DUTCH
SAFETY BOARD

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.

Quarterly Aviation Report

July - September 2021

In July, the Portuguese safety investigation authority GPIAAF published a report on an occurrence at Lisbon airport, whereby the crew of a Dutch airline used incorrect data to calculate take-off performance. A possible consequence of an error of this kind is that the calculated take-off speeds and thrust settings are lower than required. This represents a flight safety hazard, as the required take-off roll increases. This quarterly report announces an investigation into a similar occurrence in Berlin, recently launched by the Safety Board.
In line with past recommendations from the Safety Board, it is still urgently necessary to introduce a system that detects serious input errors in calculating take-off performance and/or that issues a warning of insufficient available take-off runway length, or of unusually low accelerations for the actual aircraft configuration. Focusing exclusively on tightening up operational procedures is insufficient to prevent occurrences of this kind.

Following the abovementioned occurrence in Berlin, the flight crew failed to secure the recordings of the Cockpit Voice Recorder, as a result of which they were not available for the investigation. A number of other investigations are currently underway in which this is also the case. The Dutch Safety Board therefore emphasizes the importance of Cockpit Voice Recorder recordings as a means of determining the facts, and as part of a safety investigation to ensure that optimum lessons can be learned.

Jeroen Dijsselbloem
Chairman Dutch Safety Board


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Occurrences into which an investigation has been launched

Ground loop during off-field landing, Rolladen-Schneider LS8-a, near Nijmegen, 20 July 2021

The pilot made a landing in a meadow. Just before landing, the pilot noticed a pole in the meadow, whereupon he made a right turn to avoid it. The right wing hit the ground, after which the glider made a ground loop. The glider hit the pole. The pilot was unharmed. The fuselage of the glider was broken in several places.

Classification: *Accident*
Reference: *2021079*

Runway excursion, Cessna 177, Hilversum Airfield, 21 July 2021

During landing, the flight instructor lost control of the aircraft. The aircraft came to a stop in a meadow adjacent to the airfield and was seriously damaged. The flight instructor suffered minor injuries. The student and a passenger were unharmed.

The crashed aircraft.

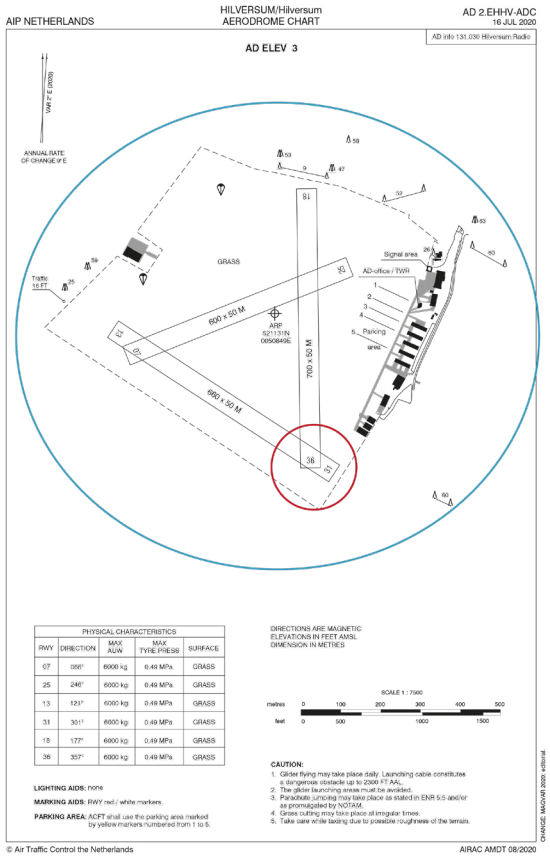
Classification: *Accident*
Reference: *2021080*

Occurrences into which an investigation has been launched

Departed from wrong runway, Reims Aviation S.A. F172N, Hilversum Airfield, 23 July 2021

The pilot of the F172N took off from runway 31, while runway 36 was in use. The aircraft passed a member of the gliding club at a short distance, which was positioned west of runway 36. The winch start of a glider was temporarily suspended. After take-off, the aircraft passed a glider at a short distance.

Classification: *Serious incident*
Reference: *2021081*



Aerodrome chart Hilversum Airfield. (Source: AIP, LVNL)

Take-off with erroneous data, ERJ 190-400, Berlin Brandenburg Airport (Germany), 12 September 2021

The aircraft took off from runway 25R via intersection L5. The flight crew had based the take-off performance calculation on intersection K5, from where the available take-off length is longer. After rotating, the crew noticed that the remaining runway length was short.

The German Federal Bureau of Aircraft Accident Investigation (BFU) delegated the investigation to the Dutch Safety Board.

Classification: *Serious incident*
Reference: *2021105*

Occurrences abroad with Dutch involvement into which an investigation has been launched by a foreign authority

Bird strike, Boeing 777-300ER, Kotoka International Airport (Ghana), 3 September 2021

During the take-off from runway 03 at Kotoka International Airport, a Dutch registered Boeing 777 operated by a Dutch airline suffered a bird strike, at which point the crew rejected the take-off. Two tyres were punctured, and two other tyres suffered damage due to wear.

The Aircraft Accident and Incident Investigation and Prevention Bureau of Ghana launched an investigation following this occurrence. The Dutch Safety Board provides assistance.

Classification: *Incident*
Reference: *2021100*

Runway excursion, F28 MK 0100, Laverton Aerodrome (Australia), 28 September 2021

After landing, the crew of the Fokker 100 experienced steering problems while taxiing. As a result, the nosewheel ended up off the runway.

The Australian Transport Safety Bureau (ATSB) launched an investigation into the occurrence. The Dutch Safety Board offered its assistance.

Classification: *Incident*
Reference: *2021115*

Published reports

Near miss between two aircraft during taxi, Airbus 320-200, G-EZWY, Airbus 320neo, SE-DOY, Amsterdam Airport Schiphol, 3 February 2019

An Airbus 320neo landed in the evening of 3 February 2019 on runway 18C of Amsterdam Airport Schiphol and, while taxiing on a taxiway, received clearance from air traffic control to taxi to the parking position at the C-pier. The crew was also instructed to give way, when approaching a taxiway junction, to an Airbus 320-200 that had landed on runway 18R and would approach from the right. This instruction was given in advance, around 1:30 minutes before the two aircraft would meet each other. The crew acknowledged the instruction but did not read back the full instruction. The crew of the A320-200 was informed that the A320neo had just landed and would wait for them at the junction to pass.

When both aircraft approached each other at the taxiway junction, the crew of the A320neo did not give way as instructed. A collision between the two aircraft was prevented, because the pilot of the A320-200 made an effective emergency stop. The right wingtip of the A320neo passed a short distance in front of the A320-200. The flight crew of both aircraft and ground control have a responsibility to prevent collisions or dangerous situations between taxiing aircraft. The flight crew of the A320 neo, who did not know where to expect the other aircraft, overlooked it. This was due to the darkness, the back ground lighting, the complexity of the location and their other tasks during taxi.

The span of control in combination with the darkness complicated the tasks of the ground controller to provide adequate traffic control. He gave the instructions early and paid little attention to both aircraft. In view of the circumstances, the ground controller had little opportunity to prevent the conflict in time when the two planes had approached each other closely.

The serious incident was caused because the crew of the aircraft that had to give priority did not notice the other aircraft in time. The factors below played a role:

- The early instruction of the ground controller and the lack of later, additional instructions.
- The crew did not hear or did not recall where to expect the other aircraft neither did they challenge air traffic control.
- The ground controller did not challenge the crew when they gave an incomplete read back.
- The darkness and background lighting in combination with the complexity of the location at Amsterdam Airport Schiphol where the incident occurred and other tasks of the flight crew.
- The darkness and the distance between the control tower and both aircraft.
- The limitations of visual observation during darkness in combination with the properties of the ground radar system.

Preventing collisions and dangerous situations on the ground is a shared responsibility. Both flight crews and air traffic control play an important role in this, certainly in cases where a possible conflict is foreseen. In addition, it is preferable to repeat stop instructions and continue to stay in touch with the crews, until they have a clear picture of the situation and the possibility of making mistakes is reduced.

The Dutch Safety Board published the report on 22 September 2021.

Left turn where the Airbus 320-200 came from right. (Source: Amsterdam Airport Schiphol)

Reports with Dutch involvement published by foreign investigation authorities

Runway overrun, Fokker F28 Mk 0100, VH-NHY, Newman Airport (Australia), 9 January 2020

After a stable approach, the aircraft touched down in moderate rain, at or before the touchdown zone, at a speed 16 kts above the reference landing speed for the configuration. The crosswind at the time was recorded as gusting to 35 kts. The flight crew experienced lower than expected braking performance and reported aquaplaning during the landing roll. The pilot flying used the aquaplaning response technique to maintain directional control and subsequently commanded maximum reverse thrust.

The aircraft stopped 70 metres beyond the end of the runway inside the runway end safety area. There were no injuries to crew or passengers and an inspection of the aircraft found that the loose gravel had damaged some of the landing gear components.

The combination of the approach speed required by the prevailing wind conditions and the poor braking effectiveness in the wet conditions resulted in the aircraft overrunning the runway.

The Australian Transport Safety Bureau (ATSB) published the report on 1 September 2021.

Avionics system occurrence, Fokker F28 Mk 0100, VH-FNR, West Angelas Aerodrome (Australia), 1 September 2020

During the landing, the take-off/go-around (TOGA) mode activated, disarming automatic deployment of the lift dumpers. Manual activation of the lift dumpers and reverse thrust did not occur on the first or second attempts by the flight crew. On the third attempt, the lift dumpers and thrust reversers deployed. During the landing roll, an engine speed caution activated as reverse thrust had been selected between the idle and maximum reverse positions.

The ATSB found that, during the landing phase, the TOGA mode activated uncommanded for an undetermined reason. This subsequently prevented automatic deployment of the lift dumpers. It was also established that the aircraft likely landed so softly that the weight on wheels sensors did not immediately activate. This delayed manual activation of the lift dumpers and deployment of reverse thrust.

The Australian Transport Safety Bureau (ATSB) published the report on 22 July 2021.

Reports with Dutch involvement published by foreign investigation authorities

Incorrect take-off performance calculation, Boeing 737-800, PH-BCD, Lisbon Airport (Portugal), 3 March 2021

While entering LINTOP (Lido Integrated Take-off Performance tool) data on board a Boeing 737 operated by a Dutch airline, to calculate the take-off performance, the crew selected intersection S1 on runway 21. Because intersection S1 is not a valid initiation point, LINTOP created a notice of the occurrence. The investigation revealed that the crew had requested take-off data for intersection S on runway 21, erroneously leaving out the '1' (of S1). As a result, position S was accepted as a valid initiation point. On the airport map used by the crew, this position designates the intersection at the beginning of runway 21. Eventually, the crew initiated their take-off on runway 21 from intersection U5, as instructed by air traffic control. As a result, at the end of the runway, the aircraft was flying too low, at an altitude of between 45 and 70 feet radio height. The flight was continued without further mishap.

The Portuguese GPIAAF published the report in July 2021.

Occurrences that have not been investigated extensively

Landings on unavailable runway, Amsterdam Airport Schiphol, 18 January 2020

On 18 January 2020, sixteen aircraft landed at Amsterdam Airport Schiphol, with permission from air traffic control, on an unavailable runway.

Before Air Traffic Control the Netherlands (LVNL) at Amsterdam Airport Schiphol (AAS) is permitted to use a particular take-off or landing runway, the runway in question must first be requested by LVNL, and subsequently made available to air traffic control by the airport authorities. This had not happened on 18 January 2020. As a result, sixteen landings took place on an unavailable runway (runway 36C). 25 minutes later, it was noticed that the runway was in fact unavailable. If a runway has not been made available to air traffic control by the airport authorities, it is possible that other aircraft or for example (towing) traffic or other vehicles may be present on the runway. It is therefore a potentially hazardous situation if take-offs or landings are carried out on an unavailable runway. In the case of 18 January 2020, the hazard situation was limited because the stop bars[1] had been switched on by LVNL.

The incident on 18 January 2020 was not the first incident whereby LVNL made use of a runway that had not yet been made available by the airport authorities. On 16 June 2012, nine aircraft took off from a runway that had not been made available to air traffic control by the airport. The unavailability of the runway was not observed by the duty runway controller or by any other member of the air traffic control staff present. At the time, the Dutch Safety Board launched an investigation into the incident. The report described multiple causal factors and issued a number of recommendations[2], not all of which have yet been followed up on. Procedures for requesting and returning runways have also not been changed, and no officer responsible has yet been designated for this task. In addition, no checklist is used when commissioning or decommissioning a runway.

Over the past few years, AAS and LVNL have introduced a number of systems that contribute to preventing the use of unavailable runways. In 2017, the Airfield Lighting Control and Monitoring System (ALCMS) was commissioned by the airport. Via an interactive screen, this system provides an overview of the status of the runways at Amsterdam Airport Schiphol; see the photograph below.

The Airfield Lighting Control and Monitoring System (ALCMS) control panel at Amsterdam Airport Schiphol. The runways illuminated in yellow are available to air traffic control. The runways in grey are unavailable.

On 21 April 2019, the analogue system used by LVNL for handling flights on the basis of standardised information carriers (strips), was replaced by a system that presents flight data electronically, the Electronic Flight Strips (EFS) system. Since the commissioning of the new control tower layout, the uniform ALCMS overview of runway availability is presented at all workstations in the control tower.

The introduction of ALCMS at the airport, which among others controls the runway availability panel in the control tower, and the new layout of the control tower means that the recommendation to integrate, standardise and simplify the presentation of runway availability and runway use has been complied with. Nevertheless, this incident was not prevented.

In response to the occurrence on 18 January 2020, ahead of the planned date, the ALCMS was linked to the EFS commissioned by LVNL, on 17 March 2020.

1 Stop bar, a row of recessed red lights at right angles to the direction of travel of a taxiway, at the intersection between the taxiway and the take-off or landing runway.

2 https://www.onderzoeksraad.nl/en/page/1935/negen-starts-van-een-niet-beschikbaar-gestelde-baan-16-juni-2012

Occurrences that have not been investigated extensively

Part of a workstation at Schiphol control tower: the EFS of LVNL. In the above example, runway 18L/36R is unavailable. The red rectangular block (marked with an arrow) contains the tekst 'runway unavailable'. (Source: LVNL)

By connecting these two systems, it is no longer possible to allocate a flight to an unavailable runway. If an attempt is made to do so, the runway section lights up red and the flight data do not appear on the screen. The system also generates the warning 'Runway unavailable'.

The introduction of the EFS at LVNL and the subsequent combination of the two systems following this incident have created an effective safety net. The Dutch Safety Board believes that these steps have considerably reduced the likelihood of incidents that involve runways being made available to LVNL and returned to the airport authorities. The Dutch Safety Board would however add that the system of making runways available to air traffic control and the return of runways by air traffic control to the airport authorities if one or more runways are temporarily out of use, is unique to Schiphol. This situation contributes to the complexity of handling air traffic at Amsterdam Airport Schiphol, which can entail certain safety risks.[3]

Classification: *Incident*
Reference: *2020005*

3 https://www.onderzoeksraad.nl/en/page/4247/veiligheid-vliegverkeer-luchthaven-schiphol section 3.5

Loss of control during landing, Blackshape Prime BS100, PH-4Q1, Middenmeer airfield, 7 April 2020

The microlight aeroplane (MLA) took off from Middenmeer airfield for a local flight. On board were the pilot and one passenger. The pilot had already completed two flights with the same aircraft, earlier in the day. On returning, he joined the downwind leg for runway 05. Wind speed was 6 knots at 075 degrees. During the approach to runway 05, the pilot selected 30 degrees of flaps. The pilot's intention was to halt the aircraft on the first half of the runway, before the exit, so that it could rapidly clear the runway for an aircraft he had seen waiting to take off, at the beginning of the runway. However, shortly before the landing, just before he passed the runway threshold, the aircraft rolled to the left, and the tip of the left wing touched the ground. The aircraft subsequently turned to the left, and came to a stop in a field next to the runway. The aircraft was damaged; the left main landing gear and the left flap broke off. The two occupants were unharmed.

The pilot was in possession of a valid pilot's licence and a valid medical certificate. He had 9,639 hours flying experience of which 348 hours on single-engined piston engine aircraft, including 37 hours on the type involved.

The Middenmeer Safety Committee investigated the cause of the occurrence and shared the results with the Dutch Safety Board. These results were included in the investigation by the Dutch Safety Board.

The cause of the accident was an asymmetric stall over the left wing during short final, at which point the pilot lost control of the aircraft. The flight data show that the speed of the aircraft fell from around 70 knots during final to around 53 knots during short final. The pilot then in a short time raised the pitch attitude, at which point the speed fell further to 45 knots. A few seconds later, the nose of the aircraft rose even higher and the left wing stalled. According to the flight data, the aircraft generated an auditive stall warning but the pilot had no memory of this warning.

The Blackshape Prime in the field. (Source: Dutch Aviation Police)

The MLA version of the Blackshape Prime is approved in the Netherlands with a maximum take-off weight of 472.5 kg.[4,5] According to the flight manual[6], the stall speed at this weight, with the wings horizontal and 30 degrees of flaps, is 35 knots. In practice however it has shown to be almost impossible, even with just one occupant, to remain below this maximum take-off weight, which leads to an increased stall speed.[7] Just like many other Dutch users of the Blackshape Prime BS100, the pilot therefore structurally maintained higher approach and landing speeds than those specified in the flight manual. His intention to bring the aircraft to a standstill before the exit from the runway may have contributed to the fact that he allowed the approach speed to fall below the higher stall speed than that specified in the flight manual.

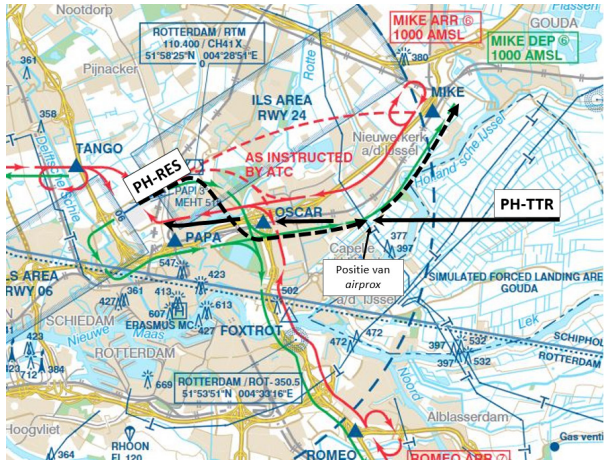
4 The maximum landing weight is also 472.5 kg.
5 The Light Sport Aeroplane version has a maximum take-off and landing weight of 600 kg.
6 BLACKSHAPE S.P.A., BLACKSHAPE prime PILOT'S OPERATING HANDBOOK AND AIRPLANE FLIGHT MANUAL, BPUFM472, First issue, 31/08/2015.
7 The estimated landing weight of the aircraft during the accident flight was approximately 585 kg, with an accompanying stall speed of approximately 39 knots. The aircraft was 24% overloaded in respect of the maximum landing weight.

In the Netherlands, it is expected that the maximum take-off weight of MLAs will be raised during the first half of 2022 to 600 kg, and the maximum stall speed increased to 45 knots, such that this discrepancy between manual and practice no longer exists.

Classification: *Accident*
Reference: *2020018*

Airprox, Airbus EC135 P3H, PH-TTR, Reims Aviation S.A. F172N, PH-RES, Rotterdam CTR, 24 June 2020

The EC135 P3H air ambulance helicopter, registration PH-TTR, is used by ANWB Medical Air Assistance for emergency medical flights. The helicopter was on its return from a cancelled callout, to the east of the control zone (CTR) of Rotterdam The Hague Airport (see figure). At the time, the radio frequency of the Rotterdam tower was congested due to a large number of flights in the CTR. Shortly before the helicopter reached the boundary of the CTR, the crew of the helicopter received clearance from the air traffic controller to enter the CTR. The clearance instructed to fly at an altitude of 1,500 AMSL or lower, directly to point Papa, for a visual approach to landing. In the meantime, the crew of the helicopter was involved in efforts to solve noise disruptions on the helicopter's intercom. On board the air ambulance helicopter were the captain, an HEMS[8] crew member (navigator) and a medical passenger (doctor).



Position of the airprox between PH-TTR (black) and PH-RES (black dotted). (Source: LVNL, modified by the Dutch Safety Board)

8 Helicopter Emergency Medical Services.

Occurrences that have not been investigated extensively

The Reims F172N, registration PH-RES, had taken off from runway 06 at Rotterdam The Hague Airport for an instruction flight. The aircraft was cleared for the VFR Mike Departure. On board the aircraft were the captain instructor and a trainee pilot.

Following clearance from the air traffic controller, the air ambulance helicopter descended to approximately 800 feet and set course for point Papa via point Oscar. At the same time, the aircraft on the Mike Departure was flying at 1,000 feet AMSL, and after passing point Oscar turned onto a heading of approximately 080 degrees. At around 3 NM east of point Oscar, the two aircraft came within close vicinity of each other in opposite directions (see figure). The helicopter made an evasive manoeuvre to the right; at the same time the aircraft also made an evasive manoeuvre to the right. The aircraft subsequently passed each other at a horizontal separation of approximately 150 metres and a height difference of 200 feet. Following the airprox, the helicopter landed at Rotterdam The Hague Airport, and the aircraft continued its flight in a north-easterly direction.

At the moment of the airprox, the air traffic controller was responsible for two IFR flights and eight VFR flights. A number of the VFR flights were survey flights and photographic flights that had been present within the CTR for some time. In addition, the fuelling station at the airport was defective, a situation that generated more radio traffic. Moreover, a number of aircraft did not respond swiftly to calls from the air traffic controller.
The weather was suitable for flying under visual flight rules (VFR). The wind was 10 knots from an easterly direction, visibility was more than 10 kilometres and the only cloud cover being high altitude cirrus.

The air traffic controller had issued the necessary initial clearances to the air ambulance helicopter and the aircraft. These clearances led to a situation where both aircraft found themselves approaching each other in opposite directions. The controller did not issue any further traffic information about the possible conflict to the aircraft. The air traffic controller indicated that the cause of this omission was the high traffic volume in the CTR and the resultant increased workload.

The recording of the radio traffic reveals a high frequency load, sometimes requiring the controller to repeat an unanswered or misunderstood transmission.

To the east of point Oscar, the helicopter pilot had deliberately opted to fly at 800 feet AMSL, based on his experience in recent days that the area was busy with other VFR traffic flying at 1,000 feet AMSL. This meant he was flying 200 feet below the altitude of the Mike departure. Furthermore, the crew of the helicopter observed no other traffic that could represent a conflict, on the traffic advisory system. However, PH-RES was not indicated on the helicopter's traffic advisory system. The aircraft transponder was not transmitting any information, because it had been switched to the wrong setting. In addition, just before the airprox, the crew of the helicopter was distracted by an electronic noise on the intercom system. As a result, their attention was mainly focused inside the helicopter.

Both aircraft were flying under visual flight rules in the Rotterdam CTR; this airspace is classified as class C airspace. In class C airspace, VFR flights receive air traffic control for the separation with IFR flights and traffic information about other VFR air traffic. Traffic information means that information is provided by air traffic control to inform pilots about other known or observed air traffic located close to or on the proposed route, in order to avoid mid-air collisions. In class C airspace, the pilots of VFR flights are responsible for their separation with other VFR flights.[9] The application of the see-and-avoid principle, with appropriate division of attention and scanning techniques, is of vital importance.[10]

Both ANWB Medical Air Assistance (MAA) and Air Traffic Control the Netherlands (LVNL) conducted their own investigation into the occurrence and shared the results with the Dutch Safety Board. Both organisations have taken internal measures to reduce the risk of airproxes. The ANWB MAA has informed its crews of the risks of crossing VFR departure and arrival routes and training attention has been given on crew resource management to solve unusual situations.

9 EASA, Easy Access Rules for Standardised European Rules of the Air, 2021.
10 EASA, Sunny Swift: See and Avoid, 2021.

At Rotterdam The Hague Airport, LVNL has introduced a planning overview in the tower, that provides an indication of the workload of the total IFR flights, VFR flights and special flights.

This occurrence once again, shows that the see-and-avoid principle is fundamental for a safe separation between aircraft that are not being separated from each other by air traffic control.

Classification: *Serious incident*
Reference: *2020040*

Airprox, Rolladen-Schneider LS4-a, PH-888, Glaser-Dirks DG-800 S, PH-1240, Malden glider airfield, 5 August 2020

The DG-800 took off from runway 21R at Malden glider airfield, using the winch launch method. The pilot released the winch cable at an altitude of 320 metres. The aircraft found itself in a thermal, at which point the pilot initiated a left-hand turn and started to circle. The LS4 took off one minute later, also using the winch launch method. When the LS4 reached an altitude of approx. 300 metres, a FLARM warning indicating an approaching collision hazard was activated in both aircraft. The pilot in the LS4 saw the DG-800 approaching from the right, at approximately the same altitude and perceived the separation between the two aircraft as dangerously close. He performed no evasive manoeuvre. At that moment, the pilot in the DG-800 did not observe the LS4. The separation between the two gliders subsequently increased, the FLARM warnings were deactivated, and both pilots continued their flight without reporting any further incidents.

According to data retrieved from the FLARM devices on board the two gliders, the minimum horizontal separation between the two aircraft was 111 metres, with a vertical separation of 71 metres. This resulted in an absolute separation between the aircraft of 132 metres.

Immediately following the winch launch, the pilot in the DG-800 started turning in a thermal above the winch path. He had not agreed on this course of action prior to launch with the launch leader, and after releasing the winch cable also failed to report his intentions via the radio. The LS4 took off shortly after the DG-800. Neither the pilot of the LS4 nor the club members involved in the winch launch (winch operator, launch leader, cable hooker/wing walker) observed the DG-800 circling shortly before the take-off of the LS4, despite having been aware of the take-off of the DG-800, one minute previously. It is possible that sunlight at the take-off location restricted visibility for the various persons involved, thereby contributing to their failure to observe the DG-800. The pilot of the DG-800 had also not seen the LS4 taking off, when he started circling in the thermal. Both pilots were notified of the approaching conflict situation by the FLARM warnings.

It should be remembered that FLARM warnings must be viewed as a last line of defence. Maintaining a careful lookout is and remains the primary means of preventing airproxes.

It is a mark of good airmanship to not start circling above the winch and/or the winch path following a winch launch, in particular if the take-off was not assisted using the final winch cable in a set, such that a subsequent winch launch can take place shortly afterwards. If circling in a potentially risky location is considered desirable, then this must be coordinated in advance with the launch leader and/or instructor on duty, or permission for the action must be requested via the radio. In addition, if flying at low altitude above or close to the winch, it is the responsibility of the pilot to monitor at all times whether other aircraft are taking off.

After completing the cockpit checks that are carried out by the pilot prior to every take-off, the pilot must also check whether the launch area is clear. This includes scanning the airspace for the presence of gliders or other aircraft that could cause a potential collision hazard during the take-off. This responsibility also lies with the club members directly involved in the winch launch.

The Safety Management Committee (VMC) of the gliding club conducted an investigation into the occurrence and shared its findings with the Safety Board. The occurrence was reported to the Dutch Safety Board on 26 April 2021. Due to the late reporting of the occurrence, for this report, the Safety Board made use of the report drawn up by the VMC.

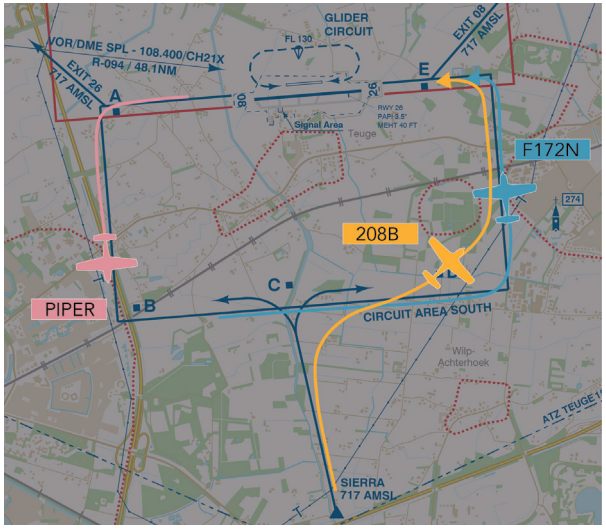
Classification: *Serious incident*
Reference: *2020095*

Occurrences that have not been investigated extensively

Airprox, Cessna 208B, PH-SWP, Reims Aviation S.A. F172N, PH-TGV, International Airport Teuge, 20 August 2020

PH-SWP, a Cessna 208B Grand Caravan, was approaching point Sierra south of the circuit area of International Airport Teuge (hereafter Teuge) after a para-drop for a landing on runway 26. The pilot of the 208B reported this on the Teuge Radio frequency. Upon passing point Sierra, the pilot reported again and almost immediately thereafter, the pilot of a Piper Cub reported "turning left crosswind 26". Because of the difference in speed between them, the pilot of the 208B asked the Piper for permission to turn onto downwind in front of him. The pilot of the Piper had no objection. The 208B entered on downwind and continued the circuit. At short final the pilot of the 208B heard the pilot of another aircraft report that he had been cut off by him. The 208B then landed on runway 26.

PH-TGV, a Reims Aviation S.A. F172N, was flying in the circuit and was performing touch-and-go's during a flying lesson. The pilot of the F172N stated that while turning to final he was suddenly overtaken by the 208B, which consequently passed overhead and ended up in front of him. The pilot of the F172N estimated the horizontal distance between the two aircraft to be approximately 30 meters and the vertical distance to be 20 meters. According to the pilot of the F172N the 208B entered the circuit at high speed and from above. In response, the pilot of the F172N initiated a go-around. After landing, the pilot of the 208B stated that he had not seen the F172N. He also stated that he had not received notification from the FLARM system, with which the aircraft was equipped. The airport manager saw the incident occur, but did not issue a warning.



Situation overview based on statements from the pilots. (Chart: visual approach chart International Airport Teuge, source: AIP, LVNL)

At Teuge, runway 26 with a left hand circuit was in use. The circuit is located at an altitude of 700 feet AAL (see also the situation overview). No speed restrictions apply in the circuit. An approach speed between 55 and 70 knots is prescribed for the Reims Aviation S.A. F172N.[11] The Cessna 208B, a larger aircraft, has an approach speed between 78 and 110 knots.[12]

Like the 208B, all of the operator's other aircraft were equipped with a FLARM system. This system provides a warning in case of collision danger. Because the system only works when other aircraft also use this system, and the F172N was not equipped with this, no warning was generated either.

11 Depending on the flap setting. Source: Cessna Aircraft Company, Pilot's Operating Handbook for Cessna Model 172N, 1977.

12 Depending on the flap setting. Source: Cessna Aircraft Company, Pilot's Operating Handbook for Cessna Model 208 Series, 2004.

The weather conditions played no role in the occurrence of this incident. The sky was clear and visibility was more than 10 kilometers. The incident could have occurred because the pilot of the 208B had not seen the other aircraft. Due to the higher speed of the 208B the aircraft caught up with the 172N.

Data requested from the Aviation Occurrence Analysis Agency of the Human Environment and Transport Inspectorate (ILT) shows that similar incidents have occurred more frequently in the Teuge circuit area involving aircraft with different operating speeds. In the period 2009-2019, eight airproxes were registered, of which six reports involved high speed and/or high insertion or cutting in the circuit by a C208 according to the reporter.

Teuge is an airport used by a variety of aircraft conducting different types of operations. Inherent speed differences between aircraft can in some cases lead to situations where aircraft come close to each other, as illustrated by this incident and previous incidents. Aircraft used for para-drops often fly faster than other aircraft in the circuit and operate many times a day. It is important for pilots to be aware of their speed and be vigilant for slower traffic and anticipate to it.

Classification: *Serious incident*
Reference: *20200081*

Emergency landing, Diamond DA40 TDI, PH-TDS, Den Bommel, 19 September 2020

At approximately 11.30 hours, the single engine Diamond DA-40 aircraft, registered as PH-TDS, took off from Amsterdam Airport Schiphol for a VFR flight to Midden Zeeland aerodrome. The pilot was the only occupant onboard and he possessed a private pilot license (PPL). He had accumulated 360 hours in total, of which 100 hours on the DA-40. After having flown a Victor departure, he left the control zone (CTR) of Schiphol and flew on a southerly heading at 1.200 ft, the pilot had established contact with Amsterdam Information of Air Traffic Control the Netherlands (LVNL).

According the pilot the fuel tanks were full when he departed from Schiphol and after approximately 20 minutes he was flying above the Haringvliet waters. He observed that engine oil pressure decreased, shortly came back a little after which it declined to 'zero'. The piston engine started to malfunction and power fell back after which the engine stopped. At 11.55 hours the pilot issued a Maday call to Amsterdam Information and reported he had an engine failure. As the pilot was conducting a glide he reached the shore near the village of Den Bommel. The pilot made an emergency landing in a field with crops, which he had initally viewed as grass. The pilot suffered no considerable injuries, the aircraft was substantially damaged.

Investigation and analysis

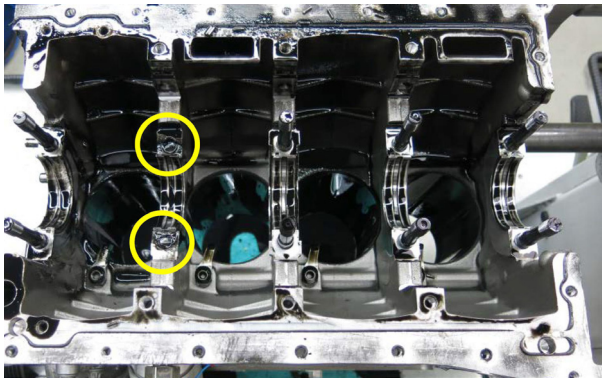
Initial engine inspection
While reading the before take-off checklist at Schiphol the pilot had not experienced any anomalies on the engine. Despite the decreasing oil pressure as observed by the pilot, it appeared that no engine oil had leaked. The diesel engine[13] of the manufacturer Continental Aerospace Technologies (formerly Thielert) was relatively new with 196 flight hours. Metal parts were found in the oil filter and the crankshaft appeared to be broken.

13 TAE-125-02-114-(0018)-(02) with serial number 02-02-11150.

As the engine had been designed and manufactured in Germany, the Dutch Safety Board (DSB) shared these results with the Bundesstelle für Flugunfalluntersuchung (BFU) in Germany which participated into the investigation.

PH-DTS after the emergency landing. (Source: Dutch Aviation Police)

Follow-up investigation
In October 2020 the BFU and the German manufacturer accomplished a further teardown of the engine of PH-TDS. Besides other damage it appeared that stud bolts of one of the crankshaft main bearing caps were broken, see the figure below.


Failed stud bolts of bearing #2 .

Occurrences that have not been investigated extensively

At the same time a similar engine from Ethiopia was investigated. Also this engine failed when it had accumulated approximately 200 flight hours. Its teardown also revealed a broken stud bolt, however, its crankshaft was still intact. It is suspected that both the stud bolts of PH-TDS and of the engine from Ethiopia failed due to fatigue. In February 2021 the BFU reported to the DSB that – in addition to the occurrence with PH-TDS – four other in-flight engine failures were known.

The damage assessment of the crankshaft and the main bearings of the engine of PH-TDS shows that due to the failure of main bearing #2, the crankshaft no longer appropriately aligned in all the bearings in the engine block. As this caused a cyclic load, the crankshaft ultimately failed due to fatigue and the engine block cracked, making an engine failure inevitable.

To assemble the engine the manufacturer uses four variants of stud bolts. All failed stud bolts were of the same (dark colored) variant and showed fatigue fractures. During the manufacturing process the failed stud bolt had been rolled[14] before the heat treatment whereas the other variants (shiny colored) had been cold rolled after the heat treatment. The shiny colored stud bolts demonstrated a better resistance against fatigue than the dark colored stud bolts.

Although the manufacturer found sufficient safety margin for the dark colored stud bolts in its calculations against fatigue, it can be concluded that the calculation methodology does not take into account all in-service conditions. The assembly process of the engine does not appear to be a factor for the failed stud bolts.

14 Rolled steel: a metal forming process to impart mechanical properties and/or to reduce or uniform thickness. When cold rolled, the steel temperature was below the recrystallization temperature.

Corrective actions
On 18 December 2020 the engine manufacturer issued a Service Bulletin (SB) to owners and maintenance organizations. The SB refers to the engine serial numbers of this type of engine which have been equipped with stud bolts from suspected batches. The manufacturer will replace these stud bolts and has determined the limits of flight hours and time within which this replacement has to be carried out. The efforts of the manufacturer are monitored by the oversight authority EASA, which approved the technical information in the SB.

In September 2021 the BFU reported that 370 engines had been returned to its production facility for inspection. This major safety action of the manufacturer resulted into the discovery of another 17 engines (22 in total when including the in-flight failure cases) with failed stud bolts.

Classification: *Accident*
Reference: *2020064*

Deviating airspeed and altitude indications, Boeing 737-800, OO-JAV, Amsterdam Airport Schiphol,
3 October 2020

On 3 October 2020, at approximately 08.30 hours the Boeing 737-800 was climbing out of Amsterdam Airport Schiphol (hereafter Schiphol) for a passenger flight to Madeira. While passing FL80, the first officer (pilot flying) noticed a sudden change in indicated airspeed of about 15 knots on his Primary Flight Display (PFD). When passing FL110, the captain and the first officer checked the altitude indications on their PFDs and noticed a difference of 400 feet with the standby altimeter. These differences in altitude and airspeed indications continued intermittently until after reaching the cruising altitude of FL360. Therefore, the flight crew performed the "Airspeed Unreliable" checklist to analyse and solve the unusual situation. Initially, the crew analysed the captain's altitude indication to be reliable. Meanwhile, the flight crew decided, in coordination with the airline's operations centre, to return to Schiphol. During the return, it became apparent that the captain's altimeter showed erratic indications again. Hence, the "Airspeed Unreliable" checklist was run for a second time and now it was concluded that only the flight information from the Integrated Standby Flight Display (ISFD) was reliable. The flight crew continued the return flight while using the ISFD and made an uneventful landing at Schiphol. On the ground, the flight crew found out that the captain's and the first officer's static port on the right hand side of the aircraft was partially covered with transparent plastic and tape.

At the time of take-off, the visibility was more than 10 kilometres and de ceiling was few to broken at 1,200 feet. Along the aircrafts flown route from the southern-western part of Holland until the point of return, just past the western tip of Normandy, France, the aircraft encountered a frontal zone with multi layered clouds up to FL350. During the approach and landing at Schiphol the aircraft encountered fair weather conditions similar to the weather at the time of take-off.

The investigation revealed that this flight was the aircraft's first flight after returning to service from a six day parking period. For the storage of the aircraft, among others, the primary static ports were covered to prevent water, dirt or insects from entering the pitot static system. Normally, the operator provided the maintenance crews with pre-fabricated orange placards to cover the static ports. However, these placards were not available at the maintenance facility anymore. The COVID-19 pandemic flight restrictions caused a large number of aircraft to be parked in storage, which created an increased demand on these placards. Therefore, the maintenance crew searched for and used the most suitable material that was available. This led to the covers being made from clear plastic foil and adhesive tape that had the same colour as the surrounding fuselage of the static port (see figure below). The crew indicated that they were content with getting the aircraft covered and ready for parking with the available material.

The manufacturer's aircraft maintenance manual provides specific guidance on how to fabricate plastic covers for static ports. The manual instructs to use specific orange tape with "Remove Before Flight" printed on it and specific adhesive tape. The manual also instructs to make an orange streamer and attach it to the static port cover. In addition, to get the attention of the flight crew, a "Static Ports Covered" tag has to be attached to the left control wheel in the cockpit. The maintenance crew had indicated that they were not entirely familiar with these procedures as they were normally provided with readymade placards. Besides, they were not used to attach streamers to the placards or to attach premade cautionary tags to the left control wheel.

When the aircraft was returned to service, the next maintenance crew did not remove the cover on the primary static port on the right hand side of the aircraft. On the day of the occurrence, the maintenance crew that had prepared the aircraft for flight and the flight crew, did not notice that the static port was still covered during their pre-flight inspections either. Noted that these inspections were performed during hours of darkness.

The following four factors were contributing to this serious incident. First, the normalized maintenance practice to cover the primary static ports with readymade placards. This practice was different from the aircraft's maintenance manual procedure. Amongst maintenance crews, the normalization led to unfamiliarity with the maintenance manual procedure and materials to be used. Second, the intention to get the aircraft into parking with the material that was at hand. Third, the low observability of the plastic and adhesive tape used, that made it difficult to notice the covers; especially in combination with low light conditions. And fourth, the expectation bias to see orange coloured covers and streamers.

Altogether, the Dutch Safety Board emphasizes that standard maintenance procedures or approved alternate procedures must be followed. In this way, the safety operation of aircraft is ensured.

The incorrect working of the pitot static system causes the presented airspeed and altitude information to become unreliable. These unreliable indications may cause difficulties for the pilots to safely control the aircraft. When these unreliable indications are combined with unfavourable environmental conditions such as cloud layers, the unsafe situation may worsen because pilots are not be able to use outside references -horizon- to aid in controlling the aircraft. During this occurrence the pilots were able to safely fly the aircraft, despite a cloud layer that was present for the majority of the flight. Nevertheless, pitot static system malfunctions have led to serious incidents and accidents in the past. It is therefore emphasized that maintenance and flight crews must verify that the pitot static system is clear of covers, placards or tape during inspections and preparation for flight to ensure the safety of flight.

The Dutch Safety Board has issued an interim warning with the aim to raise airlines' and maintenance organisations' awareness to the safety risks that can increase when aircraft are retuned to service following a period of storage.

Occurrences that have not been investigated extensively

OO-JAV's right hand side captain's and first officer's pitot static port and remnant of used plastic and tape. (Source: Operator of the aircraft)

The operator and maintenance organizations both performed an investigation into the occurrence and shared their findings with the Dutch Safety Board. The Dutch Safety Board used the information from these reports and conducted interviews for this investigation.

Classification: *Serious incident*
Reference: *2020068*

Nose landing gear breaking during landing, TL Ultralight TL-3000 Sirius, PH-4N5, Ameland Airport, 17 October 2020**, PH-4S1, Middenmeer airfield,** 31 March 2021

In 2020 and 2021, respectively, two similar occurrences took place with TL-3000 Sirius aircraft in the Netherlands. The results of the limited investigations into these occurrences have been combined in the report below.

PH-4N5, Ameland Airport, 17 October 2020
The pilot had departed Middenmeer airfield for a cross-country flight to Ameland Airport. On final approach to Runway 27, a grass runway, the pilot selected full flaps. The airspeed on final was 60 KIAS. On the first touchdown, the aircraft landed with hardly any positive pitch (flare) and bounced. The pilot continued the landing, after which the aircraft bounced a second time. At third touchdown, the nose wheel dug into the ground and subsequently the nose landing gear of the aircraft broke off. The aircraft nosed over and came to rest inverted. The aircraft was substantially damaged. The pilot was slightly injured, but was capable of leaving the aircraft himself.

The pilot had an ATPL[15] license (approx. 20,000 hours on all types, 22 hours on the TL-3000 Sirius). There were visual meteorological conditions, with variable winds at speeds of around 5 knots.

The landing was recorded by video cameras on the airport.

PH-4S1, Middenmeer airfield, 31 March 2021
The student pilot had received 50 hours of flight training on the TL-3000 Sirius since January 2020. After a flying lesson with an instructor on 31 March 2021, the student pilot made his first solo flight that day from Middenmeer airfield.

15 Airline Transport Pilot Licence.

PH-4N5 after the landing. (Source: Dutch Aviation Police)

The wind came from the direction 180 degrees at a speed of 4 knots. The instructor was seated by the runway with a radio in his hand. During the landing on grass Runway 23, the aircraft bounced whereupon the pilot performed a go-around. At that same time the instructor told him to go around. After re-joining the circuit, the pilot selected full flaps at the end of downwind. On final the speed was 56 KIAS and the trim was selected a bit forward of the neutral position. When the aircraft was over the landing strip, the instructor told the pilot via the radio to flare and float out quietly. During the flare manoeuvre, the aircraft regained some height, and subsequently made a hard landing. The aircraft bounced up and hit the ground with a nose down attitude. The nose landing gear broke off, the aircraft nosed over and came to rest inverted. The flight instructor rushed to the aircraft and unsuccessfully attempted to open the passenger door. The pilot managed to open the door on his side and exit the aircraft unharmed. The aircraft was severely damaged.

The final approach and landing were recorded by the instructor and a video camera on the airfield.

PH-4S1 after the landing. (Source: Middenmeer Safety Committee)

Aircraft

The TL-3000 Sirius is a 2-seat high-wing carbon composite microlight aeroplane ('ultralight') designed by TL Ultralight. The aircraft is powered by a Rotax reciprocating engine and has a maximum take-off weight of 472.5 kg, including a parachute rescue system.[16] It has a fixed tricycle landing gear with steerable nose wheel. The TL-3000 has a special certificate of airworthiness. The TL-3000, like similar microlight aeroplanes, falls within the category of aeroplanes to which the European common rules on civil aviation do not apply. These aeroplanes have not been certificated to international standards but fall under the regulatory control of the individual member states, in light of their limited risk to civil aviation safety, simple design, and/or operation mainly on a local basis.[17]

On final approach and on short final, the Pilot's Operating Handbook (POH)[18] prescribes an airspeed of 55 KIAS, full flaps, and trim in the aft position (as required), followed by a touchdown with the main wheels first and the nose high. The POH further states that during a soft field landing the nose wheel is to be kept high and off the runway surface for as long as possible. A nose wheel touch down on landing could result in the nose wheel digging into the soft runway.

Similar occurrences

The Dutch Safety Board previously investigated a similar accident with PH-4S1 at Middenmeer airfield on 30 December 2019.[19] The Board concluded that unstable weather conditions which led to increased pilot workload, as well as a correction to a slightly too flat final approach, resulted in a lower than normal nose position during flaring. This resulted in a bumpy landing, and subsequently the breaking of the nose wheel leg and the aircraft nosing over.

The three similar accidents in the Netherlands (in 2019, 2020 and 2021) with TL-3000 Sirius aircraft all took place during landing and are characterised by a broken-off nose landing gear, followed by the nosing over of the aircraft. The Dutch Safety Board has not further investigated the design of the nose landing gear, because the focus of the investigation was on the operational aspects.

Survivability issues

The door closing and locking mechanism of the TL-3000 consists of two separate parts: an inner and outer door handle to close the door, and the actual locking mechanism which is operated by turning a red lever on the inside of the door.

If the door is locked, it is difficult to open it from the outside, without breaking the transparent part of the door. The round ventilation window is narrow and does not provide easy access to the red lever on the inside, if at all.

16 There is also a Light Sport Aeroplane version of the TL-3000 Sirius, which has a MTOW of 600 kg. The nose wheel design of this version is similar to the design of the MLA version.

17 Basic Regulation, Regulation (EC) 2018/1139.

18 POH, TL3000/12/001AJ, Rev. No.: 3, Revision date: 17.7.2019. Section 4: Normal Procedures.

19 https://www.onderzoeksraad.nl/en/page/16135/over-de-kop-geslagen-tijdens-landing-tl-ultralight-s.r.o.-tl-3000

Occurrences that have not been investigated extensively

The manufacturer stated not to be aware of occurrences where the locking mechanism has been an issue.

The red lever and round ventilation window.

Following the nose-over at Ameland Airport, the pilot briefly lost consciousness. He was however, able to unlock the door from the inside and exit the aircraft on his own. In the 2021 Middenmeer accident, the instructor was unable to open the passenger door from the outside. However, the pilot subsequently managed to unlock and open the door on his side and exit the aircraft.

Conclusions

In both occurrences, the aircraft landed with little or no nose up attitude, followed by one or more bounces. The pilots did, following the first bounce, not react by initiating a go-around. The aircraft subsequently landed on the nose landing gear, which thereafter broke off.

In the Middenmeer occurrence, the pilot had set the trim a bit forward of the neutral position on final, although the POH prescribes the aft position in this flight phase. It has not been established whether this was a contributing factor, although following the procedures in the POH is recommended at all times.

The nose wheel landing gear is generally the most critical part of the aircraft in case a landing is performed on all wheels at the same time. These accidents emphasize the importance of recognizing and acknowledging the dangers of a bounced landing. If case of a bounced landing, back pressure on the yoke or stick will keep the aircraft in a nose-high landing attitude, as prescribed by the POH. If the case of a significant bounce, a go-around should be performed.

The TL-3000's door locking mechanism is designed in such a way that a locked door cannot easily be opened from the outside, without breaking the transparent part of the door. This may complicate rescue operations if the occupants are incapacitated and/or rescue staff is unfamiliar with the operation of the door.

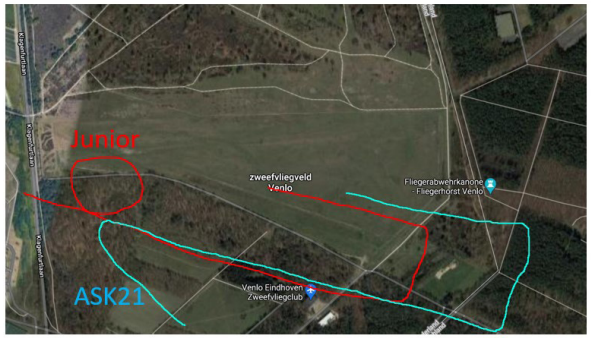
The Middenmeer Safety Committee investigated both occurrences and shared its results with the Dutch Safety Board. These results have been used in the investigation by the Dutch Safety Board.

Classification: *Accident*
Reference: *2020076/2021016*

Airprox, PZL-Bielsko SZD-51-1 "Junior", PH-980, Alexander Schleicher ASK 21, PH-1606, Venlo glider airfield,
22 October 2020

The Junior and the ASK 21 were simultaneously flying close to the circuit starting point to join the left-hand circuit for runway 29. Visibility was more than 10 kilometres. The Junior was flying at an altitude of 220 metres when the pilot observed the ASK 21 approaching from the right, at practically the same altitude. As a result, he felt obliged to initiate a 360 degree turn to the left, in order to avoid a collision between the two aircraft. The ASK 21 made a right-hand turn towards the downwind leg. The pilot of the Junior then followed the ASK 21 into the circuit and informed the occupants of the ASK 21 via the radio that he was flying behind them, low, and requested them to take the outside bend. Having received no response on the radio, on the base leg, he flew past and in front of the ASK 21. Both gliders completed a safe landing.

The pilot of the Junior stated that he had only seen the ASK 21 at the last moment, because the aircraft was approaching him head on. Previously, no movement of the ASK 21 had been visible to him, until the aircraft made a right-hand turn to join the circuit. In addition, from the point of view of the Junior, the visible surface of the ASK 21 was minimal. The instructor and trainee in the ASK 21 subsequently declared that they had not seen the Junior close to the circuit starting point. The minimal contrast between the white gliders and the pale blue/white sky (in the background) probably also represented a factor in the late observation or non-observation of the aircraft.



Flight paths completed by both gliders. (Source: Gliding club)

In neither aircraft had the FLARM issued a warning. The cause of this was that the FLARM in the ASK 21 was defective. The occupants of the ASK 21 had not heard the radio call that was intended for them because the transmitter of the radio in the Junior was not working correctly. In other words, both gliders demonstrated defects. The defects were already known before the start of the flight. In particular a fully functioning FLARM is able to notify pilots of an approaching collision hazard on time, thereby leaving sufficient time to evaluate the situation and if necessary to undertake an evasive manoeuvre. A FLARM should be seen as the last line of defence and may never take the place of a 'see and avoid' concept.

The airprox occurred because the pilots observed each other late or not at all, respectively. Thanks to the adequate evasive manoeuvre by the pilot of the Junior, a collision was avoided. In accordance with the right-of-way rules[20], he was also required to give way to the ASK 21, since it was located on his right-hand side, and both aircraft were at intersecting headings, at approximately the same altitude.

20 EASA, *Easy Access Rules for Standardised European Rules of the Air (SERA)*, SERA.3210 Right-of-way, December 2020.

It is important that anyone participating in gliding activities realizes that the majority of defects on a glider can have an adverse impact on flight safety. It is therefore essential that every defect be reported, examined and assessed, and that the aircraft in question only returns to service once it is determined that the aircraft can be used safely.

The Safety Committee (VC) of the gliding club conducted an investigation into the occurrence and shared its findings with the Dutch Safety Board. The occurrence was reported to the Dutch Safety Board on 3 April 2021. Due to the late reporting of the occurrence, for this report, the Safety Board made use of the report drawn up by the Safety Committee.

Classification: *Serious incident*
Reference: *2020096*

Occurrences that have not been investigated extensively

Airprox, Alexander Schleicher ASK 21, PH-1569, Piper PA 46-350P, N417RK, Noordkop glider airfield, 24 April 2021

PH-1569, an ASK 21 glider, took off from runway 03 of the Noordkop glider airfield for a local flight using the winch launch method, at around 14.08 hours. On board were a licenced pilot, who was in control of the glider, and an instructor. The pilot stated that at an altitude of approximately 425-450 metres[21], PH-1569 transitioned from a climb to horizontal flight. At that stage, the winch cable had not been released from the glider. At that moment, the pilot observed a motorised aircraft flying directly towards him. According to his estimate, the aircraft was flying approximately 25 metres lower than their glider, and the horizontal separation was around 75-100 metres. At the last moment, the motorised aircraft completed a sharp turn to the left, thereby flying past and ahead of the glider. Because of the vertical separation, the pilot saw no need to carry out an evasive manoeuvre. According to the pilot there was no immediate risk of collision between the two aircraft, but if the motorised aircraft had not taken evasive action, it would probably have flown into the winch cable.

The motorised aircraft was N417RK, a single-engined Piper PA 46-350P Malibu. The pilot, together with one passenger, had taken off from runway 03 at Texel International Airport at around 14.00 hours, for a VFR flight to Breda International Airport. The aircraft was flying towards Den Oever, via the Wadden Sea Corridor, at an altitude of approximately 1,750 feet. The pilot stated that he was aware of the presence of a glider airfield to the southwest of Den Oever, because he had flown this route on dozens of occasions, in the last two years. He intended to keep to the west of a transmitter mast located on the IJsselmeer coast. Although he was aware of the location of the glider airfield, he continued to fly directly towards the glider airfield. According to the pilot, he was still flying at an altitude of 1,750 feet.

The pilot of the Piper stated that he just started preparations for initiating a descent in order to keep clear of the Schiphol 1 TMA, and was about to call Amsterdam Information via the radio, when the Airborne Collision Avoidance System (ACAS) generated a warning. When he looked up, immediately ahead of him, according to him at a distance of approximately 400-500 metres, he observed a glider. He immediately made a sharp turn to the left to avoid the glider. Following the evasive manoeuvre, he continued his flight to Breda International Airport.

The pilot of the Piper was of the opinion that he had not caused a serious situation, because the glider was flying higher than his aeroplane and because he had performed an evasive manoeuvre, on time. Moreover, he believed he was flying high enough to be able to overfly the glider airfield safely, and according to him flying at this location was not prohibited. He had not observed the winch cable and was not aware of the fact that the Aeronautical Information Publication states that gliders can be winch launched to an altitude of 1,800 feet AAL from the Noordkop glider airfield.[22]

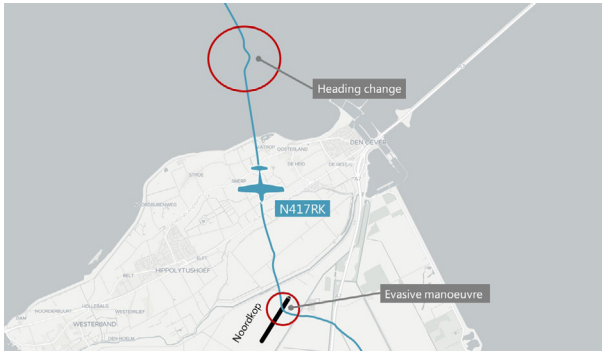
N417RK is visible on the recorded radar images. PH-1569 is not visible on radar, because the transponder on board the glider had probably not been switched on. The FLARM system on board the glider had been activated. The position and altitude information from the FLARM system were used to determine the position of PH-1569 in relation to N417RK.[23]

21 Altimeter set to QFE.

22 The AIP also states that the winch cable represents an almost invisible obstacle, at a distance of approximately 1 NM all around the geographical location of the airfield.

23 By combining data from two systems (radar and FLARM), a slight inaccuracy is possible in terms of positions and times.

The radar data show that N417RK was flying above the Wadden Sea at an altitude of approximately 1,750 feet. Before reaching the coast, the pilot altered the heading of the aeroplane slightly to the south, and upon reaching the coast of Noord-Holland, the aeroplane descended to approximately 1,400 feet. The aeroplane then flew over the northern perimeter of the glider airfield, and made the evasive manoeuvre above the glider airfield. At the moment of the evasive manoeuvre, N417RK was flying at an altitude of approximately 1,400 feet. According to the FLARM data, at that moment, PH-1569 was flying west of N417RK, at an altitude of approximately 1,690 feet (QNH). The horizontal separation between the two aircraft was approx. 180 metres and the vertical separation approx. 290 feet (88 metres). The figure below shows the radar data for the relevant section of the route of N417RK.



Route followed by N417RK. (Source of data: Air Traffic Control the Netherlands)

The Noordkop glider airfield was made operational in 2018, after having moved from another location. The pilot of the N417RK was aware of the presence of the glider airfield because he regularly flew to and from Texel Airport. The investigation failed to explain why the pilot opted to change his heading in such a way that it meant he would fly over the glider airfield. There is sufficient space between the glider airfield and the transmitter mast on the coast or to the east of the transmitter mast to pass the glider airfield at a safe distance. The change of heading and the descent increased the risk of a hazardous situation.

The occurrence took place in uncontrolled airspace. In such conditions, pilots themselves are responsible for maintaining sufficient separation from other aircraft in order to avoid collisions. Maintaining a constant lookout for other air traffic and employing a good scanning technique are crucial. During the winch launch, the pilot of PH-1569 had no forward vision due to the high pitch attitude of the glider. He only saw N417RK when he lowered the nose of the glider, in order to transition from climb to horizontal flight. The pilot of N417RK only observed the glider when he had been notified of a collision hazard by the ACAS. When he noticed the glider, he immediately performed an evasive manoeuvre. This avoided a possible collision with PH-1569 or the winch cable.

It is a mark of good airmanship when following a route in a motorised aircraft to pass glider airfields at an ample distance. It is essential that this is taken into account when determining the route during flight preparations. In this sense, pilots flying from Texel to Noord-Holland and vice versa must be aware of the location of the Noordkop glider airfield, and the possible glider activities south of the Wadden Sea Corridor.

Classification: *Serious incident*
Reference: *2021042*

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 three permanent board members under the chairmanship of Jeroen Dijsselbloem. 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.

The Safety Board's bureau has around 70 staff, two-thirds of whom are investigators.

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

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December 2021

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

Source photos cover:
Photo 2: Dutch Aviation Police
Photo 3: Dutch Aviation Police