

SUDDENLY IN TROUBLE

Michael R. Grüninger and Capt. Carl C. Norgren share real life experiences and lessons on flight safety challenges, pre-flight calculations



Going with the flow

In Basel runway 15 is the main landing runway. When ATC advised the crew that a take-off from runway 33 was possible, but would imply a delay of over half an hour, the commander decided against runway 33 and opted for runway 15 where no delays were expected.

The Belair aircraft then commenced taxiing. At this stage, the crew tried again to get runway 33 again, but it became obvious why the take-off had to be performed from runway 15. There was simply too much landing traffic on runway 15 and all preceding departures

Plan the flight

The weather in Basel on this early afternoon of 06 October 2014 was excellent. The air was 20°C warm under a blue sky just sprinkled with a few clouds. There was no significant wind.

The Airbus 320-214 was still at the gate while the Commander and the First Officer of Belair flight BHP 2532 were preparing the cockpit for a flight to Djerba, Tunisia.

The crew discussed which runway to use.

Initially they wanted to use Runway 33's total available runway length of 3900 m.

The commander was meticulous in preparation. Various take-off scenarios were prepared. The crew calculated the take-off data for a full length runway 33 and 15 departure. In addition, the commander calculated the take-off data for an intersection take-off at Golf on runway 15 on his EFB and the co-pilot prepared a take-off from the Hotel intersection on runway 15 on his EFB.

The Flight Management and Guidance System (FMGS) allows two different flight routes to be entered. The crew loaded a full-length runway



15 departure into the primary flight plan and a full-length runway 33 departure in the secondary flight plan.

The crew briefed for take-off while still standing at the gate. The briefing on that particular day covered a full-length take-off on runway 15 and a take-off on runway 33 from Delta intersection. Neither of the two intersections Gold and Hotel on runway 15 were mentioned.

were taking place towards the south-east.

The Belair aircraft gave way to an EasyJet Airbus which then departed from intersection Golf of runway 15.

At this stage the Commander of the Belair flight decided to follow his peer and proposed to ATC that they too could take-off from intersection Golf. He was assuming that the aircraft in approach to runway 15 would land first.

THREAT
Commander and First Officer of Belair flight BHP 2532 faced challenge when taking off the A320-214.

Surprisingly ATC cleared BHP 2532 for take-off before the next landing aircraft. Time was suddenly in short supply and the crew lined-up on runway 15 and performed a rolling take-off.

At V1 the commander noted that the acceleration was slower than usual and that the end of the runway was approaching fast. He realized that the safety of the flight was at risk. Suddenly the flight was in danger. The commander applied TOGA power. Simultaneously he checked on his EFB, where a Golf intersection take-off had already been calculated, whether the aircraft was already fast enough for rotation. He rotated.

The climb was uneventful and the flight continued to Djerba.

Streamlining and expediting

Streamlining flight operations and performing tasks expeditiously is part of the daily routine of every airline commander. Time is money and passengers expect flights to operate to published schedules. This results in constant time pressure and air crews aim to fit into the flow of other traffic as well as possible.

Nobody wants to obstruct others or to be obstructed unnecessarily.

But time pressure is an old enemy of flight safety. In this particular case, the crew let time pressure and the wish to go with the flow affect the safety of their operation.

Such streamlining happened in a context where procedures did not effectively prevent errors to happen.

The investigation highlighted three contributing factors:

- Procedures which required the checking of essential items in silence. Without verbalization cross-checking could not take place in the spirit of a closed loop.

- The decision to perform an intersection take-off was made at very short notice without consideration of the time required for a re-briefing.

- Additional cross-checking of the data entered into the flight guidance system during the line up, which had been introduced by the company 6 months earlier, was ineffective because the flight crew were unaware of this new procedure.

Changing the plan

The crew had prepared the flight thoroughly.

They had calculated multiple take-off scenarios for take-off and all data was in the FMS or in their EFBs. Despite the good preparation, events unfolded not as expected. As the crew tried to speed up departure, and ATC provided them a take-off clearance ahead of the expected moment, the crew was suddenly put in a state of hurry.

The ideal sequence of actions required a certain amount of time.



That time was simply not available any longer.

Human factor researchers have dispelled the myth that multitasking comes easily to humans.

The Belair crew found themselves in a situation where they had to taxi, line-up and perform a take-off before they were able to complete all FMGS changes. This typical multitasking situation created vulnerability to error.

The situation would have been mitigated were the procedures designed to accommodate multitasking situations.

Instead of fostering cross-checks with a closed loop logic, the operator's silent cockpit philosophy separated the pilots from each other. The erroneous take-off power setting remained undetected. Only the commander's experience in judging distances and his disposition to react swiftly prevented a bigger tragedy.

Fly the plan

The tragic aspect of this serious incident is characterized by the good preparation which vanished

for reasons of operational efficiency.

The pre-flight calculations had ascertained that the accelerate-stop distance did not exceed the accelerate-stop distance available (ASDA) as required by the regulations (CAT.POL.A.205). By suddenly changing the plan last minute, the flight was put at peril.

Researchers suggest that pilots should treat interruptions, suspending tasks, deferring tasks or performing tasks out of normal sequence as red flags.

The next simple way to mitigating multitasking risks is to use solid procedures. The simplest way to return to a standard situation is to stop and take the time to fix the issues.

But stopping while cleared for take-off is a hard decision to take for a pilot who wants to fit smoothly into the flow.



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DANGER
Time pressure and multitasking risks are enemies of aviation safety.