



Ministry of Infrastructure
and Water Management

National Aviation Safety Plan (NASP) for the Netherlands 2023 – 2026

March 2023



National Aviation Safety Plan (NASP) for the Netherlands 2023 – 2026

March 2023



Table of Contents

Summary 5

Foreword 7

1 Introduction 9

- 1.1 Introduction to National Aviation Safety Plan (NASP) for the Netherlands 9
- 1.2 Scope of the NASP 9
- 1.3 International context 9
- 1.4 Relationship SSP, SSA, Aviation safety system monitor and NASP 10
- 1.5 Size of the aviation sector 10
 - 1.5.1 Airports 10
 - 1.5.2 Number of airlines 10
 - 1.5.3 Number of aircraft 10

2 Building blocks of the NASP 12

- 2.1 The Civil Aviation Policy Memorandum 2020-2050 12
- 2.2 Organizational challenges 12
- 2.3 Operational safety risks 13
- 2.4 The State Safety Analysis (SSA) 13
- 2.5 Developments and new issues in aviation 15

3 Goals and indicators 17

- 3.1 State safety goals 17
- 3.2 Safety performance 17
- 3.3 Safety enhancement initiatives 17
- 3.4 Priority safety enhancement initiatives 17
- 3.5 Indicators and target values per safety enhancement initiative 18

4 Organizational safety enhancement initiatives 20

- 4.1 Responsible parties 20
- 4.2 Areas for improvement in the aviation system 20

5 Monitoring implementation of risk mitigating measures 23

- 5.1 Procedure 23
- 5.2 Monitoring progress with stakeholders 23

Annexes 24

- Annex I: NASP safety enhancement initiatives 2023-2024 25
- Annex II: Priority safety enhancement initiatives 2023-2024 29
- Explanation of prioritized safety enhancement initiatives 30
- Abbreviations 33
- Glossary 34



Summary

Flying is one of the safest forms of transportation. Aviation safety has been designated as a top priority within the Ministry of Infrastructure and Water Management (IenW). As stipulated in the Civil Aviation Policy Memorandum 2020-2050 and in the Dutch State Safety Programme 2020-2024 (SSP), the Netherlands (including the Dutch Caribbean) strives to continuously improve aviation safety. The SSP indicates that a National Aviation Safety Plan (NASP) will be drawn up. This NASP indicates how the Netherlands (IenW and the aviation sector) will implement the continuous further improvement of aviation safety.

The NASP was prepared in cooperation with the aviation sector in accordance with the international requirements that exist for this action plan. It describes in process terms how this action plan was drafted and how the safety enhancement initiatives were identified. The elaboration of the safety enhancement initiatives will be taken up together with the sector within the existing consultation platforms.

The NASP addresses the scope, the relationship with other relevant documents in the international context and the Dutch aviation sector. It indicates the building blocks of the NASP and the mutual relationships between objectives, indicators and target values and how these are to be established. Subsequently, the organizational safety enhancement initiatives and the method of monitoring and reporting is described.

Based on the building blocks of international commitments, the State Safety Analysis (SSA) (in Dutch: *Nationale Veiligheidsanalyse (NVA)*) and the Aviation Safety System Monitor (in Dutch: *Systeemmonitor Luchtvaartveiligheid*), 110 safety enhancement initiatives have been identified that may need to be further focused on. The initiatives in this action plan touch various facets of the safety system: regulation, oversight, admission and safety promotion. Annex I gives a total overview of all safety enhancement initiatives. Many of these safety enhancement initiatives have already been initiated or partially or nearly fully implemented. Annex II details the seven safety enhancement initiatives that will be prioritized in the coming years. Annexes I and II are recalibrated biennially and sent to the House of Representatives. At the same time, the House will also receive the progress monitoring of all safety enhancement initiatives.



Foreword

Globally, flying is one of the safest forms of transportation. This is due in part to the fact that at the international level this matter receives constant attention. The global agreements on aviation safety are laid down in the Chicago Convention¹. The treaty also regulates the establishment of the International Civil Aviation Organization (ICAO). Within the European Union, European laws and regulations and standards for aviation have been established. The European Union Aviation Safety Agency (EASA) is responsible for drafting implementing rules in the field of aviation safety. Part of those international rules are also the substantive requirements that a national aviation safety plan must meet.

Aviation safety is a top priority within the Ministry of Infrastructure and Water Management. As stipulated in the Civil Aviation Policy Memorandum 2020-2050² and in the Dutch State Safety Programme 2020-2024 (Dutch SSP)³, the Netherlands (including the Dutch Caribbean) strives to continuously improve aviation safety. The Netherlands is committed to full compliance with its international obligations and has the ambition to continuously be among the best performing countries in the field of aviation safety. With the Aviation safety system monitor⁴, I provide an annual picture of how the aviation safety system is functioning and in doing so, I provide insight into how I fulfil my role as being accountable for the functioning of the aviation safety system. The state safety goal as formulated in 2020 in the SSP is to continuously improve aviation safety by identifying the highest national risks and managing them to an acceptable level.

The drafting, implementation and monitoring of the National Aviation Safety Plan (NASP) for the Netherlands 2023-2026 fulfils the state safety goal and international obligations for an action plan.

The NASP provides a comprehensive overview of current operational and organizational safety enhancement initiatives. The NASP also provides insight into the priorities set by the Netherlands in the coming years to maintain and further improve the high level of aviation safety. Amongst other things, many of the safety enhancement initiatives in this action plan touch on facets of the safety system, such as regulation, oversight, admission, and safety promotion. Naturally, the resources that I have already made structurally available for the implementation of the SSP are also available for the implementation of the NASP. In addition, there are safety enhancement initiatives focused on operational aspects.

The safety enhancement initiatives stem from international commitments, from the State Safety Analysis (SSA) and from the Aviation safety system monitor. An important note here is that improving aviation safety is a continuous process. The international obligations are recalibrated every one to three years, depending on the international plan. This recalibration is implemented in the annexes to the NASP. Every two years, the House of Representatives receives the revised list of safety enhancement initiatives, the priority list, and a report of the monitoring of the progress thereof.

Mark Harbers

Minister of Infrastructure and Water Management

¹ Chicago Convention means the Convention on International Civil Aviation concluded at Chicago on December 7, 1944 (Trb. 1973, 109);

² Parliamentary documents II, 31 936, nr. 820

³ Parliamentary documents II, 24 804, nr. 116

⁴ Parliamentary documents II, 24 804, nr. 195



1 Introduction

1.1 Introduction to National Aviation Safety Plan (NASP) for the Netherlands

This NASP describes the process and approach to improving aviation safety for the period 2023 to 2026. The structure of this NASP follows the international requirements for drafting action plans. The initiatives identified by the Netherlands for 2023 and 2024 to maintain and further improve aviation safety are included in Annex I. This is to ensure readability and traceability of all safety enhancement initiatives. The priority safety enhancement initiatives for 2023 through 2024 are included in Annex II. These annexes require more frequent updates than the NASP itself, which has been set for four years.

For each of the safety enhancement initiatives, the Ministry of Infrastructure and Water Management (IenW) formulates mitigating measures, together with the sector where relevant. Mitigating measures are often aimed at reducing a risk, containing the consequences or eliminating them. They can also be aimed at ensuring the performance of a mandatory task. To monitor the progress of safety enhancement initiatives, mitigating measures are elaborated with corresponding indicators and target values. Every two years, IenW will monitor the implementation of the safety enhancement initiatives formulated in the NASP and thereby determine the priorities for the following two years.

1.2 Scope of the NASP

The scope of the NASP stems from the Dutch State Safety Programme (SSP, in Dutch: *Nederlands luchtvaartveiligheidsprogramma (NLVPP)*), which is the Dutch government's integral safety management system for international civil aviation. The NASP brings together operational safety enhancement initiatives at the state level from various building blocks (see Chapter 2). A characteristic of the mitigating measures resulting from the SSA building block is that they cannot be fully and/or optimally controlled at the level of an individual aviation organization, but require cooperation between aviation organizations and/or governments⁵. Incidentally, the security of civil aviation is beyond the scope of this NASP.

⁵ Parliamentary documents II, 24 804, nr. 116

1.3 International context

Article 7 of EU Regulation 2018/1139⁶ (Basic Regulation) states that EU Member States must establish and maintain a state safety programme in accordance with international standards and recommended practices. In the SSP, the integral safety management system of the Dutch government for aviation safety is established. The SSP describes how civil aviation safety within the Netherlands, including the Caribbean Netherlands, is organized. In February 2020, the SSP was presented to the House of Representatives.

Article 8 of the Basic Regulation stipulates that Member States, in addition to a state safety programme, must also develop a national action plan for aviation safety. For the Netherlands this is the NASP. This is part of the safety management system as described in the SSP.

The NASP explicitly takes into account the Global Aviation Safety Plan 2020-2022 (GASP)⁷ and the Regional Aviation Safety Plan 2022-2024 (EUR-RASP)⁸ of ICAO and the European Plan for Aviation Safety 2022-2026 (EPAS)⁹ of the European Union Aviation Safety Agency (EASA). The safety enhancement initiatives from these plans, including those indicated as “member-state tasks”, for which member states are responsible, are internationally mandatory and included in this NASP. In the event of changes to the international plans, the list of safety enhancement initiatives will be adapted.

⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1139&from=EN>

⁷ [ICAO Global Aviation Safety Plan](https://www.icao.int/safety/GASP/)

⁸ [EUR-RASP 2022-2024 \(icao.int\)](https://www.icao.int/safety/eur-rasp/)

⁹ [European Plan for Aviation Safety | EASA \(europa.eu\)](https://www.easa.europa.eu/easa/plan-aviation-safety)

1.4 Relationship SSP, SSA, Aviation safety system monitor and NASP

The SSP describes the cyclical safety management process. As part of that process, IenW conducts a State Safety Analysis (SSA) every two years (in Dutch: *Nationale Veiligheidsanalyse (NVA)*). The first SSA was released in 2022.¹⁰ This analysis identifies the main safety risks at the state level and includes an inventory of possible mitigating measures to manage the risks. These are risks that cannot be managed in their entirety and/or optimally at the level of one individual aviation organization, but require cooperation between aviation organizations and/or governments¹¹.

The minister of IenW is ultimately accountable for the functioning of the safety system and has a directive role within it. Every year, IenW uses the Aviation safety system monitor to provide a picture of how the safety system is functioning, thereby providing insight into how the minister fulfils his or her final accountability and directive role. In addition to the international obligations, the SSA and the Aviation safety system monitor are two important building blocks for the NASP

1.5 Size of the aviation sector

The size of the aviation sector, specifically the airports, the number of airlines and the number of aircraft is summarized below.

1.5.1 Airports

The Netherlands has six airports that structurally handle aircraft for commercial aviation. Amsterdam Airport Schiphol serves as the main international airport with most flight movements. The special municipalities of Bonaire, St. Eustatius and Saba (or BES islands, in the Caribbean Netherlands) each have their own airports. These are essential for urgent medical transport and passenger transport to and from the islands. In addition, except for Saba, these airports handle aircraft for commercial aviation. For General Aviation there are eleven regional airports. These are used, among other things, for training and practice flights, private flights and sightseeing flights.

In the Netherlands, helicopters use the regular airports with a runway and a landing strip. In addition, the Netherlands has five permanent heliports. Scattered throughout the country there are also several hospitals with a (raised)

helideck, which can be used by Helicopter Emergency Medical Services.

1.5.2 Number of airlines

The Netherlands has 21 airlines that transport international passengers and/or cargo for a fee; 13 airlines use aircraft for that purpose, the remaining 8 use helicopters for that transport. The Netherlands also has 6 companies that operate roundtrip flights to and from the same airport using small aircraft.

1.5.3 Number of aircraft

The Dutch aviation register¹² lists 287 large aircraft (reference date January 30, 2023) used for commercial passenger and cargo transport. The number of aircraft falling under the general aviation category totals 1737. These include aircraft used for student flights, sightseeing flights and private flights. Gliders, microlights and balloons are also included. In addition, nearly 225 drones and 77 helicopters are registered.

¹⁰ Report 'Nationale Veiligheidsanalyse voor de Nederlandse luchtvaart' [State Safety Analysis for Dutch Aviation], NLR-CR-2022-040, June 2022

¹¹ Parliamentary documents II, 24 804, nr. 116

¹² [Luchtvaartuigregister](#) | [Inspectie Leefomgeving en Transport \(ILT\)](#) [Aircraft Registry | Human Environment and Transport Inspectorate]



2 Building blocks of the NASP

Internationally, a distinction is made between organizational challenges and operational risks. This classification is adopted below. As described in Section 3.2, the state safety goal is in line with the international safety goals. The international action plans of ICAO and EASA have been analysed. The safety enhancement initiatives from these plans, including those indicated as “member-state tasks” for which member states are responsible, and which can also contribute to achieving our safety goal in the Netherlands, are also included in the NASP.

2.1 The Civil Aviation Policy Memorandum 2020-2050

The Civil Aviation Policy Memorandum 2020-2050¹³ sets a new course towards a sustainable aviation sector that continues to connect the Netherlands with the rest of the world. This course provides guidance for all parties involved in civil aviation and offers an agenda with clear goals and a concrete approach for the years to come. The Civil Aviation Policy Memorandum establishes that safety remains a top priority in aviation. It also establishes that the State will take the lead in strengthening the Dutch aviation safety system to be among the best performing countries. The SSP and this NASP implement these safety ambitions and objectives from the Civil Aviation Policy Memorandum, which are related to aviation safety.

2.2 Organizational challenges

Organizational challenges involve challenges related to organizational culture, the policy and procedures regarding the effectiveness of safety risk management. Safety cannot be unilaterally enforced by laws and regulations. Safety is the joint product of the national aviation authority and the sector. A systems approach is necessary in this regard. If all parts of the system are functioning well, this will help maintain and continuously improve civil aviation safety.

ICAO has identified effective safety oversight and effective safety management – the process of identifying and then addressing risks – as requirements to address organizational issues. The analysis of the systematics developed by ICAO for this purpose provides an important source of information for the Aviation safety system monitor.

The Aviation safety system monitor provides annual insight into the functioning of the aviation safety system, based on 18 selected indicators. In this way, the Aviation safety system monitor provides insight into compliance with regulations and the execution of processes and activities. This provides a picture of the opportunities to further strengthen and continuously improve the organization of the aviation safety system.

The Aviation safety system monitor also shows the progress of individual actions from the Integral Safety Management System (ISMS) Schiphol and the status of the follow-up to the recommendations the Dutch Safety Board (*Onderzoeksraad voor Veiligheid, OVV*) made in 2017.

The results of the Aviation safety system monitor 2022 show that there is room for further improvements to the safety system. The main areas for improvement are, in random order:

- a. developing a methodology for determining the number of staff needed for licensing and oversight;
- b. further implementation of international frameworks related to solving safety problems;
- c. monitoring and encouraging the execution of measures from the Schiphol Safety Improvement Roadmap on schedule by the Integral Safety Management System (ISMS).

These focus areas are included in the list of safety enhancement initiatives in Annex I.

¹³ Parliamentary documents II, 31 936, 820

2.3 Operational safety risks

ICAO has set itself the goal of zero fatalities in commercial flights by 2030. Based on analyses using global safety data from investigations into fatal accidents and (serious) incidents, ICAO has identified five high-risk categories. To increase safety levels, ICAO has developed several safety enhancement initiatives. Sector parties have the primary responsibility for day-to-day operational safety. Thus, not only the government, but also the sector parties have a role in achieving this safety goal. The safety enhancement initiatives related to the high-risk categories are listed in Annex I.

The five high-risk categories are:

A. Controlled Flight Into Terrain (CFIT)

CFIT is an in-flight collision with terrain, water or an obstacle without loss of control of the aircraft. Factors that can contribute to a CFIT accident include disorientation of crew members, deteriorated weather and the way approach procedures are designed and established.

B. Loss of Control in-Flight (LOC-I)

LOC-I refers to the unintentional loss of control of the aircraft in flight. Factors that can contribute to a LOC-I accident are aircraft technical problems, human and environmental factors.

C. Mid-Air Collision (MAC)

MAC is a mid-air collision between aircraft. Factors that may contribute to this type of accident include traffic volume, air traffic controllers' workload, aircraft equipment, and knowledge and skills of flight crew members

D. Runway Excursion (RE)

RE is the aircraft leaving the runway surface at the side or the end during takeoff or landing. Factors that may contribute to this type of accident include an unstable approach and the condition of the runway (e.g., due to rain, ice or snow).

E. Runway Incursion (RI)

RI is any event at an airport where an aircraft, vehicle or person is inappropriately present in an area designated for aircraft landing and takeoff. Factors that can contribute to this type of accident include airport design, the workload of air traffic controllers and flight crew members, and improper use of radio communication.

2.4 The State Safety Analysis (SSA)

The SSA maps aviation safety risks at the national level. The first issue of the SSA was presented to the House of Representatives in 2022. As indicated in Section 1.4, it deals with risks that cannot be managed as a whole and/or not optimally at the level of an individual aviation organization, but that require cooperation between aviation organizations and/or governments. Due to the design of the analysis, both organizational and operational risks have emerged. The SSA distinguishes between the domains of commercial aviation, general aviation, unmanned aviation and aviation in the Caribbean Netherlands. The nature and size of these domains are so different that each domain has different risks. This means that different mitigating measures are needed to control the risks. The safety enhancement initiatives identified for the risk scenarios in the SSA are listed in the table in Annex I.

The SSA risk scenarios per domain are indicated in the table below. The number in parentheses is the code assigned to the associated scenario in the SSA.

Domain	Risk scenario
Commercial Aviation	Bird strikes (COM.01)
	Increase of commercial unmanned aviation activities (COM.62)
	Airspace infringements general aviation and unmanned aviation (COM.14)
	Lack of quality of oversight of organizations (COM.20)
	Workload among current staff due to difficulty in attracting suitably qualified personnel (COM.88)
	Lack of, and maintenance of, just culture (including just culture in ground handling and new staff) (COM.21)
	Unruly passengers (COM.65)
General Aviation	No proper flight preparation (GA.25)
	Complex and fragmented Dutch airspace (GA.12)
	Low-flying engine powered aircraft in the vicinity of glider club winches (GA.32)
	Insufficient separation between aircraft (including consequences of wake turbulence) (GA.03)
	No or limited situation awareness (GA.27)
Unmanned Aviation	Insufficient separation between unmanned aircraft and other airspace users (including other unmanned aircraft) (OL.03)
	Airspace infringement by an unmanned aircraft (OL.15)
	Loss (loss-of-control, fly-away) of unmanned aircraft due to technical failure (OL.25)
	Loss (loss-of-control, fly-away) of unmanned aircraft due to human error (OL.17)
	Operators of unmanned aircraft in the open category are insufficiently aware of regulations and procedural requirements applicable to the operation (OL.10)
	Unmanned aircraft operations in close proximity to general aviation operations (OL.16)
Aviation in the Caribbean Netherlands	Management and maintenance of airports not in order, resulting in non-compliance or threat of non-compliance with ICAO Annex 14 'Aerodromes' (C-NL.01)
	No designated Search And Rescue (SAR) (C-NL.09)
	Limited level of just culture (C-NL.24)
	Insufficient (quality) oversight (C-NL.03)
	Emergency plans not properly implemented and not well coordinated between different services (C-NL.25)
	Effectuation of ICAO guidelines in BES regulations is not complete (C-NL.02)

2.5 Developments and new issues in aviation

In the short and medium term, new issues or topics may emerge within aviation, which also has the international attention. Some of these developments are listed below. These issues may potentially pose risks in the future, for which safety enhancement initiatives must then be developed in a timely manner. These issues are not currently reflected in the table in Annex I, but will be included as input to the risk analysis for the next SSA.

A. Hydrogen fuel	<p>Combustion of hydrogen theoretically produces only water as a residual product. In the pure reaction, there is no emission problem with carbon dioxide, carbon monoxide, nitrogen or particulate matter. However, hydrogen combustion engines are too heavy for use in aviation, and in addition, a hydrogen combustion engine still produces nitrogen oxides. Therefore, aviation is experimenting with converting hydrogen and oxygen to water and electricity in flight. The electricity is used to run an electric motor.</p> <p>Obstacles to hydrogen use in aviation are fire and explosion hazards when using hydrogen and the weight of the tanks/cylinders needed to transport hydrogen.</p>
B. Rapid increase of electric flying	<p>Electric flying brings a new dimension. There is a different way of ‘fuelling’ the aircraft and there are different operational rules and changed emergency procedures. ICAO and the sector are not prepared for a possible very rapid increase in the scale of electric flying.</p>
C. Limited ‘fuel’ reserve when flying electrically	<p>The battery capacity for electric flight with a small aircraft is about an hour. Ten or 15 minutes of that hour are then kept in reserve.</p> <p>In general aviation (GA), keeping a reserve of 45 minutes to an hour is common. Such a reserve gives the ability to divert to another airport if the runway is suddenly blocked (for example, due to an emergency landing or runway excursion of another aircraft). With the limited fuel reserve of an electric aircraft, evasive manoeuvring or holding is not possible.</p> <p>In addition, ‘fuel-management’ is also a problem in practice with regular electric flying: Electric aircraft regularly have to ‘jump ahead’ on landing because they are too low in their fuel.</p>
D. Flights by unmanned aerial vehicles in the certified category	<p>European legislation distinguishes flights by unmanned aerial vehicles into three categories:</p> <ul style="list-style-type: none">• open category: low-risk flights;• specific category: medium-risk flights;• certified category: high-risk flights. <p>At present, mainly flights in the open and specific category take place in the Netherlands. In time, flights in the certified category will be added. Flights in the certified category are so high-risk that they are subject to regulations similar to those for manned aviation. EASA is currently developing regulations to allow flights in the certificated category.</p> <p>The certified category includes flights conducted over crowds, the transportation of persons and the transportation of hazardous materials in which there is a high risk to third parties in the event of an accident.</p> <p>In particular, however, the transportation of people by means of unmanned air taxis does not yet seem relevant in the medium term, because the approach in Europe is to first enable flights in air taxis with pilots. As soon as the safety of these flights is proven, the step to unmanned air taxis can be made.</p>



3 Goals and indicators

3.1 State safety goals

The Netherlands is committed to high compliance with ICAO requirements and has the ambition to continuously be among the best performing countries. The desired outcome is that no accidents occur in Dutch aviation. To achieve this ambition, strategic safety goals have been drawn up in this NASP, based on the international strategic safety goals:

- a. strengthen the role of the minister accountable for the aviation safety and the fulfilment of that accountability;
- b. full implementation of the actions identified in the SSP¹⁴;
- c. manage operational state safety risks;
- d. resolve organizational deficiencies to comply with international frameworks.

3.2 Safety performance

ICAO Annex 19 requires member states to establish an acceptable level of safety performance. These safety performance levels can be achieved by implementing the actions in the SSP and maintaining the SSP. In addition, safety enhancement initiatives have been identified based on building blocks (see also Chapter 2). By establishing and monitoring mitigating measures, indicators and target values for all identified safety enhancement initiatives, it can be demonstrated that the safety enhancement initiatives have been effectively implemented.

The overall safety goal from the SSP is “to continuously improve aviation safety by knowing the highest national risks and managing them to an acceptable level.” The Dutch acceptable level of aviation safety was declared in the Civil Aviation Policy Memorandum 2020-2050 as “no serious injuries or fatalities resulting from aviation activities” occur. The vision expressed by ICAO in the GASP is to achieve and maintain zero fatalities in commercial operations by 2030 and beyond.

The national goals are thus in line with the international safety goals.

3.3 Safety enhancement initiatives

Gathering all safety enhancement initiatives from the International Action Plans, the SSA and the Aviation safety system monitor creates a list of 363 safety enhancement initiatives. Some of these safety enhancement initiatives are not relevant to the NASP because ICAO or EASA is the action holder. Sometimes, there is also duplication of safety enhancement initiatives between the ICAO and EASA action plans (the ‘Regional Aviation Safety Plan’ (EUR-RASP) and the ‘European Plan for Aviation Safety’ (EPAS)). Ultimately, 110 safety enhancement initiatives remain that are relevant to Dutch aviation and for which the minister of IenW is accountable within the aviation system. Some of these safety enhancement initiatives for the Netherlands have already been effectively implemented. However, these safety enhancement initiatives are included in Annex I because the Netherlands is required to monitor their status. The safety enhancement initiatives are aimed at further improving aviation safety.

3.4 Priority safety enhancement initiatives

Given the scope of work required to fulfil the 110 safety enhancement initiatives in Annex I, at the adoption of this NASP, a choice was made to address a number of safety enhancement initiatives as a priority. These priority safety enhancement initiatives are included with explanations in Annex II. In doing so, a biennial cycle is chosen. In line with the biennial monitoring of all safety enhancement initiatives and the overall recalibration of the list in Annex I, the annex of priorities will also be reviewed after two years. Any new priorities are then presented to the House of Representatives.

To make the safety enhancement initiatives manageable, they have been categorized. This categorisation corresponds to the consultation platforms in which IenW consults with relevant stakeholders. This classification is shown in Annex I.

¹⁴ The actions in the SSP are shown in blue boxes in the SSP.

3.5 Indicators and target values per safety enhancement initiative

IenW, where relevant with the sector, develops indicators (or process indicators) that monitor the progress of the safety enhancement initiatives. Target values are set in this regard, giving substance to the 'acceptable' level mentioned above. In determining the indicators and target values for individual safety enhancement initiatives, the Netherlands uses the 'Methodology for determining indicators and target values for national aviation risk mitigating measures' (in Dutch: *Nationale Veiligheids-Indicatoren en Streefwaarden*, NVIS)¹⁵. Mid-2022, this methodology was presented to the House of Representatives.

¹⁵ Parliamentary documents II, 24 804, nr. 193



4 Organizational safety enhancement initiatives

4.1 Responsible parties

In the Netherlands, the design of the aviation system is based on international guidelines. In the coming years, IenW will develop further initiatives to improve and strengthen the aviation system within the Netherlands. It is important to take into account changes in the aviation system and developments in aviation. These changes may result from both national and international developments. The minister of IenW is accountable for the establishment and assurance of the aviation system in terms of aviation policy and the establishment of an adequate oversight system.

Regarding policy, IenW is responsible for implementing the international ICAO and EU standards. Given this, the Directorate General for Civil Aviation and Maritime Affairs (in Dutch: *Directoraat-Generaal Luchtvaart en Maritieme Zaken* (DGLM)), the Human Environment and Transport Inspectorate (in Dutch: *Inspectie Leefomgeving en Transport* (ILT)) and the other responsible organizations charged with carrying out governmental tasks in the aviation system need to make a concerted effort to further strengthen the aviation safety system in the Netherlands.

The Netherlands has the ambition to continuously be among the best performing countries, which translates into full compliance with international standards. This includes organizational standards. Nevertheless, there will always be some deviation from compliance due to the incorporation of new standards into EU regulations and their implementation in the Netherlands.

In the coming period, IenW will continue to work on improving compliance with the establishment of an insightful and efficient compliance system. The goal here is to provide insight into a positive change in compliance in the annual publication of the Aviation safety system monitor.

4.2 Areas for improvement in the aviation system

The annual analysis of the safety system shows that there is room for further strengthening of the aviation system. In particular, this involves improvements in adequately fulfilling the roles and responsibilities of ILT, in carrying out oversight of the sector, in performing analyses of incidents and in solving safety problems in accordance with international requirements.

ILT and DGLM are working together to structurally strengthen both organizations, both to better meet national and international requirements and to play a stronger role in the various societal challenges. A joint programme has been set up for this purpose. An external study of this strengthening is being conducted.

There is continued attention to the functioning of the ILT's oversight of the aviation sector. Points of attention in this regard are the quality of oversight and the development of a methodology to determine what capacity is needed within the ILT to perform the statutory duties. The ILT will perform this capacity analysis on a regular basis in order to demonstrably comply with statutory requirements, to keep pace with changes in the system and to respond to changes in capacity.

In order to ensure and demonstrate that inspectors are qualified to perform the tasks, much attention is paid to the training policy within the ILT. The training policy is established in the ILT's quality management system. This ensures all necessary training for all (technical) personnel in an inspector position within all oversight areas based on the level of knowledge and experience. It forms the basis for the inspectors' individual training programmes and their implementation.

The SSA concluded that the inability to attract sufficiently qualified staff is a risk. The resulting workload is a 'latent factor'. The labour shortage in the technical professions is not limited to attracting sufficiently qualified operational personnel, as needed for flight operations, air traffic control, aircraft maintenance and ground handling. The tight labour market also affects lenW, both ILT and policy (DGLM). This has an effect on the required training path of new employees and the time that must be invested for this, which means that personnel can be deployed less quickly on the required activities. This again requires attention in determining the required capacity.



5 Monitoring implementation of risk mitigating measures

5.1 Procedure

IenW, together with the sector where relevant, develops mitigating measures, indicators and target values for the 110 safety enhancement initiatives in Annex I. This makes clear which actions are needed, who is responsible for them and which goals will be achieved. The next section explains how the mitigating measures are monitored. This involves, on the one hand, checking that the actions included in a mitigating measure are being carried out and, on the other hand, checking whether the associated target values are achieved. Every two years, the progress is reported to the House of Representatives.

platforms regarding the discussion of the remaining safety enhancement initiatives. This will be included in the biennial review of the Annexes.

5.2 Monitoring progress with stakeholders

The progress is monitored within the consultation platforms in which mitigating measures, indicators and target values have been developed. Where no consultation platform is available, the way in which and with whom the progress of the mitigating measures is secured will be examined during the development. IenW is responsible for monitoring all mitigating measures and recording this in a risk management system.

If insufficient progress is being made on safety enhancement initiatives, for example because the target values are not being met, an analysis will be carried out in consultation with the relevant stakeholders to determine the reasons behind this. Next, in consultation it will be considered whether mitigating measures or target values should be adjusted, for example.

With the revision of the overall list of safety enhancement initiatives in Annex I, a new prioritization of the safety enhancement initiatives in Annex II will also be established. This will take into account the input from the consultation

Annexes

Annex I: NASP safety enhancement initiatives 2023-2024

This Annex is established for two years. New international action plans as well as the new SSA and Aviation safety system monitor may generate new safety enhancement initiatives. These new initiatives will be addressed during the term of the Annex, but will be published at the biennial review.

Table 1 summarizes all 110 safety enhancement initiatives, divided into categories, which align with the various consultation platforms.

Table I: Safety enhancement initiatives by category.

Category	Number of actions
Laws and regulations	7
Governance and policy	8
Aspects unique to the BES islands	7
Oversight and enforcement	8
Safety system and safety management system	12
Human aspects and staff competence	10
Accident investigation	1
New technologies and concepts	1
Aviation occurrences	1
Commercial aviation operations	13
Helicopters	2
General aviation	18
Unmanned aviation	9
Maintenance	1
Air Traffic Control	1
Airports	4
Safety Promotion	2
High-risk categories of aviation operations	5
Total	110

Table 2 below provides an integral overview of all safety enhancement initiatives. It is emphasized that these are aimed to further improve aviation safety. Many of these safety enhancement initiatives have already been initiated or partially or almost completely implemented. The Netherlands is required to monitor their implementation and they have therefore been included in the table below for traceability purposes.

The safety enhancement initiatives have been ordered so that the origin of the safety enhancement initiative is clear. Here, safety enhancement initiatives from the GASP 2020-2022 are included first, then those from the EUR-RASP 2022-2024, then from the EPAS 2022-2026, the SSA (2022) and finally the Aviation safety system monitor (2022). The SSA provides the main risks (listed in italics) and the corresponding possible mitigating measures (listed here as safety enhancement initiatives) for the four domains considered in the SSA. When executing the NASP, it will be considered whether these safety enhancement initiatives are the most efficient ones. Within the grouping by origin, the safety enhancement initiatives are further classified according to the categorization of Table 1.

Column 1 assigns a number to the safety enhancement initiative. It is emphasized that the numbers in column 1 are not indicative of a prioritization of the safety enhancement initiatives. Instead, they show a logical ordering. Column 2 describes the safety enhancement initiative. (For clarification purposes, in the Dutch version of the NASP, SEI from the GASP, EUR-RASP and EPAS have been worded slightly differently; the original SEI has been added in column 2 to clarify which international SEI is referred to.)

Finally, column 3 gives an indication of the status of progress on the safety enhancement initiative. The reference date for this progress is the publication date of the NASP.

Progress is indicated with the colour green, yellow, orange or red:

- **Green** indicates that the implementation of the safety enhancement initiative is on track or already (or almost) completed.
- **Yellow** indicates that the issue is being monitored with (continued) extra attention.
- **Orange** indicates a warning that the timely realization of the safety enhancement initiative may be in question.
- **Red** means that insufficient progress has been made in realizing the safety enhancement initiative.

As indicated, aviation is one of the safest forms of transportation. Safety enhancement initiatives are intended to further improve safety. Therefore, failure to implement the safety enhancement initiative (orange and red) (on time) does not acutely mean a risk to aviation safety.

Table 2: Integrated overview of all safety enhancement initiatives (SEI)

Nr.	Safety enhancement initiative	Progress
GASP 2020-2022		
Safety management system category		
1	Strategic collaboration to jointly improve aviation safety (SEI-16: Strategic collaboration with key aviation stakeholders to complete SSP implementation)	■
2	Continuation of actions stemming from the SSP (SEI-13: Start of SSP implementation at the national level)	■
3	Strategic allocation of resources for SSP implementation (SEI-14: Strategic allocation of resources to start SSP implementation)	■
4	Strategic collaboration with key aviation stakeholders for SSP implementation (SEI-15: Strategic collaboration with key aviation stakeholders to start SSP implementation)	■
5	Advancement of a safety risk management system at the national level (SEI-21: Advancement of safety risk management at the national level)	■
6	Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner (SEI-06, SEI-11)	■
Human factors and competent personnel category		
7	Qualified technical personnel to support effective safety oversight (SEI-05)	■
Oversight and enforcement category		
8	Continued provision of the primary source of safety information to ICAO by updating all relevant documents and records as progress is made (SEI-12)	■
9	Provision of the primary source of safety information to ICAO by completing, submitting and updating all relevant documents and records (SEI-07)	■
Laws and regulations category		
10	Consistent implementation of ICAO SARPs (Standards and Recommended Practices) at the national level (SEI-01, SEI-08)	■
11	Development of a comprehensive regulatory oversight framework (SEI-02)	■
12	Continued implementation of and compliance with ICAO SARPs at the national level (SEI-09)	■
Governance and policy category		
13	Strategic allocation of resources to enable effective safety oversight (SEI-04, SEI-10)	■
14	Establishment of safety risk management at the national level (SEI-17, SEI-18)	■
15	Secure funding for making risk models available to the sector (SEI-19: Acquisition of resources to increase the proactive use of risk modelling capabilities)	■

16	Strategic collaboration with key aviation stakeholders to promote the use of risk models (SEI-20: Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities)	■
17	Establishment of an independent accident and incident investigation authority, consistent with ICAO Annex 13 (SEI-13)	■
High operational aviation safety risks category		
18	Mitigate contributing factors to CFIT (Controlled Flight Into Terrain) accidents and incidents	■
19	Mitigate contributing factors to LOC-I (Loss of Control in-flight) accidents and incidents	■
20	Mitigate contributing factors to MAC (Mid-Air Collision) accidents and incidents	■
21	Mitigate contributing factors to RE (Runway Excursion) accidents and incidents	■
22	Mitigate contributing factors to RI (Runway Incursion) accidents and incidents	■

EUR RASP 2022-2024		
Safety management system category		
23	Implement requirements and guidance material on occurrence reporting	■
Human factors and competent personnel category		
24	Implement Human Factors (HF) competency framework for regulatory staff and enhance HF training for all categories of regulatory staff	■
25	ICAO requirements for proficiency in languages used for radiotelephony communications language proficiency (ILPR) - rulemaking	■
26	ICAO requirements for proficiency in languages used for radiotelephony communications language proficiency (ILPR) - safety promotion (EUR.SPT.0022)	■
Oversight and enforcement category		
27	Regulation and Oversight of Search and Rescue (SAR) services	■
Commercial aviation category		
28	Safety Promotion on Disruptive Passengers (EUR.SPT.0045)	■
29	Flight data analysis (FDA) precursors of main operational safety risks (EUR.SPT.0043)	■
General Aviation category		
30	Promoting safety by improving technology (EUR.SPT.0060)	■
31	Promote the new provisions on fuel/energy planning and management (EUR.SPT.0040)	■

Maintenance and sustainability category

- 32 Quality assurance of check flight, in which performed maintenance is assessed by the pilot (Maintenance check flights (MCFs)) ■

Air traffic management category

- 33 Technical requirements and operating procedures for airspace design, including flight procedure design ■

Aerodromes category

- 34 Establish measures against unmanned aviation and incident management with unmanned aviation at aerodromes (EUR.SPT.0095: Counter-UAS measures and UAS incident management at aerodromes) ■

Laws and regulations category

- 35 Operational rules for sailplanes and balloons (EUR.SPT.0058) ■

Safety promotion category

- 36 Promote information on how to maintain control of the aircraft (EUR.SPT.0063: Campaign on staying in control) ■

New technology and concepts category

- 37 Ensuring safe use of airships (zeppelins). (Operations with airships) ■

EPAS 2022-2026

Safety management system category

- 38 Member States to give priority to the work on SSPs (MST.0001) ■
- 39 Promote the use and implementation of safety management systems in companies (MST.0002: Promotion of SMS) ■
- 40 Assess safety management systems at companies (MST.0026: SMS assessment) ■
- 41 Establish and maintain the aviation state safety programme (SSP) (MST.0028: Member States to establish and maintain a State Plan for Aviation Safety) ■

Human factors and competent personnel category

- 42 Oversight capabilities/focus area: flight time specification schemes (MST.0034) ■
- 43 Promote assignment of clear roles and oversight of human behaviour (acts and omissions) (MST.0037: Foster a common understanding and oversight of human factors) ■
- 44 Language proficiency requirements — share best practices, to identify areas for improvement for the uniform and harmonised language proficiency requirements implementation (MST.0033) ■
- 45 The inclusion of learning objectives in the area of meteorology in the syllabus for general aviation pilots (MST.0036: PPL/LAPL learning objectives in the Meteorological Information part of the PPL/LAPL Syllabus) ■

- 46 Ensure process for international sharing of the outcome of maintenance technicians oversight when fraud is identified (part 147) (MST.0035: Oversight capabilities/focus area: fraud cases in Part-147) ■

Aviation occurrences category

- 47 Implement uniform method of reporting of aviation occurrences (ABL) (MST.0040: Safety and security reporting coordination mechanism) ■

Commercial aviation category

- 48 Member States should maintain a regular dialogue with their national aircraft operators on flight data monitoring programmes (MST.0003) ■
- 49 Better understanding of operators' governance structure (MST.0019) ■
- 50 Establish laws and regulations and the system of reporting to EASA on incidents between military and civil air traffic over international waters (MST.0024: 'Due regard' for the safety of civil traffic over high seas) ■
- 51 Implementation of solutions through airspace modifications (TMA), aimed at reducing the risk of mid-air collisions (MST.0030: Implementation of SESAR solutions aiming to reduce the risk of mid-air collisions en route and in terminal manoeuvring areas) ■

Helicopters category

- 52 Organizing safety events for helicopter operators and users (MST.0015: Helicopter safety events) ■
- 53 Implementation of solutions by helicopter companies in standards and processes, aimed at safe instrument-based flying with helicopters (MST.0031: Implementation of SESAR solutions aiming to facilitate safe instrument flight rules operations) ■

General Aviation category

- 54 Improve the quality of safety information for pilots and also its dissemination (MST.0025: Improvement in the dissemination of safety messages) ■
- 55 Promotion of safety culture in GA (MST.0027) ■
- 56 Assess airspace for complexity and local bottlenecks (MST.0038: Airspace complexity and traffic congestion) ■

Aerodromes category

- 57 Implementation of solutions to improve infrastructure at airports and the layout of nearby airspace (MST.0029: Implementation of SESAR runway safety solutions) ■

Safety promotion category

- 58 Promote information on how to safely scale up air traffic (after COVID-19) (MST.0039: Safety promotion to support ramp-up / safe return to operations) ■

SSA 2022 measures

Commercial aviation category

- 59 *Bird strikes*: Inventory and evaluation of measures concerning bird strikes (SSA: COM.01.B.1). ■
- 60 *Lack of quality of oversight of organizations*: Improve ILT capacity and resources - identify needs and prepare improvement plan (SSA: COM.20.B.1). ■
- 61 *Workload among current staff due to difficulty in attracting suitably qualified personnel*: Attract staff from other EU member states (SSA: COM.88.B.1). ■
- 62 *Workload among current staff due to difficulty in attracting suitably qualified personnel*: Encourage technical training (SSA: COM.88.B.2). ■
- 63 *Lack of, and maintenance of, just culture (including just culture in ground handling and new staff)*: Ensure Just Culture (including in ground handling and new staff) by introducing safety management system for ground handling companies (SSA: COM.21.B.1). ■
- 64 *Unruly passengers*: Improve passenger flow at airports (SSA: COM.65.B.1). ■
- 65 *Unruly passengers*: Educate passengers about the consequences of undesirable behaviour (SSA: COM.65.B.2). ■

General Aviation category

- 66 *No proper flight preparation*: Conduct information campaign on the importance of proper flight preparation (SSA: GA.25.B.1). ■
- 67 *No proper flight preparation*: Encourage application of the four-eye principle in flight preparation (SSA: GA.25.B.2). ■
- 68 *No proper flight preparation*: Improve provision of information used in flight preparation (SSA: GA.25.B.3). ■
- 69 *Complex and fragmented Dutch airspace*: Review airspace (GA.12.B.1). ■
- 70 *Complex and fragmented Dutch airspace*: Provide information about Dutch airspace to visiting pilots (SSA: GA.12.B.2). ■
- 71 *Low-flying engine powered aircraft in the vicinity of the glider club winches*: Ensure provision of information (static and dynamic) about air sports activities to all airspace users (SSA: GA.32.B.1, B2 and B3). ■
- 72 *Low-flying engine powered aircraft in the vicinity of the glider club winches*: Provide information on the use of the VHF radio (SSA: GA.32.B.4). ■
- 73 *Low-flying engine powered aircraft in the vicinity of the glider club winches*: Provide information on risks of flying near air sports areas (SSA: GA.32.B.5). ■
- 74 *Insufficient separation between aircraft (including consequences of wake turbulence)*: Introduce a uniform warning system on board aircraft (SSA: GA.03.B.1). ■
- 75 *Insufficient separation between aircraft (including consequences of wake turbulence)*: Provision of operational support before and during flight by air traffic control (SSA: GA.03.B.2). ■

- 76 *Insufficient separation between aircraft (including consequences of wake turbulence)*: Provide information on separation (required distance between aircraft) (SSA: GA.03.B.3). ■
- 77 *No or limited situation awareness*: Provide information on the importance of good situation awareness (SSA: GA.27.B.1). ■
- 78 *No or limited situation awareness*: Improve exchange of good practices and elements of good airmanship (SSA: GA.27.B.2). ■

Unmanned aviation category

- 79 *Insufficient separation between unmanned aircraft and other airspace users (including other unmanned aircraft) and Unmanned aircraft operations in close proximity of general aviation operations*: Active participation in the European U-space programme (concerning temporary claim by unmanned aircraft on airspace in flight) (SSA: OL.03.B.1 + OL.16). ■
- 80 *Insufficient separation between unmanned aircraft and other airspace users (including other unmanned aircraft) and Unmanned aircraft operations in close proximity of general aviation operations*: Installation of equipment to display position information to other airspace users (SSA: OL.03.B.2 + OL.16). ■
- 81 *Airspace infringement by an unmanned aircraft*: Detecting airspace infringements using radar systems (SSA: OL.15.B.1). ■
- 82 *Airspace infringement by an unmanned aircraft*: Publish zoning data in a standardized manner (SSA: OL.15.B.2). ■
- 83 *Operators of unmanned aircraft in the open category are insufficiently aware of regulations and procedural requirements applicable to the operation*: Information campaign on drone regulations (SSA: OL.10.B.1). ■
- 84 *Loss (loss-of-control, fly-away) of unmanned aircraft due to technical failure*: Collecting occurrence information (SSA: OL.17/25.B.1). ■
- 85 *Loss (loss-of-control, fly-away) of unmanned aircraft due to technical failure*: Implementing market oversight of unmanned aircraft (SSA: OL.25). ■
- 86 *Loss (loss-of-control, fly-away) of unmanned aircraft due to human error*: Encourage practical training (SSA: OL.17.B.1). ■

Aspects unique for BES-islands category

- 87 *Management and maintenance of airports not in order*: Focusing on critical elements in airport safety management system (SSA: C-NL.01.B.1). ■
- 88 *No designated Search And Rescue (SAR)*: Facilitate already existing plans for SAR (SSA: C-NL.09.B.1). ■
- 89 *Limited level of just culture*: Establish occurrence reporting scheme (SSA: C-NL.24.B.1). ■
- 90 *Limited level of just culture*: Provide information campaign on the usefulness of occurrence reporting (SSA: C-NL.24.B.2). ■
- 91 *Insufficient (quality) oversight*: Make agreements with CCAA about oversight of air traffic control Curaçao (SSA: C-NL.03.B.1). ■
- 92 *Emergency plans not properly implemented and not well coordinated between different services*: Finalize procedures for investigation by the Dutch Safety Board (OVV) (SSA: C-NL.25.B.1). ■

- 93 Effect of ICAO guidelines in BES regulations is not complete: Ensure sufficient capacity and priority to draw up regulations for the BES islands (SSA: C-NL.02.B.1). ■

Aviation safety system monitor

Safety management system category

- 94 Identify top-five risks for flight and ground operations. ■

Human factors and competent personnel category

- 95 Improve implementation status of admission and oversight (including description of procedures regarding the training and qualifications of ILT technical staff). ■

- 96 Taking into account the size and complexity of the Dutch aviation sector: determine how many FTEs are needed within IenW. ■

Accident investigation category

- 97 Describe procedures for accident investigation. ■

Oversight and enforcement category

- 98 Lay out the functions and authority of IenW, especially in describing the roles and responsibilities of ILT's oversight and enforcement. ■

- 99 Implementing the measures from the Schiphol Safety Improvement Roadmap on schedule. ■

- 100 Following up on agreements and covenants made. ■

- 101 Full demonstration of the implementation of the international standards and recommendations. ■

- 102 Scale up the number of inspections to the number in accordance with a regular year (prior to COVID-19). ■

Aerodromes category

- 103 Fully implement measures in the Schiphol Safety Improvement Roadmap. ■

- 104 Improve implementation of international frameworks related to solving safety problems, in particular for the airport domain. ■

Laws and regulations category

- 105 Implementing international frameworks related to solving safety problems. ■

- 106 Contributing to the creation of international frameworks. ■

- 107 Implementing international legislative and regulatory frameworks. ■

Governance and policy category

- 108 Develop a methodology for determining the number of FTEs needed within the ILT. ■

- 109 Conduct external evaluation of the Integral Safety Management System (ISMS). ■

- 110 Complete external evaluation of the ABL. ■

Annex II: Priority safety enhancement initiatives 2023-2024

Implementation of all safety enhancement initiatives requires capacity and resources. In addition, some require sector cooperation. This requires prioritization of safety enhancement initiatives. This Annex identifies priority safety enhancement initiatives for 2023-2024. These are safety enhancement initiatives that require explicit attention and priority action over the next two years. This is without prejudice to working on all safety enhancement initiatives as described in Annex I. In line with the biennial monitoring of all safety enhancement initiatives and the overall recalibration of the list in Annex I, this Annex of priorities will also be reviewed after two years. The new priorities will then be sent to the House of Representatives.

Starting points for prioritizing these safety enhancement initiatives include:

- that by taking them up, a contribution will be made to putting in order the basic requirements for a good organization, such as laws and regulations and oversight;
- that priority safety enhancement initiatives have been selected from all domains in the SSA (commercial aviation; general aviation; unmanned aviation and aviation in the Caribbean Netherlands);
- that priority action on these safety enhancement initiatives has a positive impact on other safety enhancement initiatives;
- that some of the priority safety enhancement initiatives are already receiving society's attention;
- that connections are made with ongoing dossiers, which are receiving extra attention.

The table below schematically shows the priority safety enhancement initiatives. No sequential prioritization has been applied. Further information on these priority safety enhancement initiatives is given below the table. This is a thematic approach, as several Annex I safety enhancement initiatives fall under these seven.

Table 1: priority safety enhancement initiatives

1.	Reduce bird strikes
2.	Strengthen quality of oversight
3.	Reduce number of incidents with unruly passengers
4.	Improve flight preparation by general aviation
5.	Improve knowledge of rules and procedures by unmanned aviation
6.	Reduce airspace infringements by unmanned aviation
7.	Putting regulations in order in the Caribbean Netherlands

Explanation of prioritized safety enhancement initiatives

1. Reduce bird strikes

Bird strikes pose a significant risk to aviation. They can have fatal consequences for commercial aviation, for helicopters, and for general and unmanned aviation. The SSA puts bird strike risk at number one. Reducing the risk of bird strikes has had attention for decades and many mitigating measures have already been taken at and around Dutch airports. The mitigating measures are on the one hand preventive (vegetation/water management) and on the other hand repressive (chase/move/kill). As yet, the number of strikes is not decreasing.¹⁶

To further reduce the risk, the ecological carrying capacity (food, breeding and roosting areas) of an airport and its surroundings must first be understood. On this basis, a pallet of preventive and repressive measures can be determined for each airport to reduce the risk of bird strikes. This requires optimal cooperation between the various parties. Together, they will make an inventory to strengthen the current measures and to identify measures that have not been tried before. It is important to include in this analysis developments and experiences from abroad.

2. Strengthen quality of oversight

In 2017, the OVV concluded¹⁷ that the ILT's subject matter expertise and capacity were insufficient for effective oversight of air traffic safety at and around Schiphol Airport. This report prompted the Safe and Sustainable Schiphol programme under which various improvements were initiated. Aviation concerns international obligations, which cannot be postponed. The SSA also mentions the OVV

report and identifies 'lack of quality of oversight of organizations' as a risk for commercial aviation. The challenges regarding the quality of oversight can be broken down into a number of issues that have ongoing attention:

- a. number of inspectors;
- b. competencies of inspectors;
- c. strengthening aviation authority¹⁸;
- d. risk-based oversight.

Re a)

The number of inspectors is partly determined by the outflow, prompted by the current labour market in which shortages and aging are prevalent. At the time of the publication of the OVV report there was an outflow of ILT staff; since then the ILT has hired many new people. Partly because of the high quality requirements placed on inspectors, not all vacancies have yet been filled. Recruitment of personnel requires continuous attention.

Re b)

The requirements placed on inspectors are high and specific. These requirements are also laid down in European regulations. The required combination of level of education, knowledge, skills and experience in different areas is scarce and in demand on the labour market. New entrants always require additional training to reach the required level of qualification. To maintain their qualifications, inspectors need regular retraining. Developments in aviation require further training to maintain competencies in individual areas/domains/subjects of oversight.

Re c)

Since 2002, the establishment of the aviation authority has effectively separated policy from the ILT. Within the ILT, oversight is separated from licensing. Different modalities are invested within those departments. The method of oversight per modality may differ. In 2022, a programme was started to set up and strengthen the aviation authority.

Re d)

The ILT has opted for risk-based oversight. In essence, oversight takes place primarily where the risk is highest. Aviation is a relatively safe form of transportation, but maintaining that level requires constant attention. There is a paradox that if few incidents occur, the risk increases because lessons are not learned from incidents and accidents. Risk assessment is complex, so supervised parties do not always recognize their own risks. The ILT is actively pursuing risk-based oversight of the aviation sector by prioritizing within the oversight programme based on the risk profiles of individual aviation organizations.

¹⁶ <https://dashboards.ilt.rijkscloud.nl/luchtvaartvoorvallen>

¹⁷ OVV report 'Veiligheid vliegverkeer Schiphol' ['Schiphol Airport air traffic safety'], published April 6, 2017, Dutch Safety Board

¹⁸ In this document, Aviation authority refers to IenW, where specific tasks are vested in DGLM (policy) and the ILT.

The ILT is in the process of addressing the above issues. For the long term, the outcome of the study on the design of the aviation authority will be leading.

3. Reduce number of incidents with unruly passengers

The term unruly (misbehaving) passengers is used for passengers who do not obey the rules on board an aircraft. For example, by smoking, being under the influence of drugs or alcohol, or exhibiting aggressive behaviour towards staff, these passengers disrupt order and safety on the aircraft. Unruly passengers can pose a threat to flight safety. For this reason, the minister of IenW is involved in this matter.

Usually this threat is indirect, such as by distracting the (cabin) crew so that safety tasks can no longer be performed properly. However, the consequences can also be more serious. For example, smoking in the lavatory can create a fire hazard. Aggressive behaviour can also get out of hand, causing injury to fellow passengers and/or crew members. Unruly passengers are criminally prosecuted for violations and misdemeanours, hence the Public Prosecutor's Office and the Royal Netherlands Military Police are involved.

The number of reported incidents involving unruly passengers shows an increase from previous years (partly due to corona). This only concerns the number of reported incidents on aircraft. Passengers already misbehaving at the airport are not registered. However, in cases where these passengers cannot take their seats on the plane, the solution on the ground does contribute to safety in the air.

In 2021, in an international sense, the Netherlands expanded its legal power to take action against unruly passengers by ratifying the ICAO Montreal Protocol. With this, more types of conduct were made punishable. In addition, the expansion includes being able to act as "State landing" (country in which the aircraft lands and therefore has jurisdiction) and as "State of the operator" (country in which the airline is based). In addition, airlines can create blacklists, which include passengers who are no longer allowed to fly with that airline as a result of their behaviour on board. KLM can now share its blacklist with subsidiary Transavia. The Dutch airlines are assessing which next steps are necessary so that the blacklists can be shared with the other Dutch airlines. A permit from the Personal Data Authority will be required. IenW will have a facilitating role in this.

The implementation of the international agreements is essential for the effective implementation of the mitigating measure.

4. Improve flight preparation by general aviation

Flight preparation is part of a pilot's basic training. However, based on the number of reports, it is observed that in practice flight preparation is not carried out with sufficient care. This may pose a risk to aviation.

Insufficient flight preparation can lead to airspace infringements, such as flying in an area without permission, as well as to fatal accidents due to pilots ending up in bad weather. Furthermore, flying in the Netherlands is normally allowed at an altitude of 150 meters. For tall buildings and wind farms with blade heights above 150 meters, proper flight preparation is important. The operational risk is that accidents can occur due to collisions with obstacles.

In 2022, in consultation with the sector, it was agreed to improve flight preparation in general aviation. Here, the umbrella organizations for general aviation, including AOPA (Aircraft Owners and Pilots Association), KNVVL (*Koninklijke Nederlandse Vereniging voor Luchtvaart* [Royal Netherlands Aeronautical Association]), NACA (Netherlands Association of Commercial Aviation) and NVL (*Nederlandse Vereniging Luchthavens* [Netherlands Association of Airports]), will identify and implement steps to be determined (such as the four-eye principle, through which the pilot always talks through what is being done with the aircraft that day with someone else). In total, this involves about 10 steps or more. The primary mitigating measure is to demonstrably establish processes to tighten flight preparation, as well as implement them.

5. Improve knowledge of rules and procedures by unmanned aviation

The unmanned aviation sector is an innovative and internationally oriented industry. In recent years, the sector has become a very mature player in the aviation sector and has firmly established itself in our society. The possibilities with unmanned aerial vehicles (drones) are being increasingly exploited and future innovations are taking shape with varying qualities and capabilities. As a result, the use of drones is increasing significantly, both recreationally and professionally.

Among other things, observations show that drones are flying in parts of the airspace in which this is not automatically permitted. Permitted use is laid down in European and national regulations to ensure the safe use of drones and to protect third parties. The observed violations may indicate insufficient knowledge of the rules. Therefore, action is taken to improve the existence and knowledge of the rules regarding the use of drones.

6. Reduce airspace infringements by unmanned aviation

The presence of drones is frequently detected (for example, by defence radar or pilot reports) in the airspace around airports.

The use of drones in the vicinity of airports is currently not legally allowed without permission from ILT and Air Traffic Control the Netherlands (LVNL). The risk of a collision between a drone and another airspace user is especially present around the approach routes to airports. Nevertheless, in certain locations around airports, it is safe to fly drones under certain conditions. However, current regulations do not provide that option.

To reduce the number of airspace infringements, zones are mapped where drones can be flown safely (under certain conditions) as well as zones where the use of drones is only possible with permission from ILT and LVNL. The expectation is that this will create more space for drones to fly safely, thereby reducing the number of airspace infringements. An additional communication campaign can further emphasize that flying in zones in which it is not allowed is unsafe for other airspace users.

Specifying more precisely the zones in which drone flying is prohibited for safety reasons may also have a positive effect on enforceability.

7. Putting regulations in order in the Caribbean Netherlands

In the Caribbean Netherlands, depending on the topic, aviation regulations are outdated or non-existent. This does not meet international requirements. In addition, oversight without clear rules is not possible. In essence, safety is therefore not fully guaranteed.

This calls for targeted catch-up and modernization in several areas. The development and establishment of regulations forms the basis for this. But also the implementation of effective oversight in the Caribbean based on these regulations requires further elaboration and execution.

Specific attention is given to safety regulations in relation to:

- air traffic services;
- professional accident investigation;
- design of airports;
- design of flight routes;
- Search and Rescue.

Due to local conditions in the Caribbean Netherlands, these focal points are different from those in the European Netherlands and require special interpretation.

Abbreviations

ABL	Analysebureau Luchtvaartvoorvallen [Aviation Occurrence Analysis Bureau]	SSA	State Safety Analysis [Dutch: Nationale Veiligheidsanalyse (NVA)]
AOPA	Aircraft Owners and Pilots Association	SSP	State Safety Programme [Dutch: Nederlands luchtvaartveiligheidsprogramma (NLVP)]
BES	Bonaire, St. Eustatius and Saba	TMA	Terminal Manoeuvring Area
CCAA	Curaçao Civil Aviation Authority	UAS	Unmanned Aircraft System
CFIT	Controlled Flight Into Terrain	VHF	Very High Frequency
DGLM	Directoraat-Generaal Luchtvaart en Maritieme Zaken [Directorate-General for Civil Aviation and Maritime Affairs]		
EASA	European Union Aviation Safety Agency		
EPAS	European Plan for Aviation Safety		
FDA	Flight Data Analysis		
FTE	Fulltime-Equivalent		
GA	General Aviation		
GASP	Global Aviation Safety Plan		
HF	Human Factors		
ICAO	International Civil Aviation Organization		
IenW	Ministerie van Infrastructuur en Waterstaat [Ministry of Infrastructure and Water Management]		
ILT	Inspectie Leefomgeving en Transport [Human Environment and Transport Inspectorate]		
ISMS	Integral Safety Management System		
KNvVL	Koninklijke Nederlandse Vereniging voor Luchtvaart [Royal Netherlands Aeronautical Association]		
LOC-I	Loss of Control In-Flight		
LVNL	Luchtverkeersleiding Nederland [Air Traffic Control the Netherlands]		
MAC	Mid-Air Collision		
MCF	Maintenance Check Flight		
NACA	Netherlands Association of Commercial Aviation		
NASP	National Aviation Safety Plan (also named SSP Action Plan, National Plan for Aviation Safety (NPAS), or State Plan for Aviation Safety (SPAS)) [Dutch: Nederlands Actieplan voor Luchtvaartveiligheid (NALV)]		
NVIS	Nationale Veiligheids-Indicatoren en Streefwaarden [National safety indicators and target values]		
NVL	Nederlandse Vereniging Luchthavens [Netherlands Association of Airports]		
OVV	Onderzoeksraad voor de Veiligheid [Dutch Safety Board]		
PPL/LAPL	Private Pilot Licence/ Light Aircraft Pilot License		
RASP	Regional Aviation Safety Plan (ICAO)		
RE	Runway Excursion		
RI	Runway Incursion		
SAR	Search and Rescue		
SARPs	Standards and Recommended Practices (ICAO)		
SEI	Safety Enhancement Initiative		
SESAR	Single European Sky Air traffic management Research		

Glossary

Aviation Organization	Organization that may conduct aviation activities upon admission.
Commercial aviation	A flight operation to carry passengers, cargo or mail for compensation or other reward.
General aviation	Refers to aviation activities outside of commercial scheduled flights, charters, military and unmanned aviation.
Indicator	A parameter to monitor or assess safety performance.
Oversight	The ongoing verification, by or on behalf of ILT, of continued compliance with the laws and regulations on the basis of which a license was issued or a statement was submitted.
Permit	A certificate, approval, license, permit, attestation or other document issued as a result of an admission recognizing compliance with applicable requirements.
Risk	The probability of occurrence multiplied by the effect of the consequences determines the risk (risk = probability x effect).
Risk management	Taking measures to mitigate risk to an acceptable level.
Safety	The extent to which risks have been mitigated by measures to an acceptable level.
Safety management or mitigation	The process of identifying safety risks and controlling them with measures to an acceptable level.
Safety management system	A safety management system aims to use a systematic process to identify risks and to control them to an acceptable level of safety. It describes policies and objectives, safety risk management, safety assurance and safety promotion.
Safety performance	The level of safety that an aviation organization or country achieves based on established indicators and target values.
Safety promotion	The total of activities aimed at raising awareness, transferring knowledge and behaviour change to promote safety.
Target values	A planned or intended goal for the performance of a safety indicator over a specified period of time that contributes to the state safety goal.
Unmanned aviation	Any aircraft that performs flights or is designed to perform flights autonomously or remotely without a pilot on board.

This is a publication for the

**Ministry of Infrastructure
and Water Management**

Directorat-General Aviation and Maritime Affairs

Postbus 20901 | 2500 EX The Hague
Ministry of Infrastructure and
Water Management | [Government.nl](https://www.government.nl)

Reference: IenW/BSK-2023/153443

March 2023