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Session 4

Operational Safety Risks

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Overview

- What is ops safety risk?
- Why do we need to identify ops safety risks? HRCs?
- How do we identify ops safety risks?
- Facilitated Exercise I (Part 1)

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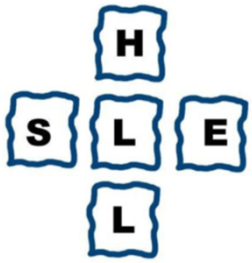
What is an Ops Safety Risk?



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- Ops safety risks arise during
  - delivery of service
  - conduct of an activity
    - e.g. operation of aircraft, airports, or provision of ATS
- They involve identification of hazards & safety deficiencies
- Result from
  - Ops interactions between people & technology
  - Ops context in which aviation activities are carried out

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Why Identify Ops Safety Risks?

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- Ops safety risks need to be
  - identified > what is safety issue?
  - addressed > eliminated or mitigated
- To prevent accidents & enhance safety
- Ops safety risks should be classified by occurrence categories
  - using taxonomy
  - CICTT

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HRCs: Top Ops Safety Risks

- HRCs represent unsafe outcomes
- They are "end states"
  - need to be avoided
  - to prevent fatalities
- HRCs can be global, regional or national
  - G-HRCs, R-HRCs, N-HRCs

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- HRCs are those that
  - resulted in high number of fatalities in past accidents
  - can result in high number of fatalities if they occur in future
  - comprise overall largest number of accidents (or serious incidents)

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HRCs & Contributing Factors

- HRCs represent unsafe outcomes that are “end states”
- Efforts by States, regions & industry should focus on
  - addressing pre-cursors & contributing factors
  - to avoid accidents & serious incidents
- To assist, ICAO identified examples of contributing factors
  - leading to 5 G-HRCs

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How To Identify Ops Safety Risks?

- Standardized Framework for Identification of HRCs
- Guide analysis of existing data sources
  - in transparent & repeatable manner
- Tool for
  - organizing information
  - direct data collection & analysis

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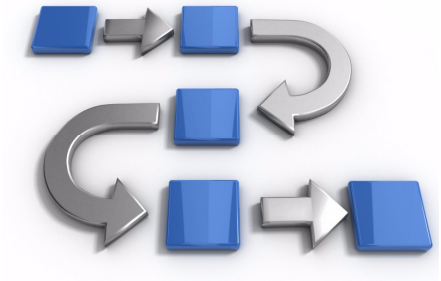
Standardized Framework – HRCs

- For identification of HRCs
  - criteria may be used for inclusion & removal of occurrences
  - from G-, R-, N-HRC list

- Framework defines
  - Criteria – Aspects / areas to analyse
  - Specifics – Detailed elements to analyse
  - Methodology – Set of methods for analysis



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Criteria	Specifics	Methodology
Fatality	Fatalities by accident occurrence categories (as per the Commercial Aviation Safety Team/ICAO Common Taxonomy Team (CICTT))	1) Analyse the classification of occurrences: • as per the ICAO Occurrence Validation Study Group (OVSG) 2) Identify categories that resulted in the highest number of fatalities
Fatality risk	Fatality risk by accident or serious incident occurrence categories (as per CICTT)	1) Analyse the classification of occurrences: • as per the OVSG 2) Identify categories that are linked to occurrence categories with the highest number of fatalities (as severity outcome)
Number of accidents and serious incidents	Number of accidents or serious incidents by occurrence categories (as per CICTT)	1) Analyse the classification of occurrences: • as per the OVSG 2) Identify categories that resulted in the highest number of accidents and serious incidents
Breakdown by ICAO Region **(based on min of 5-year data set)**	Frequency of occurrences	• 5-year rolling average • Consider including use of rate-based data (e.g., sectors flown)
	Commonality of occurrence across Regions	If an occurrence category appears in more than two regions, consider it potentially global
	Use of data/safety intelligence from accidents	• Focus on pre-cursors and contributing factors • Sources: ICAO and Industry • Develop and monitor associated safety performance indicators

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Criteria to Identify HRCs

- Actual fatalities
- Fatality risk by accident or serious incident occurrence categories
- Number of accidents or serious incidents by occurrence categories
  - as per CICTT
- Breakdown by ICAO Region
  - based on a minimum of five-year data set
- Consideration of G- & R- HRCs
  - in setting N-HRCs

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Commercial Aviation Safety Team
COMMON TAXONOMY TEAM
International Civil Aviation Organization

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AIRPROX/TCAS ALERT/LOSS OF SEPARATION/NEAR MIDAIR COLLISIONS/MIDAIR COLLISIONS (*MAC*)

Air proximity issues, Traffic Collision Avoidance System (TCAS)/Airborne Collision Avoidance System (ACAS) alerts, loss of separation as well as near collisions or collisions between aircraft in flight.

Usage Notes:

Includes:

- All collisions between aircraft while both aircraft are airborne.
- Separation-related occurrences caused by either air traffic control or cockpit crew.
- AIRPROX reports
- Genuine TCAS/ACAS alerts.

Does NOT include:

- False TCAS/ACAS alerts caused by equipment malfunctions, which are coded as SCF-NP.
- Loss of separation with at least one aircraft on the ground, which may be coded as ATM, GCOL, NAV, and/or RI if the occurrence meets the criteria and usage notes for those categories.

Crossover to/from other occurrence categories:

- Code both MAC and NAV if the event was caused by a navigation error and the event meets the usage notes of both categories.
- Code both MAC and ATM if the event was caused by an ATC/ATM error and the event meets the usage notes of both categories.

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Example: Fatality Risk

Occurrence per CICTT	Categories linked to Occurrence
• Mid-air Collision (MAC)	• Air proximity issues • TCAS/ACAS alerts • Loss of separation • Near collisions • Collisions between aircraft in flight

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Global HRCs for 2023-2025

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Points to Remember

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- Ops safety risks need to be addressed to prevent accidents
- HRCs are top ops safety risks > outcomes to be avoided
- G-HRCs are defined in GASP > R-HRCs in RASP > N-HRCs in NASP
- Standardized Framework is tool to identify HRCs
- Action plan should target contributing factors

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Facilitated Exercise I

Develop a List of Prioritized National Safety Issues (Pt. 1)

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Your Tasks

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- Using Standardized Framework for N-HRCs + SME
  - conduct evaluation of StateX (based on Appendix A)
- Based on results of evaluation
  - compile list of identified hazards & safety deficiencies
- Discuss & select top hazards/deficiencies as national ops safety risks
  - classify them as either N-HRCs or other operational safety risks
  - include reason for selecting each issue
    - as N-HRC or other national operational safety risk
- Complete Appendix B
  - Time allocated: 2h00

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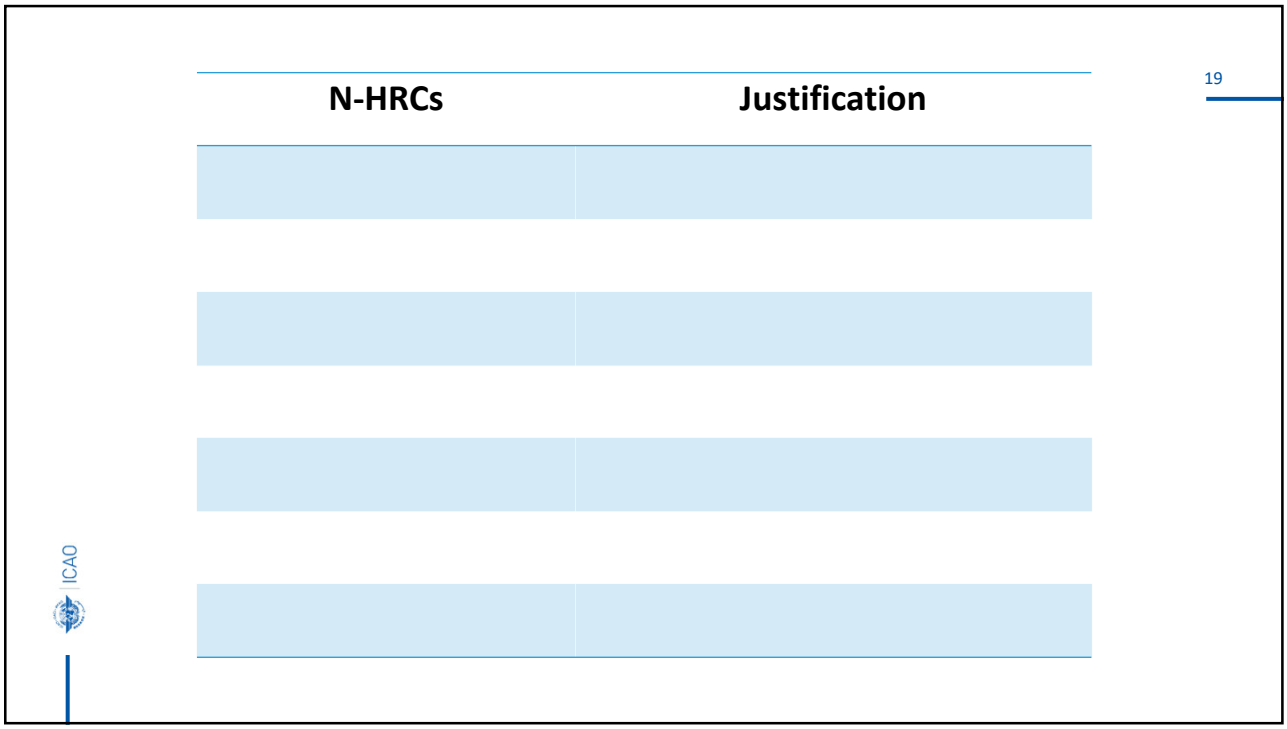
N-HRCs
Justification
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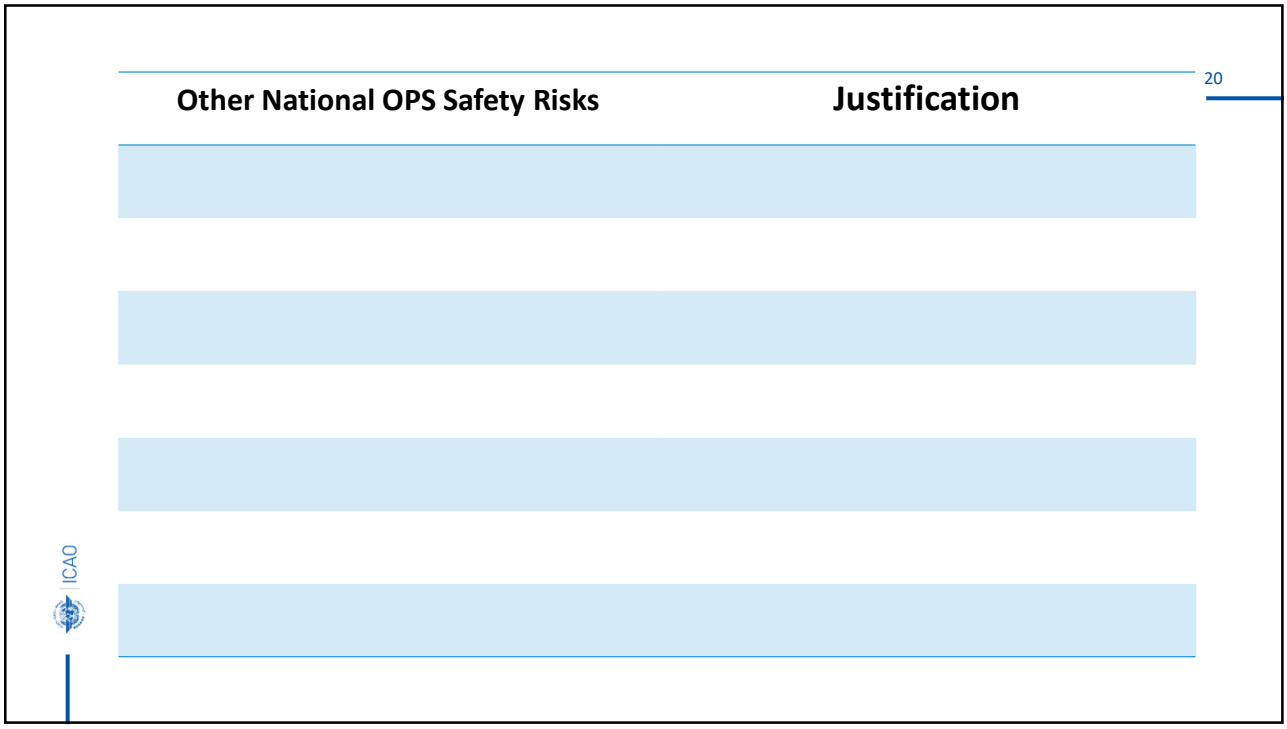
Other National OPS Safety Risks
Justification
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