ARMS in a Nutshell

ERC

Event Risk Classification

First step for all incoming data

HOW TO DO IT:

Question 2

What was the effectiveness of the remaining barriers between this event and the most credible accident scenario?

Effective	Limited	Minimal	Not effective
50	102	502	2500
10	21	101	500
2	4	20	100
1			

Question 1

If this event had escalated into an accident outcome, what would have been the most credible outcome?

		Typical accident scenarios
Catastrophic Accident	Loss of aircraft or multiple fatalities (3 or more)	Loss of control, mid air collision, uncontrollable fire on board, explosions, total structural failure of the aircraft, collision with terrain
Major Accident	1 or 2 fatalities, multiple serious injuries, major damage to the aircraft	High speed taxiway collision, major turbulence injuries
Minor Injuries or damage	Minor injuries, minor damage to aircraft	Pushback accident, minor weather damage
No accident outcome	No potential damage or injury could occur	Any event which could not escalate into an accident, even if it may have operational consequences (e.g. diversion, delay, individual sickness)

Answer Question 1:

•Think how the event could have escalated into an accident outcome (see examples to the right of the ERC matrix). Typically, the escalation could be due to actions by the people involved, the way the hazard interferes with the flight, and barrier behaviour.

• Do not filter out improbable scenarios. Question 2 will take the (low) probability into account.

• Among the scenarios with an accident outcome, pick the most credible, and select the corresponding row in the matrix.

Answer Question 2:

•To assess the remaining safety margin, consider both the number and robustness of the remaining barriers between this event and the accident scenario identified in Question 1.

• Barriers, which already failed are ignored

•Select the column of choice. See section 4.2 for detailed guidance.

RESULT:*

→ Immediate action & further investigation required

→ More refined Risk Assessment and/or investigation required.

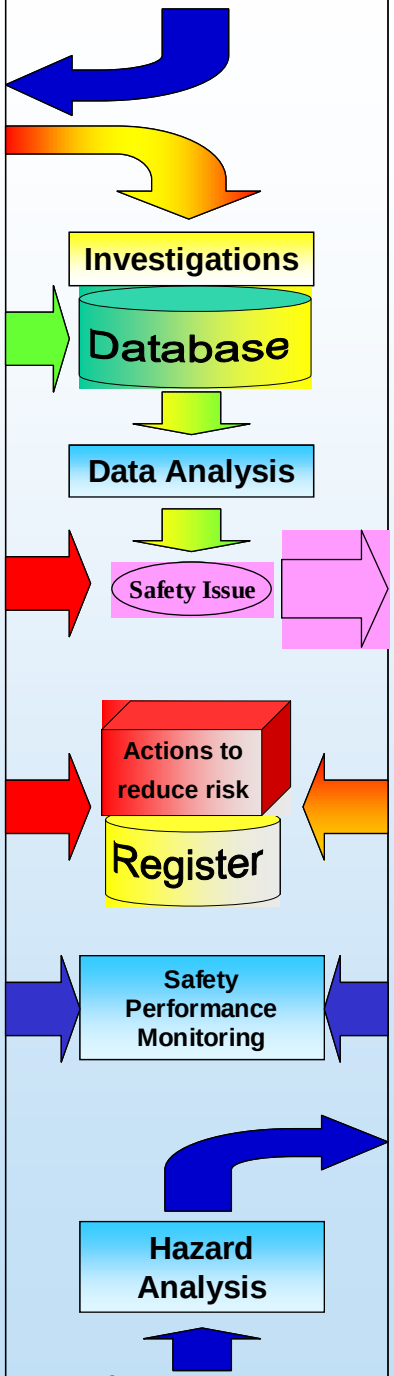
→ No action required. Contributes to the Safety Database.

21 ERC Risk Index number → Use in database analysis (trending & statistics)

* Examples only. To be customised at each organisation.

Safety event/data

START HERE



Safety Assessment

START HERE

Quick Reference Guide

SIRA

Safety Issue Risk Assessment

Used for:

- ***Safety Issues***
- ***Safety Assessments, when quantifiable (Management of Change process)***

HOW TO DO IT:

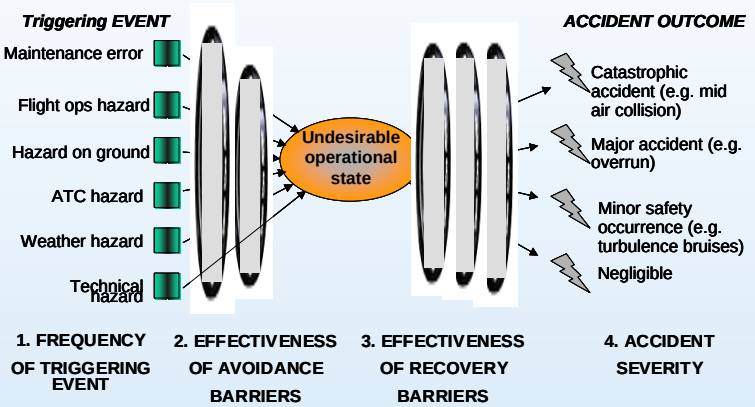
Define the Safety Issue precisely:

• Scope the issue in terms of hazards, locations, a/c types, etc. See section 4.8 for detail.

Develop the related potential accident scenarios:

• There may be several accident scenarios within one Safety Issue (see *glossary*)

• Select the most critical scenarios (one or more) for the risk assessment



Analyse (each) Scenario using the SIRA model (above):

• Identify the accident outcome of the scenario

• Identify what is considered the triggering event (see section 6.9 for detail)

• Decide what you consider as the UOS.

• List the avoidance and recovery barriers and review their robustness

Run the SIRA with numbers:

• Consider using the SIRA Excel tool

• Select a known or an estimated value for each of the 4 SIRA components

RESULT:* *(see section 4.8 for detail)*

Stop → "Stop": Discontinue the concerned part of the operation until acceptable risk level.

Improve → "Improve": Still unacceptable risk but tolerable for a short time. Action required.

Secure → "Secure": Frequent monitoring required, as the item is at the limit of acceptable.

Monitor → "Monitor": Monitor through the routine database analysis.

Accept → "Acceptable". No specific action required.