



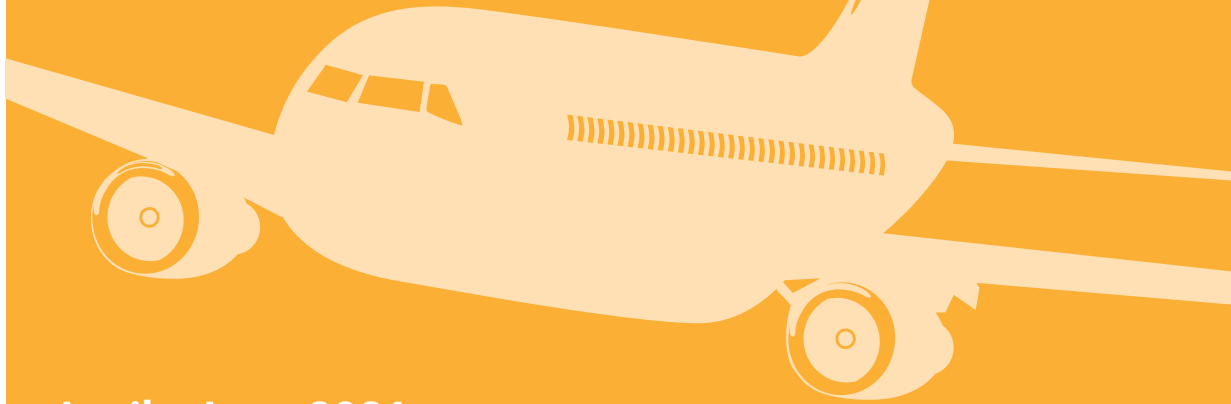
DUTCH
SAFETY BOARD

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 to remove these. The Board's investigations explicitly exclude any culpability or liability aspects.

Quarterly Aviation Report



April - June 2021



In the second quarter of 2021, the Dutch Safety Board published a report on the additional follow-up investigation into the safety of flight routes. On 8 January 2020, flight PS752 was shot down by a surface-to-air missile, shortly after taking off from Teheran Airport in Iran. Against this background, also in response to a request from the Minister of Infrastructure and Water Management, the Dutch Safety Board decided to reflect further on the implementation of the recommendations from the investigation into the shooting down of flight MH17 in 2014. The aim of the follow-up investigation was to provide an insight into the practical measures taken by airlines and states to manage the risks of flying over conflict zones.

The protection of civil aviation against the risks of flying over a conflict zone is primarily in the hands of the country where the conflict is taking place. This country may take measures to partially or completely restrict its airspace. In this investigation, the Board concludes that this rarely happens. Iran for example did not restrict its airspace when the conflict with the United States escalated rapidly in January 2020. To improve this situation, the Board recommends among other things developing international criteria for when a country should restrict its airspace.

Jeroen Dijsselbloem
Chairman of the Dutch Safety Board



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Occurrences into which an investigation has been launched

Hard landing, Alexander Schleicher ASK 21, Venlo glider airfield, 1 April 2021

On final, the glider hit a treetop. The glider then made a hard landing and was damaged. The pilot was unharmed.



The glider following the hard landing. (Source: Gliding club)

Classification: Serious incident
Reference: 2021017

Emergency landing after flight control problems, Piper J3C, Epse, 15 April 2021

The pilot experienced problems with the control of the aircraft, after which he decided to make an emergency landing. During this landing the aircraft came into contact with a tree and the right wing broke off. The aircraft also sustained damage to the nose and right stabiliser. The pilot was unharmed.



The aircraft following the emergency landing.

Classification: Accident
Reference: 2021026

Occurrences into which an investigation has been launched

Emergency landing after smoke in cockpit, Cessna 550, Groningen Airport Eelde, 16 April 2021

The crew declared an emergency, after smoke was observed in the cockpit and cabin. During the descent, a low oil pressure warning was generated for the left engine, whereupon the crew reduced the power of this engine to idle. The flight diverted to Groningen Eelde Airport, where a safe landing was made.

Classification: *Serious incident*
Reference: 2021027

Erroneous altitude and airspeed indications, Boeing 737-700, Rotterdam The Hague Airport, 24 April 2021

Shortly after takeoff, erroneous altitude and airspeed values were displayed on the captain's and first officer's instruments. The crew was able to reach adequate airspeed and altitude by use of standby instruments and decided to divert to Amsterdam Airport Schiphol, where the aircraft made a safe landing.

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 returned to service following a period of storage.



Multi-function displays and stand-by instruments.

Classification: *Serious incident*
Reference: 2021031

Airprox, ASK 21, Piper PA-46 Malibu, Noordkop Gliding Centre, 24 April 2021

The Piper Malibu had taken off from Texel International Airport. After leaving the corridor above the Wadden Sea, the Piper flew at an altitude of about 1,450 feet over the Noordkop Gliding Centre, where a glider was being winched at that time. The Piper's pilot spotted the glider at the last minute and made an evasive maneuver with the Piper flying in front of the glider. Both pilots continued their flight with no further details reported.

Classification: *Incident*
Reference: 2021042

Departed from wrong runway, Reims Aviation S.A. F152, Breda International Airport, 11 May 2021

At the time that the runway in use was changed from direction 24 to 06, the F152 was taxiing to the beginning of runway 24. The pilot was informed of the runway change by radio. He did not heed a further call to wait before entering the runway and departed from the then wrong runway 24.



Runway direction 06. (Source: Breda International Airport)

Classification: *Incident*
Reference: 2021041

Airprox, ASK 21 B, ASH25Mi, Venlo glider airfield, 23 May 2021

During the winch start, the flight instructor released the winch cable prematurely to avoid a collision with a glider that threatened to come over the winch path.

Classification: *Serious incident*
Reference: 2021045

Occurrences into which an investigation has been launched

Airprox, unmanned aircraft system, Embraer E190, Amsterdam Airport Schiphol, 23 May 2021

During final approach to Runway 18R, at an altitude of 2,500 feet, the flight crew observed an unmanned aircraft system to the left of their flight path.

Classification: *Serious incident*
Reference: 2021073

Flight over winch path, Reims Aviation S.A. F172P, Gilze-Rijen Air Base, 30 May 2021

The F172P flew over a winch path of Gilze-Rijen Air Base. The gliding club was active at that time. Since members of the gliding club had heard the aircraft approaching, winch activities were temporarily suspended.

Classification: *Incident*
Reference: 2021048

Hit sign during final approach, Rolladen-Schneider LS4-b, 6 June 2021

During final approach, the glider's left wing hit a metal sign. The wing sustained damage to the underside. The glider then made a safe landing.



The sign that was hit. (Source: Gliding club)

Classification: *Accident*
Reference: 2021051

Takeoff from taxiway, Reims Aviation S.A. F172P, Midden Zeeland Airport, 13 June 2021

The F172P taxied to the run-up area of Runway 27 to carry out the checks before takeoff. After the pilot had done this, the aircraft made a 180 degree turn and immediately took off from the taxiway. At the same time, a Cessna 208 taxied towards the departing aircraft. The F172P flew at low altitude over the Cessna 208.

Classification: *Serious incident*
Reference: 2021065

Emergency landing after loss of engine power, Cessna 208B, west of Teuge Airport, 25 June 2021

The aircraft took off from Teuge Airport with 1 pilot and 17 parachutists on board. Shortly after takeoff, the aircraft lost engine power, after which the pilot made an emergency landing in a meadow. The aircraft collided with a billboard with the right wing, then made a ground swing and came to a stop against the crash barrier next to the highway. The aircraft was heavily damaged. One parachutist was slightly injured.



The Cessna 208B following the emergency landing.

Classification: *Accident*
Reference: 2021062

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

TCAS RA, Boeing 737-700, Tecnam P2006 T, Barcelona TMA (Spain), 28 May 2021

After take-off from Barcelona Airport, a TCAS RA¹ warning was generated in the cockpit of the Dutch registered Boeing 737 of a Dutch airline. The other aircraft, a Tecnam P2006 T, was at a distance of 1.5 NM (nautical miles) with a vertical separation of 350 feet. Both aircraft continued their flight with no further details reported.

The Spanish Civil Aviation Accident and Incident Investigation Commission (CIAAIC) launched an investigation following this occurrence. The Dutch Safety Board provides assistance.

Classification: Incident
Reference: 2021050

¹ Traffic Alert and Collision Avoidance System, Resolution Advisory.

Published reports

Crashed after banner pick-up, Piper PA-25-235 Pawnee, SE-KHF, Breda International Airport, 31 May 2018

On 31 May 2018 just before 11.00 hours, a Piper PA-25-235 Pawnee took off from Breda International Airport (Seppe) for a banner towing flight. Within the local circuit, the pilot positioned the aeroplane to pick up the banner. Shortly after the pick-up, the aeroplane lost airspeed and started to descend. Just outside the airport boundary, it fell over its right wing and impacted the ground in an almost vertical attitude. The pilot was fatally injured. The aeroplane was destroyed by the crash and subsequent fire.

This accident was the operator's fourth incident or accident in a period of five years. Therefore, the Dutch Safety Board investigated a broad range of factors and system elements in this accident. The investigation answers the following three questions: (1) What was the cause of the crash? (2) How did the operator's safety management contribute to safe operations? (3) What systemic factors were related to the accident?

1) Cause of the accident

The following conclusions were drawn. First, the aeroplane stalled and crashed because it was equipped with an improper propeller for banner towing operations. As the aeroplane was flying slowly and the engine did not have enough power to produce sufficient rpm, the propeller could not produce enough thrust for the aeroplane to safely accelerate and climb after the pick-up of the banner. Furthermore, the aeroplane was flown above its maximum take-off weight, which worsened the thrust deficient situation. In this unsafe situation, the experienced pilot had no options to seize back control of the aeroplane.

2) Operator's safety management

Second, the operator's safety management was characterized by a neglect of safety risks in maintenance and flying operations. Safety responsibilities were delegated to the maintenance organisation, the on-demand hired engineer and the pilots. Furthermore, the operator did not foster an environment where safety was an integral part of maintenance and flying operations. In this environment it was possible that: 1) an improper propeller was fitted on the aeroplane; 2) the limitations of the aeroplane and propeller were not sufficiently known to the operator and pilots; 3) the aeroplane was used for banner towing for more than six years while not having a supplemental type certificate for banner towing operations and without having authorized banner towing limitations; 4) there was no assessment of operational performance of the aeroplane after the installation of the fuselage fuel tank and the installation of the 4-blade propeller; and 5) the pilot's survivability in case of a crash and post-crash fire was reduced by the installation of an additional fuselage fuel tank. These shortcomings signify that the certification and operational limitations of aeroplanes are not just obligatory requirements that can be taken for granted, but they are essential for ensuring safe operations and the wellbeing of personnel.

3) Systemic factors

Third, the Human Environment and Transport Inspectorate (ILT) did not perform active oversight on the operator from the moment it was founded in 2008 until the day of the accident. The long history of safety deficiencies of the operator would have justified an active role of the inspectorate. This history of unnoticed deficiencies, signifies the importance of active oversight in the general aviation sector to identify and reduce the safety risks for specialized operations and third parties.

In an earlier [investigation](#), the Dutch Safety Board noticed a reluctance to report unsafe situations in the general aviation sector.² This investigation, unfortunately, provides further proof of this lack of reporting of unsafe situations. No occurrence reports were submitted to ILT, despite the operators' history of safety deficiencies and the serious concerns in the sector associated with this operator.

The Dutch Safety Board emphasizes the importance to report unsafe situations to ILT. In this way every person involved can contribute to the safety of aviation. This also requires an active role and a responsive attitude of ILT in supervising and monitoring the sector.

The Dutch Safety Board published the [report](#) with recommendations on 12 May 2021.



Banner pick-up accident flight. (Source: De Haan)

² Dutch Safety Board, Fatal aircraft accident in low flying area Gouda, 22 May 2018.

Loss of control after interrupted winch launch, LS8-18, PH-1150, Gilze-Rijen Air Base, 12 July 2020

On Sunday 12 July 2020, the Rolladen-Schneider LS8-18, with registration PH-1150, a single seater glider, took off from Gilze-Rijen Air Base by making use of the winch launch method. At an altitude of approximately 200 metres, the cable disconnected prematurely. Witnesses saw the glider lower its nose and a transition to a right hand turn with a steep angle of bank. The glider then attained a nose-down attitude and started to rotate. After approximately two full rotations in the nose-down attitude, the glider crashed into the ground and came to rest upside down. The pilot died due to fatal injuries.

The Dutch Safety Board conducted an investigation into the cause of the accident. This investigation answers the following three questions: (1) What was the cause of the crash? (2) Which factors enabled the participation of PH-1150 in flight operations on the day of the accident, while there was a possible malfunction of the release mechanism? (3) Which circumstances led to the fact that the pilot involved, with no recent experience on single seaters, took off with PH-1150?

1) Cause of crash

The accident was caused by the pilot not being able to recover from the spin, which was the result of a low airspeed situation, close to the stall speed, which had quickly developed into an asymmetric stall. The low airspeed situation arose after the premature cable release during the winch start. After a premature cable release, the pilot has to carry out the cable release procedure, which, in practice, implies forward moving of the control stick to achieve a normal flying attitude and the corresponding safe speed. The pilot of PH-1150 made a right turn, before the glider had reached a safe speed, causing the right wing to stall. There were no technical defects in the flight controls that have played a role in the accident.

During maintenance of PH-1150, a temporary repair of the molded sleeve of the yellow release handle was made and the routing of the cable of the centre of gravity release hook was adjusted. On the first day of flying with PH-1150 after this work on the cable release mechanism, this was the day before the accident, three premature cable releases took place during winch launches. After the last flight before the accident flight, a breakdown of the temporary repair was observed. A technician who was informed about one premature cable release that day and the breakdown of the repair, checked the release mechanism at the end of that day and found no particularities. It is concluded that the premature cable release during the accident flight was caused by a malfunction of the release mechanism. The exact cause of this malfunction has not been established.

2) Release of PH-1150

No one realised that PH-1150 had three premature cable releases in one day after a temporary repair was done. The information about the three premature cable releases was scattered. People who witnessed or were aware of one or two premature cable releases, made assumptions about the cause. Premature cable releases were not specifically mentioned in the club's rules as occurrences that should be reported. The club's safety management system did therefore not ensure that it was detected that the same malfunction occurred three times with PH-1150 and did not ensure subsequent communication about it within the club.

All people involved either assumed an accidental flaw and those concerned did not consider it a reason to ground PH-1150. However, no peculiarities were found during the inspections of the cable release mechanism. The consequence of that was that the cause of the premature cable releases was unknown, so the risk could not be fully assessed. In such situations, precaution is preferred.

By not grounding PH-1150 immediately after the initial premature cable release without clear cause, the malfunction of the cable release mechanism continued to exist and premature cable releases continued to occur.

3) Allocation of gliders

The pilot's lack of recent flying experience, and especially on single seater gliders may have contributed to not being able to obtain a safe airspeed after the unexpected situation of a premature cable release. The club set up rules for the allocation of its gliders, including experience requirements. The pilot met the club's requirements. The club's safety management system did not ensure that it was prevented that the pilot, with no recent flying experience on single seater gliders, took off with PH-1150. Furthermore, the club did not have a member tracking system that can help to inform instructors about specifics of members, for instance regarding their currency on type.

Concluding, a temporary repair had been carried out on PH-1150 and then three times a premature cable release took place. PH-1150 was subsequently not grounded, but made available for flight operations with a malfunction of the cable release mechanism, without the cause of the cable releases being thoroughly analysed. This in combination with the allocating of PH-1150 to a pilot with a lack of recent experience on single seater gliders, created a situation in which the accident could occur. The club's safety management system did not ensure that such a situation was prevented from happening.

The Dutch Safety Board published the [report](#) with recommendations on 18 May 2021.



Wreckage of the glider.

Safe flight routes - Responses to escalating conflicts, 2021 report

Twice in the past decade, a passenger plane has crashed after it was hit by a surface-to-air missile while flying over a conflict zone. On 17 July 2014, flight MH17 crashed in Ukraine. Flight PS752 crashed in Iran on 8 January 2020. This was reason for the Dutch Safety Board to conduct (partly at the request of the Minister of Infrastructure and Water Management) a review into the implementation of the recommendations in the MH17 Crash report and the conclusions in the report 'Flying over Conflict Zones'.

Since the crash of flight MH17, important steps have been taken by various aviation parties to better manage the risks of flying over or near conflict zones. Despite the increase in awareness of risks of conflicts to civil aviation, the improvements made regarding the sharing and gathering of information and the increasing number of states that issue recommendations or prohibitions in relation to conflict zones, the investigation reveals that with regard to the conflict in Iran, civil aircraft continued to operate in airspace where security threats had been identified.

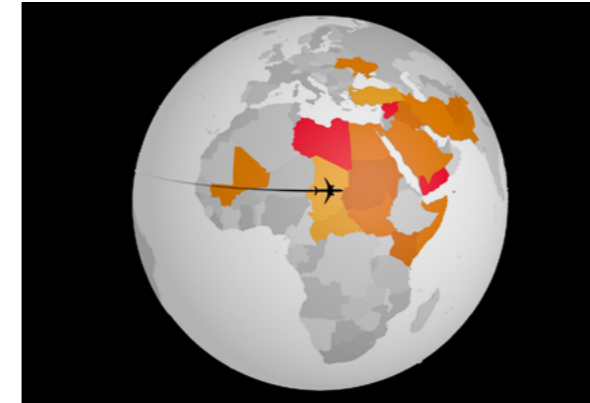
The protection of civil aviation against the risks of flying over a conflict zone is primarily in the hands of the country where the conflict is taking place. This country may decide to restrict or close its airspace. Airspace management in conflict zone situations is an effective safety barrier in theory, but not in practice. Most states with a conflict zone on their territory or near to their territory do not close or restrict their airspace. Also when the conflict between Iran and the United States escalated rapidly in January 2020, Iran's airspace remained open. To improve this situation, the Dutch Safety Board recommends developing international criteria for when a country should restrict its airspace.

In addition to the country of conflict, the airlines have an important responsibility of their own. When tensions in Iran rose by the attack on general Soleimani in the early 2020s, this did not prompt airlines to avoid the country's airspace, because the risk of being hit by a surface-to-air missile was assessed to be unlikely, even while the consequences could have been catastrophic. Nor did any countries advise their own airlines to avoid flying over Iran. As a result, aircraft flew over an area at increased risk as the conflict escalated further as Iran fired missiles at US air bases in Iraq. The Dutch Safety Board concludes that further development of the risk assessment methodology for flying over and near conflict areas is necessary because possible scenarios with catastrophic consequences should be given more weight in the risk assessments of both airlines and governments.

At European level, advice on conflict zones is published by EASA, the European Union Aviation Safety Agency. EASA bases its recommendations on the EU Integrated Aviation Security Risk Assessment process for conflict zones. Although the recommendations from EASA are generally perceived as valuable and reliable, the process of reaching a decision on issuing a recommendation in practice takes a great deal of time. These recommendations are therefore not issued quickly enough, if conflicts escalate within a short time span. The Board recommends accelerating this process at the European level.

The provision of information to the Dutch airlines by the Dutch government has improved significantly in the years since the MH17 crash, but the Dutch government still only provides information, and does not come with advice or a flight prohibition. Whereas other countries, including important allies of the Netherlands, do so. The Dutch Safety Board recommends to consider expanding the possibilities for the Dutch state, in addition to the provision of information to airlines, to also issue advice, and as the ultimate remedy, to impose a flight prohibition for Dutch operators in foreign airspace.

The Dutch Safety Board published the [report](#) with recommendations on 24 June 2021.



Reports published by foreign investigation authorities

Crashed, Beechcraft G58 Baron, PH-CJX, Münster-Osnabrück Airport (Germany), 9 August 2018

The Dutch registered aircraft, with two occupants on board, had taken off from Lelystad Airport for a training flight. The crew made a go-around at Münster-Osnabrück Airport during which the aircraft crashed. The aircraft came to a stop upside down and was severely damaged. Both occupants were fatally injured.

The accident was caused, because during the final approach with one engine running, the relevant speeds were undershot and the aircraft became uncontrollable due to the initiated go-around.

The German Bundesstelle für Flugunfalluntersuchung published the [report](#) in April 2021.

Classification: Accident
Reference: 2018083



Archive photo of the Beechcraft G58 Baron. (Source: E. Stam)

Occurrences that have not been investigated extensively

Hard landing, Alexander Schleicher ASK 21 B, PH-1637, Terlet glider airfield, 17 July 2020

The ASK 21 B, a dual-seat glider, took off from runway 22L by means of the winch launch method. There was practically no wind. On board were an instructor and a trainee. The trainee was piloting the glider. Following a short flight, he joined the left-hand circuit at a slightly lower than standard altitude. In his statement, the instructor declared that on the base leg, the airbrakes had been partially opened, a fact confirmed by the available flight data.³ During the final approach, on the instructions of the instructor, the trainee fully opened the airbrakes. This did not result in the desired angle of descent. As a consequence, the instructor then took over control and at

³ IGC file, originating from the LX8080 navigation system.

an estimated altitude of approx. 30-50 metres, initiated a sharp slip manoeuvre to the left, with full rudder, the aim of which was to lose additional altitude. During this slip manoeuvre, the nose of the aircraft was pointed downwards, and in the course of the manoeuvre, this downward angle increased. The instructor returned the aircraft to a more or less horizontal position just a few metres above the ground, before making a hard landing in the heather, just in front of the airfield landing area. The aircraft bounced up and landed on its nose, left wing down. The glider continued rolling and rotated through approx. 90 degrees to the left, before coming to a stop on the intended landing area. Following the incident, the instructor suffered a painful right arm and shoulder while the trainee remained unharmed. The tail of the aircraft had broken off, the fuselage was twisted and the nose dented.

The aircraft manufacturer declared that during slip manoeuvres, the ASK 21 B, which had been in use by the glider club in question for around two months, did not differ in terms of flying characteristics from the ASK 21. The instructor had a total of over 600 hours of glider experience (3004 launches), over 350 hours of which were in the ASK 21 (over 1900 launches). On the day of the accident, the instructor had completed five instruction take-offs in the aircraft in question. He declared that it had been at least 8 years since he had last landed on runway 22L. The trainee had completed a total of 22 flights.

The flight data showed that the downwind leg was not flown entirely parallel to the winch path. As a consequence, the circuit flown was somewhat tighter, resulting in a shorter base leg, leaving less time to lose altitude. When the aircraft found itself in final approach, where the terrain in front of the landing area slopes downwards, there was almost no headwind, which resulted in an insufficient angle of descent. Partly because the landing runway is relatively short, the instructor felt it was necessary to carry out a slip manoeuvre. In part, this may have been due to optical illusions caused by the relatively wide landing strip, in combination with the downward sloping terrain ahead of the landing area.

Available film recordings of the final approach of the aircraft show that the slip manoeuvre was initiated at low altitude with full rudder extension. This resulted in a high angle and high speed of descent. Notable was the low pitch attitude during the entire manoeuvre. The slip was

halted at low altitude, with a level pitch attitude; this left insufficient altitude to slow the high speed of descent and subsequently to land. This resulted in a hard landing.

To carry out a slip manoeuvre with the required precision, it is always important to initiate the manoeuvre gently, and simultaneously keep the nose of the glider above the horizon. It is also vital to have an active awareness of the speed of descent; this should be kept proportional to the flying altitude. At low altitude, the speed of descent should also be low. The manoeuvre should also be terminated gently, at sufficient altitude, at which point the pitch attitude can be lowered, in order to maintain sufficient airspeed.

The safety committee of the gliding club in question investigated the occurrence, and shared the results of its investigation with the Dutch Safety Board.



The ASK 21 B after the hard landing. (Source: Dutch Aviation Police)

Classification: Accident
Reference: 2020050

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 all knowledge 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 occurrences 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 well 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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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.

September 2021

Photos

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

Source photos cover:

Photo 3: Politie, Team Luchtvaarttoezicht