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SESSION 9

**How to Develop a
National Aviation Safety Plan**





Overview

- How to use roadmap to develop NASP
- NASP development process
- 7 steps to develop NASP
- NASP template (ICAO Doc 10131)



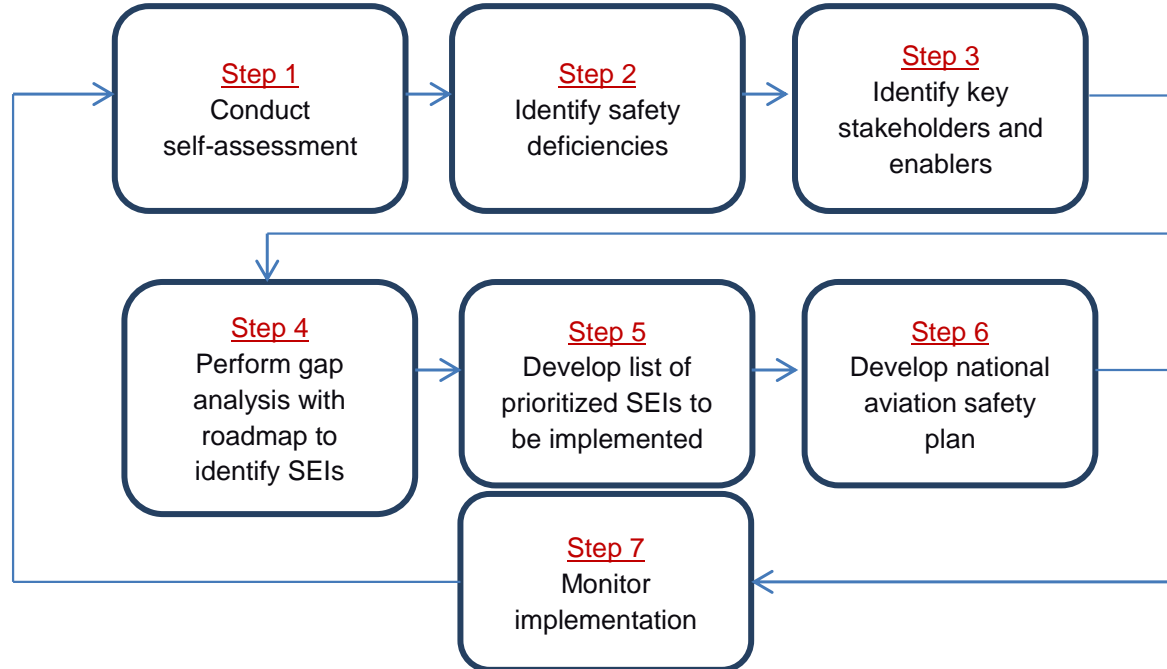
Use Roadmap to Develop NASP

- State should use roadmap as basis to develop NASP
 - that define specific SEIs to improve safety
- GASP illustrates 7 steps of NASP development process
- Same steps should be used by regions
 - when developing RASP





NASP Development Process





Step 1 — Conduct Self-assessment

- State should conduct self-assessment
 - in conjunction with initial review of roadmap
 - to understand current ops environment
- Analysis needs to assess established capabilities, system size and level of complexity, and available resources
- Self-assessment should use several sources of information











Step 1 — Conduct Self-assessment (2)

- State should assess
 - its level of EI of CEs of safety oversight system
 - status of SSP implementation
- Why?
 - to develop baseline understanding of its current safety oversight capabilities
 - and operational environment
- Use electronic safety tools available on ICAO iSTARS





E-tools Available on ICAO iSTARS

iSTARS tools to assist States to identify specific deficiencies related to safety oversight and SSP implementation			
Tools to determine the EI score and identify existing safety deficiencies, as well as the safety oversight index for the three functional categories	USOAP Protocol Questions	PQ Tester	
	Level of Implementation and SSCs	Safety Audit Information	
	Summary of State Safety Indicators	State Safety Briefings	
	USOAP CMA OLF tools		
	Risk-based prioritization for operations, air navigation and support functions	Safety Oversight Index	
SSP implementation	State safety programmes	SSP Gap Analysis	
	Status of SSP prerequisite protocol questions	SSP Foundation Tool	



Step 1 — Conduct Self-assessment (3)

- State moving into SSP implementation should conduct SSP gap analysis
 - to ensure it is ready to begin SSP implementation
- If State has effective SSP >> use SRM process to identify hazards
- State should also consult latest GASP & RASP
 - to assist it in identifying organizational challenges & ops safety risks (HRCs)
 - that may be common to region or of global concern
- Refer to regional entities (RASG) for assistance in identifying safety deficiencies



Step 2 — Identify Safety Deficiencies

- Identify series of safety deficiencies to be addressed
 - based on results of self-assessment
- Identified deficiencies assist State to identify appropriate starting point in ORG roadmap
 - i.e. component & phase, in case of 1st component
- HRCs should also be addressed as part of safety deficiencies
 - based on OPS roadmap & State's safety data analysis



Step 3 — Identify Key Stakeholders & Enablers

- Identify key stakeholders
 - based on results of self-assessment & identified safety deficiencies
- Who can be stakeholders?
 - those with supporting capabilities, additional resources and other strengths or opportunities
 - that can assist it in addressing deficiencies and enable safety improvements
 - e.g. external funding, support from RASGs
- Stakeholders will be involved in developing, implementing & sustaining SEIs





Step 4 — Perform Gap Analysis with Roadmap to Identify SEIs

- Once Steps 1 to 3 have been completed
 - State has sufficient information
 - to identify appropriate starting point within ORG roadmap
- It should then perform gap analysis using ORG roadmap
 - select SEIs needed to address identified safety deficiencies
 - and help it achieve GASP goals





Step 4 — Perform Gap Analysis with Roadmap to Identify SEIs (2)

- Review identified safety deficiencies & results of gap analysis
 - in comparison to selected SEIs
 - then identify list of potential SEIs
 - as relevant corrective actions
- Review SEIs in OPS roadmap
 - identify those that have not been implemented
 - to serve as safety risk mitigations for HRCs





Step 5 — Develop List of Prioritized SEIs to be Implemented

- Review list of potential SEIs
- Assess State capability to implement all of them
- Evaluate availability of resources
 - necessary to complete each SEI
 - human, financial, technical, training, stakeholder commitments, etc.





Step 5 — Develop List of Prioritized SEIs to be Implemented (2)

- Consider ability to make changes
 - in addition to identifying necessary resources
- Assessment should include
 - political will to change
 - availability of technology
 - resources necessary to implement change
- State should prioritize SEIs that have greatest impact on safety





Step 5 — Develop List of Prioritized SEIs to be Implemented (3)

- One method is to focus on actions having greatest potential safety enhancement
 - while requiring fewest resources to complete
- It is good practice to use quantitative approach in this analysis
- State may rely on knowledge and expertise of evaluation team
 - where quantitative approach is not feasible



Step 5 — Develop List of Prioritized SEIs to be Implemented (4)

- State should develop a list of prioritized SEIs
 - based on assessment
 - to be completed within a specified timeframe
- Conclusion that SEI implementation is not practical should be last resort
- If such conclusion is reached
 - aviation activities need to be adjusted
 - to eliminate or mitigate consequence of hazard or identified safety deficiency





Step 6 — Develop NASP

- SEIs selected in Step 5 serve as basis for NASP
- State should develop NASP
 - once list of prioritized SEIs has been developed
 - will become master document for implementing SEIs at State level
- NASP should cover manageable set of actions
 - that represent steps necessary to achieve defined goals





Step 6 — Develop NASP (2)

- Once plan is finalized
 - a responsible party or organization should be identified
 - to lead the implementation of each SEI
- Established regional activities and organizations may be able to provide implementation strategies and support
- State is encouraged to collaborate with other stakeholders
 - at national and regional levels to harmonize existing plans





Step 6 — Develop NASP (3)

- State should implement applicable SEIs within timelines
 - associated with GASP targets
- If timelines proposed in GASP may not be achievable
 - State should develop attainable timelines
 - in coordination with ICAO and other stakeholders





Step 7 — Monitor Implementation

- After NASP has been finalized
 - SEIs should be assigned to organizations or individuals responsible for leading implementation
- Related activities should be continuously monitored
 - to ensure that actions are accomplished
- Any roadblocks to implementation should be removed
 - and plan accommodate any newly identified gaps





Step 7 — Monitor Implementation (2)

- As NASP SEIs are completed, steps should be repeated
- To identify other SEIs that State may need to complete





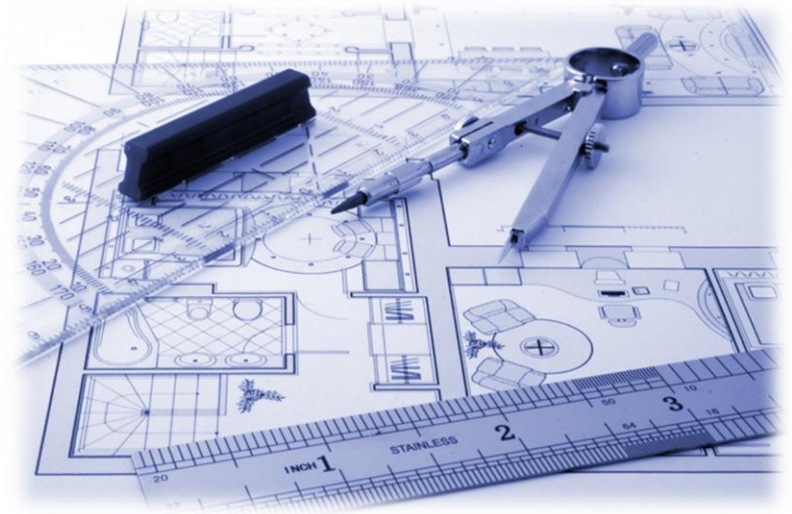
New Guidelines & Template

- ICAO developed new guidance
 - Doc 10131, *ICAO Manual on the Development of Regional and National Aviation Safety Plans*
- Provides guidelines for RASP & NASP development
- Explains in detail content to be included in plan
- Provides template where State can fill in blanks (as example)



Content of Doc 10131

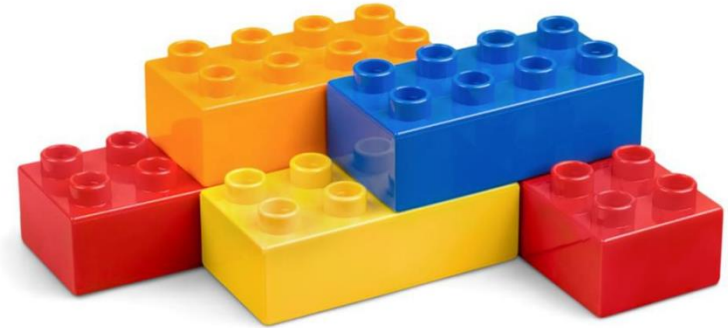
- Introduction
- RASP & NASP development process
- Guidance for Drafting RASP
- Guidance for Drafting NASP
- Reporting on Plan





NASP Template

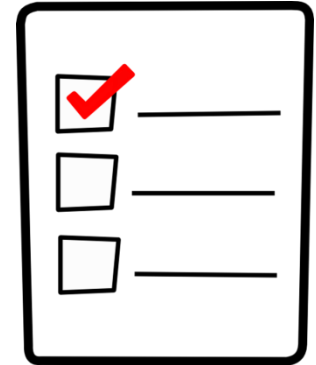
- Follows format presented in GASP
- Contains 6 sections
 1. Introduction
 2. Purpose of NASP
 3. State's strategic approach to managing aviation safety
 4. National operational safety risks
 5. Other safety issues
 6. Monitoring implementation





NASP Template (2)

- All sections include standard “Boilerplate” text
 - text that can be reused in new contexts without significant changes to original
- Indicates when to fill in blanks
 - Name of entity, title of plan, etc.
- Contains lists and tables to fill
 - Issues, Goals, etc.
- Presents examples for blank sections that State must fill in





1) Introduction

- Text providing overview of NASP and its structure
- Sample text on relationship of NASP & SSP
 - Separate sample text for States with or without full SSP (options)
- Responsibility for NASP development, implementation and monitoring
- Overview of National safety issues, goals and targets
- Description of operational context



Overview of NASP

[State] is committed to enhancing aviation safety and to the resourcing of supporting activities. The purpose of this national aviation safety plan (NASP) is to continually reduce fatalities, and the risk of fatalities, through the development and implementation of a national aviation safety strategy. A safe aviation system contributes to the economic development of [State] and its industries. The NASP promotes the effective implementation of [State's] safety oversight system, a risk-based approach to managing safety, as well as a coordinated approach to collaboration between [State] and other States, regions and industry. All stakeholders are encouraged to support and implement the NASP as the strategy for the continuous improvement of aviation safety.



Structure of NASP

This NASP presents the strategy for enhancing aviation safety for a period of [number] years. It is comprised of six sections. In addition to the introduction, sections include: the purpose of the NASP, [State's] strategic approach to managing aviation safety, the national operational safety risks identified for the [date interval. Example, 2020-2022] NASP, other safety issues addressed in the NASP, and a description of how the implementation of the SEIs listed in the NASP is going to be monitored.



Text for State without full SSP

This NASP addresses operational safety risks identified in the ICAO GASP and the [name of the RASP] in the absence of [State's] SSP. [State] is committed to fully implement an SSP by [date] as a State's responsibilities for the management of safety comprise both safety oversight and safety management, collectively implemented through an SSP. Initiatives listed in this NASP address organizational challenges and aim to enhance organizational capabilities related to effective safety oversight.



Responsibility for NASP

The [name of responsible entity. Example, **the CAA**] is responsible for the development, implementation and monitoring of the NASP, in collaboration with [**list names of entities**] and with the national aviation industry. The NASP was developed in consultation with national operators and other stakeholders, and in alignment with the [**current edition**] of the GASP and the [**name of the RASP**].



National Safety Issues, Goals & Targets

The NASP addresses the following national safety issues:

- 1) [list risks and other safety issues]
- 2) Example, **Loss of control in-flight occurrences**
- 3) **bird strikes**
- 4) **lack of AIG capabilities at the national level**

In order to address the issues listed above and enhance safety at the national level, the [date interval] NASP contains the following goals and targets:

- 1) [list goals and targets]
- 2) [Example, **Goal 1: Achieve a continuous reduction of operational safety risks and Target 1.1: Maintain a decreasing trend of the national accident rate**]
- 3) [...]



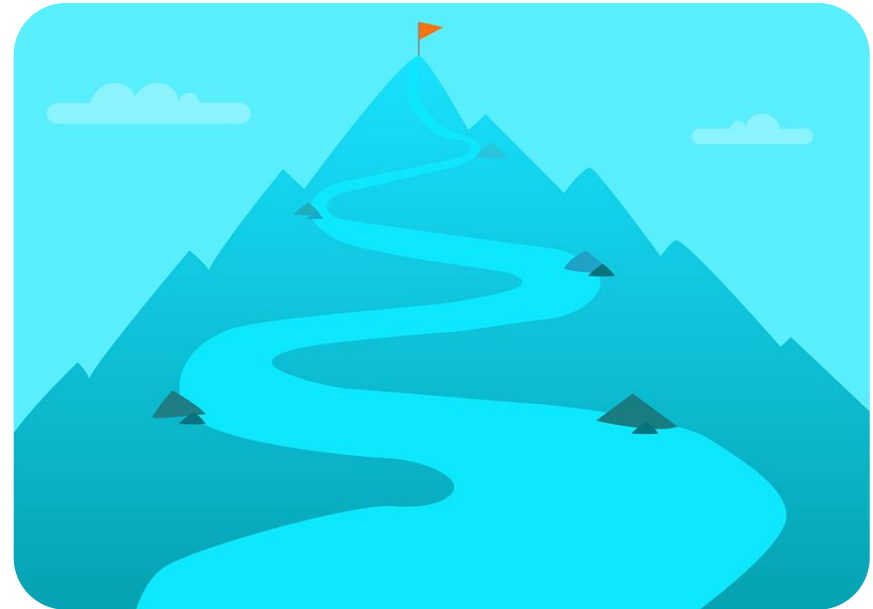
Operational Context

There are [number] certified aerodromes in [State], including [number] international aerodromes. The airspace of [State] is classified into Class [list all airspace classes]. There were [number] of movements in [State] over the period of [year-year]. There are currently [number] air operator certificates (AOCs) issued by [State], and of those there are [number] issued to operators conducting international commercial air transport operations. [State] also has [number] operators, which operate domestic air taxi services, primarily on turboprop aircraft, as well as [number] helicopter operators. There are [number] of heliports in [State]. Common challenges in [State] include: [list challenges. Example, Topography, meteorology, infrastructure, and socio-political issues].



2) Purpose of NASP

- “Boilerplate” text
 - to be completed by State





Purpose of NASP

The NASP is the master planning document containing the strategic direction of [State] for the management of aviation safety for a period of [number] years ([year] to [year]). This plan lists national safety issues, sets national aviation safety goals and targets, and presents a series of SEIs to address identified safety deficiencies and achieve the national safety goals and targets.



3) Strategic Approach

- Sample text based on level of SSP implementation
 - Separate sample text for States with or without full SSP (options)
- Sample table to present goals, targets and link to plans
- List of emerging issues to be completed





Goal	Target	Indicators	Link to GASP and RASP
1. Example, Achieve a continuous reduction of operational safety risks	1.1 Maintain a decreasing trend of the national accident rate 1. n	1.1.1 Number of accidents involving national operators per 10, 000 departures 1.1.2 Percentage of occurrences related to HRCs 1.2. n	[describe link] This goal is directly linked to Goal 1 and Target 1.1 of the GASP and linked to Goal 1 and Target 1.1 of the RASP



Emerging Issues

The NASP addresses the following emerging issues, which were identified by [describe the process. Example, **an analysis conducted by service providers**] for further analysis:

- 1) [list emerging issues]
- 2) [Example, **small drones operating in the vicinity of aerodromes**]
- 3) [...]



4) National Ops Safety Risks

- Sample text
- Table to include accident/serious incident stats
 - By State of Occurrence & State of Registry
- Lists to complete
 - HRCs
 - Additional categories of ops safety risks
 - Contributing factors to HRCs





Year	Fatal accidents	Non-fatal accidents	Serious incidents
Commercial air transport occurrences in [State]			
[year to year, average]			
[current year]			
General aviation aircraft occurrences in [State]			
[year to year, average]			
[current year]			



Year	Fatal accidents	Non-fatal accidents	Serious incidents
Occurrences involving commercial air transport aircraft registered in [State]			
[year to year, average]			
[current year]			
Occurrences involving general aviation aircraft registered in [State]			
[year to year, average]			
[current year]			



List of HRCs & Additional

These HRCs are in line with those listed in the [current edition] of the GASP, as well as the [name of the RASP]:

- 1) [list HRCs]
- 2) [Example, Loss of control in-flight (LOC-I)]
- 3) [...]

In addition to national ops safety risks listed above, the following additional categories of ops safety risks have been identified:

- 1) [list additional categories of operational safety risks]
- 2) [Example, Bird strikes]
- 3) [...]



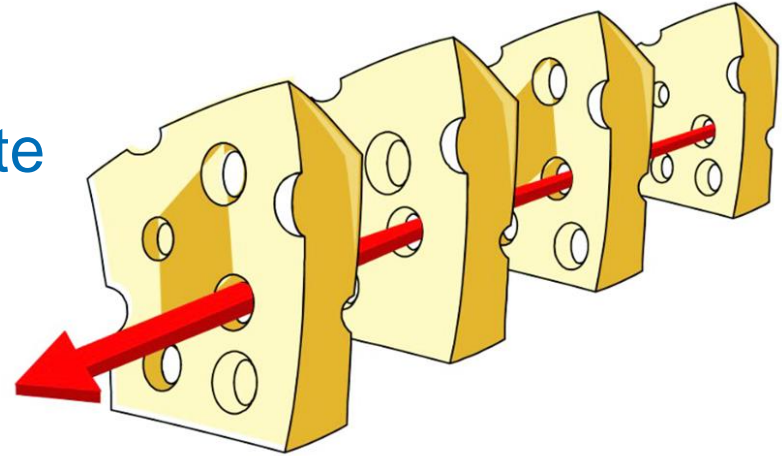
Contributing Factors to HRCs

- **HRC 1:** [name of occurrence category Example, **Loss of control in-flight (LOC-I)**]
 - 1) [list contributing factors]
 - 2) [Example, **Inadequate SOPs for effective flight management**]
 - 3) [...]
- **HRC 2:** [name of occurrence category]
 - 1) [list contributing factors]
 - 2) [...]
 - 3) [...]



5) Other Safety Issues

- Sample text
- Tables for EI score & SOI of State
- List to complete
 - issues & description





Overall EI score

[X]%

EI score by CE

CE-1	CE-2	CE-3	CE-4	CE-5	CE-6	CE-7	CE-8
[X]%	[X]%	[X]%	[X]%	[X]%	[X]%	[X]%	[X]%

EI score by audit area

LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
[X]%	[X]%	[X]%	[X]%	[X]%	[X]%	[X]%	[X]%

Overall SOI score	Score in the area of Operations	Score in the area of Air Navigation	Score in the area of Support Functions



Other Safety Issues

These safety issues are in line with those listed in the [current edition] of the GASP, as well as the [name of the RASP]:

- 1) [list safety issues & explain why they were given priority]
- 2) [Example, lack of aircraft accident and incident investigation capabilities at the national level. This was the area where the State received the lowest EI score during the most recent ICAO USOAP audit and was therefore placed as a high priority issue to resolve.]
- 3) [...]



6) Monitoring Implementation

- “Boilerplate” text
 - to be completed by State





Monitoring Implementation

In addition to the above, [State] will review the NASP every [number] years or earlier, if required, to keep the identified operational safety risks, safety issues and selected SEIs updated and relevant. The [name of responsible entity. Example, the CAA] will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals and targets. If required, [State] will seek the support of [list names of entities, Example, the RASG, industry] to ensure the timely implementation of SEIs to address safety deficiencies and mitigate risks. Through close monitoring of the SEIs, [State] will make adjustments to the NASP and its initiatives, if needed, and update the NASP accordingly.



Appendix for Detailed SEIs

HRC x: [name of HRC. Example, Loss of control in-flight (LOC-I)]							
Goal x: [name. Example, Goal 1: Achieve a continuous reduction of operational safety risks] Target x.x: [description. Example, Target 1.1: Maintain a decreasing trend of the national accident rate]							
Safety enhancement initiative	Action	Timeline	Responsible entity	Stakeholders	Metrics / Indicators	Priority	Monitoring Activity
[name of SEI and GASP SEI number, as well as RASP SEI number, if applicable]	[describe action(s)]	[insert timeframe for completion]	[name]	[list stakeholders]	[list metrics / indicators]	[Low Medium High]	[list mechanisms for verifying SEI implementation]
SEI-n [describe] (GASP, SEI-x) (RASP, SEI-x)							
Example, GASP OPS SEI on LOC-I (State) — Mitigate contributing factors to LOC-I accidents and incidents	Require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes	Q1 2020 to Q4 2022	CAA	<ul style="list-style-type: none"> Operators Approved training organizations (ATO) Flight simulator product and service providers Pilots' associations CAA inspectors 	<ul style="list-style-type: none"> Training programmes updated with upset prevention and recovery Number/percentage of pilots completing upset prevention and recovery training Upset occurrence rates in voluntary reporting Stick-shaker activation events in FDA data LOC-I occurrence rates 	High	Surveillance of operator and ATO training activities



HRC x: [name of HRC. Example, **Loss of control in-flight (LOC-I)**]

Goal x: [name. Example, **Goal 1: Achieve a continuous reduction of operational safety risks**]

Target x.x: [description. Example, **Target 1.1: Maintain a decreasing trend of the national accident rate**]

Safety enhancement initiative	Action	Timeline	Responsible entity	Stakeholders	Metrics/ Indicators	Priority	Monitoring Activity
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Points to Remember

- Use roadmap as basis to develop NASP
- Carry out 7 steps listed in GASP
- Once SEIs completed >> repeat steps
- NASP template provides example & guidance (Doc 10131)



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