Bundesstelle für
Flugunfalluntersuchung

German Federal Bureau of
Aircraft Accident Investigation

Investigation Report

The Investigation Report was written in accordance with para 18 Law Relating to the Investigation into Accidents and Incidents Associated with the Operation of Civil Aircraft stating facts only.

Identification

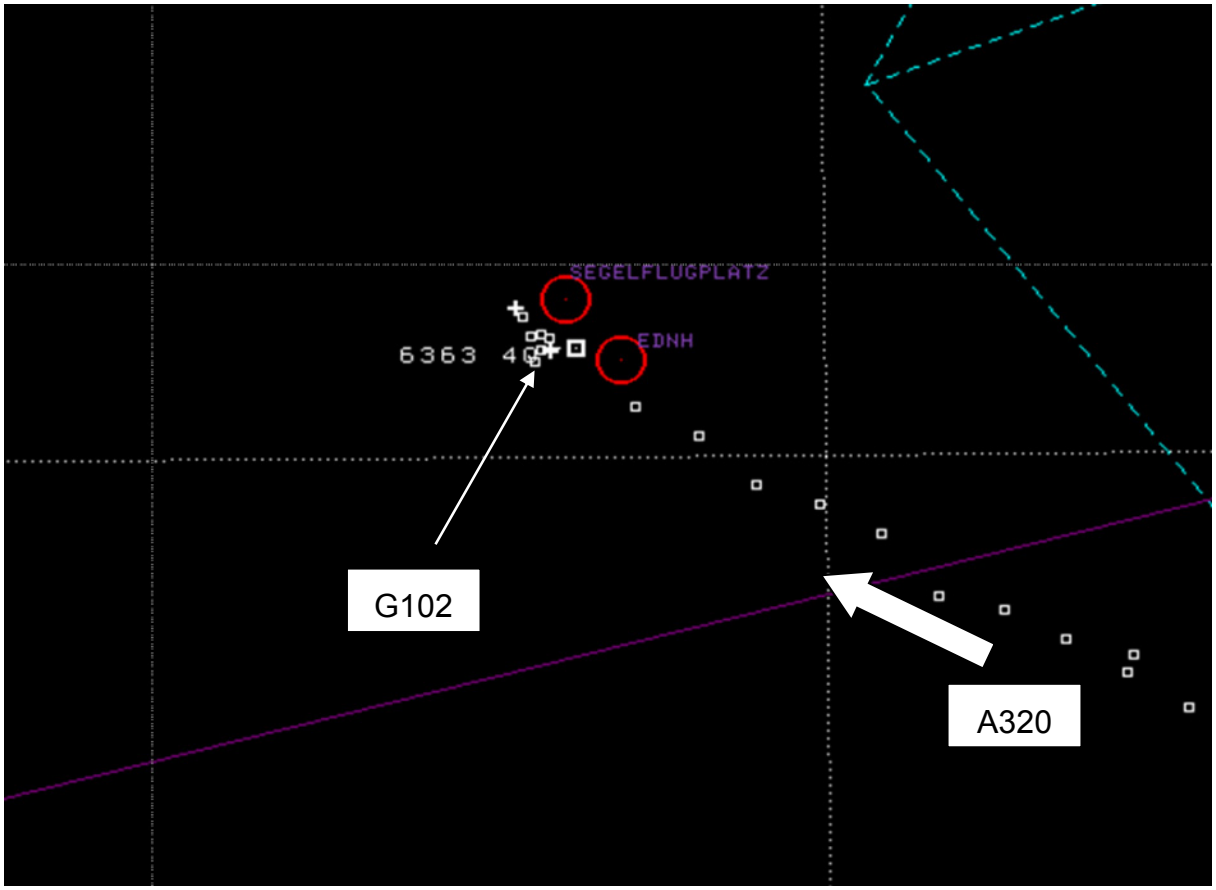
Type of Occurrence:	Serious incident
Date:	6 April 2015
Location:	Near Allgäu Airport Memmingen
Type of aircraft:	1. Airplane
	2. Glider
Manufacturer / Model:	1. Airbus Industries / A320-232
	2. Grob Werke GmbH Co. KG /G102
Injuries to Persons:	None
Damage:	None
Other Damage:	None
Information Source:	Investigation by BFU
State File Number:	BFU EX001-15

Factual Information

In the approach area of Allgäu Airport Memmingen (airspace category E) an airprox occurred at 1532 hrs[1] involving an Airbus A320 and a glider. The A320 was flown in accordance with Instrument Flight Rules (IFR) and the glider in accordance with

1 All times local, unless otherwise stated.

Visual Flight Rules (VFR). The minimal radar distance was 0.247 Nautical Miles (NM) (Source: Federal Armed Forces (Bundeswehr)). The glider pilot estimated the distance with approximately 200 to 300 meters laterally and approximately 100 to 150 meters vertically. The Airbus would have crossed the flight path of the glider behind and above it. The Airbus crew estimated the distance with 200 to 300 ft.



Flight paths of the A320 and the glider

Source: Bundeswehr

History of the Flight

The Airbus was on an IFR flight from Timisoara, Romania, to Memmingen, Germany. Six crew members and 145 passengers were on board the airplane.

At 1523:30 hrs the crew reported to Munich Radar *"[…] passing flight level 129, descending level 90 inbound Juliet Alpha 458 […]."* The air traffic controller informed the crew to expect radar vectors to the Instrument Landing System (ILS) of

runway 24. At 1525:01 hrs the air traffic controller instructed the crew to fly a heading of 300°. At 1527:09 hrs the crew received the clearance to descend to 5,000 ft AMSL and at 1529:36 hrs another clearance to descend to 4,000 ft AMSL. At 1532:39 hrs the crew reported the airprox with the glider "*[…] we just missed a glider by, I don't know, two – three hundred feet*".

The crew stated they saw the glider in an altitude of 4,300 ft AMSL. The Pilot Monitoring (PM) took over controls and commenced climb. Within the next one to two seconds the glider had been overflown.

The Quick Access Recorder (QAR) data available for the investigation showed that the autopilot was deactivated as the Airbus had reached an altitude of 4,357 ft AMSL. The aircraft descended to 4,329 ft AMSL and then climbed again to 4,353 ft AMSL. This occurred in a time span of approximately five seconds. A lateral avoidance manoeuvre was not documented. The Airbus then continued the descent and landed on runway 24 at Allgäu Airport Memmingen.

The pilot of the G102, a pilot student, stated he had been on a training flight in the area of the glider airfield Bad Wörishofen. He was circling left when noticing a cone of light approaching him. Once it had come closer he realised it was an Airbus A320 which approached him in an altitude close to his own. In order to avoid it he completed the circle to the north-east until he was able to fly perpendicular away from the Airbus' flight path. To gain greater distance he had also commenced a descent and increased speed. The Airbus passed approximately 200 to 300 metres behind and about 100 to 150 metres above the G102.

The responsible flight instructor and a different student pilot were also on board a glider (Grob Twin III). He had given the student pilot of the G102 a flight order prior to take-off. He stated he had been in an altitude of approximately 600 meters north of the glider airfield Bad Wörishofen when he saw the Airbus about two kilometres south-west of and approximately 300 meters higher than his own position. The G102 had been south of his own position at the time.

Personnel Information

Airbus A320-232 Crew

Pilot in Command

The 29-year-old pilot held an Airline Transport Pilot's License (ATPL(A)) issued in accordance with ICAO; valid until 31 December 2015. He had a flying experience of more than 5,400 hours of which 3,250 hours were on the type in question.

Co-pilot

The 39-year-old pilot held an Airline Transport Pilot's License (ATPL(A)) issued in accordance with Part FCL and ICAO; valid until 30 September 2015. His total flying experience was 7,230 hours of which 410 hours were on the type.

Gliders Crew

G102 Pilot

At the time of the occurrence the 17-year-old pilot was in training for a glider licence. He had a flying experience of more than 38 hours.

Twin III Pilot

The 64-year-old flight instructor held Sailplane Pilot Licence (SPL) and a Private Pilot Licence (PPL(A)) including the instructor rating for SPL and TMG (Touring Motor Gliders) issued in accordance with Part FCL by the Luftamt Südbayern valid until 6 August 2016. He had a flying experience of more than 2,100 hours.

Air Navigation Service Provider

Air Traffic Controller

The 50-year-old air traffic controller held a valid license for approach and sector control including FIS valid until 5 March 2016.

Aircraft Information

Airbus A320-232

The aircraft type is a low-wing transport aircraft equipped with two turbofan engines. The aircraft had a valid Hungarian certificate of registration and was operated by a

Hungarian air operator. It was equipped with an aircraft Collision Avoidance System (ACAS).

Grob G102

The aircraft type is a single-seat glider in midwing configuration. It has a wing span of 15 metres.

Meteorological Information

The aviation routine weather report (METAR) of Allgäu Airport Memmingen of 1520 hrs reported the following conditions:

- Wind: 330°, nine kt
- Few clouds with a lower limit of 1,000 ft AMSL
- Broken clouds with a lower limit of 2,700 ft AMSL
- Ground visibility of more than10 km.

Radio Communications

The air traffic service provider recorded the radio communications between the A320 crew and the air traffic control unit. The transcript was made available to the BFU for investigation purposes.

Flight Recorders

The flight data of the Airbus (QAR-data) was made available to the BFU for investigation purposes.

The radar data was also recorded by the air traffic service provider and the Bundeswehr (German Armed Forces) and made available to the BFU for investigation purposes.

Airspace

Airspace E is a controlled airspace in which flights in accordance with Instrument Flight Rules (IFR) and flights in accordance with Visual Flight Rules (VFR) take place. IFR flights are separated to each other but not to VFR flights. As far as

possible, IFR flights receive traffic information regarding VFR flights. VFR flights also receive traffic information, as far as possible.

In addition, for VFR flights the following is required: A flight visibility of 5 km (below FL100), distance from clouds 1.5 km horizontally and 1,000 ft vertically. Powered aircraft have to engage a transponder above 5,000 ft AMSL.

Additional Information

The glider flew without an activated transponder. Therefore the glider was not visible for the air traffic control personnel. Due to the missing transponder data the collision avoidance system of the A320 could not recognise the glider.

Investigator in charge: Blanke

Assistance: Hempelmann

Braunschweig 26 August 2015

This investigation was conducted in accordance with the 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 and the Federal German Law relating to the investigation of accidents and incidents associated with the operation of civil aircraft (*Flugunfall-Untersuchungs-Gesetz - FlUUG*) of 26 August 1998.

The sole objective of the investigation is to prevent future accidents and incidents. The investigation does not seek to ascertain blame or apportion legal liability for any claims that may arise.

This document is a translation of the German Investigation Report. Although every effort was made for the translation to be accurate, in the event of any discrepancies the original German document is the authentic version.

Published by:

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