

# WHEN LUCK RUNS OUT



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## What Seemed Like a Decent Start

**O**n February 12, 2009, a Falcon 10/100 carrying two crew members and one passenger closed in on Samedan (LSZS) its destination airport which is located in the Swiss Alps. The flight had passed without incident and the wintery weather was typical of the area; conditions changed rapidly, there were low clouds, snow and reduced visibility. LSZS is the highest aerodrome in Europe and lies at 5600 feet AMSL. The airport is non-controlled and may be used only under visual flight rules. A flight information service officer (FISO) gives information to flight crews, but there is no air traffic controller.

The crew had already cancelled the IFR flight plan and continued under VFR. Snow had fallen recently and the FISO informed the crew that snow clearance work was taking place on the runway, delaying the approach by ten minutes. The pilot in command (PIC) was 69 and very experienced. He had clocked up over 17,000 hours and was familiar with the airport and its surroundings. Radar tracks showed that, while waiting for the snow to be cleared in the vicinity of the surrounding mountains, he manoeuvred in tight turns with very high bank angles. At some point the circuit breaker was pulled and the EGPWS was deactivated. After approximately 15 minutes the crew started the approach into the narrow mountain valley and then things went wrong. It was later found that there were inadequate visual references and that the aircraft was in an unfavourable position for an approach.

## Warning Signs

The pilot in command (PIC) was flying the plane, and had an incident history. In 1999, he overshot the end of a runway by 220 meters on landing and severely damaged the aircraft. The competent Austrian AAIB concluded that the pilot did not follow the provisions of the flight operations manual regarding training and that he demonstrated a lack of procedural awareness (operating limits, approach speeds, knowledge of AFM and FOM, radio communication procedures). The AAIB also noted that the pilot didn't seem to have adequate knowledge of the route to be flown or of the aerodrome he was destined towards. The AAIB also said that the pilot didn't comply with Cockpit Resource Management principles and didn't initiate a go-around even though the aircraft was not stabilized on final approach.

In 2007, flying the same aircraft, the pilot veered off the runway in Samedan and skidded past the glider aircraft winch. The aircraft came to rest a few meters in front of the tarmac, where other aircraft were parked. The pilot blamed the event on a defective left-hand reverser and an unresponsive nose wheel steering. But he didn't mention the incident in the aircraft logs, and no one informed the maintenance organization responsible for this aircraft, about the incident.

Just two weeks later, the same pilot veered off the runway in Samedan once again barely missing the glider winch. Once again, the pilot cited technical reasons for the runway excursion, didn't record the incident in the aircraft logs, and the company responsible for maintenance was not informed. And as with the incident two weeks prior, functional system checks didn't reveal any technical discrepancies.

In 2008, one year after these events, the same pilot landing the same aircraft at the same aerodrome touched down short of the threshold on a small asphalted patch. The airport authority confronted him but the pilot said he had a normal landing. Fortunately, thanks to a hefty measure of luck, these incidents only caused material damage and no injuries.

## COMPLACENCY

If you depend too much on your bag of luck, one day it will really be empty.



On the fateful flight in 2009, luck ran out. It was reported that the runway was in sight and ten seconds later the aircraft touched down on the runway, 135 m beyond the threshold. The longitudinal axis of the aircraft was pointing 6 to 8 degrees to the right of the centreline axis. The aircraft made first ground contact with the right wingtip some two meters left of the centreline. The main wheels touched down, but the misaligned aircraft drifted to the left, until the left wingtip scraped a bank of snow running parallel to the runway. As a result, the aircraft rotated around its vertical axis and the right side of the fuselage collided with the corner of a compact snow bank, while still travelling at a speed of approximately 107 kts (200 km/h). The fuselage broke into two pieces and skidded for some 150 meters before coming to rest. The two pilots died on impact and the passenger and owner of the aircraft suffered serious injuries.

The accident investigation by the Swiss AAIB ruled out technical or medical issues as contributing factors. But the investigation found numerous weak and strong indications that there was an accident waiting to happen. It seems inconceivable that the extensive aviation safety management and oversight system failed to see these indications. With hindsight, it is hard to believe that there was no mechanism, process or authority that could have prevented the accident.

In terms of the flight, the private operator followed the legal requirements and while competent authorities might have intervened, due to a lack of proper reporting, they didn't have the necessary information to be

able to. From an operational oversight point of view private operators were not obliged to exercise direct operational supervision. The company which was the registered owner and operator of the aircraft, didn't engage in any operational activities and exercised no operational oversight. It was merely a contractual partner of companies which provided the services so that the flight could be undertaken. In the company's opinion, the operational control and responsibility was delegated to the commander of the accident flight. Numerous discrepancies were found over the course of the accident investigation, involving manuals and documents, crew training and qualification, pre-flight and flight procedures, and more.

Obviously, many things went wrong in the system. In this column you may have read about some of the processes that are being implemented to make aviation even safer, such as performance based regulation, safety management systems, safety culture development etc. But quite frankly, this accident illustrates that for these defences to work, all of the relevant stakeholders must work in synch with each other. Defences can completely fail, and a huge amount depends on the pilot.

### Bag of Luck – Bag of Experience

Piloting involves skill, knowledge, and experience – and a little luck. A well known saying says that every pilot starts out with a full bag of luck and an empty bag of experience. The trick is to fill the bag of experience before the bag of luck is empty. However, lucky outcomes in certain situations may give a pilot a “can do”

attitude and he or she may begin to look upon procedures and limitations as mere guidelines. Flight crews should consciously interpret significant incidents and “fender benders” as last chance warnings. The real trick is to depend on the bag of luck as little as possible.

Unfortunately, experience does not guarantee expertise. Experience builds up when you have done something many times, expertise is about knowing what you have done. Learning from experience is an active process and requires mindfulness and a positive attitude to safety issues. This accident report shows how important it is to learn from one's own experience, but also to learn from other people's experience by following recognised safe practices and philosophies, such as approved flight procedures and available guidance.

If you depend on the full bag of experience, while still drawing heavily from the bag of luck, one day it will really be empty.



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**UNISON**  
If defences are to work all stakeholders must work in synch with one and other. Source for pictures: AAIB Switzerland Final Report 2014