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discuss the risks of leaving safety culture as a loosely defined and adaptable concept through an accident in Geneva in 2017

LANDING WITH PARKING BRAKES ON

MISHAP
The Runway 05 at Geneva Airport was blocked for 1.3 hours due to an immobilized aircraft.

Flight VPC5, early afternoon, October 28, 2017, Geneva International Airport (LSGG), Runway 05, excellent weather conditions. Geneva Tower closes the airport.

The main wheel tires of a Hawker Beechcraft 750-HB-33 had blown up upon landing. The immobilized airplane was not able any longer to exit the runway on own power.

It took the emergency services 1 hour 17 minutes to tow airplane off the runway. Gladly, no personal injuries occurred.

Operator Proficiency Check on the Aircraft

ES-PHR, the Spanish registered airplane operated by Panaviatic AS from Tallinn (Estonia), was utilized on that day as platform for an Operator Proficiency Check (OPC). Two pilots were conducting the

OPC, while two more pilots were seated in the passenger cabin while not under OPC.

The 53-year-old pilot flying acted as commander of the flight and sat on the left hand seat. The role of the co-pilot was exercised by a 71-year-old Type Rating Instructor (TRI), who simultaneously acted as pilot monitoring and instructor or examiner. In fact, the Summary Serious Incident Report does not clearly specify whether the TRI was performing instruction or an examination during the particular sector leading to the occurrence. It may be assumed that the occurrence flight was a training flight or simply a positioning flight.

On previous legs, the instruction covered GNSS approaches in Grenoble (LFLS) for all pilots onboard. Once the exercises were completed, the active crew began the return flight to Geneva.

At the time the pilot monitoring contacted Geneva Approach Air Traffic Control, the pilot flying was maintaining Flight Level (FL) 110 at a ground speed of 278 knots.

The crew was cleared for a standard IFR approach from the southwest for a straight in ILS 05 approach to land on Runway 05.

When the aircraft passed six nautical miles from waypoint INDIS and approximately 1000 feet too high for glide slope intercept of the ILS 05, the commander announced that the airplane was flying too high and that he was confident to be able to correct the descent in time to join the glide slope.

The instructor on the right-hand seat suggested that "this" should be used, but the commander did not agree. At about the same time the cockpit voice recorder recorded a "click". Unnoticed by the crew members, the brake pressure jumped from zero to 1300 PSI and remained at that level.

Four minutes later, the instructor told Geneva Approach that ES-PHR was established on the ILS 05. He then changed frequency to Geneva Tower.

After four more minutes, the tower cleared flight VPC5 to land. One minute later, at 12:52 UTC, the Hawker 750 touched down.

Within seconds both pilots became aware of the fact that the airplane decelerated abnormally fast and soon they found out that the brakes were completely locked. While the airplane was still moving on the runway with burst tires, the instructor notified the tower. Six seconds later, ES-PHR was standing still on the runway and could not move any more.

Parking Brake Active, Runway Blocked

Geneva Runway 05 was blocked for 1.3 hours due to the aircraft immobilized on the runway.

Immediately after the aircraft had come to a stop, the two pilots started discussing what had just happened and found that the parking brake was activated. They were puzzled and did not know how the parking brake activation had come about.

The report assumes that the instructor must have suggested the use of the air brake. He must have accidentally mistaken the wheel brake lever for the air brake lever. In any case, one of the pilots must have made a mistake and placed the wheel brake lever to parking. The problem is that the cockpit voice recorder did not record any acknowledged commands concerning the activation of any brake lever.

The Wheel Brake Lever

The Hawker 750 is equipped with a wheel brake lever located on the right side of the center pedestal. On the left side of the thrust levers, the air brake lever is installed.

During the approach, when the position too high relative to the Glide Slope was detected, the instructor suggested the use of "this". He might have meant the use of the air brake lever and accidentally changed the position of the wheel brake lever, despite the pilot flying not requiring or ordering any activation of the air brake lever.

The wheel brake lever provides three positions. In normal position, both the parking as well as the emergency brake system are not active. In emergency position, hydraulic pressure from accumulators can be used after touch-down to provide pressure to the pedal brakes in case the normal hydraulic system would have failed. In emergency, the anti-skid units would be by-passed. Finally, in parking position, the wheel brake lever would pressurize the brakes from the accumulators.

Landing with the wheel brake lever in the "parking" position leads to a wheel lock and burst tires.

Questions

This serious incident and the report raise numerous questions:

- Apparently, the flight in question was conducted as a training flight that included an OPC. Industry best practice, supported by regulations, directs commercial operators to conduct pilot training and checking in simulators. Only in case no suitable simulators are available, training and checking may be conducted by use of the actual airplane. Had the use of the aircraft for the conduction

FAULT
The pilot mistakenly pulled the hand brake lever slightly instead of the air brake lever.

LANDING
Reports show touchdown occurred while the parking brake was applied.

of the training and checking been legal and been conducted with the consent of the competent authority?

❍ Experience shows that pilots' psychology and behavior patterns differ between activities in training and in operational environments. Did the fact that training and checking was conducted under real flight conditions contribute to the incident?

❍ As we learn from the report, after landing the instructor wanted to show the trainee pilot how the parking brake works while still standing on the runway after the tire burst. Obviously, he was trying to take advantage of the mishap to illustrate parking brake system functions. Was he aware of what had just happened and of the magnitude of the risk the crew and passengers were exposed to?

❍ Among other things, an OPC shall assess a pilot's proficiency with regard to crew coordination skills and adherence to Standard Operating Procedures. Is that at all possible when the instructor or examiner is part of the active crew and is acting as pilot monitoring?

❍ The report indicates that the flight was conducted under commercial flight rules. Therefore, it is likely that it was a positioning flight. However, in this case the instructor would have been older than legally allowable for commercial flights. Has his age and a possible age-related deterioration of his performance together with the other described factors contributed to the incident?

❍ The air brake and the wheel brake lever are different in shape. The air brake lever left of the throttles has a horizontal bar shaped handle, while the wheel brake lever right of the throttles features a vertical ball shaped handle. It can be assumed that these shapes were designed to prevent any confusion between these two levers. But, what if a pilot changes seats and flies the aircraft from both sides depending on the different roles he holds? Is there a risk of confusing one with the other?

Where do we Get the Answers from?

Unfortunately, the official summary report answers none of the questions above and does not even discuss many of them. Its conclusions are superficial and based on assumptions.

Like most entities in the public aviation sector, accident investigation bodies are short on staff and resources. Therefore, they have to set priorities when deciding which cases to investigate in detail and which ones to treat more generously.

Usually and for political reasons, the extent of the damages caused by an event is taken into consideration, which means that accidents with fatalities or major personal injuries enjoy highest attention while incidents not even causing major financial damages to third parties rank a lot lower on the priority list.

Of course, the number of fatalities is not a good indicator for the potential of learnings we can take away from a case. So where do we find the answers to low-priority event questions?

Regulations required any commercial operator to investigate and analyze any accident, incident or other safety threat that occurs in connection with its air operation. The operator cannot solely rely on the investigation of the investigation boards, but itself holds the responsibility for drawing conclusions from the own analysis.

Regrettably, many operators are not aware of these obligations. Even more regrettably, the industry still hesitates to share the knowledge of and learnings from safety relevant events among the participants in the community. Still no common platform where operators can make their reports and occurrence analyses available is introduced neither by AfBAA, EBAA nor by IATA or any other industry association. Such a platform would be the place where also those issues that has not received full attention by the state investigation boards could be communicated.

We will have to continue to promote the sharing of safety relevant knowledge, encourage operators to live up to their obligations, maintain Safety Management Systems that are capable of drawing conclusions and transfer them into daily operations.

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