DUTCH
SAFETY BOARD

Quarterly Aviation Report

July - September 2024

Q3 2024

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Types of completed investigations:

Statement of facts
A factual description of the occurrence.

Summary
A summary of an investigation report that has already been published on the Dutch Safety Board's website.

Report
A factual description of the occurrence with an analysis, conclusion and potential lessons learned.

Discontinued investigation
An investigation that has been halted.

Investigations

Within the Aviation sector, the Dutch Safety Board is required by law to investigate occurrences involving aircraft on or above Dutch territory. In addition, the Board has a statutory duty to investigate occurrences involving Dutch aircraft over open sea. Its investigations are conducted in accordance with the Safety Board Kingdom Act and Regulation (EU) no. 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation. If a description of the events is sufficient to learn lessons, the Board does not conduct any further investigation.

The Board's activities are mainly aimed at preventing occurrences in the future or limiting their consequences. If any structural safety shortcomings are revealed, the Board may formulate recommendations. The Board's investigations explicitly exclude any culpability or liability aspects.

Your photos can help make the Netherlands safer

Last summer, a single-engine aircraft crashed on the A58 motorway near the Dutch town of Sint Willebrord. Tragically, the pilot did not survive. The Dutch Safety Board commenced an investigation immediately, on the same day as the accident, 31 July 2024.

It is a good thing that our researchers investigate all the different aviation occurrences that take place. It is easy to comment afterwards, but the key question is of course 'what really happened?' Thoroughly investigating the underlying cause of an occurrence contributes to aviation safety.

In the case of the aircraft crash on the A58, our investigation is still ongoing. It would be very valuable to have images of the accident itself or of the moments immediately preceding it. Perhaps you were driving on the A58 that Wednesday afternoon and your dashcam recorded footage? Or maybe you took a photo with your phone? If so, the Dutch Safety Board would like to hear from you.

This call for images also applies more broadly, namely to our other investigations as well. After all, 18 million Dutch people with a camera on their mobile phone can sometimes see more than 80 members of the Dutch Safety Board. Photos can help establish the facts and circumstances of an occurrence. So, if you think your photos may help our investigations, please share them with us. That way, we can all help make the Netherlands safer.

Chris van Dam
Chairman of the Dutch Safety Board

01 Occurrences into which an investigation has been launched

Hard landing after engine failure exercise, Sportavia-Putzer GmbH & Co. KG SF 25 B

Hilversum Airfield, 11 July 2024

In the course of a training flight, the motor glider stalled immediately after take-off during an engine failure exercise. The aircraft then made a hard landing and was heavily damaged. The occupants were unharmed.

Classification: Accident
Reference: 2024124

▼ *The damaged SF 25 B. (Source: student)*

Runway incursion, Robinson R44

Hilversum Airfield, 15 July 2024

During a touch-and-go by a DV 20 aircraft, an R44 helicopter had started its take-off run halfway down the runway. The pilot of the DV 20 made an evasive manoeuvre at low altitude to avoid a collision with the R44.

Classification: Serious incident
Reference: 2024143

Damage during off-airfield landing, Alexander Schleicher ASW 28 B

Beemte-Broekland, 15 July 2024

During an off-airfield landing, the glider's left wing struck a post, after which the aircraft made a ground loop and was badly damaged. The pilot was unharmed.

Classification: Accident
Reference: 2024129

◀ *Damage to left wing. (Photograph: gliding club)*

Injury by burst of flame, Balony Kubicek spol. s r.o. BB100Z

Woerden, 17 July 2024

The burner was being tested during pre-flight preparations for a hot-air balloon flight. A burst of flame caused burns to the pilot's face, for which the pilot received medical treatment.

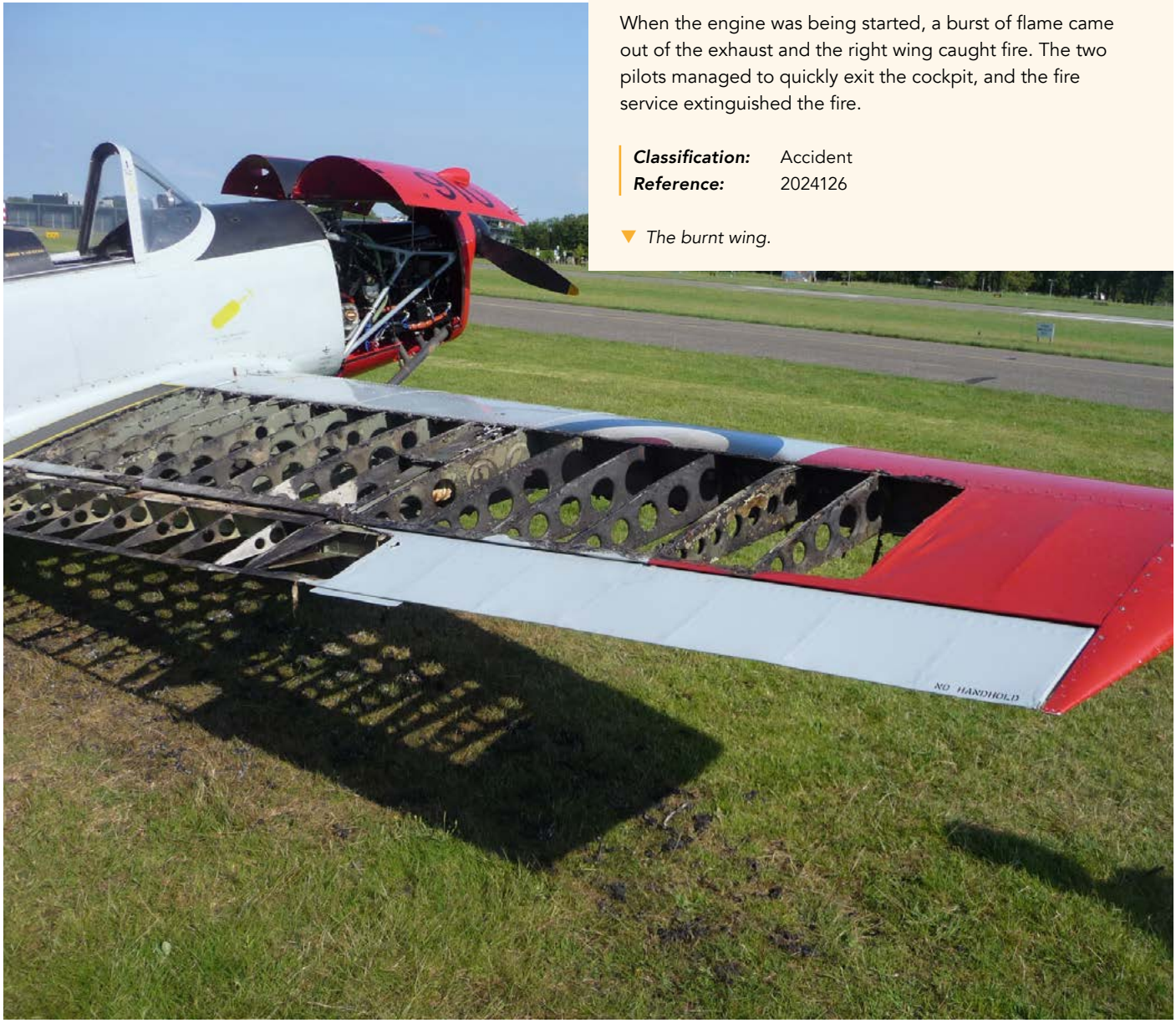
Classification: Accident
Reference: 2024131

Fire during engine start-up, De Havilland Canada DHC-1

Breda International Airport, 17 July 2024

When the engine was being started, a burst of flame came out of the exhaust and the right wing caught fire. The two pilots managed to quickly exit the cockpit, and the fire service extinguished the fire.

Classification: Accident
Reference: 2024126



▼ *The burnt wing.*

Crashed in turn to final, Van's Aircraft, Inc. RV-12

Hilversum Airfield, 17 July 2024

During the flight, the aircraft experienced engine trouble, prompting the pilot to land at Hilversum Airfield (EHHV). Because the aircraft was flying too high on final for runway 30, the pilot decided to abort the approach. He made a left turn downwind and continued to fly close to the runway. When the aircraft was flying level with the beginning of runway 36, the pilot made a left turn to land on the planned runway 30. During the turn, the aircraft struck the ground hard. The aircraft was badly damaged, and the two occupants sustained injuries.

Classification: Accident
Reference: 2024127

▼ *The crashed aircraft.*

Emergency landing after engine failure, Reims Aviation S.A. F172N

Nunspeet, 30 July 2024

During a flying lesson, an instructor and a student experienced an engine failure after a touch-and-go at Lelystad Airport. Despite efforts to resolve the problem, engine performance deteriorated, leading to an emergency landing in a field near the town of Nunspeet. The aircraft was damaged; this included the nose landing gear collapsing. Both pilots were unharmed.

Classification: Accident
Reference: 2024136

The F172N in the field. (Source: Police, Aviation Supervision Team)

Crashed after take-off, A210 AQUILA Aviation GmbH AT01-100

A58 motorway (Sint Willebrord), 31 July 2024

Shortly after take-off, the aircraft crashed on a motorway and caught fire. It was completely destroyed. The student pilot on board was engaged in a solo cross-country flight as part of his flight training. He died as a result of his injuries.

Classification: Accident
Reference: 2024137

The site of the accident.

Emergency landing after engine failure, PIVI Pipistrel d.o.o. Ajdovscina Virus SW 121

Voorst, 4 August 2024

A Pipistrel Virus lost engine power and made an emergency landing in a field of maize. The student pilot on board was engaged in a solo cross-country flight as part of his flight training. He was unharmed. The aircraft sustained considerable damage.

Classification: Accident
Reference: 2024141

▼ *The Pipistrel in the field of maize.*

Airprox, Alexander Schleicher ASK 21 and LS 4-a

Gilze-Rijen CTR, 10 August 2024

When the ASK 21 was approaching a thermal, one of the gliders present in it left the thermal and flew directly towards the ASK 21. The pilot of the ASK 21 then initiated a dive with open airbrakes to increase the separation between the two aircraft.

Classification: Serious incident
Reference: 2024154

Taxiing aircraft near worksite, Boeing 737-800
Amsterdam Airport Schiphol, 13 August 2024

The flight crew of a Boeing 737 received clearance to taxi and then approached an area where work was being carried out near a taxiway. An airport employee who was in a vehicle on the taxiway saw the aircraft approaching. He decided to drive away because he did not have the impression that the aircraft was going to brake. The aircraft continued taxiing without any obstruction.

Classification: Serious incident
Reference: 2024156

Airprox, Alexander Schleicher ASK 21 and Astir Jeans
Terlet glider airfield, 17 August 2024

During the winch launch of the ASK 21 on runway 04C, the Astir flew over the take-off point, intending to land near the winch. To prevent a collision, the instructor aboard the ASK 21 aborted the winch launch at a height of approximately 50 metres, made a 270-degree left turn, and landed crosswise on runway 04R. The Astir landed near the winch.

Classification: Serious incident
Reference: 2024161

Loose tow cable over wing, Alexander Schleicher ASK 13 and Pipistrel Virus SW 121
Deelen Air Base, 24 August 2024

During an aerotow, the tow release broke, after which the tow cable came across the left wing of the glider. Neither aircraft sustained damage, and they landed without any further incident.

Classification: Serious incident
Reference: 2024166

Passenger injured during landing, Theo Schroeder Fire Balloons G
Bergeijk, 1 September 2024

A passenger broke their ankle during the landing of the hot-air balloon.

Classification: Accident
Reference: 2024171

Airprox, Alexander Schleicher ASK 23 B and Alexander Schleicher ASK 21
Noordkop glider airfield, 14 September 2024

In the circuit, two gliders came close to each other during the turn to final. Both aircraft then made a safe landing.

Classification: Serious incident
Reference: 2024182

02 Occurrences into which an investigation has been launched (abroad)

Damaged fuselage, Boeing 787-9

en route (Chili-Argentina), 21 July 2024

During the flight from Santiago International Airport (SCEL) in Chile to Ezeiza International Airport Buenos Aires (SAEZ) in Argentina, the aircraft sustained damage to its fuselage.

Argentina's Junta de Seguridad en el Transporte (JST) has commenced an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft is registered in the Netherlands and a Dutch airline is concerned.

Classification: Incident
Reference: 2024133

Tree struck during off-airfield landing, Schleicher K8

Percey (France), 2 August 2024

The pilot was making his first solo cross-country flight from Saint Florentin Chéu Airport (LFGP). Because of a lack of thermals, he decided to return to the airport. However, he could no longer reach it and was therefore forced to make an off-airfield landing. During the landing, the aircraft's left wing struck a tree, after which the aircraft came to a standstill with its nose in a ditch. The aircraft was badly damaged. The pilot sustained injuries.

The French BEA has commenced an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft belongs to a Dutch gliding club and the pilot is a Dutch national.

Classification: Accident
Reference: 2024140

▲ *The crashed K8. (Source: BEA)*

▲ *Archive photograph Fokker 50. (Source: A. Rivera)*

Loss of rear-door panel, Fokker F27 Mk 0050
en route (Panama), 3 September 2024

While en route from Marcos A. Gelabert Airport (MPMG) to its destination of Alonso Valderrama Chitre Airport (MPCE) in Panama, the Fokker 50 lost a rear-door panel. There were 3 crew members and 15 passengers on board. The aircraft landed without any further incident.

The Office of Investigation of Air Accidents (OFINVAA) of the Panama Civil Aviation Authorities has commenced an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft was designed and manufactured in the Netherlands.

Classification:	Incident
Reference:	2024173

Emergency landing after engine failure, ATEC v.o.s. Zephyr 2000

Finn Valley airstrip, County Donegal (Ireland),
7 September 2024

The aircraft experienced an engine failure during its final approach, after which it struck the ground before the start of the runway, sustaining significant damage.

The Irish Air Accident Investigation Unit has commenced an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft was manufactured in the Netherlands.

Classification: Accident
Reference: 2024180

Runway excursion, Fokker F27 Mk 0050

Wilson Airport, Nairobi County (Kenya),
30 September 2024

When landing on runway 07 at Wilson Airport, the Fokker 50 – with five crew members on board – came to a standstill beyond the end of the runway. The aircraft did not sustain any damage, and the occupants were unharmed.

Kenya's Aircraft Accident Investigation Department has commenced an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft was designed and manufactured in the Netherlands.

Classification: Serious incident
Reference: 2024190

▼ *The Fokker 50 being towed away. (Source: AAID Kenya)*

Completed investigations

Summary

Failure of aileron flight control cable, Boeing 737-804, PH-CDF

Heraklion International Airport (Greece), 8 July 2022

On 8 July 2022, a Boeing 737-800 registered as PH-CDF, took off for a commercial flight from Heraklion International Airport "Nikos Kazantzakis" on Crete, Greece, to Amsterdam Airport Schiphol, the Netherlands. Six crew members and 179 passengers were onboard the aircraft. During take-off, immediately upon lift-off, the flight crew experienced an uncommon roll effect to the left. The aircraft remained controllable as the flight crew managed the roll effect by applying rudder and aileron input. The flight deviated to Athens, Greece, without further anomalies. Post-flight inspection showed that an aileron cable had failed.

In close consultation with the Air Accident Investigation and Aviation Safety Board (AAIASB) of Greece, representing the State of Occurrence, it was decided that the Dutch Safety Board, representing the State of Registry and State of the Operator, would conduct a safety investigation according to the principles of ICAO Annex 13.

In smooth air the flight crew was able to cope with the roll effect of the aircraft, but in case of turbulent weather the controllability of the aircraft may become difficult which can further impair safety. Therefore, the Dutch Safety Board classified the occurrence as a serious incident, as the (partial) system failure of a primary flight control resulted into a degraded state of safety of the aircraft. The United States' National Transportation Safety Board, representing the State of Design and Manufacture, and its technical advisor (Boeing Commercial Airplanes), assisted in the investigation.

Detailed investigation revealed that the location where the flight control cable had failed, was between the feel and centering unit and the ailerons. Given the flight control system configuration on PH-CDF, the 'Before taxi checklist' is not effective in detecting a deteriorating or failed flight control cable at that position. A timely detection of a defect therefore depends on an adequate maintenance process.

The failed aileron cable was the original cable since aircraft delivery in January 2000 and was in accordance with the material specifications. According to the maintenance documents, the Detailed Visual Inspection (DVI) had been accomplished. However, the Dutch Safety Board cannot rule out that the cable had not been treated and lubricated in accordance with applicable maintenance procedures.

In view of the Dutch Safety Board, it is important that - in particular for cables that have aged in cycles and flight hours like on PH-CDF – ground engineer timely detect defects since aging contributes to normal wear anyway. For ground engineers, the detection and determination of the extent of wear during a Detailed Visual Inspection (DVI) of the cables is a difficult task because of the small size of the cable inspected 'on condition'. It could not be determined that aging (in terms of normal wear) of the aileron cable was a more dominant factor than the effect of lack of lubrication, which promoted more than normal wear and corrosion. Consequently, it could not be determined that the inspection interval of the DVI (4,000 flight cycles or 24 months) valid at the time of the event, was set too broadly.

Since 1997 three other cable failures were reported to Boeing, for which no ICAO Annex 13 investigations have been initiated. Reviewing the last three decades with hundreds of millions of flights, there is no immediate reason to doubt the effectiveness of the maintenance procedures based on a DVI interval of 4,000 flight cycles or 24 months as applicable in June 2022. The Dutch Safety Board

concludes that a safety recommendation is therefore considered not to be appropriate.

It is noted that since June 2023 the industry has increased the interval of the DVI to 6,600 flight cycles and 36 months.

▲ *A part of the broken cable.*

The Dutch Safety Board published the report on 8 August 2024.

Classification:	Serious incident
Reference:	2022086

Report

Canopy lost during flight, Sky Arrow 650 TCNS, PH-WUR

near Goudriaan, 1 February 2024

Prior to the accident

The aircraft, a Sky Arrow 650, is a two-seater high-wing aircraft equipped with a piston engine with a pusher propeller. It was being used to measure greenhouse gases, for the purpose of which it was equipped with sensors and computer equipment to record measurement data. On the day of the occurrence, the pilot and the ground crew prepared the on-board measuring equipment after the aircraft had been started up. The aircraft took off from Hilversum Airfield and set a course towards the village of Goudriaan to carry out a measurement flight. South of the city of Utrecht, the pilot noticed that a sensor of the measuring equipment was not functioning properly and decided to return to Hilversum Airfield to have it repaired.

After landing, the aircraft taxied back to the hangar. Because of the measuring equipment, the aircraft's engine remained running. Communication between the pilot and the ground crew and all necessary actions took place through a small window in the canopy, the 'storm window'. When the aircraft was once more ready to go, it took off again and flew towards Goudriaan for the measurement flight.

The accident

In the vicinity of Goudriaan, the pilot initiated a descent to 200 feet while simultaneously making a right-hand turn in order to start the first measurement. During the descent, the canopy opened up and separated from the aircraft. As a result of the airflow, the pilot's headset and spectacles flew overboard. The pilot was able to pull the headset in by the cable and put it back on. When it became clear that the aircraft could still be controlled, the pilot decided to return to Hilversum Airfield. The pilot then noticed abnormal readings from the engine, whereupon he decided to make an emergency landing in a field. The pilot sustained a slight facial injury during the occurrence.

Investigation and analysis

The canopy

The canopy opened up as the aircraft descended. In the process, the canopy smashed into pieces against the wing strut. Parts of the canopy entered the engine, which was located behind the wing. This caused abnormal engine readings. Parts of the canopy also struck the propeller and the vertical stabiliser.

Most of the canopy was recovered and secured by the police several kilometres from where the pilot had made a successful landing. The canopy pieces were found close to one another on the ground. Part of the canopy frame and a piece of

plexiglass was still attached to the aircraft by the hinge (see Figure 1). Dutch Safety Board investigators examined the canopy pieces. There were no signs indicating foreign object damage (FOD), such as from a bird strike. Human blood was found on the canopy and other parts of the aircraft. Given the pilot's injury, this was very probably his blood.

▲ *Figure 1: The aircraft after the emergency landing. A small part of the canopy was still attached to the aircraft by means of the hinge.*

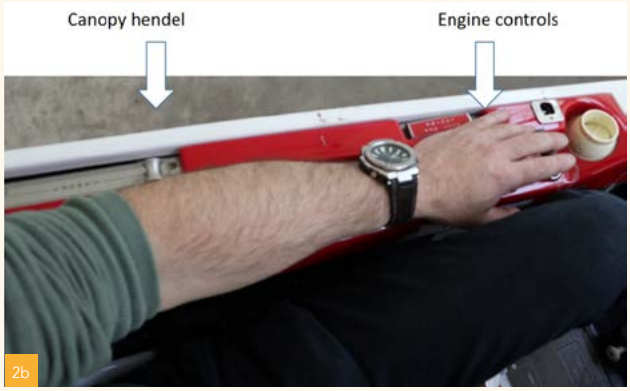
The locking mechanism

The canopy of this type of aircraft hinges open to the right-hand side. The locking mechanism on the aircraft side is on the left-hand side and consists of two pin-and-hole connections (see Figure 2a and 2b). Two pins with a hole through them are attached to the canopy (see Figure 2c). When the canopy is closed, these drop into the pin-and-hole connections on the aircraft side. To lock the canopy, a single handle is used to push two pins through the two holes.

▼ *Figure 2a: The front pin-and-hole connection, indicated by an arrow.*

▼ *Figure 2b: The locking mechanism handle (indicated by an arrow) is positioned a bit to the rear of the engine controls. It is pushed forwards to lock the canopy and pulled backwards to open it.*

▼ *Figure 2c: One of the two canopy pins.*



The Safety Board examined the canopy locking mechanism and found the following:

- The handle has an over-centring mechanism, which prevents the position of the handle being altered by a slight touch or a movement of the aircraft.
- When the handle is in the closed position, the locking pins on the aircraft side pass a long way through the holes in the canopy pins, preventing them from slipping loose.
- When the canopy is closed, the holes in the canopy pins line up with the locking mechanism on the aircraft side, preventing the canopy pins from dropping in next to or past the mechanism.
- If the handle is in the locked position and an attempt is then made to close the canopy, there is a visible gap between the canopy and the edge. If this had been the case at take-off, the pilot could have noticed it.
- The canopy handle is located at the height of the pilot's elbow and the other engine controls are near his left hand. To operate the canopy handle, the pilot must turn his shoulders. It therefore seems unlikely that the pilot accidentally operated the canopy handle instead of one of the engine controls.

The manufacturer has stated that if the canopy is not properly locked or becomes unlocked during flight, it can be forced open by the airflow as the airflow passes through the canopy and lifts it up (for example, during a left-hand turn or turbulence). The aircraft descending also alters the airflow around the canopy, which can have a similar effect.

Conclusion

The Safety Board finds that the locking mechanism was in good order and that the canopy opened up because it was not locked or not fully locked. The Safety Board also notes that there is no warning system or other technical safety mechanism in this type of aircraft. Adhering to the checklist ('Canopy CLOSE AND LOCK') is therefore the sole means of preventing the canopy from not being locked or not fully locked.

Classification: Accident
Reference: 2024010

Discontinued investigation

Loss of control, drone

Eindhoven CTR, 23 January 2024

A drone was flying within the air traffic control zone of Eindhoven Airport. After a system warning on the transmitter, the drone no longer seemed to respond to control commands. The drone began to drift and descended, eventually ending up in a tree.

Based on the information obtained, the Dutch Safety Board has decided not to investigate the incident.

Classification: Serious incident
Reference: 2024007

Completed investigations (abroad)

Cabin pressure occurrence, Fokker F28 Mk 0070, P2-ANT

Port Moresby (Papua New Guinea), 20 February 2023

The crew of the Fokker 70 – with 67 passengers and 4 crew members on board – decided to return to Jacksons International Airport. They did so when it became apparent that the weather near the planned destination (Mount Hagen Airport) was unsuitable for an approach and landing. The crew then broke off the approach to runway 14L at Jacksons International Airport due to problems with the cabin pressure. Following the subsequent landing, it became clear that 4 passengers had sustained serious injuries and 18 passengers had sustained minor injuries.

Papua New Guinea's Accident Investigation Commission published its report on 11 September 2024.

Classification: Serious incident
Reference: 2023019

Punctured tyres after landing, Boeing Company 777-300ER, PH-BVC

Johan Adolf Pengel International Airport (Suriname), 6 March 2023

After landing, a warning for three punctured tyres was triggered in the cockpit. The crew brought the aircraft to a standstill on the taxiway and requested that a technician check the tyres. It was found that 11 of the 12 tyres of the main landing gear were damaged, with 3 of them being completely deflated.

The Dutch Safety Board received the report by Suriname's Civil Aviation Safety Authority (CASAS) on 16 November 2023.

Classification: Incident
Reference: 2023029

Crew member taken ill, Embraer ERJ 170-200 STD, PH-EXI

Dublin (Ireland), 19 October 2022

Shortly following departure from Dublin Airport (Ireland), the first officer indicated that he was feeling unwell. He was no longer able to carry out his duties. The pilot-in-command took over all the flying duties and requested the cabin crew to assist the first officer. After entrusting him to the care of two members of the cabin crew, the pilot-in-command made an emergency call to air traffic control and returned to Dublin Airport, where the aircraft landed safely. The aircraft belongs to a Dutch airline and is registered in the Netherlands.

The Irish Air Accident Investigation Unit published its report on 16 September 2024.

Classification: Serious incident
Reference: 2022154

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Colofon

This is a publication of the Dutch Safety Board. This report is published in the Dutch and English languages. If there is a difference in interpretation between the Dutch and English versions, the Dutch text will prevail.

November 2024

Photos
Photos in this edition, not provided with a source, are owned by the Dutch Safety Board.

The Dutch Safety Board in three questions

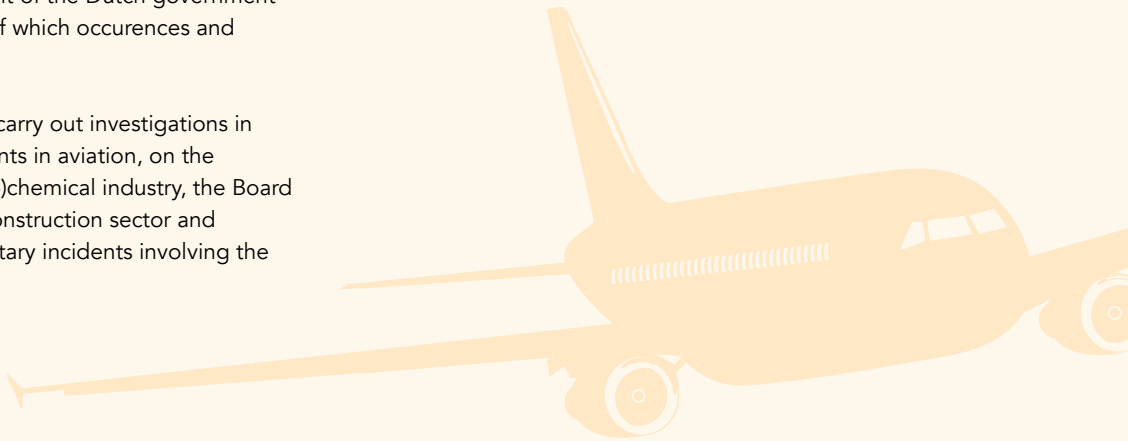
1. What does the Dutch Safety Board do?
Living safely, working safely, safety. It seems obvious, but safety cannot be guaranteed. Despite allknowledge and technology, serious accidents happen and disasters sometimes occur. By carrying out investigations and drawing lessons from them, safety can be improved. In the Netherlands the Dutch Safety Board investigates incidents, safety issues and unsafe situations which develop gradually. The objective of these investigations is to improve safety, to learn and to issue recommendations to parties involved.

2. What is the Dutch Safety Board?
The Dutch Safety Board is independent of the Dutch government and other parties and decides for itself which occurences and topics will be investigated.

The Dutch Safety Board is entitled to carry out investigations in virtually all areas. In addition to incidents in aviation, on the railways, in shipping and in the (petro-)chemical industry, the Board also investigates occurrences in the construction sector and healthcare, for example, as wel as military incidents involving the armed forces.

3. Who works at the Dutch Safety Board?
The Board consists of permanent board members; the Chairperson is Chris van Dam MPA. The board members are the public face of the Dutch Safety Board. They have extensive knowledge of safety issues.

They also have extensive administrative and social experience in various roles. For specialist knowledge, the Board members can enlist the assistance of the associate members of the Board. The Safety Board's bureau has around 80 staff, two-thirds of whom are investigators.



Visit the website for more information www.safetyboard.nl.