



DUTCH
SAFETY BOARD

Loss of control during go-around

at Amsterdam Airport Schiphol



Loss of control during go-around

at Amsterdam Airport Schiphol

The Hague, June 2016

*The reports issued by the Dutch Safety Board are open to the public.
All reports are also available on the Safety Board's website www.safetyboard.nl*

Photo cover: Dutch Royal Military Police

Dutch Safety Board

When accidents or disasters happen, the Dutch Safety Board investigates how it was possible for them to occur, with the aim of learning lessons for the future and, ultimately, improving safety in the Netherlands. The Safety Board is independent and is free to decide which incidents to investigate. In particular, it focuses on situations in which people's personal safety is dependent on third parties, such as the government or companies. In certain cases the Board is under an obligation to carry out an investigation. Its investigations do not address issues of blame or liability.

	Dutch Safety Board	
Chairman:	T.H.J. Joustra E.R. Muller M.B.A. van Asselt	
Secretary Director:	C.A.J.F. Verheij	
Visiting address:	Anna van Saksenlaan 50 2593 HT The Hague The Netherlands	Postal address: PO Box 95404 2509 CK The Hague The Netherlands
Telephone:	+31 (0)70 333 7000	Fax: +31 (0)70 333 7077
Website:	www.safetyboard.nl	

NB: 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.

General overview	5
Summary	6
1 Investigation	7
1.1 Flight preparation and history of the flight	7
1.2 Damage	9
1.3 Crew	9
2 Conclusions	10

GENERAL OVERVIEW



Figure 1: Archive photo of the mishap aircraft. (Photo: Pilot N860PC)

Identification number:	2016007
Classification:	Accident
Date, time ¹ of occurrence:	2 February 2016, around 19.15 hours
Location of occurrence:	Amsterdam Airport Schiphol
Registration:	N860PC
Aircraft type:	Cirrus SR22
Aircraft category:	Single engine piston aircraft
Type of flight:	Private
Phase of operation:	Landing followed by go-around
Damage to aircraft:	Damaged beyond repair
Flight crew:	One
Passengers:	None
Injuries:	None
Other damage:	None
Light conditions:	Darkness

¹ All times in this report are local times (UTC + 1 hour) unless otherwise indicated.

On 2 February 2016 a Cirrus SR22 with registration N860PC flew from Magdeburg Airport in Germany to Amsterdam Airport Schiphol. Around 19.15 hours local time a landing was performed after an Instrument Landing System approach had been made to runway 27 at the destination. After landing the aircraft bounced several times and the pilot initiated a go-around. During the go-around the pilot lost control at low altitude and the aircraft hit the runway with its left main landing gear and left wing. The aircraft ended up in the grass south of the runway and broke in two. The pilot, the sole occupant, sustained no injuries.

1.1 Flight preparation and history of the flight

Flight preparation

The pilot had prepared the private flight from Magdeburg Airport (EDBM) to Amsterdam Airport Schiphol (EHAM) the day before the flight was planned. The flight time from EDBM to EHAM was calculated to be 2 hours and 20 minutes. The mass and balance calculation was performed and a risk analysis was made using the risk evaluation checklist provided with the 'Aircraft Training Guide'. The checklist takes into consideration, amongst others, the experience of the crew, the time of day (day or night flight), possible icing, weather conditions and familiarity with the destination. The outcome of the analysis resulted in a low risk for the flight.

On 2 February 2016 just prior to take-off the en route and destination weather was checked. The forecasted weather conditions were instrument meteorological conditions (IMC) for the first part of the flight and at EHAM a strong wind was anticipated with gusty winds from direction 270, varying in speed between 16 and 27 knots. The forecast for EHAM were visual meteorological conditions (VMC) with good visibility and no low clouds.

History of the flight

It was the second flight of the pilot that day; earlier he had flown a local flight in Germany. Both flights were flown under Instrument Flight Rules (IFR).

At 16.50 hours the aircraft departed EDBM and climbed to FL100. After encountering moderate icing, the pilot selected de-icing. Enroute to EHAM, the aircraft later climbed to FL120 and FL140. The pilot was using the aircrafts' oxygen system all the time he was flying at high altitude.

After about one hour into the flight, the aircraft was clear of clouds and the remainder of the flight was flown under VMC. When entering the Amsterdam Flight Information Region the pilot contacted Amsterdam Radar over the radio and continued his flight to EHAM.

After passing waypoint Pampus, the pilot checked the Automatic Terminal Information Service (ATIS²); ATIS Lima was active changing to Mike just after 18.00 hours. According to both ATIS messages runway 27 was in use for landing and no warnings were given. According to the ATIS information VMC prevailed at Amsterdam Airport Schiphol. Winds were mainly from direction 260 with speeds varying between 15 and 28 knots. The visibility was more than 10 kilometres and the cloud base was around 4000 feet.

2 ATIS is a continuous transmission of aeronautical information and contains essential information such as runway in use, weather information, and special procedures such as low visibility procedures.

The pilot was transferred to Amsterdam Approach. The pilot received heading instructions towards the beginning of the Instrument Landing System (ILS) approach to runway 27. On the ILS approach the aircraft flew behind an Embraer 190 as number two.

As requested by air traffic control the airspeed was initially reduced from 160 to 150 knots, later on to 140 knots.

During the final approach, the pilot received instructions to vacate the runway after landing. According to the pilot, the number of heading instructions, in combination with the after landing instructions for vacating the runway, let the level of stress for the pilot rise, but not to an uncomfortable level.

During the entire ILS approach the aircraft was flown on autopilot. During the approach the aircraft was steady inbound on the ILS and on short final the pilot became aware of the Precision Approach Path Indicator (PAPI). At an altitude of approximately 500 feet, the pilot switched off the autopilot and flew the landing manually. Just before landing the airspeed was further reduced to 85 knots, 5 knots above normal landing speed to handle the variable wind speed during the landing. Flaps were selected to full down prior to landing.

The accident

Just before touchdown, the pilot reduced the engine power and flared the aircraft for landing. According to the flight data retrieved from the aircraft³ the speed quickly reduced and around the time of landing the speed was just above stalling speed (58 knots). During the final phase of the flare the pilot noticed the aircraft going down faster than anticipated, hitting the tarmac and veering up again. Most likely the aircraft encountered a shift in wind direction and or speed, resulting in a temporary loss of lift causing it to hit the runway harder than expected. Because of the hard landing and the spring like reaction of the undercarriage, the aircraft bounced twice again, gaining height after each bounce.

The pilot stated that, after the third touchdown, he selected full throttle to initiate a go-around without applying sufficient right rudder to counter the yaw effect on the aircraft as a result of the prop wash.⁴ The pilot then tried to stop the yaw motion with a right stick input, but the yaw could not be stopped. At this time the airspeed was just below stalling speed. The aircraft hit the ground with the left main landing gear and the left wing, followed by the aircraft turning over left around the vertical axis several times. The aircraft came to a standstill in the grass approximately 50 meters south of runway 27.

The SR22 flew behind an Embraer 190 on the ILS approach. The time between touch downs of both aircraft was just over 3 minutes. It is unlikely that the wake vortices generated by the Embraer 190 at low altitude, in combination with the strong surface

³ The aircraft is equipped with a logging system. The data in the multi function display (MFD) is recorded at 1 Hz and contains all engine data, Lat/Long data, and flight telemetry (pitch, roll and yaw). This data is recovered and downloaded from the SD card in the top slot of the MFD in the cockpit.

⁴ The force or wind generated behind a propeller, particularly on or before take-off when high/full power is set, but also when the aircraft is taxiing.

winds, have created an upset for the SR22, because vortices generally do not persist that long in windy conditions.

1.2 Damage

The aircraft sustained major damage during the accident. The left wing, nose cowling, propeller and main landing gear were damaged severely. The aircraft broke in two just behind the cockpit. The damage was such that the aircraft was considered beyond repair.



Figure 2: The damaged aircraft after the mishap. (Photo: Dutch Military Police)

1.3 Crew

The pilot was a 55 year old male from Germany. He had a valid medical, a Private Pilot License (PPL) for Single Engine Piston (SEP) aircraft and a valid Instrument Rating (IR). The pilot declared he was fit for flight and had rested well the night before.

Experience	Flight hours
On aircraft type	900
Last 3 months	40
Total	1029

2 CONCLUSIONS

Summary

The flight preparation was performed the day before the flight was planned, including a mass and balance calculation and a risk analysis for the flight. The flight preparation gave no restrictions for the flight.

At Amsterdam Airport Schiphol VMC prevailed with strong winds from direction 260 degrees, variable between 15 and 28 knots. According to the SR22 Pilots Operating Handbook, the maximum demonstrated crosswind is 20 knots. The wind speed and crosswind component were within the aircrafts limitations. The variation in wind speed may have been a contributing factor in the cause of this accident.

As a result of low speed just before touch down, the aircraft landed hard, and bounced several times before the pilot initiated a go-around.

During the go-around the airspeed came below the stalling speed and insufficient right rudder was applied to counter the effect of the prop wash. The pilot then lost control of the aircraft.

The aircraft hit the ground with the left main landing gear and the left wing, and came to a stop in the grass south of runway 27.

The aircraft was damaged beyond repair.

Cause

As a result of low speed during go-around, in combination with insufficient yaw control, the pilot lost control of the aircraft whereby the aircraft encountered a stall situation and crashed south of the runway.

Classification

This occurrence is classified as loss of control in-flight.



Visiting Address
Anna van Saksenlaan 50
2593 HT The Hague
T +31(0)70 333 70 00
F +31(0)70 333 70 77

Postal Address
PO Box 95404
2509 CK The Hague

www.safetyboard.nl