

Loss of visual references on final in snowstorm, collision with terrain

Aircraft	Socata TBM 700 registered D-FALF
Date and time	Friday 10 February 2012 at around 17 h 30 ⁽¹⁾
Operator	Private
Place	Cuers Pierrefeu Aerodrome (83)
Consequences	Pilot and passengers lightly injured Aeroplane destroyed

⁽¹⁾All of the times in this report are local.

CIRCUMSTANCES

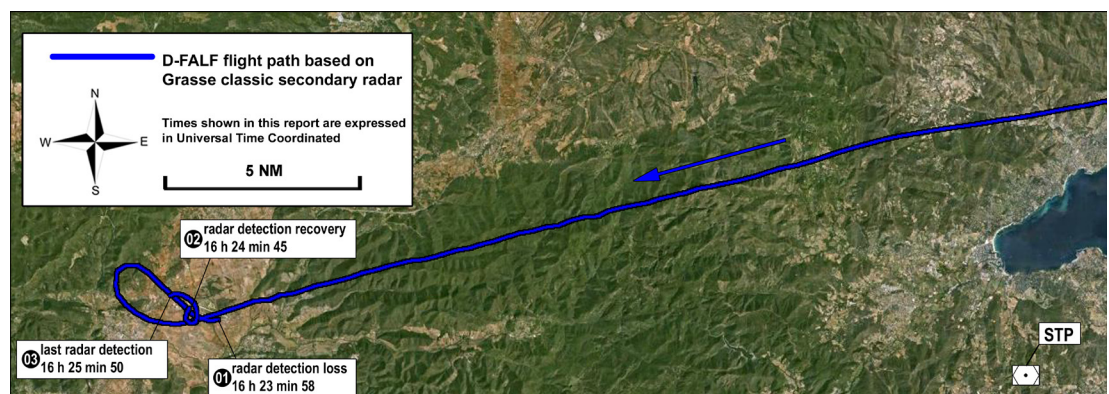
The pilot took off at around 14 h 45 from Maribo aerodrome (Denmark) bound for Cuers. He filed an IFR flight plan that he cancelled⁽²⁾ at 17 h 15 near the St Tropez VOR (83).

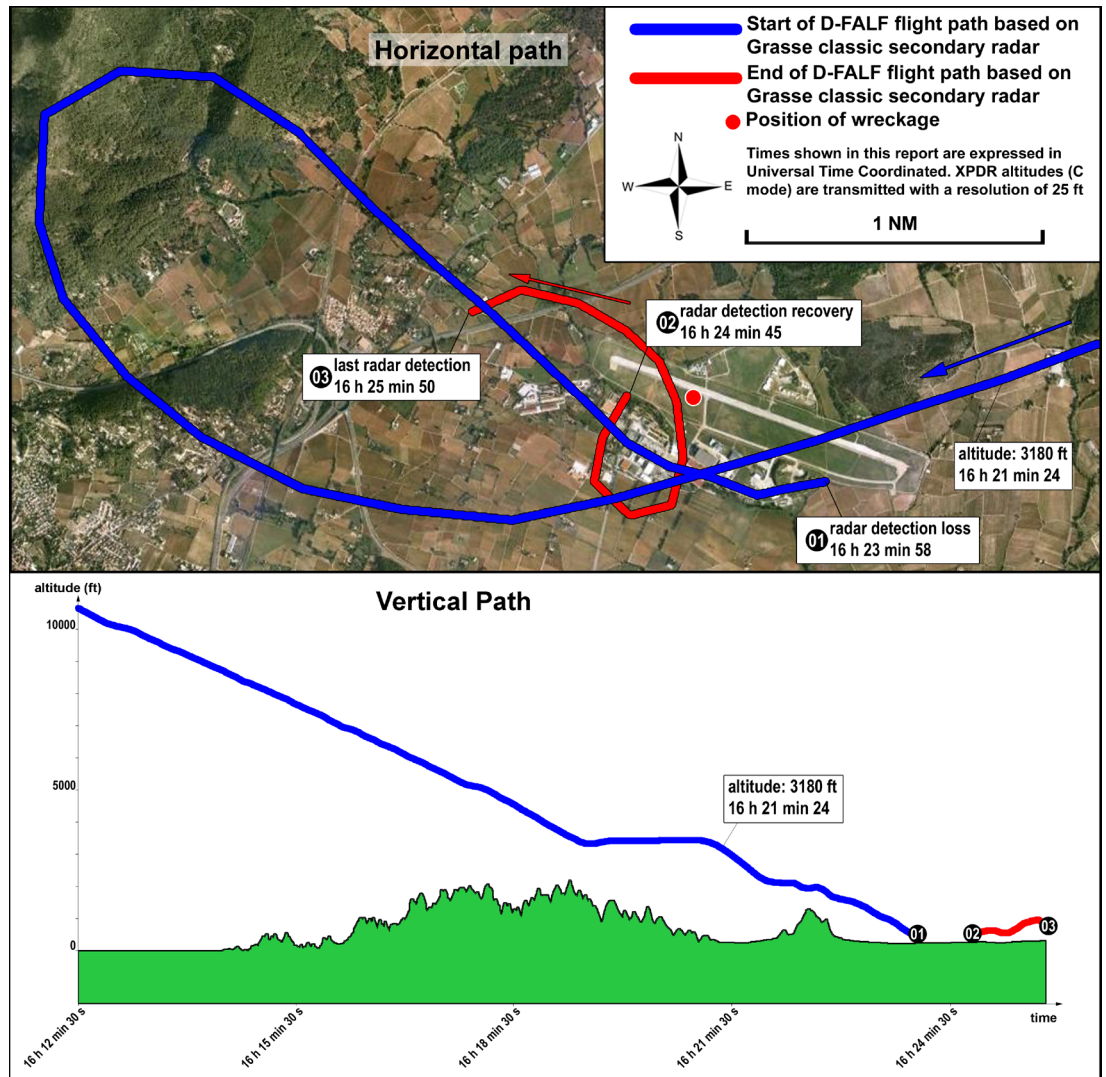
⁽²⁾Cuers aerodrome does not have an instrument approach procedure.

He explained that he had overflown the installations at Cuers at 1,500 ft and started an aerodrome circuit via the north for runway 11. He was visual with the ground and noted the presence of snow showers. He reckoned that these conditions made it possible to continue the approach. At about 600 ft, he went into a snow shower. At about 400 ft, he noticed that the horizontal visibility was zero and that he had lost all external visual references. He tried to make a go-around but didn't feel any increase in engine power. At about 200 ft, he saw that he was to the right of the runway and decided to make an emergency landing. The aeroplane struck the ground on the right side of the runway. It slid for 150 metres and swung around before stopping.

According to Météo France, the estimated meteorological conditions at the site were as follows: wind from north / north-west at 5 to 6 kt, temperature -1°C, QNH 1017 hPa. The radar images show the presence of a convective cell embedded in the air mass that may have caused a cloud base at a height of 1,300 ft, as well as precipitation in the form of snow. Information on the nearby aerodromes, which the pilot possessed, indicated ceilings and visibility compatible with VFR flight.

It was possible to partially reconstitute the aeroplane's trajectories based on radar recordings. They show that the pilot overflew the runway three times before attempting to land.





A short time before the accident, two witnesses located in the buildings to the south of the runway observed the aeroplane passing towards the north, directly above the installations « at a height of about fifty metres ». They then lost sight of it as the visibility was « very bad ».

A fireman stated that he had heard an aeroplane overflying the aerodrome without being able to see it due to the reduced visibility. He added that, while doing his rounds, he saw it coming out of the cloud layer « at a height of about 50 metres ». The aeroplane had a bank angle of over 45° and a steep nose-down pitch attitude.

A witness located to the east on the edge of the runway stated that the aerodrome was under a snowstorm « unlike any he had seen for 16 years ». He described the snow as « heavy and dense », which started to fall about a quarter of an hour before the accident and stopped about ten minutes later. He reckoned that the visibility was no greater than 300 to 400 metres because he heard the collision without seeing it. According to him, the sound of the turboprop was regular. He did not notice any increase in engine RPM before the impact.



Photo of the wreckage about 10 minutes after the accident

Examination of the wreckage confirmed that the aeroplane had struck the ground with a high left bank angle. The landing gear was extended and the flaps set at 10°. The engine was supplying power at the moment of impact, though it was not possible to determine the power level. A strong smell of kerosene was noticeable around the wreckage. In the cockpit, the inertial switch was found in the « OFF » position.

The pilot used a portable GPS, which it was not possible to examine.

Additional examinations were conducted on the fuel pump and the regulator. They did not bring to light any anomalies that could have caused a delay in thrust increase. The manufacturer stated that, at low thrust levels, the reaction time for the turboprop engine is between 0.9 and 3.1 seconds.

The pilot had a PPL licence issued in 1999, valid until February 2014. His IFR rating was valid until 11 February 2012. He stated that he had a total of 8,000 flying hours, of which 2,000 on type. He knew Cuers aerodrome well, which he had been using for 17 years. He explained that he continued his approach despite the snow because he frequently encountered these conditions in Germany.

CONCLUSION

The accident was linked to the pilot's to continue his approach under VFR, even though the meteorological conditions made it impossible. Coming out of an area of thick snowfall at 200 ft, he was unable to control the bank angle or the flight path of the aeroplane. The investigation was unable to determine if this bank angle was linked to inadequate control during an attempt to go around without external visual references⁽³⁾ or a late attempt to reach the centre of the runway.

Overconfidence in his abilities to pass through a snow shower, as well as a determination to land, may have contributed to the accident.

⁽³⁾See the 2013 BEA Study « Loss of control on fast single-engine turboprop. Case of Socata TBM 700 ».