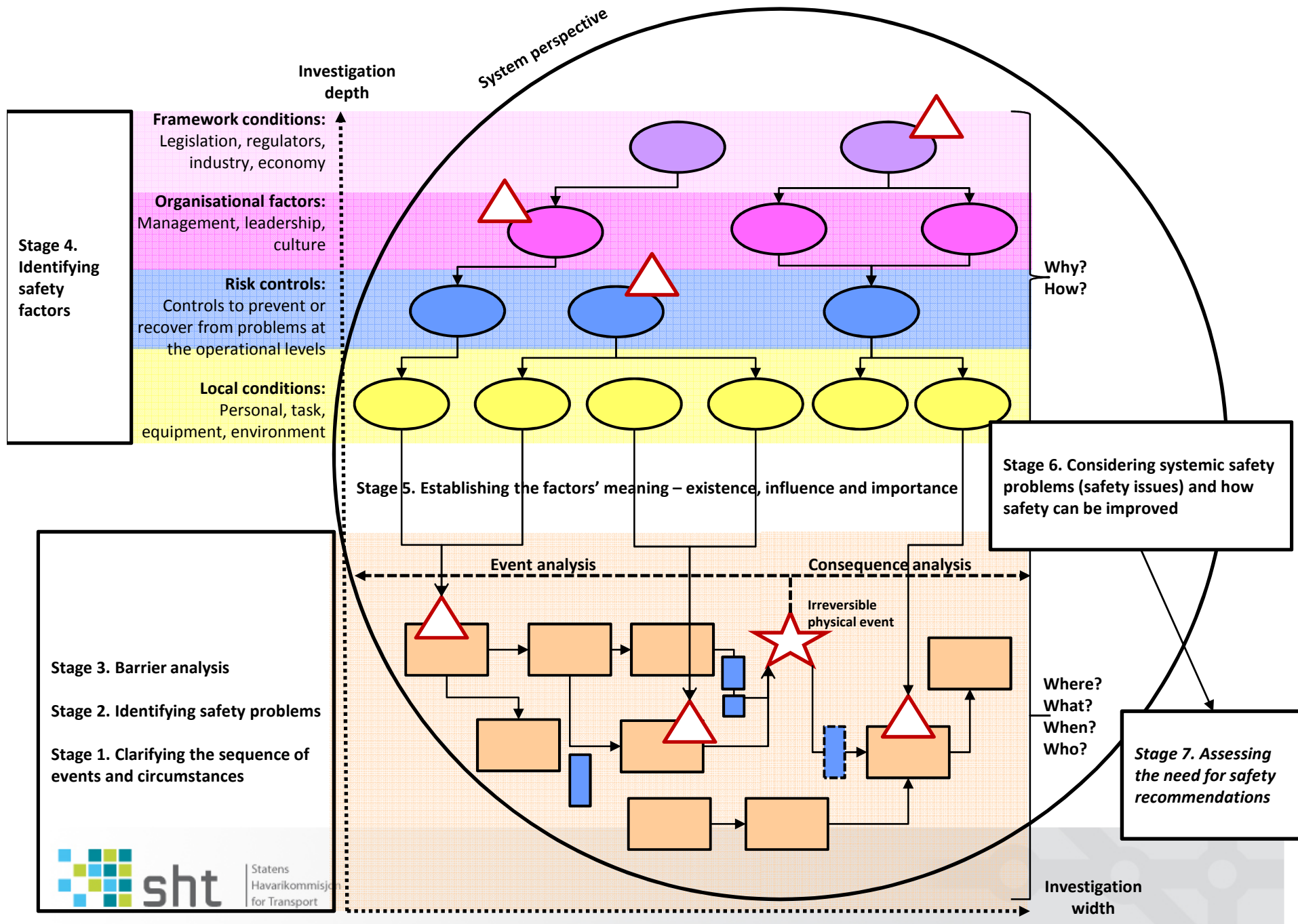


Framework and analysis process for
systematic safety investigations


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The AIBN method

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Coordinator Advisory Staff



Key aspects

- Structured analysis process.
- 7 stages - adapted to the scope and complexity of the investigation.
- AIBNs mandate:
what – why – improving safety
- A bridge between the practical investigation and the accident models and theories.
- The stages are based on different perspectives.
- The framework of the ATSB – one of the main references
- The circle represents:
 - the iterative process
 - system perspective
- The initial safety problems  potential indicators of safety issues.

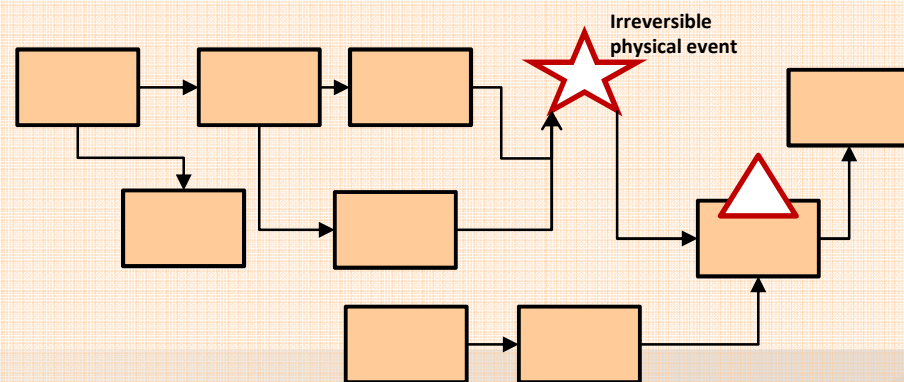
Collision between SAS flight LN-RRS and de-icing truck at Stavanger airport Sola 24 November 2014



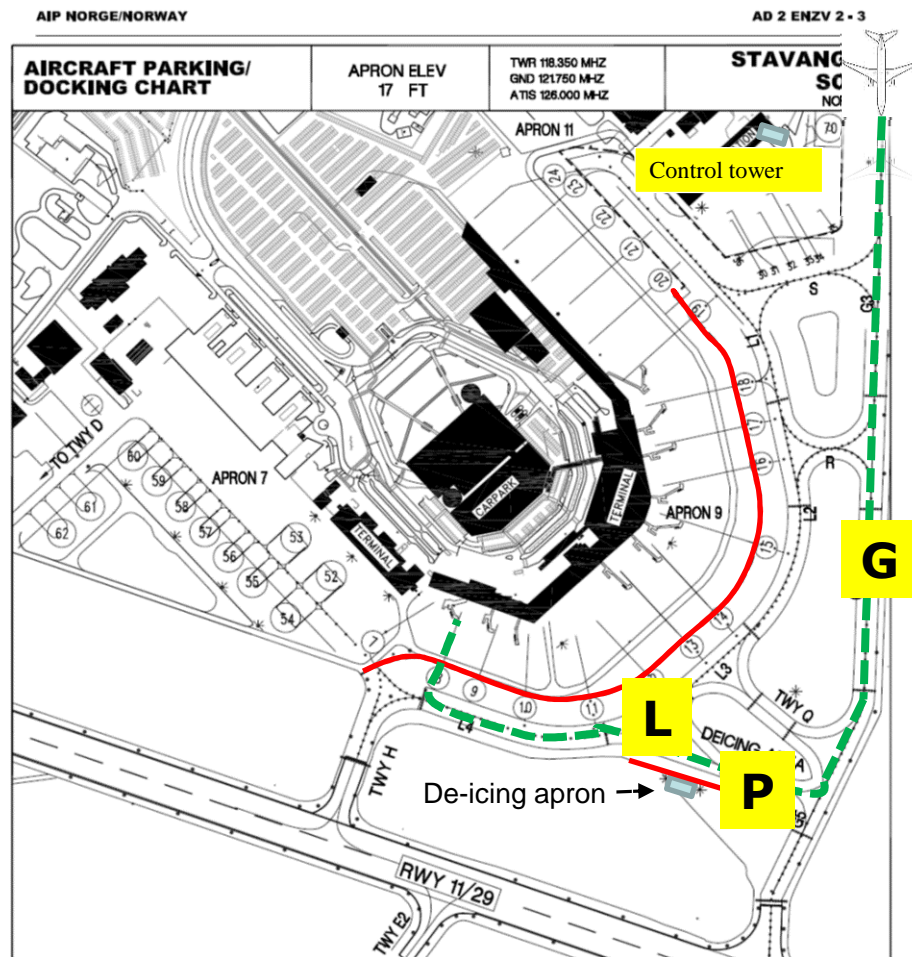
Stage 1. Clarifying the sequence of events and circumstances

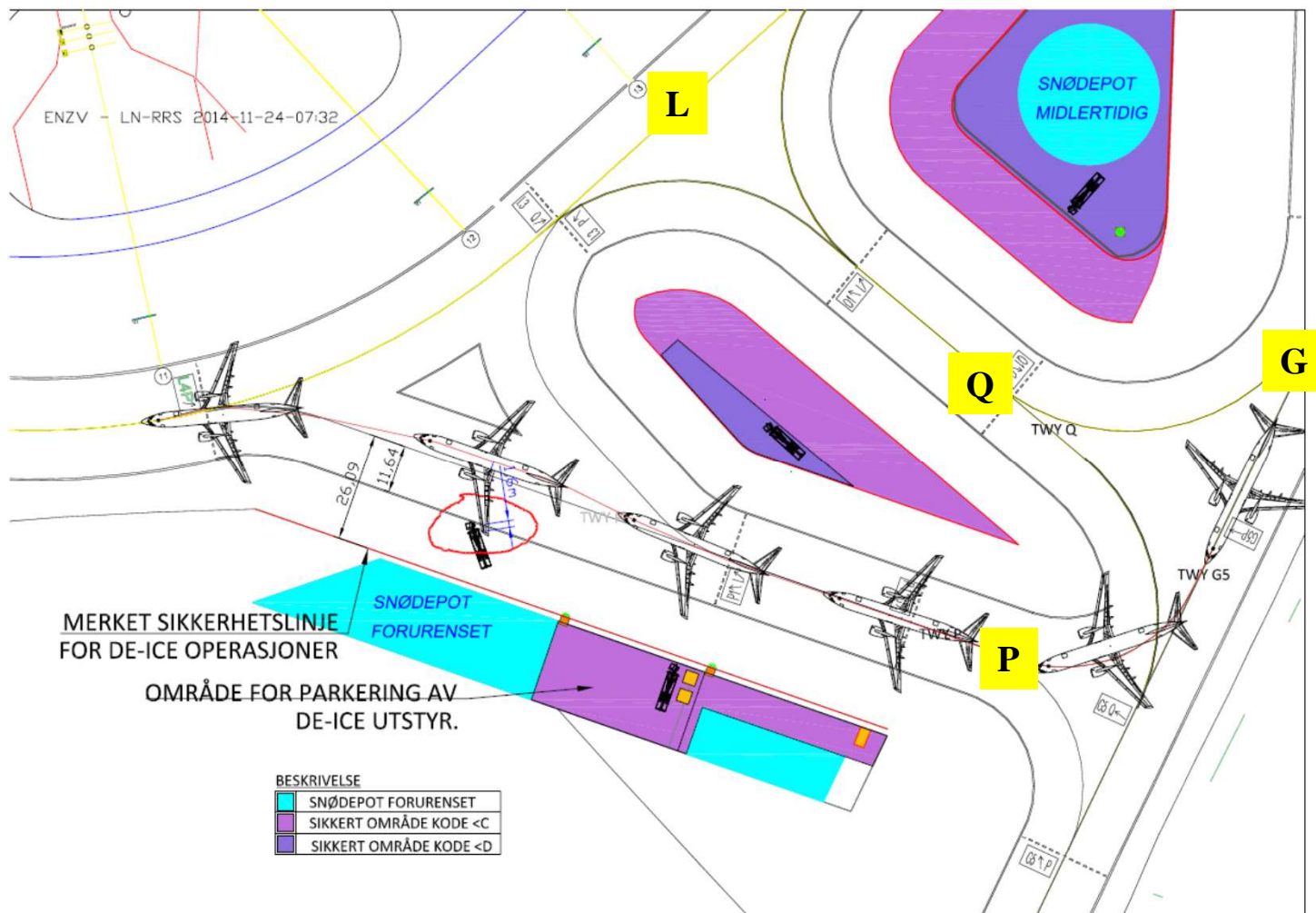


Statens
Havarikommisjon
for Transport

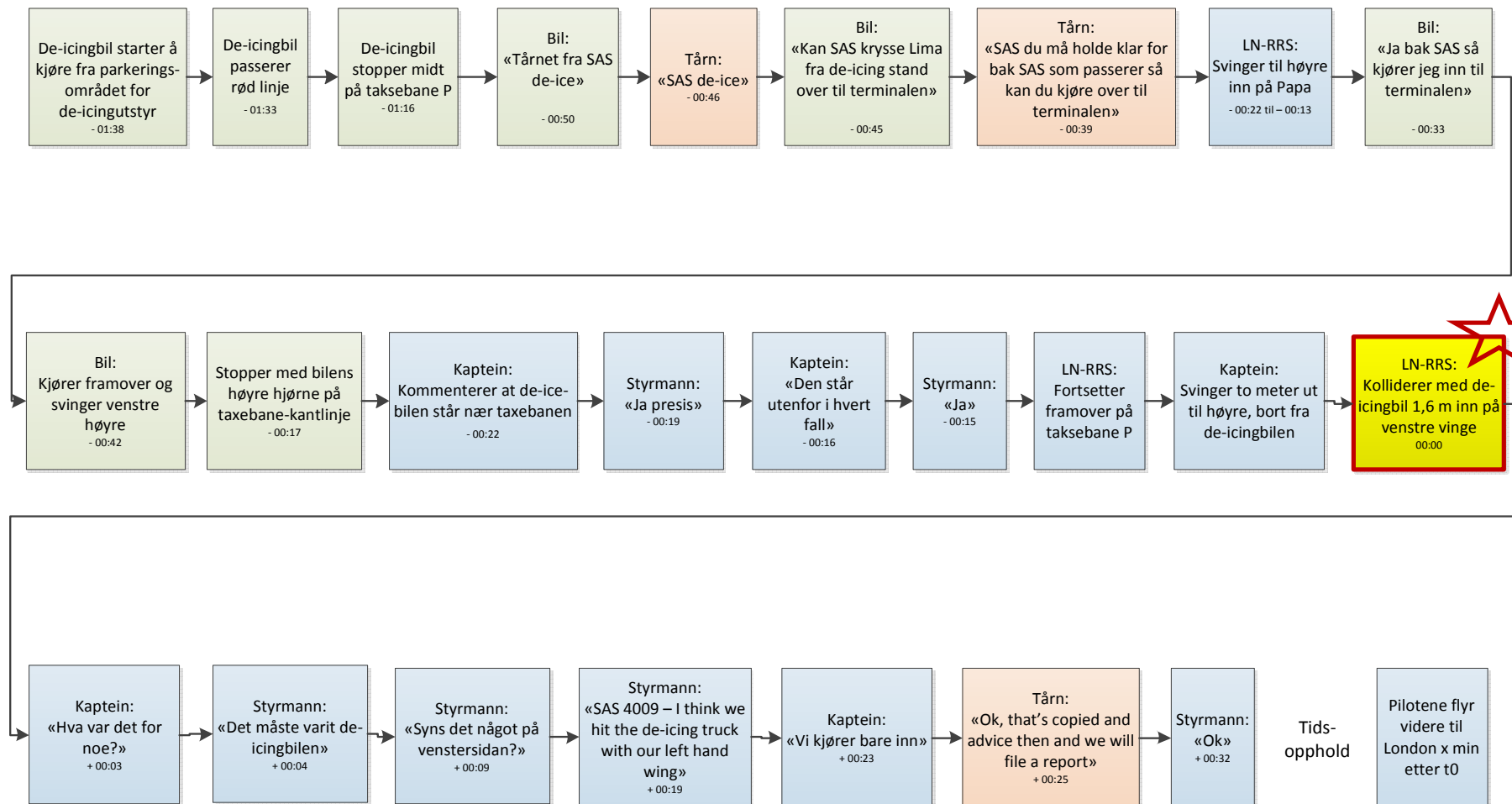


Where?
What?
When?
Who?



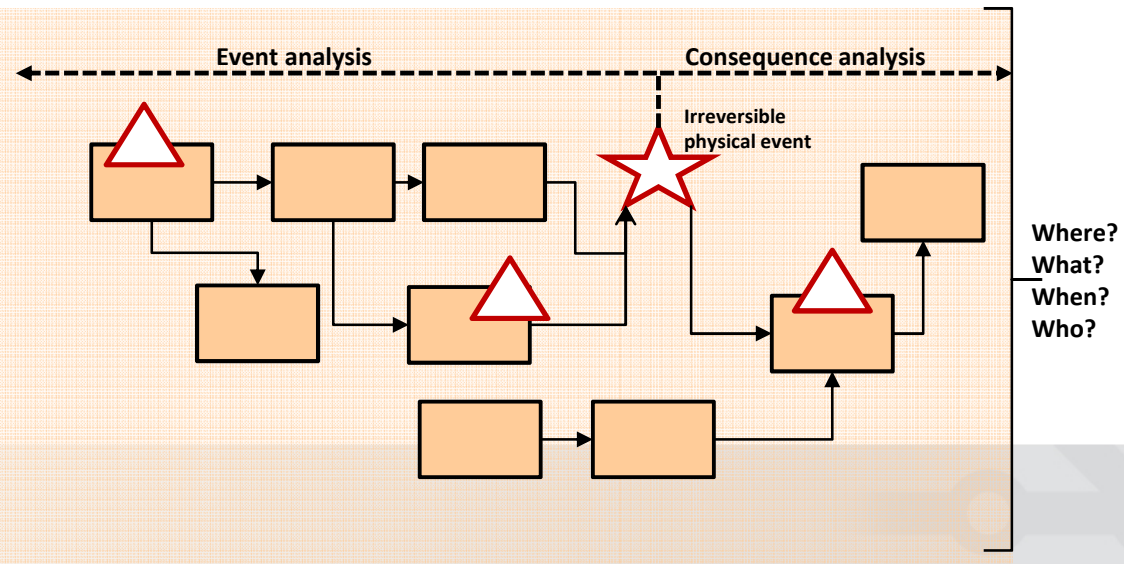


Sequence of events



Stage 2. Identifying safety problems

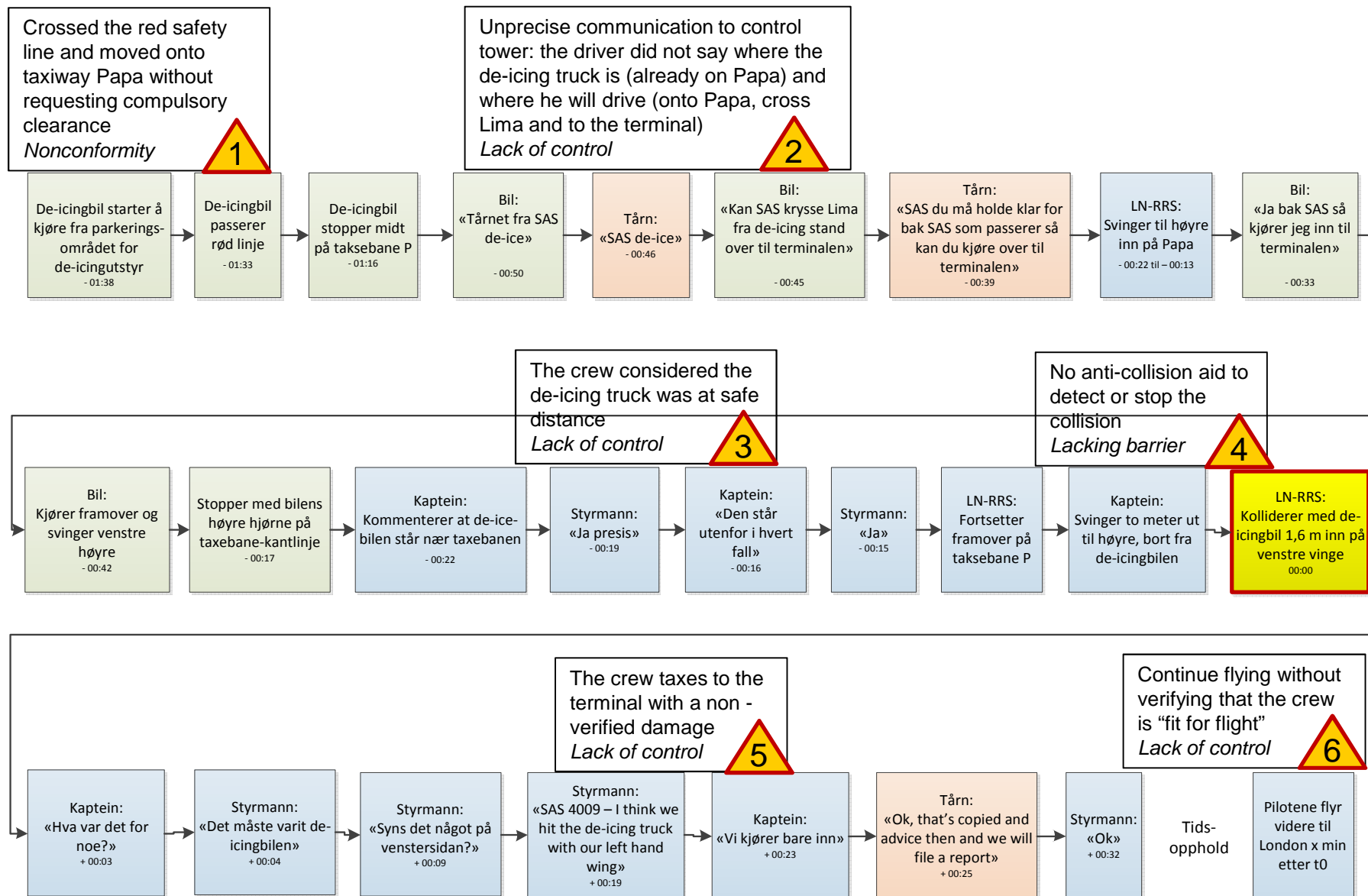
Stage 1. Clarifying the sequence of events and circumstances



Safety problems = what went wrong?

Look for the following:

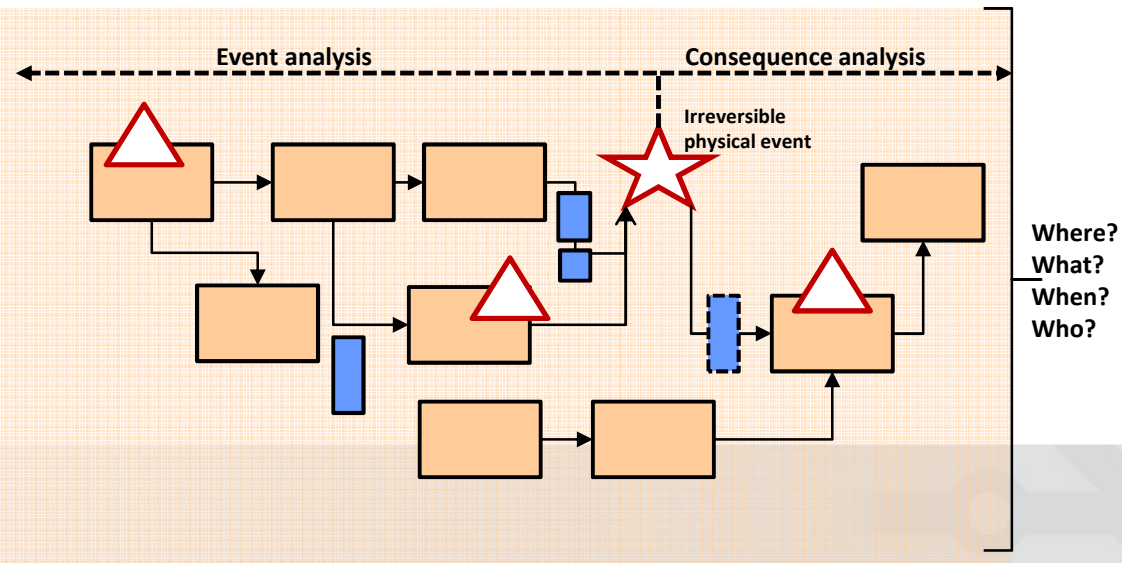
- Where the sequence of events could have been changed or interrupted (barrier approach)
- Where the sequence of events involved a loss of control/poor control (risk control approach)
- Where the sequence of events deviated from safe or expected functions (nonconformity approach)

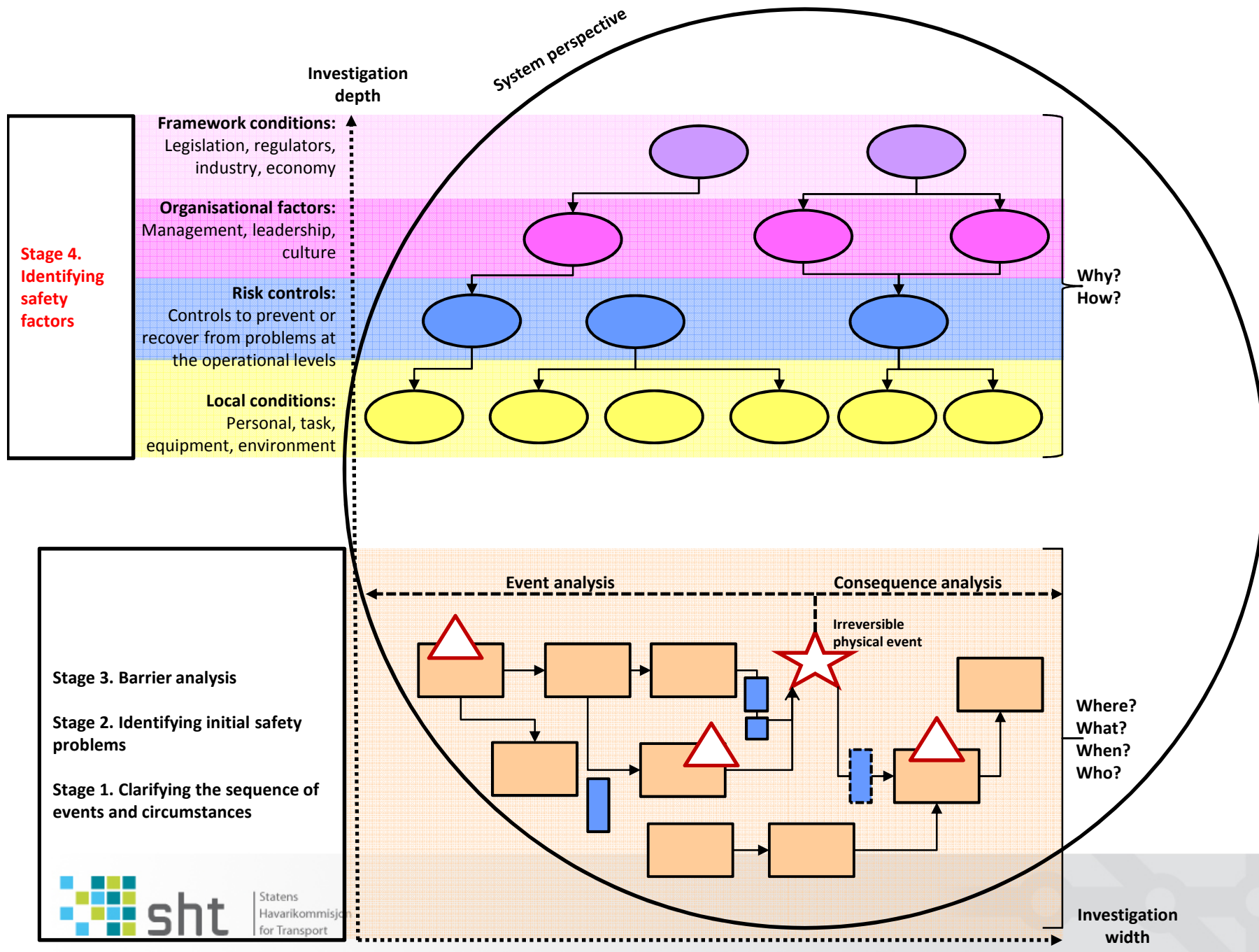


Stage 3. Barrier analysis

Stage 2. Identifying initial safety problems

Stage 1. Clarifying the sequence of events and circumstances





Framework conditions

CAA had checked compliance with traffic rules, but the random checks did not reveal deviations

Organisational factors

Drivers describe the staffing as low, experience stress and want to be effective

Deficiency in the safety management of the airport

The handling operator was aware that the traffic rules were not always adhered to

Risk controls

Unfortunate practice had not been detected or corrected by the airport

Difficult to monitor the area from the control tower

Local conditions

Common to cross the red line without clearance

Inconvenient to request clearance, tempting to take liberties

The driver knew that he needed clearance (violation)

Cramped area

1

The driver crossed the red safety line and moved onto taxiway «P» without requesting compulsory clearance

2

Unprecise communication to control tower

3

The crew considered the de-icing truck was at safe distance

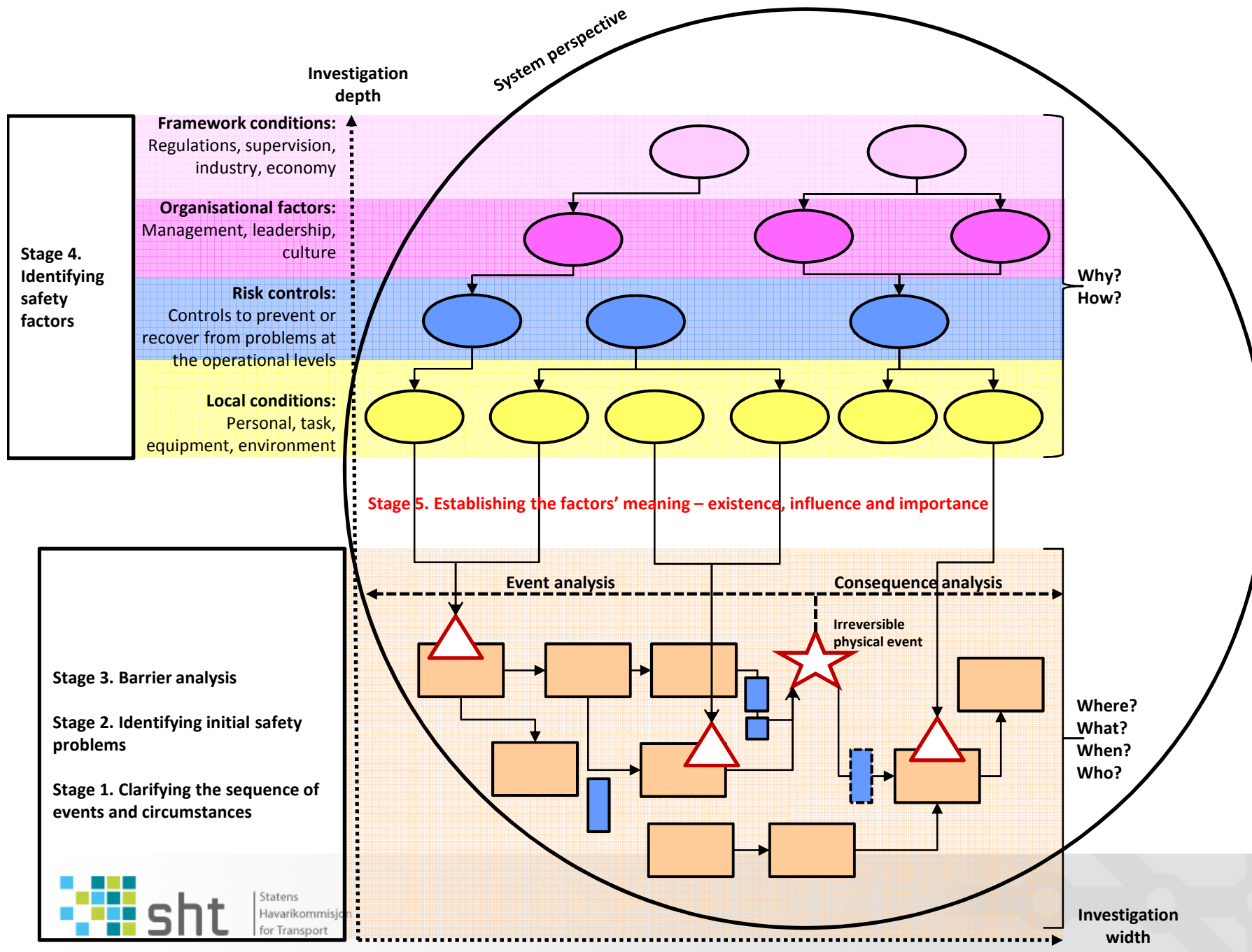
SAS flight collides with de-icing truck

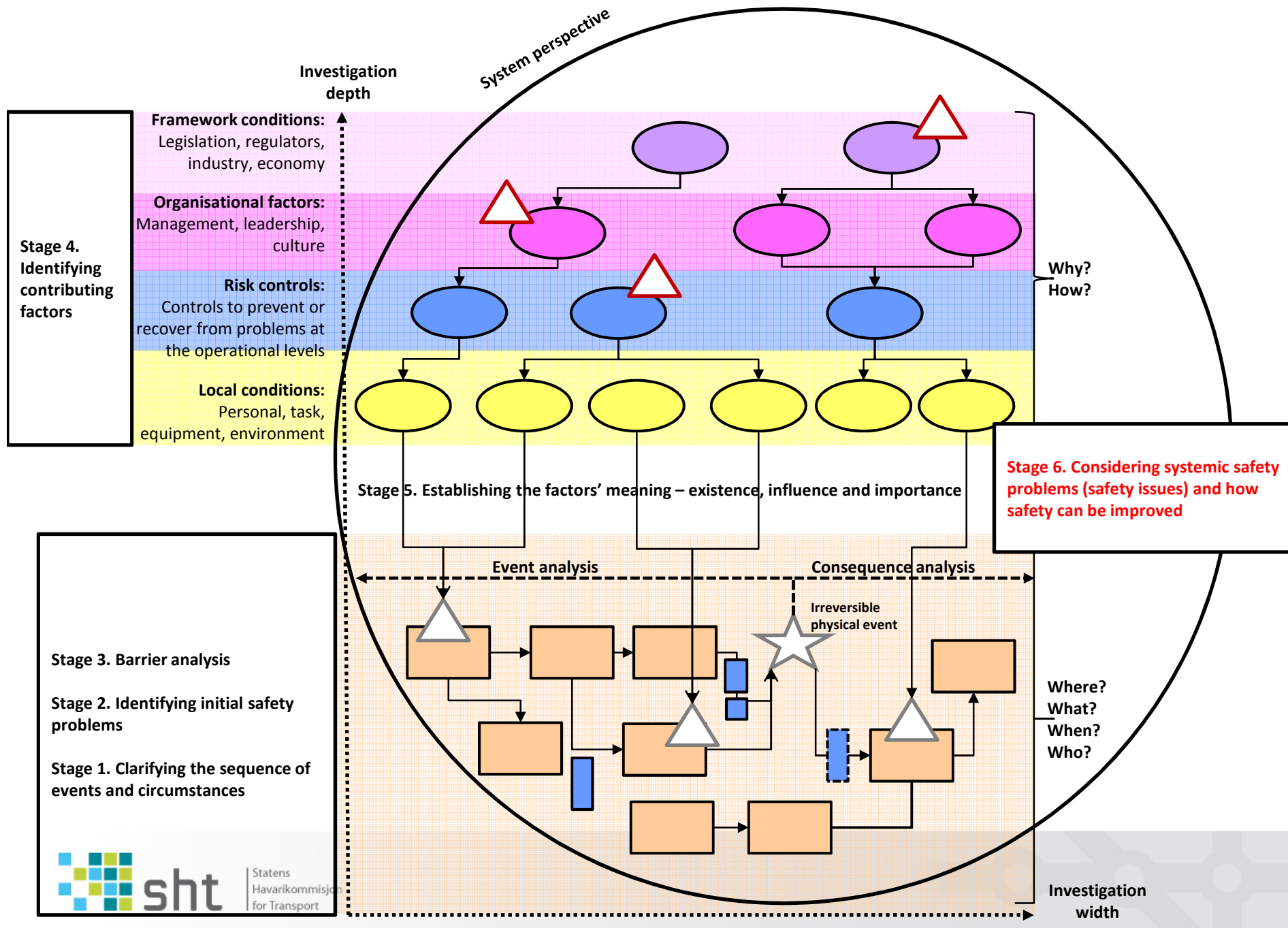
4

Taxes to the terminal with a non - verified damage

5

Continue flying without verifying that the crew is "fit for flight"





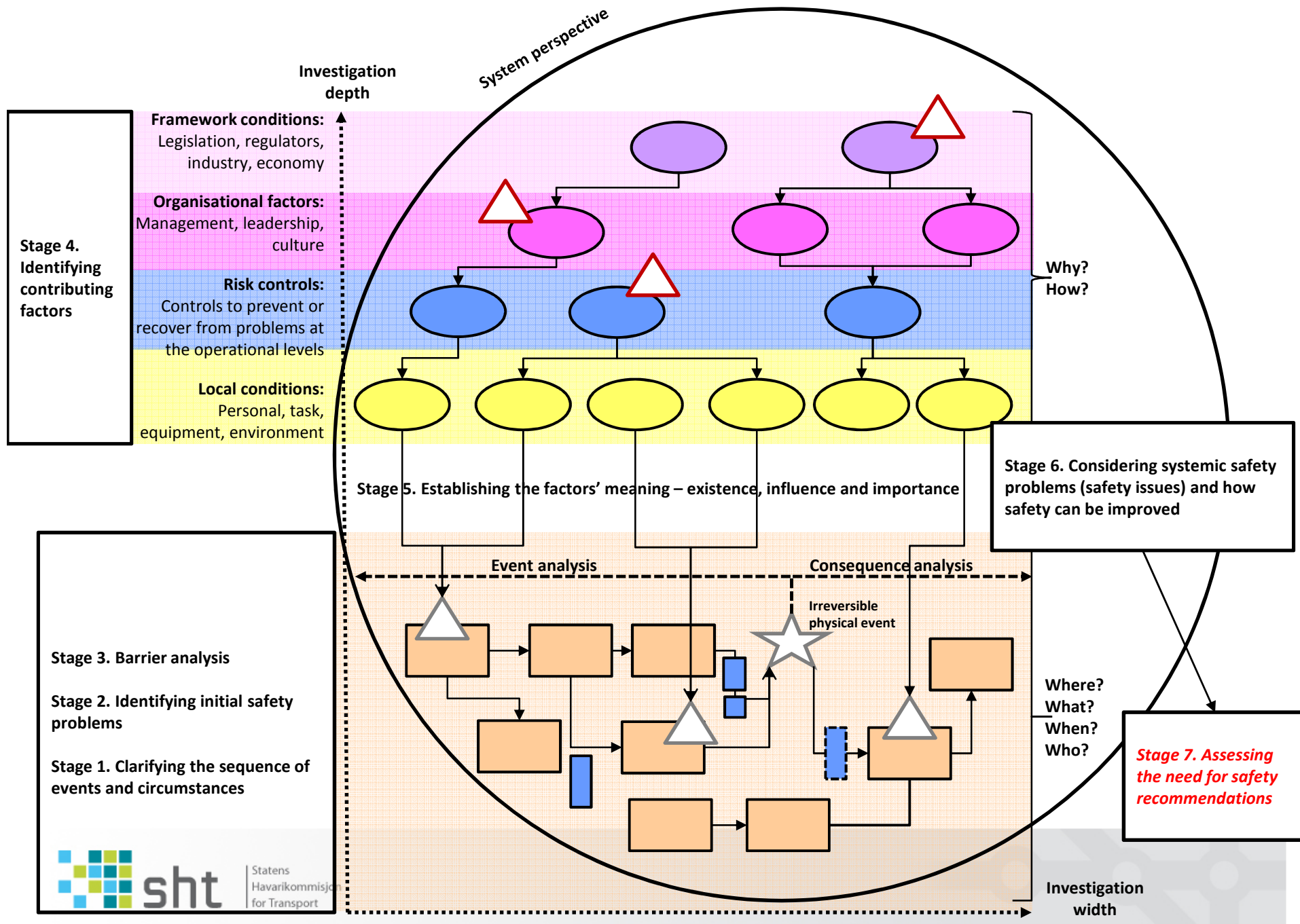
Systemic safety problem / safety issue

A safety factor that:

- Can reasonably be regarded as having the potential to adversely affect the safety of future operations.
- and
- Is a characteristic of an organisation or system, rather than a characteristic of a specific individual, or characteristic of an operational environment at a particular point in time.

It is a factor for which an organisation or authority has some level of control and responsibility for and, if not addressed, will increase the risk of future accidents.





Safety recommendations

- Assessing the need for safety recommendations based on:
 - Importance and impact of the safety issue.
 - Safety action already taken or planned. Is there a need for more safety action?
 - Necessary to consider practicality. What is believed to be possible or realistic to implement for the owner of the safety issue?
 - Eventual effect on safety of a possible improvement.
- Information and communication with the organisation or regulator responsible for risk control.

Need for safety recommendations?

- a) The airline, handling operator and the airport have performed internal investigations and planned several corrective measures after this accident.
- b) Ground collisions happen rather frequent. NTSB and AAIU have made safety recommendations to FAA, EASA and ICAO and recommended them to consider the need for anti-collision aids, e.g. by wingtip cameras.



To conclude...

The AIBN method:

- Helps us to collect, organise, analyse and interpret information and data from accidents in a systematic and verifiable manner.
- Provides a shared understanding and frame of reference for the investigators working in a team.
- Helps us to identify safety issues and it gives a foundation for communicating the results of the investigation.
- Applicable to investigations in all transport modes.