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“Independence does not mean Isolation”

Runway Overrun in Lyon, France

Fixing the Holes: Infrastructure, Training and Oversight

by

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1. INTRODUCTION

On the evening of 29 March 2013, the crew of an Airbus A321 made a return flight from Dakar (Senegal) to Lyon Saint Exupéry (France) as part of a non-scheduled public transport passenger flight chartered by a French airline. The airport was under LVP conditions. The aircraft landed about 1,600 m past the threshold of runway 36R and overran the runway. During the approach, the crew did not manage the speed effectively and there was a strong tailwind. Furthermore, on short final, the crew faced an unexpected increase in engine power, which they did not identify. Landing with a 100 ft ceiling and in a fog bank the Captain, who was PM, steered the airplane around an ILS antenna and braked to stop the airplane. The airplane came to a halt 308 m past the end of the runway, short of a 15-meter deep hole in the ground. No passengers or crew were injured. However, if the aircraft had continued its roll and fallen into the hole, it is likely that it would have caused injuries or even fatalities.



Filling in that hole after the accident was one of the actions that resulted from the safety lessons drawn from this accident. It was the most obvious and direct one, but the safety investigation recommended fixing other “holes” as well. Namely, those discovered in the operator’s organization and in the oversight system.

2. FINDINGS

The investigation conducted by the BEA quickly highlighted:

- An excessive flight duty period (14h50)
- Excessive speed during the approach
- A long landing
- Crew performance below expected standards for an approach or landing
- An FMGC software glitch that contributed to an engine power increase during the landing phase.

These initial findings led us to gather more information regarding the airline's organization, its crew recruitment and training process, oversight of the airline by the National Aviation Authority as well as oversight of the National Aviation Authority by EASA. A previous serious incident had occurred in Lyon in April 2012 involving the same operator: a GPWS alert and two MSAW alerts triggered during approach. The investigation revealed similar crew performance, operational and organizational aspects.

Training

The information gathered during the two investigations revealed a low level of crew performance. During approach, the crews neither adequately managed the speed nor applied the SOP's as expected. The following factors adversely influenced crew performance.

- Both crews had limited experience with the aircraft type and in their functions. In the first event in April 2012, the left-seat pilot, trained as a Captain, had a total of about 25 flying hours on Airbus A320. The airline's Operations Manual made it possible to recruit and train the pilots based on two different conditions: part A of the Manual states that to be a Captain, no minimum experience on the aircraft type is required. The Manual also indicates that the airline management might allow a pilot to become a Captain if he was considered as "outstanding";
- The copilot of the march 2013 event had limited overall experience and disrupted flying activity;

- The recruiting criteria for employment as a pilot were variable according to the airline's needs;
- The operator's conversion course, in particular line flying under supervision, was not sufficient to compensate for the copilot's lack of experience when he was recruited. Long breaks during the copilot's line training probably disrupted the normal learning process;
- CRM training that was not representative of the specific operational conditions and that did not adequately raise crew awareness of potential risks;
- Fatigue, related to a particularly long duty period on the day of the second event. The crew began their activity at 5:45 am, took off at 6:44 am and landed in Lyon at 8:45 pm after a technical stop in Agadir, where the copilot touched down 900 m past the threshold;
- A poor level of English that prevented the copilot from precisely understanding the ATIS message, in particular in relation to the wind, and that degraded the quality of communication between Captain and copilot;
- The inappropriateness of the simulator training for the specific risks involved in this situation, such as exercises for go-around, rejected landing and dual inputs.

The conditions under which the operator began its activities in public air transport exposed it simultaneously to difficulties in crew recruitment, training and skill checks. These difficulties were also accentuated by the rapid growth in the fleet and the seasonal nature of its activities.

Even though both the Captain and the copilot theoretically met – with little or no margin on each criteria - the minimum regulatory training requirements, the investigation identified weaknesses that impacted the crew's performance. The investigation showed that crews were not adequately trained in specific procedures such as rejecting a landing below 50 ft, or emergency evacuations, and more generally that the training provided was not in line with the operational situations encountered in service. The operator had identified some safety weaknesses (Captains and copilots with little experience on type and in the position, dual inputs, unstabilized approaches), but had not adapted its initial training and recurrent training to these risks and did not have the tools required to really ensure the safety performance of its operations.

Oversight of the Airline by the National Aviation Authority

The airline, based in Greece, started its activity with only one airplane. In 2012, the owner of the airline, who also owned an airline in France, transferred four airplanes from the French airline to the Greek sister airline in order to start operations as rapidly as possible. The airline had to find qualified crew urgently - since it did not transfer the French airline crews for cost reasons -, while at the same time organizing the planning of operations and preparing consistent documentation compliant with the regulatory requirements.

The Operations Manual produced by the Greek airline under these conditions was approved in its entirety by the Greek National Aviation Authority at the end of November 2011, despite inconsistencies in the requirements to fly as copilot or Captain and the note authorizing the operator not to meet its criteria if need be. This last inconsistency was not detected by the National Aviation Authority. A new Operations Manual correcting all the inconsistencies and differences was filed with the Authority at the end of 2012 and approved after the accident.

EASA Audit and Inspection

Identifying a certain number of these factors relating to the organization of flight safety, the recruitment process for crews and their training and checks, then led the BEA to examine the work of the oversight authorities.

In 2012, EASA conducted an audit of the National Aviation Authority responsible for oversight of the operator. During the same period, EASA carried out an inspection of the airline. They pointed out the difficulties of the National Aviation Authority in conducting oversight of the activity of airlines based in Greece, as the oversight authority had issued an AOC without putting in place a suitable oversight program which would have made it possible to detect operational weaknesses. It appears that the conditions for flight crew recruitment, outsourced training and rapid expansion should have led the National Aviation Authority to establish an appropriate oversight program.

The audit results from EASA were made available, after some difficulty, to the BEA, thanks to the provisions of Commission Implementing Regulation (EU) 628/2013, on working methods of the European Aviation Safety Agency for

conducting standardization inspections and for monitoring the application of the rules of Regulation (EC) No 216/2008 of the European Parliament and of the Council. It specifies in article 21 « Access to information contained in inspection reports. »:

3. Where information contained in an inspection report relates to ongoing safety investigations conducted in accordance with Regulation (EU) No 996/2010 of the European Parliament and of the Council, that information shall be made available without delay to the authority in charge of the safety investigation.

This provision and others make it possible to foster the independence of Safety Investigation Authorities like the BEA. It allows for a better understanding of systemic issues that may contribute to accidents or serious incidents. This is how valuable lessons can be drawn for the improvement of aviation safety. However, audit or inspection results should be considered as protected information, for fear that this safety tool, designed for and used by oversight authorities, could lose some of its effectiveness.

3- CONCLUSION

This investigation could not have been undertaken without the cooperation of a large number of organizations. The findings would not have been possible if the BEA had worked in isolation. The active and fruitful cooperation of the Accredited Representative from Greece was essential. The investigation also demonstrated the spirit of independence that has to be the basis for the work of any investigation authority involved in aviation safety, but also of all the other participating organizations or authorities within the scope of their responsibilities. It enabled the 15-meter hole at Lyon airport to be filled in to prevent the recurrence of a similar accident, but also pinpointed other “holes” at the systemic level and in the functioning of oversight.