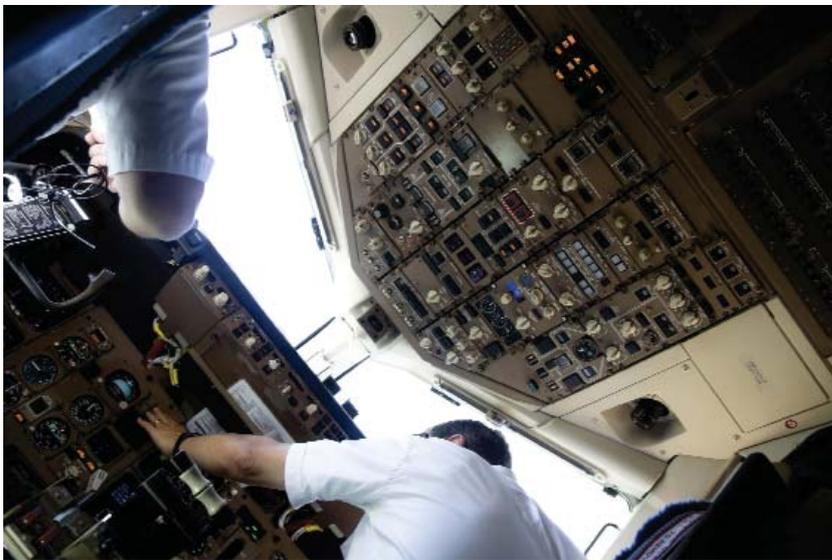


FACT-BASED DECISIONS

By Michael R. Grüniger
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The phone in the office of Capt. Johnson, the Safety Manager at a leading executive aviation company, rang again. It had been ringing all morning and the last thing Capt. Johnson needed before lunch was another interruption. He was trying to finalize the quarterly safety statistics which showed another steady improvement in the level of safety in the operation. The powerpoint slides

with the identified hazards and the associated risks including the mitigating activities told the story of a professionally managed operation.

Reporting

Capt. Johnson lifted the receiver. On the other end was his assistant, First Officer Jackson. He was very excited and spoke quickly. 'We almost lost an aircraft yesterday!' He had just received

an Air Safety Report from the crew about an EGPWS activation followed by a successful escape manoeuvre.

While following an instrument departure out of their homebase the crew had entered the transition altitude in the altitude pre-selector instead of the cleared flight level. The autopilot had captured the altitude which both pilots had acknowledged. A few minutes later, as the aircraft was approaching high ground South of the airport, the EGPWS had activated with 'Terrain, terrain' followed by 'Whoop whoop, pull up, pull up'.

The pilot flying reacted immediately and initiated an escape manoeuvre by climbing steeply. The aircraft cleared the high ground, but not with a big of margin. Had the crew waited a few seconds longer the aircraft would probably have been lost.

Understanding

Captain Johnson reacted with disbelief. How could two experienced pilots, both of whom he knew personally, and considered to be both reliable colleagues, as well as good personal friends, make such a silly mistake? And this when flying out of their

COLLECT

Data collection plays a vital role in assessing the causes of accidents and incidents.

homebase! Surely there was some misunderstanding, some easy explanation for this incident. He told his assistant that he would personally take charge of the investigation of this incident. Immediately he called the captain of the incident flight. Capt. Johnson wanted answers to the question 'who? and why?'.
The next management meeting was in 2 days time and this incident would most likely be the number 1 topic at the meeting. Capt. Johnson needed to ask the right questions quickly, because the Accountable Manager needed a complete and meaningful answer.

The story above is not entirely fictional, but the circumstances which Capt. Johnson faces are typical of a business aircraft operator for whom safety management is not a full-time occupation, but an additional function performed by somebody who is mainly engaged with other tasks.

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Deciding

The Accountable Manager, in cooperation with his management team, needs to allocate the few resources available to those issues which increase the level of safety consider-

ic methodological approach and requires from practitioners skills which are not acquired by pilots during line flying operations or during daily flight operations management tasks.

Such skills are often in short supply with smaller aircraft operators where the number of incident investigations is low. But even larger organizations for whom incident investigation is a regular process, can have deficiencies in this area. The recently published review of the Australian Transport Safety Bureau's (ATSB's) accident investigation methods performed by the Transportation Safety Board of Canada (TSB) resulted in 14 safety recommendations.

Among the recommendations was a call for an improvement in data collection methods in order to establish a solid evidentiary base for the investigation. Insufficient information had prevented proper analysis of a number of key aspects of ATSB cases.

In addition the TSB criticised the lack of a formal iterative process which would have identified the lack of information and would have caused the ATSB to question incorrect conclu-

an investigation has to be identified early on in order to ensure that missing data can be collected before it is forever lost. The longer an investigation takes, the higher the risk that data is no longer available.

Investigating incidents and accidents is an iterative process. As the investigation proceeds and new analysis identifies the need for further analysis, good investigators continually review the data collection plan. Timely and comprehensive data collection provides the basis for valid analysis.

By rigorously following a process of reviews with either higher level management or with an external party assures that critical questions are asked and deficiencies in the analysis or data are identified and acted upon.

Safety Success

Accident and Incident investigations provide decision makers not only with valuable data, but by putting data into the right context, generate meaningful information. Such information is used by risk analysts to explore the underlying logic of the occurrence and generates knowledge.

Decision makers then use such knowledge to allocate resources to those recognised areas of attention, which promise to ensure safety success.

By providing solid fact-based knowledge, Capt. Johnson can support the Accountable Manager in the difficult task of allocating resources to the right task.

The pursuit of safety thus becomes a business success story by minimizing flight risks and maximising return on investment.



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DATA
Australia's Transport Safety Bureau (ATSB) has looked at various measures to improve its data collection.



ably. It is a difficult task to take decisions on the allocation of resources, a task made even more difficult if it is not supported by a solid knowledge on the safety status of the operation based on fact based knowledge.

Aviation professionals have always used techniques to reduce the risks to the minimum. Formal Safety Management though follows a scientific

methodological approach and requires from practitioners skills which are not acquired by pilots during line flying operations or during daily flight operations management tasks. A formal second-level review was missing in the investigation process which would have assured that deficiencies in the investigation process would have been given the proper attention.

The ATSB also criticised the speed at which the investigation was conducted. Safety relevant data is often perishable. Incomplete data collection at the start of