DUTCH
SAFETY BOARD

Quarterly Aviation Report

January - March 2025

Q1 2025

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Types of completed investigations.

Statement of facts
A factual account 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.

Engine failure: also train to 'expect the unexpected'

Even though pilots are highly trained, they sometimes encounter unexpected situations. After all, it is impossible to train for every conceivable scenario. Sometimes, the devil is in the detail: a different kind of vibration, a different noise, a different response from the aircraft. Slight differences can transform a seemingly familiar situation into something unexpected.

In the reports we receive and the occurrences we investigate, engine-related problems are a regular issue. They include not only full engine failures, but also deviations from normal performance whereby making the right decisions quickly and correctly is crucial.
In this Quarterly Aviation Report, we focus on the issue of 'partial loss of engine power'. Occurrences of this kind make clear why additional attention needs to be paid during training to unexpected situations. Such training should focus on

- recognising indications that something is wrong;
- assessing the situation; and
- making decisions under pressure.

We cannot predict everything, but we can certainly be better prepared.

Chris van Dam
Chairman of the Dutch Safety Board

01

Partial engine power loss

In 2024, the Dutch Safety Board received twelve notifications of occurrences in the Netherlands that are categorised as powerplant failure or malfunction in general aviation. Powerplant failures or malfunctions can lead to situations with significant consequences for the flight safety. These include complete engine power loss, where the engine ceases to produce power, and partial engine power loss, where the engine provides reduced performance but does not fail entirely, and anything in between. Two examples of powerplant failures or malfunctions are:

- On 17 July 2024, the pilot of a Van's Aircraft RV-12 experienced a partial engine failure en route. Despite the loss of engine power, the pilot was able to keep the aircraft at an altitude of 700 feet. The pilot decided to deviate to Hilversum Airport, where the aircraft crashed.
- On 2 September 2023 the pilot of a Diamond DA 50 RG encountered fluctuating engine revolutions per minute shortly after takeoff, which ultimately led to a complete engine power loss. The aircraft crashed on the runway at Budel Airport.

These situations presented the pilots with significant challenges in decision-making, particularly as the initial engine symptoms reflected a decrease in performance rather than a total failure.

Complete engine power loss is addressed extensively in training programs, with defined procedures for troubleshooting and emergency landings. Partial power loss however, introduces complexities such as unpredictable power and uncertain outcomes, complicating decision-making for pilots. These scenarios require different strategies compared to handling complete failures, as pilots must balance the available power against the operational risks and flight environment. Partial engine power scenarios require decisions that are not currently addressed within the Dutch training syllabus, as neither EASA nor Dutch regulations mandate specific training for handling such situations.

Investigations by other safety boards

The Australian Transport Safety Bureau (ATSB) and the UK Air Accidents Investigation Branch (AAIB) are examples of safety boards that investigated accidents related to partial power loss. Both of them highlight the importance of partial engine failure training.

Lessons from ATSB

Following, the ATSB's research on managing partial power loss after take-off in single-engine aircraft[1], it becomes evident that training can significantly affect pilot response to partial power losses. The ATSB pointed out the complexity of decision-making under partial power and the importance of scenario-based training, which prepares pilots for a range of potential issues that might not be covered under current training protocols.

The research showed that most fatal and serious injury accidents resulting from partial power loss after take-off are avoidable. You can prevent or significantly reduce the risk of harm following a partial or complete engine power loss after take-off by using these strategies:

- Pre-flight decision making and planning for emergencies and abnormal situations for the particular aerodrome.
- Conducting a thorough pre-flight and engine ground run to reduce the risk of a partial power loss occurring.
- Taking positive action and maintaining aircraft control either when turning back to the aerodrome or conducting a forced landing until on the ground.

In the research period, from 2000 to 2010, there were three times more partial engine power loss occurrences than a total power loss occurrences after take-off registered in Australia.

1 https://www.atsb.gov.au/sites/default/files/media/4115270/ar-2010-055_no3.pdf

The booklet states that the chosen action following a partial power loss after take-off can be strongly influenced by the fact that the engine is still providing some power, even though this power may be unreliable. Pilots may have a strong desire to return the aircraft to the runway to avoid damage associated with a forced landing. The general lack of discussion and training on this issue add to the complexity of decision making in such circumstances, as the pilot has to rely on knowledge and experience.

▲ *Instrument panel of a Cessna 172 for illustration purposes.*

Recommendations by UK AAIB

Furthermore, also the Air Accidents Investigation Branch's (AAIB) investigation into an accident with a Grumman AA-5[2] highlights the importance of training partial power loss. The aircraft, attempting a return to the runway after suffering a partial engine failure, ultimately stalled and crashed. This investigation demonstrated that even when some engine power remains, the decision-making process becomes significantly more complex. The Grumman accident pointed out that the presence of power might induce a pilot to attempt to return to the runway, a manoeuvre with significant risks, particularly without specific training on such scenarios. This investigation led to three safety recommendations focusing on the necessity of pilot training for handling partial engine power loss events:

1. Ab initio pilots should undergo training in managing partial power loss situations in single-engine fixed-wing aeroplanes.
2. The Civil Aviation Authority (CAA) should provide detailed guidance on techniques for managing partial power loss situations and promote their use by instructors and examiners during training for rating revalidation.
3. The CAA should update its General Aviation safety promotions to include information for pilots on managing partial power loss situations in single-engine fixed-wing aeroplanes.

The CAA UK is incorporating these recommendations into the broader General Aviation Pilot Licensing & Training Simplification project. This project involves amending pilot licences, ratings, and certificates across multiple aircraft categories.

Training partial power loss

Incorporating scenario-based training that specifically addresses partial engine failures can significantly enhance pilot preparedness. Such training should focus not only on immediate responses, but also on assessing and making rapid decisions that consider the current flight path and potential emergency landing zones. This type of training could provide pilots with additional strategies and confidence, broadening their options during critical in-flight decisions and potentially mitigating the outcomes of similar emergencies in the future.

The guidelines and training materials published by the ATSB emphasize the challenges and necessary responses associated with partial power loss immediately post-take-off.

2 https://www.gov.uk/aaib-reports/aaib-investigation-to-grumman-aa-5-g-bbsa

Although this specific training guidance originates from Australia, the principles are universally applicable and underscore the need for comprehensive training in handling partial engine failures under various conditions.

Drawing from the AAIB's findings and subsequent recommendations, it might be beneficial for regulatory bodies, such as the Dutch CAA, and Dutch training organisations to consider the integration of partial engine failure scenarios into standard training curricula. Such training could enhance pilot preparedness and safety, particularly during critical phases of flight such as take-off and landing where engine reliability is crucial.

Conclusion

The challenges of managing partial engine power loss are evident from recent occurrences, emphasizing the need for including such scenarios in pilot training. Reports from the ATSB and AAIB underline the complexities of such scenarios and their impact on decision-making, particularly during critical flight phases. Integrating scenario-based training focused on partial power loss could significantly improve pilot preparedness, offering strategies to manage unpredictable power and operational risks effectively. Enhancing training curricula with such scenarios may mitigate future incidents and contribute to general aviation safety.

When does the Dutch Safety Board investigate aviation occurrences?

02

Aviation is an important focus area for the Dutch Safety Board

Accidents and serious incidents in aviation can have major consequences for those involved, and are indicative of safety risks. Aviation is therefore an important focus area for the Dutch Safety Board. The Safety Board conducts independent investigations into accidents and serious incidents involving aircraft and seeks to draw lessons from them.

Helping to improve safety

The Safety Board is authorised to investigate all aviation occurrences within the Kingdom of the Netherlands. That does not mean, however, that we investigate every occurrence. By selecting those to investigate, we can focus our capacity and attention on investigations that yield valuable insights for improving aviation safety. The Safety Board therefore focuses mainly on situations in which people depend for their safety on the public authorities, businesses, or institutions. In this way, we help make aviation safer.

There isn't always an investigation

The Dutch Safety Board has an obligation to investigate accidents and serious incidents. This obligation doesn't exist for the following categories of aircraft:

1. aircraft with a take-off mass of 2250 kg or less, if persons have not sustained fatal or serious injuries;
2. unmanned aircraft (drones) for which no certificate or declaration is required, if persons have not sustained fatal or serious injuries;
3. aircraft listed in Annex 1 of Regulation (EU) 2018/1139, including historic, experimental, and ultralight aircraft.

We do need to be notified of accidents and serious incidents with these categories. What if an aircraft from the first or second category is involved in an occurrence? In that case the Safety Board first collects relevant information. We then assess whether further investigation may yield valuable insights as regards aviation safety. If we decide it will not, we can still make use of the information later, for example as part of an overall investigation into a particular issue.

Statutory basis

Our investigations are based on national and international regulations and standards, namely:

- the Dutch Safety Board Act;
- European Regulation (EU) 996/2010;
- International Civil Aviation Organization (ICAO) Annex 13.

International cooperation

According to international agreements, it is the state where an aviation occurrence takes place that conducts a safety investigation. The investigation then takes place subject to the responsibility of that country's safety investigation authority. The Dutch Safety Board can participate in foreign investigations if the Netherlands is involved, for example if the airline concerned is Dutch or the aircraft is registered, designed, or manufactured in the Netherlands.

03 Occurrences into which an investigation has been launched

Injury to foot during pushback, Boeing 777-FFX
Amsterdam Airport Schiphol, 24 February 2025

During the pushback, the tow bar became jammed between the Boeing 777's nose landing gear and the pushback truck. When disconnecting the tow bar, the employee who was walking alongside during the pushback sustained an injury to his left foot.

Classification: Serious incident
Reference: 2025020

Construction crane struck shortly after take-off, Theo Schroeder Fire Balloons GmbH Fire Balloons G
Aalten, 16 March 2025

Shortly after taking off, the hot-air balloon came into contact with a construction crane. The balloon sustained damage but remained fully controllable. The pilot decided, however, to carry out a precautionary landing. The landing was without incident and the occupants were unharmed.

Classification: Accident
Reference: 2025033

Near collision with parachutist, Diamond Aircraft Industries, Inc. DA20-A1
Westbroek drop zone, 22 March 2025

The DA20 took off from Runway 12 at Hilversum Airport (EHHV) and left the circuit via the crosswind leg. The aircraft then flew through the active Westbroek para jumping drop zone, where it nearly collided with a parachutist.

Classification: Serious incident
Reference: 2025042

Occurrences into which an investigation has been launched (abroad)

Problems with radios and transponder, Airbus A321-252NX

en route (France), 13 January 2025

En route from Federico García Lorca Granada-Jaén Airport (LEGR) in Spain to Amsterdam Airport Schiphol (EHAM), the crew encountered problems with both radios and the transponder while over France at FL340. The crew issued an emergency call and decided to divert to Bordeaux-Mérignac Airport (LFBD) in France. During the approach, the crew were unable to select navigation aids. The landing was uneventful.

The French Bureau d'enquêtes et d'analyses pour la sécurité de l'aviation civile (BEA) has launched an investigation into this occurrence. The Dutch Safety Board has offered its assistance, given that a Dutch airline was involved in the occurrence and the aircraft is registered in the Netherlands.

Classification: Incident
Reference: 2025005

Control problems during landing, Fokker F28 Mk 0100

Mehrabad Int'l Airport (Iran), 20 January 2025

During landing on Runway 29L at Mehrabad Int'l Airport (OIII), there was vibration of the main landing gear. The pilot flying had difficulty maintaining control of the Fokker 100. The aircraft finally made a sharp turn to the right and came to a halt on the right-hand side of the runway. Both main landing gear assemblies sustained damage. The 108 occupants were unharmed.

The Iranian Aircraft Accident Investigation Board (AAIB) has launched an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft was designed and constructed in the Netherlands.

Classification: Serious incident
Reference: 2025008

Aircraft began moving during pushback, The Boeing Company 787-9

Aeropuerto Internacional Arturo Merino Benítez (Chile), 21 January 2025

During the pushback, the second engine delivered power, causing the aircraft to begin moving. The aircraft sustained damage to its nose wheel. The driver of the pushback truck was slightly injured.

The Chilean Departamento Prevención de Accidentes has launched an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that a Dutch airline was involved in the occurrence and the aircraft is registered in the Netherlands.

Classification: Incident
Reference: 2025007

The crashed Cesna 152. (Source: GPIAAF)

Tree struck during approach, Cessna Aircraft Company 152

Coimbra (Portugal), 9 March 2025

The Dutch-registered Cessna 152 was conducting a training flight as part of an ATPL(A) training programme. On board were a Portuguese instructor and a Danish trainee. During an approach to Runway 16 at Coimbra Airport (LPCO), with the instructor having reduced engine power to idle, the aircraft struck a tree just outside the airport. The two occupants remained unharmed. The aircraft was badly damaged.

The Portuguese Gabinete de Prevençao e Investigação de Acidentes com Aeronaves e de Acidentes Ferroviários (GPIAAF) has launched an investigation in response to this occurrence. The Dutch Safety Board has offered its assistance, given that the aircraft is registered in the Netherlands.

Classification: Accident
Reference: 2025028

Completed investigations

Summary

Engine failure followed by emergency landing, Diamond DA 50 RG, OO-HAN

Kempen Airport, 2 September 2023

On 2 September 2023, a Diamond DA 50 RG aircraft, registered OO-HAN, departed from Runway 21 at Kempen Airport (EHBD) for a private fight. During the initial climb, the engine experienced two noticeable drops in revolutions per minute. In response, the pilot chose to remain within the airport traffic circuit and declared a precautionary return to land. While on the downwind leg, the engine's performance deteriorated further, culminating in a complete power loss as the aircraft turned towards final approach for Runway 03.

Despite the pilot's attempts to glide the aircraft towards the runway, the high rate of descent at low altitude resulted in the aircraft impacting the terrain short of the intended runway. Upon impact, the right wing detached from the fuselage, rupturing the integrated fuel tank. The ensuing fuel spillage ignited, causing a fire that consumed significant portions of the aircraft, including the left wing and the tail section.

The pilot, who was the sole occupant, sustained minor injuries and was able to evacuate the aircraft unaided before the fire spread. Emergency services at Kempen Airport extinguished the fire shortly thereafter.

▲ *Aircraft wreckage.*

The investigation identified that the engine failure was caused by the destruction of crankshaft main bearing #2, which led to overheating and seizure of other critical engine components. Why bearing #2 failed could not be determined. However, residues of casting sand embedded in the casting within the engine's oil gallery – likely originating from the manufacturing process – were considered a potential contributing factor to the bearing failure. The manufacturer deemed this contamination a single incident, as no structural deficiencies or recurring issues were identified during the analysis of similar engines. To mitigate contamination risks in future engines, the manufacturer enhanced its cleaning protocols by incorporating measures such as an ultrasonic bath and residual dirt analysis.

The pilot's decision to remain in the circuit was consistent with current training protocols, which primarily address complete engine failures. Even if partial engine power loss is not explicitly covered under the Dutch licensing syllabus, pilots are expected to be prepared for a total power loss and an emergency landing. The DA50 Flight Manual provides procedures for various engine-related issues, including situations where power is degraded but not entirely lost. However, this accident highlighted the challenges of responding to initial signs of engine performance degradation, reinforcing the value of training for such scenarios.

Although the aircraft complied with EASA Certifcation Specifcations (CS) 23 for fuel system integrity, the forces exerted during the crash exceeded these design standards. The right wing's detachment led to a rupture of the fuel tank, directly contributing to the post-impact fre. However, the structure of the cockpit remained intact, signifcantly increasing the pilot's chances of survival.

The Dutch Safety Board published the *report* on 2 April 2025.

Classification: Accident
Reference: 2023182

Report

Loss of propeller during flight, Schempp-Hirth Duo Discus T, PH-1551,
near Wierden, 14 July 2023

During a cross-country flight, the pilot found no more thermals and decided to start the reciprocating piston-driven engine of the Duo Discus T at an altitude of just over 300 metres. During the subsequent climb, the propeller separated from the engine at approximately 600 metres altitude. The pilot closed the fuel selector and checked whether the glider still responded to input from the flight controls. The glider turned out to be responding well, allowing the pilot to gain altitude in different thermals along the way. Salland glider airfield came within gliding range, where the pilot made a precautionary landing with the engine extended. After landing, it appeared that the whole hub had ripped off. This hub holds the rod, the bearing and the propeller in place.

▲ *The location at the engine where the hub was ripped off. (Source: gliding club)*

The propeller was found by a contractor near Wierden in August 2023. A member of the gliding club in question collected the propeller from him in January 2024 and subsequently handed it over to the Dutch Safety Board. The tip of one propeller blade was missing.

The SOLO 2350D engine had been running for a total of 35 hours at the time of the occurrence.

The Dutch Safety Board had the fracture surface examined by a laboratory to determine the nature of the failure of the propeller hub. The findings were:

- The material of the hub did not meet the compositional requirements for alloy type EN AW-7022 and was identified as alloy type EN AW-7075 T6.
- The hub component from the propeller failed due to a fatigue fracture.
- The repeated alternating loads needed for the fatigue fracture were likely relatively small (vibrational) loads during flight and normal use of the propeller.

▲ *The propeller with the fractured hub.*

The investigation report prepared by the laboratory yields fatigue cracking as causal reason for the failure of the hub, but finds "No clear initiation area or indication of overload areas were observed." It is also stated that "Initiation was likely in the radius at the edge of the fracture surface, despite that it could not be confirmed during the examination." The report finds that material used is not exactly the one that the manufacturer states as per design (EN AW-7075 instead of EN AW-7022). The reason for this has not been determined. Nevertheless, the material properties are very similar and therefore susceptibility to fatigue is not significantly different between the two. The root cause of the fatigue fracture has not been determined. Furthermore, while there have been some failures in these engine models, the failure mode in the present case is new and so far singular.

EASA is, in consultation with the engine manufacturer, looking into ways to prevent the recurrence of similar incidents.

Classification: Serious incident
Reference: 2023142

Accident on short final, Schempp-Hirth Discus-2T, PH-1655

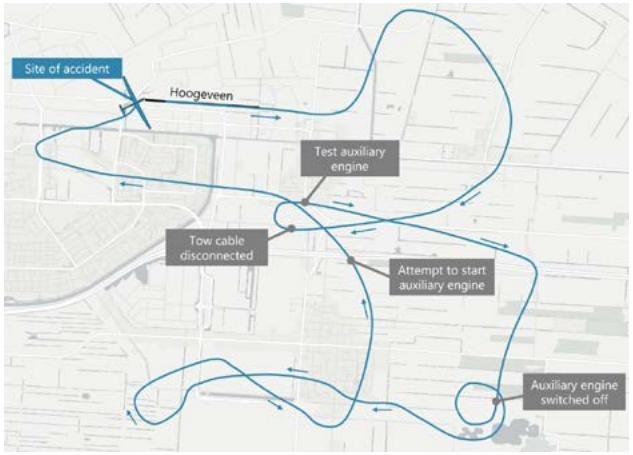
Hoogeveen Airfield, 19 June 2024

On 19 June 2024, a Discus-2T powered glider, registration PH-1655, crashed just before landing at Hoogeveen Airfield (EHHO). After an aerotow from Runway 09, the pilot had tested the auxiliary engine, determined that it was functioning, and switched it off again. After several unsuccessful attempts to find thermals, the pilot decided to return to the airfield. Just south of the downwind leg, he attempted to start the auxiliary engine again. When that proved unsuccessful, he continued his return journey with the engine extended. The glider was by then out of gliding range of the airfield. Just outside the airfield, the right wing struck a lamp post, causing the aircraft to rotate around its vertical axis and come to rest at the edge of a ditch. The pilot sustained slight injuries; the glider sustained severe damage.

The course of the flight

During the morning briefing, the pilot had been assigned the gliding club's Discus-2T for a local flight. He had wanted to practice operating the aircraft's engine again. Prior to the flight, the pilot, among other things, had once again read through the 'Discus 2 HI procedure for engine use' document, in order to freshen up on the procedure for starting the engine. He had experience of similar engines in other powered gliders. In 2023, he had made a total of seven flights with the Discus-2T concerned, in each case starting the engine at least once during the flight.

The aircraft took off from Runway 09 at 11:55 hours with a northerly wind. At a height of approximately 550 metres, the pilot disconnected the tow cable. Immediately after that, he initiated the procedure for starting the engine, leaving the landing gear extended. He first activated the ignition and then extended the engine. According to the procedure, these actions should have taken place in the opposite order, but the engine nevertheless started. When the pilot found some thermals, he switched off the engine at an altitude of approximately 600 metres, folded it back in and retracted the landing gear. However, the thermals proved disappointing, and the pilot turned back to the airfield.



▲ *The flight path of the Discus-2T. (Source: IGC-data and OpenStreetMap)*

The pilot approached the circuit starting point from the southeast and at an altitude of approximately 315 metres decided to start the engine. Normally, the circuit is started at a height of 200 metres at the circuit starting point. The pilot extended the engine. His attempt to start the engine failed. Having arrived at the circuit, the pilot flew parallel to and slightly south of the downwind leg. He was higher than the standard circuit height and could thus turn in at any moment for a landing at the airfield. The pilot pressed the fuel pump control button for a long time and did not closely monitor his altitude and position relative to the airfield. When he realised this and stopped trying to start the engine, he turned back in diagonally towards the runway.

As he approached the airfield, the pilot realised that he did not have sufficient height to reach the runway, meaning that a landing outside the airfield had become unavoidable. Just outside the airfield, the right wing struck a lamp post. This caused the aircraft to rotate around its vertical axis and come to rest at the edge of a ditch, with only the broken-off tail section upside down. The pilot sustained slight injuries.

▲ *The crashed Discus-2T. (Source: Police, Aviation Supervision Team)*

Analysis

The lack of thermals led to his early return to the airfield. The pilot stated that, at the time, he thought that a height of approximately 315 metres was sufficient for starting the engine. Club rules stipulated, however, that the decision to start the engine must be made at 350 metres. The pilot extended the engine but forgot to switch on the ignition. As a result, his attempt to start the engine failed, and he continued flying with the engine still extended. The pilot stated that force of habit may have got the better of him, despite his recent experience with the Discus-2T concerned. In the past, the pilot had also flown aircraft in which only a single switch needed to be flipped instead of two (as part of the procedure for starting the engine) and only a single button needed to be pressed (to extend the engine, switch on the ignition and switch on the fuel pump).

Due to (self-proclaimed) tunnel vision after his failure to start the engine, the pilot continued to focus on the button that operates the fuel pump, assuming that it needed to be held down longer in order to get fuel to the engine. When he realised that he had flown on too far and had stopped trying to start the engine, he turned back in diagonally towards the landing field. However, the airfield was by then out of gliding range, partly due to the drag caused by the engine, which was still extended.

The Flight Safety Committee of the gliding club concerned investigated the occurrence and issued recommendations on the use of aircraft with a turbo engine. Those recommendations included:

- When purchasing a new glider with an engine (a glider with a sustainer), select the version that allows you to operate the engine with a single button.
- Harmonise use of the engine for the various types in the club, including the checklist, training and required experience.
- Implement a mandatory annual refresher course on how to use the engine.
- Make use of a paper checklist that is specific to each type of powered glider.

The committee also organised a meeting for club members about the use of gliders with a sustainer and intends to organise such a meeting each year at the start of the season.

Classification: Accident
Reference: 2024106

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

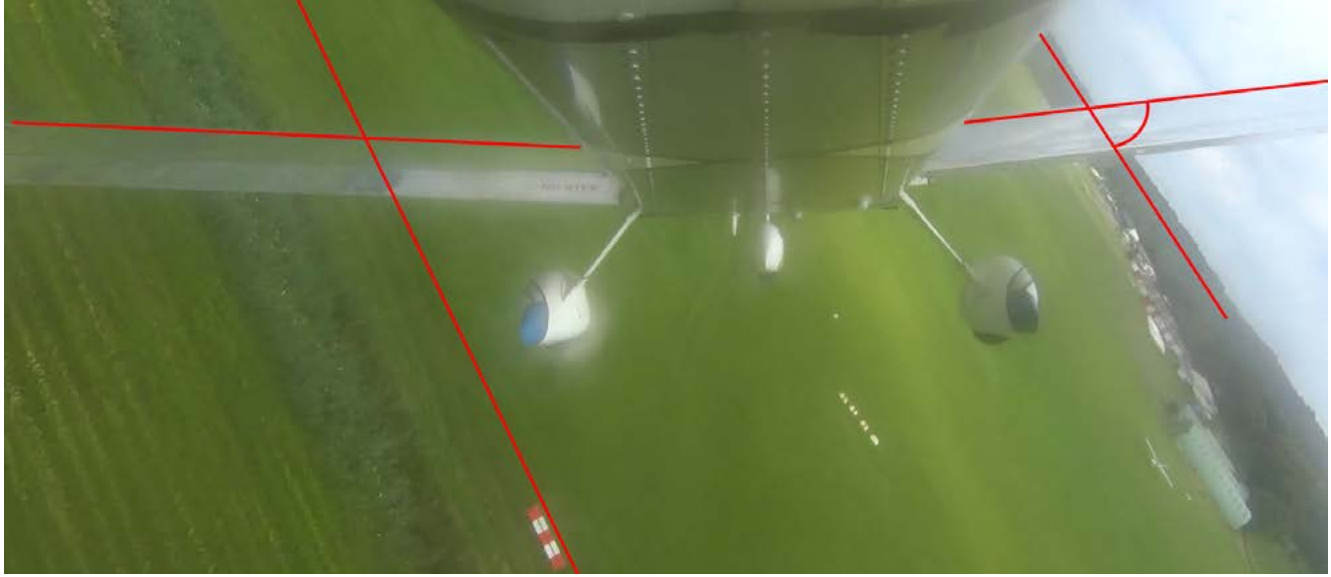
Hilversum Airfield, 17 July 2024

The flight

At about 11:10 hours, the Van's Aircraft RV-12, a homebuilt aircraft, took off from Middenmeer Airfield (EHMM) for its destination of Hilversum Airfield (EHHV). On board were the pilot and a passenger. To record the flight, the pilot had mounted a number of cameras in and on the aircraft, and the passenger had brought his camcorder.

Radar data show that the route taken proceeded via Alkmaar and the coast past Zandvoort, Noordwijk and Leiderdorp towards Alphen aan den Rijn. The pilot had logged on to the Amsterdam Information frequency.

At about 11:55 hours, near Alphen aan den Rijn, the engine lost power and the aircraft started shaking violently. The pilot notified Amsterdam Information that he had serious engine trouble and was flying at a height of 700 feet. The aircraft was still controllable. In the ensuing communication with Amsterdam Information, the pilot indicated that the aircraft, despite the loss of power, was able to maintain its altitude and that it was still nine minutes flying time to Hilversum Airfield, where he wanted to try to land. When asked by Amsterdam Information if he wished to declare an emergency, the pilot replied that he did not. Amsterdam Information then notified Hilversum Airfield of the approaching aircraft. At 12:04 hours, the pilot called in on the frequency of Hilversum Radio.



▲ *Roll angle of about 70 degrees just before the crash. (Source: video camera underneath the tail (owner))*

At Hilversum Airfield, Runway 30 was in use. Between 500 and 1000 feet, the wind was blowing from 270 degrees at a speed of 10 knots. The pilot flew via a direct left base leg to the final for Runway 30. Because the aircraft was flying too high on the final, the pilot decided to abort the approach and perform a go-around. He made a left turn downwind and continued to fly close to the runway so as to remain in gliding range of the airfield in case the engine failed. When the aircraft was flying level with the beginning of Runway 36, the pilot made a left turn with a roll angle of about 70 degrees so as to land on the planned Runway 30. Just above the ground, the pilot made a rolling motion to the right, after which (at 12:09 hours) the aircraft struck the ground hard almost horizontally, with its nose pointing towards Runway 36.

Due to the impact, the pilot was knocked unconscious and the aircraft was severely damaged. The passenger was able to leave the aircraft unaided. Because of the deformations of the fuselage, the pilot had to be freed from the aircraft by the emergency services. Both occupants were taken to hospital with injuries.

The pilot held a Light Aircraft Pilot Licence (LAPL) and had a total of about 355 hours of flying experience, including about 180 hours in the RV-12.

The investigation

The investigation focused mainly on the operational aspects. For the purpose of their investigation, Dutch Safety Board investigators analysed footage from a camera mounted in the cockpit and a camera mounted underneath the tail. Images taken from the ground, radar data and recordings of radio transmissions were also available for the flight.

Apart from the impact damage, investigators at the site did not observe any abnormalities regarding the Rotax 912 ULS engine. The engine was later examined by a maintenance technician at Middenmeer Airfield. He found that the engine was functioning, except for one of the two ignition systems, which was not functioning due to a defective ignition unit. This had resulted in a reduction in engine power. Images from the cockpit show that the engine speed was about 4300 RPM at the time of the engine failure. Normally, this is about 5000 RPM.

The Middenmeer Airfield Safety Committee investigated the accident and shared its Safety Report containing the findings of its investigation with the Dutch Safety Board.

Analysis

The checklist present on board did not include any emergency procedures. It also emerged that the Pilot's Operating Handbook did not contain an emergency procedure for the event of an ignition system malfunction, meaning that the pilot was unable to perform a structured malfunction check. He was therefore unaware that part of the ignition system had become defective. Because he was unaware of the cause of the malfunction, the pilot continuously anticipated that the engine might fail completely and incorporated extra margins into his chosen route. During his approach to Hilversum Airfield, the pilot chose to fly high on the final for Runway 30. This resulted in him needing to perform a go-around; on downwind, he then kept flying close to the runway. On the base leg, the aircraft experienced a tailwind component of around 5 knots. So as to then be able to land on Runway 30, the pilot made a steep descending turn to the final. Due to the large banking angle, the aircraft reached a high rate of descent and the pilot subsequently lost control of the aircraft.

Conclusion

The engine trouble was caused by one of the two ignition systems being defective. As a result, the engine delivered less power, but enough to maintain altitude, reach the destination and perform a go-around there.

Because the pilot wanted to stay only a short distance away from the runway after the go-around and therefore flew a tight circuit, he made a turn with a high banking angle so as to land on the planned Runway 30. This resulted in a high rate of descent and subsequent loss of control of the aircraft, causing it to hit the ground hard.

Classification: Accident
Reference: 2024127

▶ *The crashed aircraft.*

Taxiing aircraft near worksite, Boeing 737-800, PH-HZN

Amsterdam Airport Schiphol, 14 August 2024

Statement of facts

In the late evening of 13 August 2024, several work activities were taking place at Amsterdam Airport Schiphol (EHAM). The tower was manned in accordance with the nighttime configuration, consisting of a runway controller and a ground controller. At 00:22 hours, an airport employee in a maintenance vehicle called the ground controller on the runway channel. The employee submitted a request for work 'with escort' on Taxiway A between A2 and A4, with a notification time of one minute. The ground controller gave clearance for this and made a note of it as a reminder on the Electronic Flight Strip System. At 00:45 hours, a Boeing 737 landed on Runway 18R. The crew reported to the ground controller when leaving the runway.

The airport employee in the maintenance vehicle, with its amber lights flashing, had meanwhile reported back to the ground controller and requested clearance for the work previously requested. He received clearance, after which two people began working on Taxiway A. The work involved scanning, with one person walking and carrying out measurements and the other riding a quad bike, while being escorted by the airport employee in his vehicle.

A bit later – when the Boeing was taxiing southwards on Taxiway Q and was getting close to Taxiway A – the crew asked the ground controller if they could continue taxiing via Taxiway A. The ground controller gave them clearance to do so. The Boeing then made a left turn onto Taxiway A at the end of Taxiway Q and approached the area where the work was taking place.

At a certain point, the airport employee, who was on Taxiway A at the time, saw the Boeing approaching against the standard direction of travel in his rear-view mirror. Coming from Taxiway Q, Taxiway A still has four left exits until it reaches the point where the airport employee was at the time. When the aircraft failed to take any of the four exits, the airport employee was forced to 'flee' and left Taxiway A towards an aircraft stand. He did not have time to pick up the two workers. They also quickly left the taxiway and stood in the grass next to it. The aircraft continued taxiing without any obstruction. The airport employee reported to the ground controller on the runway channel that he had moved aside because of the approaching aircraft. The ground controller apologised.

As a result of this occurrence, an employee of the airport authorities contacted the airline concerned. The pilots of the Boeing reported later that after landing, while taxiing to Runway 18C, they had seen a vehicle at a considerable distance. Later, as they were approaching gate C14, they saw another vehicle driving on Taxiway A, at a considerable distance away from them. They saw that that vehicle turned left off the taxiway and then headed towards Pier B. The pilots reported that there had never been any question of a dangerous situation during taxiing and that they had a clear view of both vehicles well in advance. It was not clear to the pilots whether one of the vehicles they had observed was the maintenance vehicle involved in the occurrence. The pilots had not noticed the people in the grass next to the taxiway.

Analysis

Work is going on all the time at Amsterdam Airport Schiphol. The airport discusses all the work in advance with Air Traffic Control the Netherlands (LVNL). LVNL then decides whether or not to include the work in 'LVNL notifications' that are made available to operational staff. If that is not done, the procedure is that requests for work and reports on work are submitted via the supervisor on duty. In the case concerned here, the latter method was used.[3] An air traffic controller is only confronted with a request at the point when someone reports it on the runway channel. The air traffic controller must then respond to such situations on an ad hoc basis. On the

3 The scanning work had not been communicated via a NOTAM.

evening of the occurrence, several work activities were taking place, something that was not unusual.

At the point when the ground controller gave the Boeing clearance to continue taxiing from Taxiway Q via Taxiway A, she did not realise that she had given clearance to the airport employee for the work on Taxiway A. Nor did the note that had been made draw her attention to this at that point. When interviewed, the ground controller said that she had not been aware of the occurrence. She did not know that people had gotten out and were working on the taxiway. This was because the application used the term 'with escort', which is normally used to indicate that the airport employee is escorting one or more vehicles. The term 'walking work' indicates that persons are being escorted who are outside a vehicle. The ground controller stated that this had had no influence on the further handling of the request. Because it was dark, the people in the grass were probably not visible from the position where the ground controller was working. It was, however, possible to see Taxiway A from there.

The second vehicle that the pilots had observed on Taxiway A was the maintenance vehicle concerned. No other vehicles were in the vicinity at the time.

Based on the Integral Safety Management System, a joint risk analysis in response to the occurrence was started in the first quarter of 2025 by, among others, Air Traffic Control the Netherlands, Amsterdam Airport Schiphol, and the airline involved. This involves considering what the risks associated with this type of work generally involve. Depending on the results, these parties will decide on mitigating measures or safety improvements.

The Safety Board did not investigate the occurrence any further.

Classification: Serious incident
Reference: 2024156

Near collision, Alexander Schleicher ASK 21, PH-753 and Grob Astir CS Jeans, D-6213,

Terlet Glider Airfield, 17 August 2024

On 17 August, there was a combined flying event[4] from Runways 04C and 04R, with several gliding clubs taking part. The winch launch method was used. During the winch launch of the ASK 21 on Runway 04C, the Astir flew over the take-off point with the intention of landing near the winch. To prevent a collision with the Astir, the instructor aboard the ASK 21 aborted its winch launch at a height of approximately 50 metres. The ASK 21 made a 270-degree left turn, and landed crosswise on Runways 04C and 04R. The Astir landed safely as planned near the winch.

The gliding clubs involved conducted a joint investigation into the occurrence and shared their findings with the Safety Board. The following statement of facts is based partly on the investigation report drawn up by the clubs.

The Astir took off from Runway 04C at 18:10 hours. It was the last flight of the day for this aircraft, so the pilot therefore planned to land near the winch (known as 'overflying'). After disconnecting the winch cable, the pilot made a wide right turn and began flying the circuit. On the downwind leg, he reported over the radio that he was going to fly over. The ASK 21, with an SPL[5] holder and an instructor on board, took off five minutes after the Astir from the same runway. The SPL holder carried out the take-off. Shortly after becoming airborne, the instructor saw the Astir fly past above and to the right at an estimated height (above the ground) of 50-100 metres. The instructor took over the controls and disconnected the winch cable at a height of approximately 50 metres so as to prevent a collision between the two aircraft. According to the instructor,

4 Two winches were being used so as to enable several clubs to take off from two adjacent grass strips. In the case of such a combined flying event, two winch launches cannot take place at the same time; coordination between the clubs is therefore necessary.
5 Sailplane Pilot Licence.

flying straight ahead and then landing was not possible due to the amount of space left for landing. He therefore made a 270-degree left turn and landed the aircraft safely crosswise on the section of Runways 04C and 04R used for landing.

The pilot of the Astir had observed the ASK 21, but estimated that the distance between the two aircraft was sufficient. He otherwise focused on the landing field and landed near the winch.

▲ *Situation drawing. (Source: IGC-data and Google Earth)*

Analysis

The occurrence could arise because the wing walker and the launch leader (who was also giving the light signals to the winch) were unaware of the approaching Astir. A combination of high work pressure with varying tasks and being unable to see the Astir meant that the launch leader forgot about that aircraft. The wing walker had also not thought to keep an eye on the Astir. They then allowed the ASK 21 to start the winch launch.

In their report, the safety teams of the clubs involved noted the following regarding overflying:

> 'Overflying is carried out for practical reasons. It also offers more experienced pilots the opportunity to perform a non-standard approach. This is not problematic in itself, but it adds an extra layer of complexity to the flying event. It is necessary to communicate with two take-off locations, fly a different circuit and land at a different location, all while normal flight operations are continuing. Coordination is of crucial importance. Without two-way communication, it is uncertain whether coordination is sufficient. Given this level of complexity, the established arrangements for overflying and its implementation in actual practice are insufficient.'

The safety management team of one of the gliding clubs involved has now introduced an amended overflying protocol. This includes giving instructions to wing walkers, ensuring minimum staffing at the take-off point, removing any obstructions to visibility, such as the flap of the start car, and reporting the final on the radio.

Classification: Serious incident
Reference: 2024161

Statement of facts

Airprox, Alexander Schleicher ASK 21, PH-1337 and Rolladen-Schneider LS 4-a, PH-740

Gilze-Rijen Control Zone, 10 August 2024

The ASK 21, with a pilot and passenger on board, was approaching the left side of a thermal. At that point, one of the gliders present in the thermal, an LS 4-a that was turning anticlockwise, left the thermal. The two gliders then approached each other in opposite directions and were at altitudes of between 700 and 800 metres. The FLARM system on board both aircraft generated a warning. The pilot of the ASK 21 then initiated a dive with open airbrakes so as to prevent a collision between the two aircraft. The pilots continued their flight and reported no further particulars after landing.

The airprox took place 1.2 kilometres east of Gilze-Rijen Air Base (EHGR), from which both aircraft had taken off. The visibility at that point was more than 10 kilometres, and there was no cloud cover.

The pilot of the LS 4-a reported that she had been climbing faster than another glider that was climbing close by. That glider had been in a different thermal to the LS 4-a and had been turning in the opposite direction. The pilot of the LS 4-a had therefore decided to leave the thermal so as to create space and to join in with the other aircraft in the same turning direction.

The pilot of the ASK 21 reported that his intention had been to first fly past the thermal and then perhaps join in.

The Safety Team of the gliding club (which owns both aircraft) investigated the occurrence and shared its investigation report with the Dutch Safety Board. The team concluded that the occurrence had been made possible by the decision by the pilot approaching the thermal. He had decided to pass the thermal on the left or enter it on this side while the other aircraft was turning anticlockwise inside the thermal. A contributing factor was that neither pilot had spotted the other glider's flight path in good time.

Classification: Serious incident
Reference: 2024154

Loose tow cable over wing, Alexander Schleicher ASK 13, D-4133 and Pipistrel Virus SW 121, PH-MSM

Deelen Air Base, 24 August 2024

The ASK 13, with an instructor and a trainee on board, was to be launched by means of an aerotow from Runway 19 at Deelen Air Base (EHDL) by a Virus SW 121. The wind direction at ground level was 190, and the wind-speed was 20 knots. Prior to take-off, the instructor discussed the purpose of the tow flight with the pilot of the tug. The trainee then carried out the aerotow take-off. After a climbing turn of 180 degrees, the instructor manoeuvred the glider into a position to the left of the tug, after which the trainee manoeuvred it back into the standard position behind the tug. The same exercise was then repeated, but to the right of the tug. The tow combination then made a climbing turn of 180 degrees. The trainee, coached by the instructor, manoeuvred the glider into various positions behind the tug. The wind speed at that altitude was 30 knots. Due to turbulence,[6] the tow cable hung slack; shortly afterwards, it was abruptly pulled tight. As a result, the weak link[7] broke. The weak link was positioned close to the tug's towing hook. As a result, the tow cable came across the left wing of the glider and fell to earth. The glider remained controllable. After the tug pilot realised that the cable had come loose, he pulled the tug's release lever to make sure that a section of

6 After the flight, the tug pilot described the turbulence as 'moderate+'.
7 The weak link, a small metal plate, is a component of the tow cable that breaks at a predetermined load, thus severing the connection between the tug and the glider.

cable had not been left hanging from his aircraft. Neither aircraft sustained damage, and they landed without any further incident. The occupants were unharmed.

After the occurrence, the instructor wondered whether it is advisable to practise manoeuvring the glider into various different positions behind the tow aircraft in turbulent conditions.

The *Glider Facilities Regulations*[8] stipulate that the tow cable must include a weak link that is positioned as close as possible to the glider's tow hook. The tow cable concerned has now been fitted with a second weak link that is positioned at the glider's tow hook and has a lower fracture strength than the first tow release.

Classification: Serious incident
Reference: 2024166

Broken ankle, Theo Schroeder Fire Balloons GmbH Fire Balloons G, PH-XDR

Bergeijk, 1 September 2024

The hot-air balloon, with a pilot and four passengers on board, took off from Weert for a flight with a landing planned for a field near Bergeijk. The weather conditions were good: it was dry, about 25 degrees, and there was little wind. Before the flight, the pilot explained and demonstrated the landing position to the passengers. He repeated those instructions during the flight. That included standing with one's back to the direction of flight during landing. All the passengers adopted the position that had been explained to them when the balloonist asked them to do so just before landing. After that, the balloonist concentrated on the landing.

During the landing – with a normal descent angle and a speed of approximately 5 knots – the basket touched the meadow. The meadow was flat and the ground was not too soft. The basket did not bounce and it travelled about ten metres across the grass before coming to a standstill.

Although there was nothing unusual about the landing, one of the passengers broke his ankle when the basket touched the ground. The moment of landing came unexpectedly for the injured person because he was standing with his back to the direction of flight. He was taken to hospital for treatment. What exactly caused the broken ankle during the landing in unknown. The other passengers and the pilot were not injured. The balloon was not damaged.

Classification: Accident
Reference: 2024171

8 In Dutch: Regeling voorzieningen sleepvliegen. Section 4(1)(b).

Airprox, Alexander Schleicher ASK 23 B, PH-760 and Alexander Schleicher ASK 21, PH-1097,

Noordkop Glider Airfield, 14 September 2024

The PH-1097 and the PH-760 were flying simultaneously at the same altitude towards the circuit of Noordkop glider airfield. By his own account, the pilot of the PH-1097 reported in by radio and joined the circuit on the left-hand downwind at around 13:18 hours.

At the same time, the pilot of the PH-760 also reported in by radio and joined in downwind, approximately 300 metres behind the PH-1097. The PH-1097 was probably in a position that was difficult for the pilot of the PH-760 to spot: at the same altitude, visually at the same height as the horizon, and travelling at a similar speed. Furthermore, the pilot of the PH-760 had not heard the earlier radio message from the PH-1097. As a result of those factors, the pilot of the PH-760 was under the impression that he was the only aircraft in the circuit.

The pilot of the PH-1097 flew a wider circuit by staying downwind for longer, communicated with his passenger, carried out his checks, and concentrated on the landing field. He did not see the PH-760, flying a normal circuit and approaching him on base. During the turn to final, at around 13:19 hours, the two aircraft came close to each other, after which FLARM generated a warning in both of the aircraft. At the most critical moment, the distance between them was only a few metres. The two pilots then saw each other, increased the distance between them, and landed safely next to each other on the field.

A joint radio check after landing showed that all the radios were working correctly. Why the pilot of the PH-760 did not hear the call from the PH-1097 is unknown.

In the morning briefings, the club therefore emphasises once again the importance of flying a correct circuit, using the radio correctly, and ensuring that pilots pay proper attention when flying with passengers.

▲ *The flight paths of PH-1097 and PH-760. (Source: IGC-data and OpenStreetMap)*

Classification: Serious incident
Reference: 2024182

▲ *The Robin after the emergency landing. (Source: passenger)*

Emergency landing following loss of engine power, Avions Pierre Robin DR 400 2+2, F-BVDD

Marken, 11 January 2025

The Robin had taken off from Texel International Airport (EHTX) at 15.47 for the return flight to Breda International Airport (EHSE). On board were the pilot and one passenger. The pilot flew via the corridor across the Wadden Sea at 1500 feet in the direction of Enkhuizen. Near Andijk, he changed course towards Pampus and was then flying at approximately 1300 feet in order to remain below Schiphol TMA 1.

Above the Markermeer lake, the engine began to sputter and its power decreased. The aircraft could no longer maintain height. The pilot began flying at optimum glide speed, switched on the fuel pump, checked that the fuel switch was in the correct position and switched on the carburettor preheater. The engine then produced even less power, so the pilot switched off the carburettor preheater again. Because the engine was still producing a certain amount of power, the pilot decided not to restart it. He made a MAYDAY call on the Amsterdam Information frequency and confirmed when asked that he needed assistance.

The pilot was able to see the Marken peninsula and decided to make an emergency landing there. He could not remember whether he had selected flaps during the approach. His focus at that point was on reaching the peninsula. When he succeeded in doing so, he made a left turn and landed the aircraft in an east-northeast direction in a meadow. The wind at ground level was from direction 340 at 7 knots, gusting to 13 knots. During the ground roll, the aircraft passed over two ditches, sustaining damage to the landing gear, the propeller and the

right wing. Both occupants remained unharmed. Afterwards, the pilot called air traffic control to report how the landing had gone.

The temperature at an altitude of 1300 feet was 1 degree Celsius, and the dew point temperature at ground level along the route followed varied between 1.4 and 1.7 degrees Celsius. This indicates high humidity. Under such circumstances, ice can form in the carburettor, but other possible causes for the loss of engine power cannot be ruled out.

The pilot had bought the aircraft about a year previously and had not experienced any engine problems before. The aircraft had had its most recent 100-hour inspection on 8 November 2024.

The pilot held a PPL(A)[9] with the SEP (land) rating.[10] He had a total of 240 flight hours, 117 hours of which involved the type of aircraft concerned.

Classification: Accident
Reference: 2025002

Aerial photo of the Robin after the emergency landing. (Source: Police, Aviation Supervision Team)

9 Private pilot licence (aeroplane).
10 Single-engine piston.

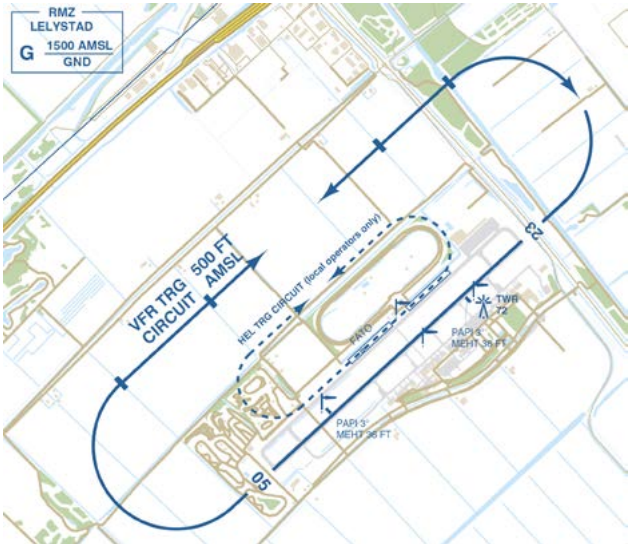
Airprox, Hélicoptères Guimbal Cabri G2, PH-HCC en Aero Sp.z o.o AT-3 R100, PH-ZVA

Lelystad Airport, 31 januari 2025

The Cabri helicopter was carrying out a local training flight from Lelystad Airport (EHLE). On board were a trainee and an instructor. Runway 23 was in use at the time. The helicopter took off from the final approach and take-off area (FATO) located on the north side of Runway 23. The intention was to conduct training in the helicopter training circuit. This is located within the training circuit for aeroplanes. The helicopter made a right turn to the crosswind leg at an altitude of 450 feet. Approximately 20 seconds later, an aeroplane passed above the helicopter at a vertical distance of 40 feet and a horizontal distance of 10 metres, as estimated by the instructor. The instructor asked on the radio frequency what the aeroplane was doing in the helicopter circuit and reported an airprox. The air traffic controller requested the pilot of the aeroplane to adhere to the published procedures.

The pilot of the aeroplane, an AT-3, had made a landing on runway 23. During the landing, the aeroplane had bounced and the pilot had performed a go-around. The pilot stated that it had been cold, which had caused the aeroplane to quickly climb to 500 feet. His focus during this manoeuvre had been on the altitude and the circuit. Once the aeroplane had reached 500 feet, the pilot had made a turn to the right to the crosswind leg and flown through the helicopter training circuit.

As stated in the Aeronautical Information Publication, pilots must adhere strictly to the circuit dimensions as shown on the visual approach charts, unless instructed otherwise by air traffic control. Because the runway at EHLE is relatively long for single-engine aeroplanes, pilots may perhaps feel that they need to fly straight ahead for a long time before they can make the turn to the crosswind leg. This applies in particular to the VFR training circuit, which is at 500 feet AMSL. This height can already be reached above the runway, before the turn to the right can be initiated. There are circuit markings on the ground under the downwind leg. By flying over the first marking at the beginning of the downwind leg for Runway 23, sufficient separation from the helicopter training circuit is guaranteed.



▲ *VFR training circuit and (within it) the helicopter training circuit. (Source: AIP Netherlands)*

Classification:	Serious incident
Reference:	2025013

Completed investigations (abroad)

Loss of control, Jonker Sailplane JS1-C 18/21 “Revelation“, ZS-GBG,

Suhl-Goldlauter Special Airfield (Germany), 25 June 2024

During the first part of the aerotow, the glider climbed above the tow aircraft. The tow cable hung slack and detached from the glider. The glider then turned to the left. A few seconds later, it suddenly began to rotate around its longitudinal and lateral axes and struck the ground. The Dutch pilot sustained fatal injuries.

The German Bundesstelle für Flugunfalluntersuchung (BFU) published an *Interim Report* in February 2025.

Classification: Accident
Reference: 2024142

DUTCH
SAFETY BOARD

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.

July 2025

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

Photo cover/foreword
Passenger.

The Dutch Safety Board in three questions

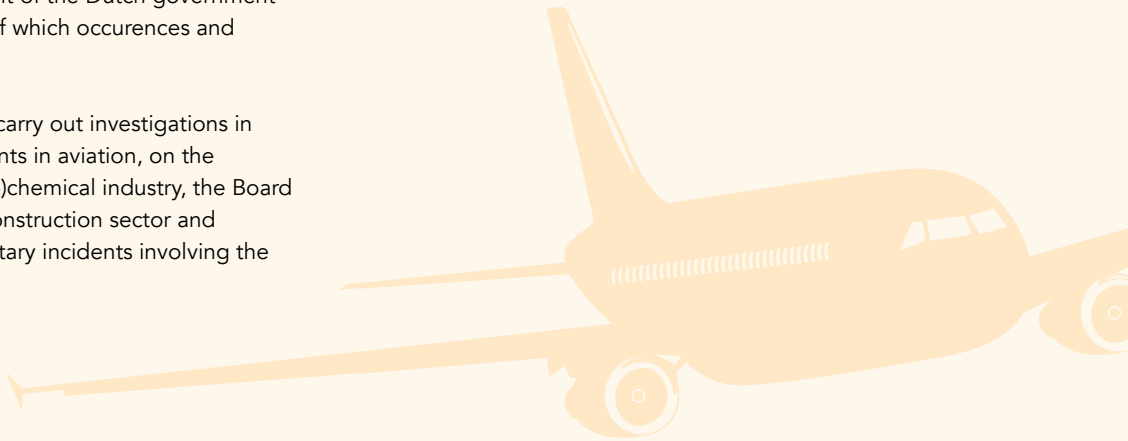
1. What does the Dutch Safety Board do?
Living safely, working safely, safety. It seems obvious, but safety cannot be guaranteed. Despite allknowledge and technology, serious accidents happen and disasters sometimes occur. By carrying out investigations and drawing lessons from them, safety can be improved. 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.