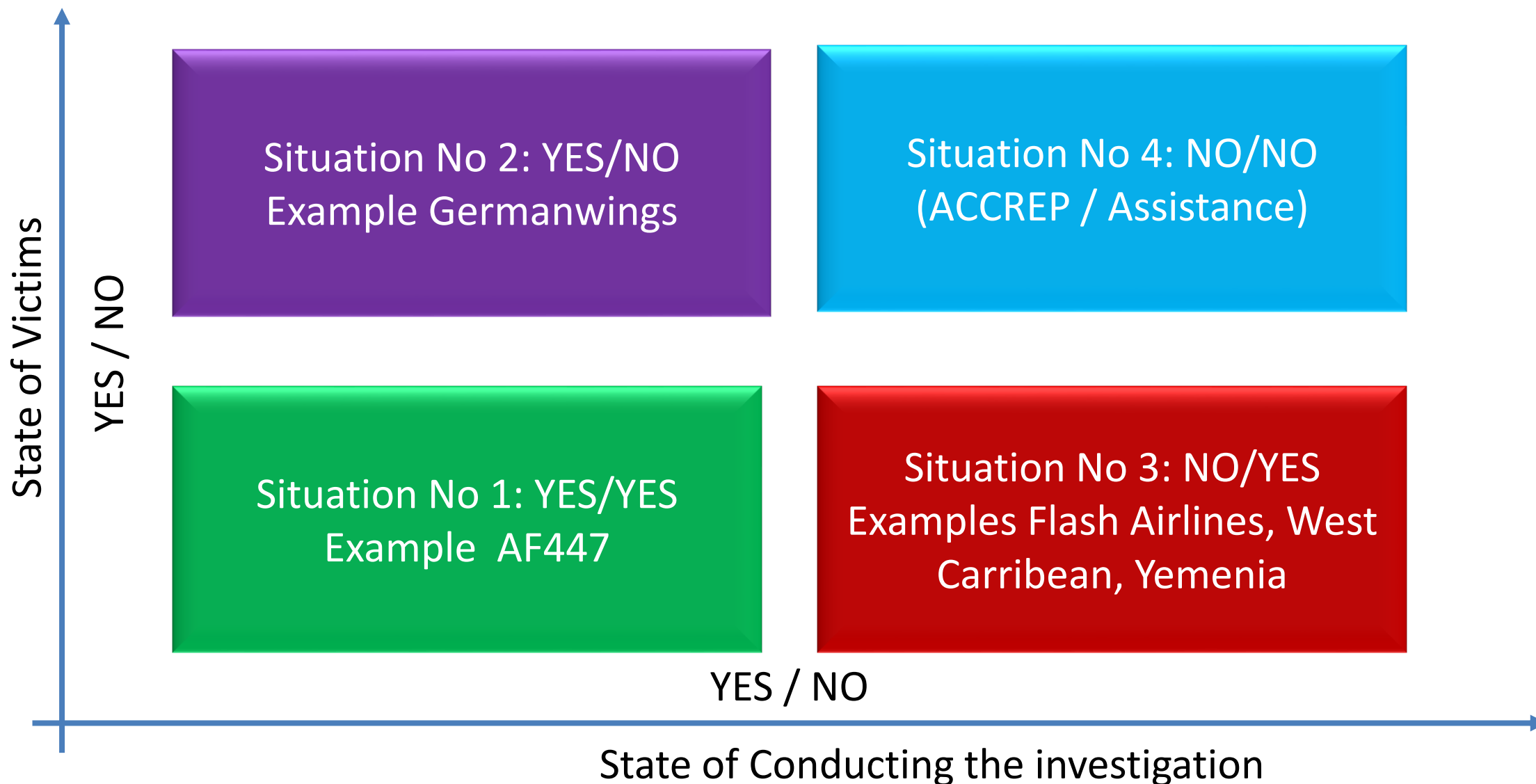


## *Panel 7 – Completed accident and incident investigation*

# *Aviation Safety and Aircraft Accident and Incident Investigation Seminar*

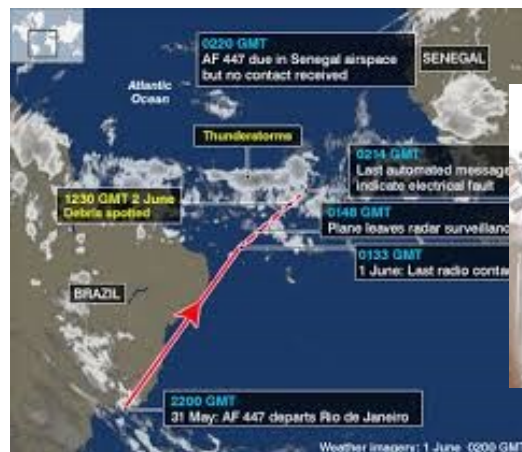
- **Examples on dealing with air accident victims**
- **Examples of providing / receiving assistance  
(introduction of ADREP methodology)**

# Part I - Different Experiences



# Example No 1: AF 447 Accident

- ❑ 228 victims
- ❑ 32 nationalities
- ❑ 3-year investigation
- ❑ 23-month search
- ❑ around 32 million Euros



# Issues Relating to Victims' Families

- ❑ Grief
- ❑ Language barrier
- ❑ Conflicting reports
- ❑ Loss of confidence

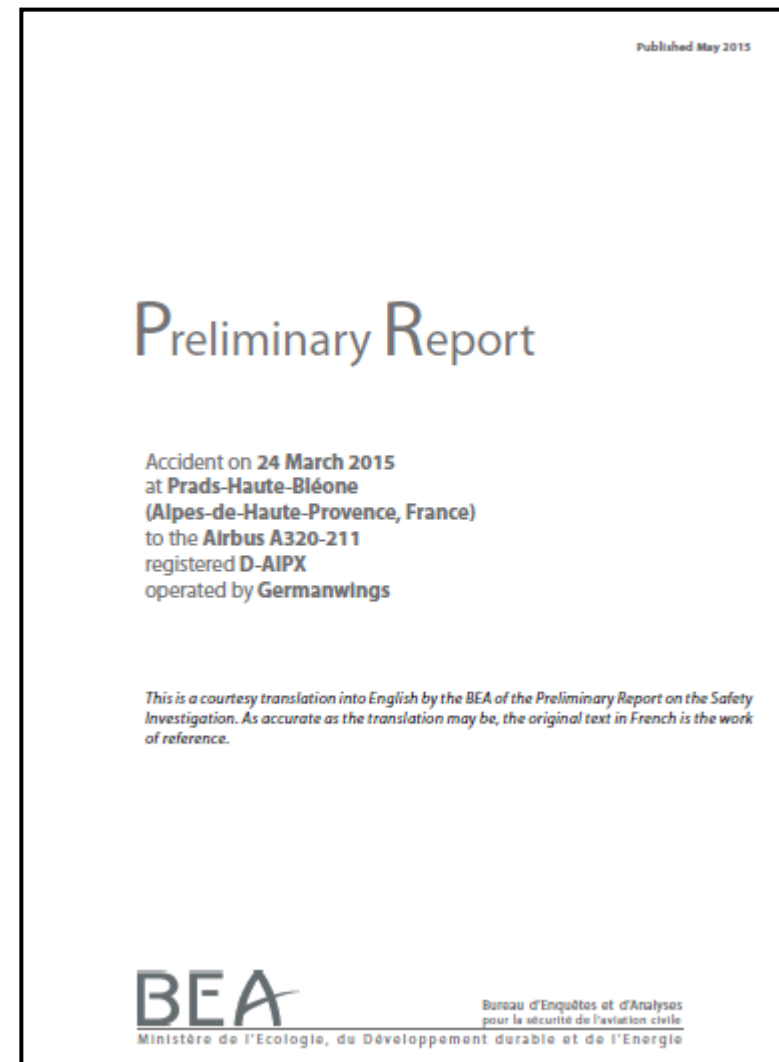


- ❑ 57 Press releases
- ❑ 52 Information bulletins sent to victims' families before public release
- ❑ 12 Press briefings
- ❑ 10 Videos
- ❑ 10 Information meetings with family associations
- ❑ Meeting with foreign representations (Embassies/experts)
- ❑ 3 Interim reports + docket  
(July 2, 2009; December 17, 2009; July 29, 2011)
- ❑ Final report (July 5, 2012)



# Example No 2: Germanwings accident

- ✓ 24 March 2015
- ✓ 150 fatalities



# Political leaders on the accident site

- Less than 24 hours after the accident!



# Germanwings Key Facts

No French victims  
No French coordinator  
Difficulty to access families contact info

Simultaneous presentation of the final report to families in Germany & Spain



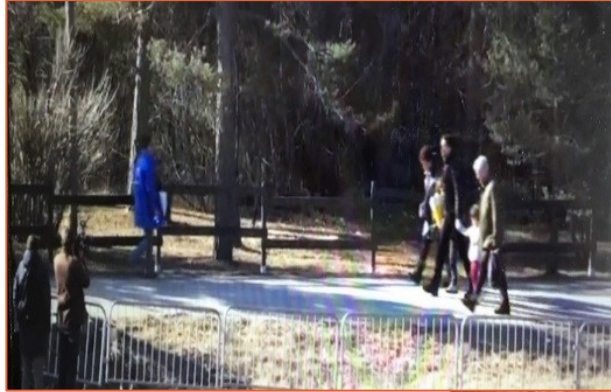
**Lufthansa**



High pressure from the medias  
from day 1 + leaks

Challenge to always inform families  
first / before medias

# Germanwings Memorial and Site Visit



# Example No 3 : Major Air Accidents involving French Nationals

## Flash Airlines 604

Aircraft: B737-300

Date: 3/1/04

Location: Sharm el-Sheikh (SSH)

Casualties: 148 deaths

Inv. body: Ministry of Civil Aviation (Egypt)



---

## Yemenia 626

Aircraft : A310-324

Date: 30/6/09

Location: Moroni (HAH)

Casualties: 152 deaths, 1 injured

Inv. Body: Agence Nationale de l'Aviation Civile et de la Météorologie (Comoros)



# West Caribbean, MD-82, Venezuela, 16 August 2005



152 French Nationals out of 160 Fatalities

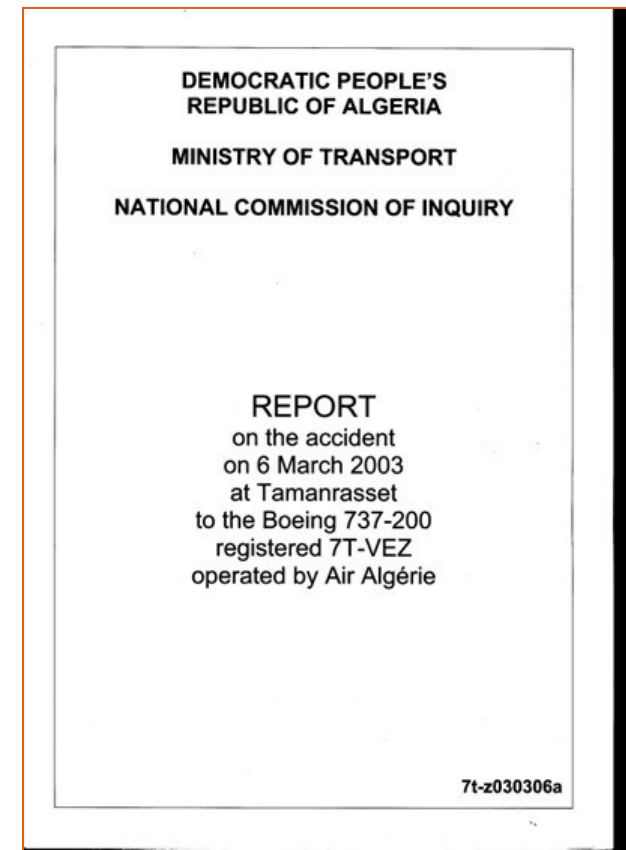
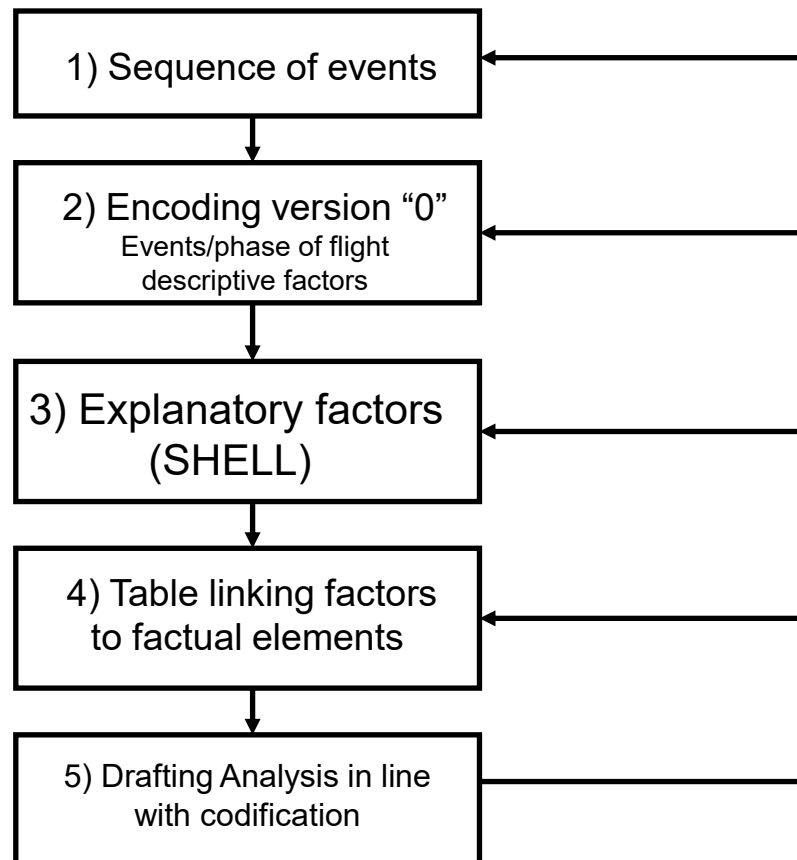
# Providing Assistance :

## Accident at Tamanrasset on 6 March 2003

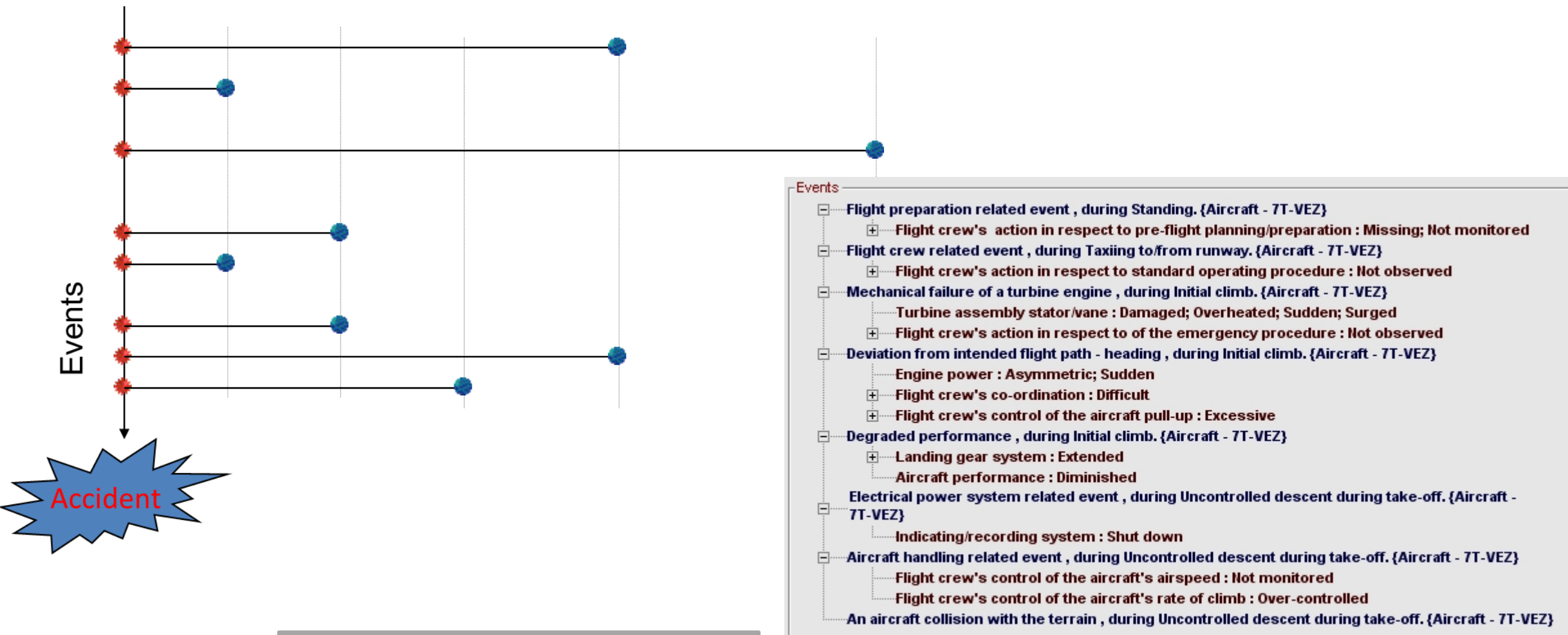


Application of ADREP Methodology

Report released in September 2004



# ADREP encoding



# Explanatory factors - SHELL Model

Human / machine

## Hardware

Machines,  
ergonomics,  
calculators...

Human / system support

## Software

Manuals,  
procedures,  
documentation

## Liveware

Physical,  
psychological,  
workload...

Human / human

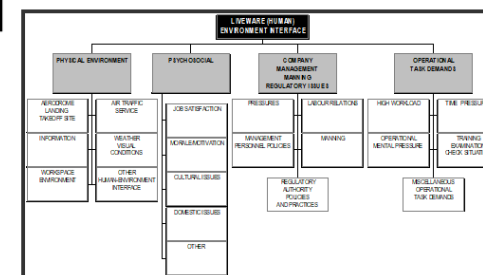
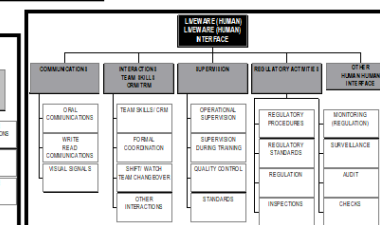
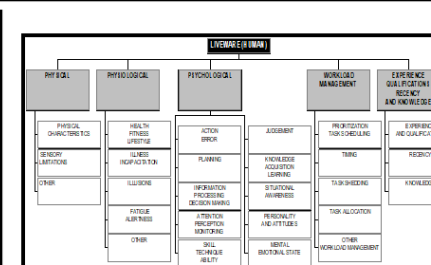
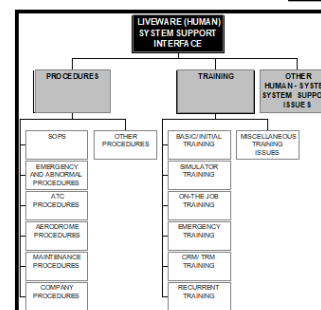
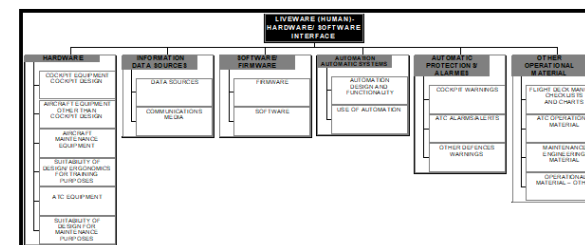
## Liveware

Communication,  
CRM...

## Environment

Social,  
operational  
factors, ATC...

Human / environment



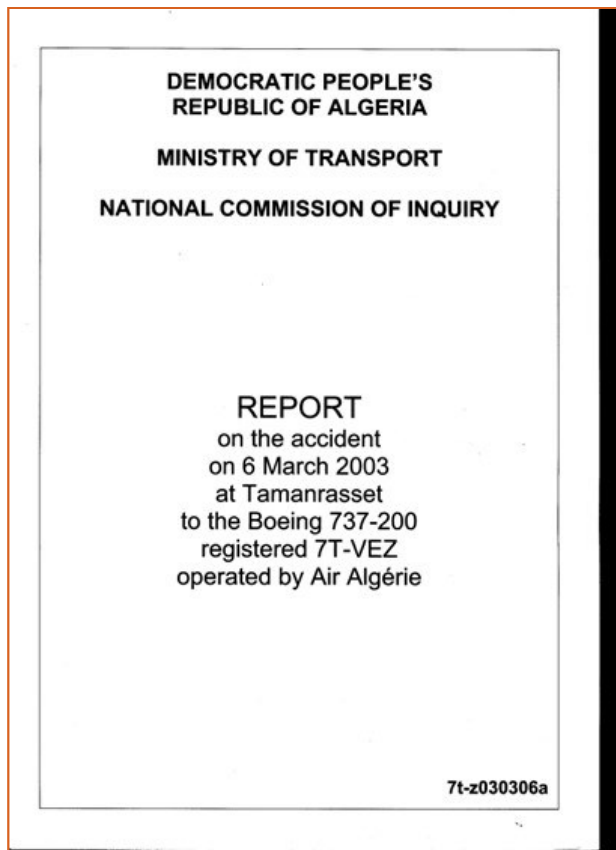
*SHELL, modified by Hawkins 1987*

## 4) Table linking chosen factors to factual elements of the investigation

| Event, phase of flight<br>Descriptive factors            | Explanatory factors                                          | Factual elements justifying<br>the codification                                                                                             |
|----------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Flight preparation<br>related event during<br>standing   |                                                              | The chosen modifiers describe the absence of pre-flight checks and the fact that the Captain was not in the cockpit at that time (CVR data) |
| Pre-flight preparation:<br>missing, not monitored        | Flight crew :<br>Psychological<br>distraction (L)            | Copilot prepares the flight alone;<br>discussions and interruptions in the cockpit                                                          |
|                                                          | Flight crew : pre-flight<br>planning :<br>underestimated (L) | It seems to them that it was a normal<br>(routine) situation (result of<br>deviations)                                                      |
| Flight crew related<br>event during taxiing<br>to runway |                                                              |                                                                                                                                             |
| Flight crew's<br>interpretation of SOPs<br>not observed  |                                                              | Elements from the CVR                                                                                                                       |

...

# Final Report - NTSB Comments



[...]

« NTSB staff would like to express our strong support of the excellent recommendations the Commission of Inquiry have made as a result of the investigation. »

[...]



Joe Sedor, US Accredited Representative

# Final Report & Safety Promotion (example Feedback for training)



## B737 Engine Failure After Take-off

[...]

« Among the lessons learnt from this report are the importance of pre-flight briefings and formalised hand-over/takeover procedures. The report is of particular relevance given our recent formalisation of the Engine Fire, Failure, Malfunction Procedures. »

[...]

Qantas Safety , Flight Ops Newsletter, Vol 4. No 6 December 2004



  
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**Thank you for attention**

**Question?**

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