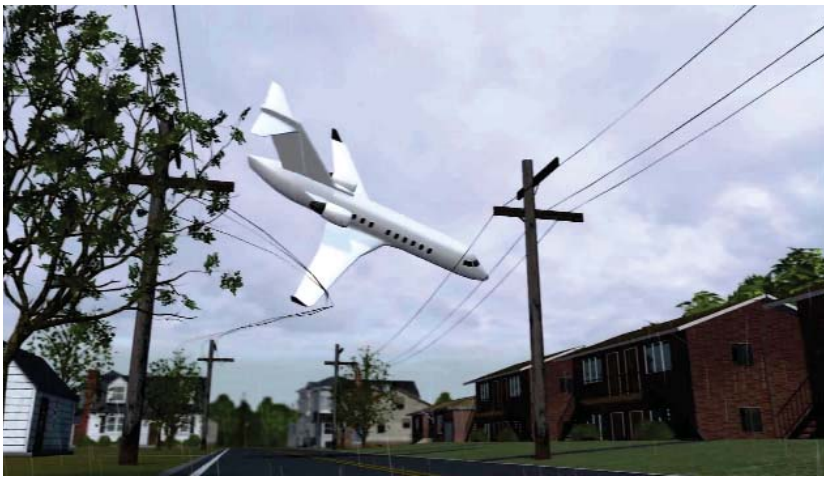
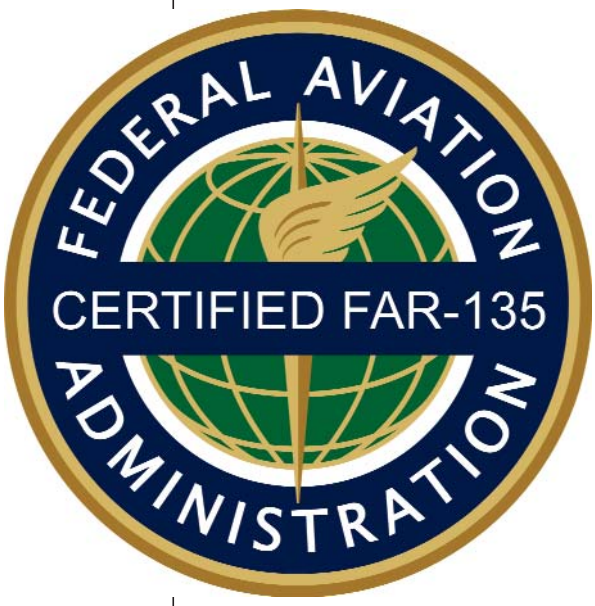
THE ILLUSION OF SAFETY

Behind all the certificates and routine audits comes the cold hard reality; safety oversight in civil aviation can cost lives. Michael R. Grüninger and Capt. Carl C. Norgren explain it through the ExecuFlight accident





WRECK
The chartered Hawker 125 crashed into an apartment building in Akron, Ohio. Photo Credit, News Direct's animation.

Due Diligence

The customers performed a thorough due diligence process. They asked the right questions and demanded safety certificates from the operators before selecting the supplier of the next charter flights. They wanted their executives to be transported safely.

ExecuFlight had an impeccable safety track record and could provide numerous documents to prove the safety of their operations. The FAA had certificated ExecuFlight as a FAR-135 operator. The operator's safety assurance and compliance monitoring departments did not detect any safety and compliance problems. Industry audit organizations, in this case Wyvern and Argus, had audited the operator and had awarded them the sought after certificates, confirming that the company met the applicable industry safety standards.

The illusion of safety was perfect. The customer felt absolutely confident that ExecuFlight was the right operator to hire.

Reality Strikes

But behind the illusion of safety, the reality was very different from the shiny certificates and awards.

The accident report reads: "On Nov. 10, 2015, about 1453 eastern standard time (EST), a British Aerospace HS 125-700A (Hawker 700A), N237WR, departed controlled flight while on a non-precision localizer approach to runway 25 at Akron Fulton International Airport (AKR) and impacted a four-unit apartment building in Akron, Ohio. The captain, first officer, and seven passengers died; no one on the ground was injured. The airplane was destroyed by impact forces and postcrash fire."

The crash was the end of a long sequence of events that began long before the customers on board ExecuFlight 1526 decided to charter the aircraft in November 2015. The actions of the crew of flight 1526 were the result of a company culture that was conductive to unsafe flight operations.

The Hawker 700A was descending with a high rate of descent in full flap configuration and gear down. Due to slower traffic ahead the co-pilot, who was pilot flying, had slowed down the aircraft to below Vref. He had started descent too late and was trying to salvage the approach by descending with 2'000 ft/min. The ceiling and visibility were just on the minimum required for the non-precision localizer approach for runway 25 at Akron (AKR). The captain, who was pilot non-flying, pointed out the low speed and the high rate of descent repeatedly during the approach, but did not intervene.

After passing the minimum, which was not called out by either pilot, the captain called 'ground' and then instructed the copilot to level off. The stick shaker activated, the GPWS issued a 'pull-up command and shortly thereafter the aircraft impacted the ground. Nobody on board survived the impact.

Telltale Signs in Hindsight

Another unstabilized approach ended in a fatal crash. Despite numerous similar accidents in the past and numerous safety recommendations yet another crash occurred under similar circumstances and for similar reasons.

The accident report highlights many telltale signs which could have been detected by the operator, the FAA and the teams auditing the operator according to clearly defined industry standards.

The obvious cause of the crash was that the pilots had mismanaged the

approach. But this is only the superficial causality. The root causes of why the pilots mishandled the approach lie much deeper.

During the investigation, it became evident to the NTSB that managers, supervisors, FAA inspectors and industry auditors had not detected or correctly interpreted the 'lead' safety indicators such as poor management, superficial pilot selection, lack of supervision, minimal oversight and complacent auditing.

Serious Lack of Management and Supervision

Management and supervision of flight, ground, maintenance and training operations are the responsibility of the operator. Numerous deficiencies in the oversight were detected during the investigation.

During the recruitment of the pilots basic background checks were not carried out which would have indicated deficiencies in the flying skills. ExecuFlight had outsourced its training. But the operator supervised the standards of training provided by the third party training organization poorly.

The operational control of flights was formally the responsibility of the president of the operator. But in reality only departure and arrival messages were monitored. Flight planning, fuel planning, selection of alternates etc. were performed by the operating crew without supervision.

The adherence to standard operating procedures during line operations was poorly monitored. The company did not have any monitoring of line operations in place.

There was no formal way to report safety relevant occurrences to the management. Hence no feedback mechanism existed except for contacting the head of flight operations directly.

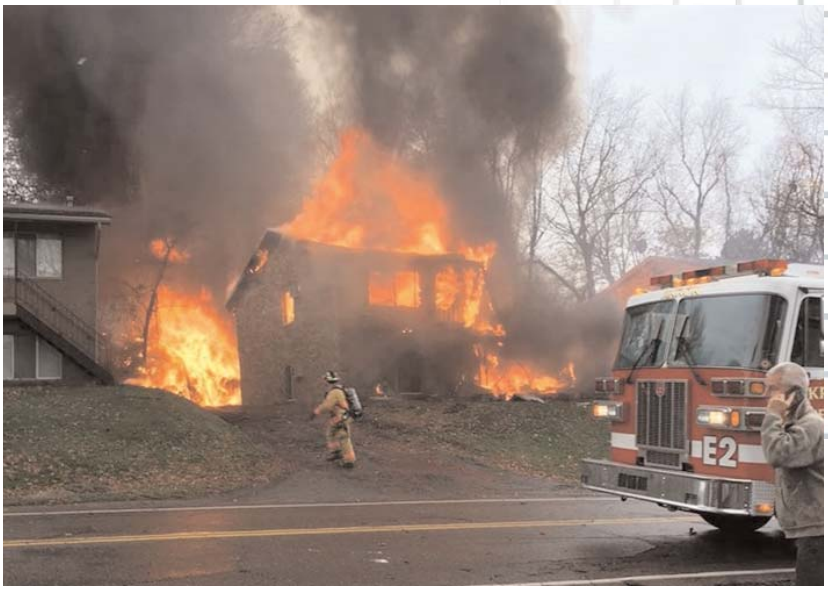
The president and the head of flight operations even scheduled flights which caused minimum rest time and maximum flight time regulations to be violated.

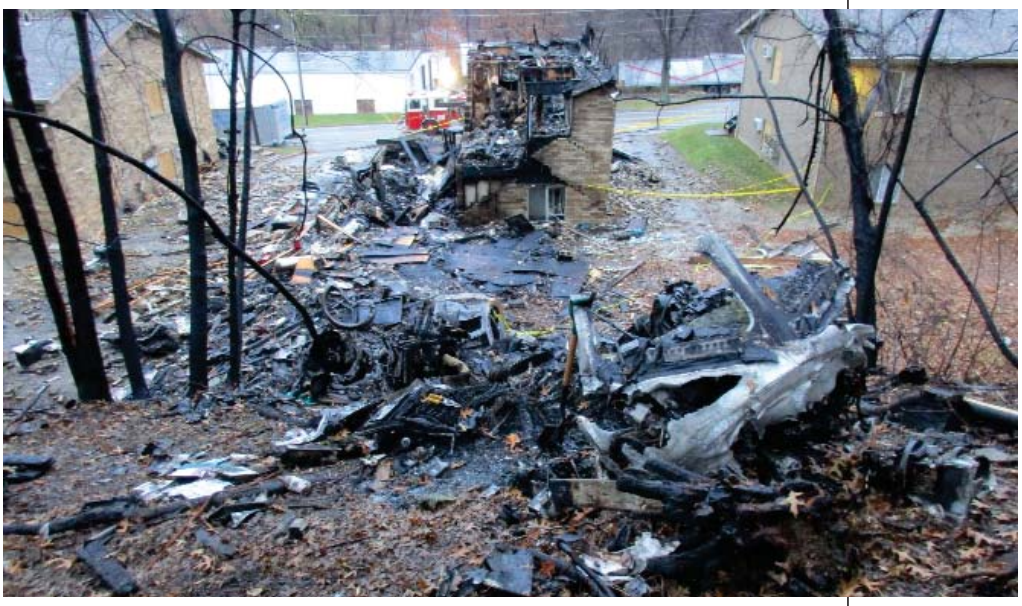
The president and the head of flight operations, who both have important roles as role models for the employees and pilots, ignored basic regulations designed to keep passengers safe. Their behavior was copied by the other pilots and became the norms and standards to which the pilot group operated.

The lack of performance of the flight crew of ExecuFlight 1526 were the result of the adverse role models and the low expectations set by the senior management team as well as the lack of effective monitoring mechanisms in daily flight operations. Corporate complacency towards the precursors of poor performance seriously endanger flight safety.

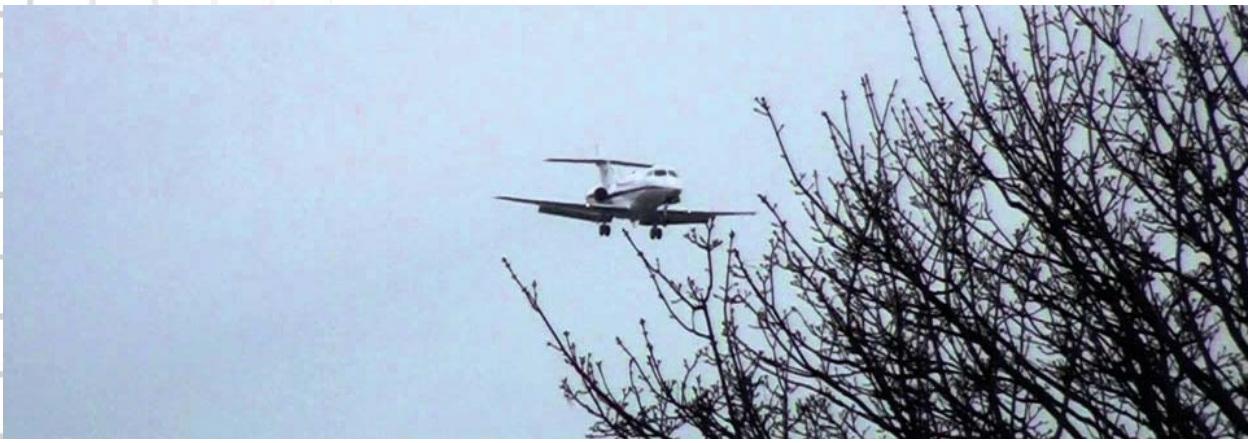
ExecuFlight had not implemented a Safety Management System (SMS). Today, most operators have implemented an SMS. And yet, developing effective safety performance indicators is often hindered by SMS practices. A recent study published in the "Aviation Psychology and Applied Human Factors" Journal (Volume 7/Number 2/2017) concludes that "the main factors in the less-than-optimal functioning of an SMS may be: the role of top management, the lack of safety culture, and the effectiveness of the data collection approach, either individually or in combination".

The importance of this statement cannot be overemphasized. It implies that although operators may have implemented an SMS, their ability of actually foreseeing weak points in their safety performance is not developed. The SMS remains blind and does not provide solid





PENALTY
Residents of the apartment building that the plane crashed into filed lawsuits against ExecuFlight and the co-pilots.



safety data to trigger appropriate and effective decisions by management. The study continues in pointing out that "the knowledge of these impeding factors may help organizations to improve their safety performance indicators and the success of their SMS".

One aspect particularly relevant to this accident and to the operator of the accident aircraft is the lack of a robust safety culture. In a robust safety culture employees know what constitutes acceptable and unacceptable behavior. The study states: "Because it was not clear for them what the organization and juridical authority considers as being acceptable and unacceptable, they were reluctant to report their actions for fear of prosecution. As a result, occurrences that should have been investigated to find out what happened, why it happened, and how to prevent it from happening again now go unnoticed."

Without feedback from front-line employees, the SMS is blind, and management cannot take the decisions to implement appropriate actions. At ExecuFlight the lack of feedback was exacerbated by the lack of positive and consistent role models. Even worse, the role models themselves did not adhere to the procedures they had laid down in the company operating manuals. When the codified rules of acceptable behavior in practice are not followed by those who established such rules, employees get confused and will not buy into a culture of safe behavior.

Although it sounds quite abstract and theoretical, it is not an academic matter. With the advent of formalized SMS, a true shift in paradigm has started in the aviation industry. While previously each employee, pilot, engineer, manager and so on acted to take care of their own little 'kingdom', safety culture today requires all personnel at all levels to work together in a clear and transparent way. Nobody may hide shortcomings and everybody should feel protected by a solid and trusted no-blame culture for reporting. The industry still has a long way ahead to fill this new paradigm with life.

FLAW
NTSB names flight crew, charter company and FAA inspector as falling short of their safety obligations.

Serious Lack of Oversight

Oversight is the responsibility of the Aviation Authority and, in an extended way, also industry audit organizations.

In the past, one of the authors of this article was directly involved in state oversight of visiting aircraft. This program is known today as SAFA. One day, an Egyptian charter operator appeared on the oversight radar of Switzerland's SAFA inspectors. Flash Airlines operated leisure flights from Europe to Egypt. The inspection of the Boeing 737 and crew of Flash airlines revealed numerous anomalies. When analyzed individually, each anomaly was either barely within limitations or slightly outside. All snags could be fixed without major difficulties on the spot in Zurich prior to departure. But when analyzing the sum of anomalies within the context of overall operations, the picture was not right. Given the certification status of Flash Airlines, the inspectors could have opted to trust the certification status and to give in to the illusion of safety. After considering the full picture, the inspectors decided to prohibit further flights to Switzerland. At the time, and especially from a legal point of view, it was a courageous and unorthodox decision to take. On January 3, 2004, Flash Airlines Flight 604 crashed departing from Sharm-el-Sheikh killing all occupants. With hindsight, the decision to prohibit flight operations was proven correct. Oversight is a serious business. It is indeed possible to detect unsafe conditions prior to an event "proving" that the conditions were unsafe. A correct risk assessment requires the courage to see the reality in its context as it is, not as one might want to believe it should be.

This example highlights how difficult it is for authority inspectors to react in a timely and decisive manner. Commercial, legal and political considerations easily counteract risk perception.

Only a vigilant and outspoken risk perception as well as mitigating action based on perceived risks can counteract the illusion of safety and break a tragic chain of events.

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