

PROS DON'T HIDE



Damage to aircraft by ground equipment caused a 12-inch hole in the fuselage that forced the aircraft to make an emergency landing. Michael R. Grüniger and Carl C. Norgren look into the faults and risks

Pilots and ground staff work closely together. Ground staff provide essential services on the ground. Pilots rely on these services for the safety of flight.

A Loud 'Pop'

Northwest Airlines flight 1411 from Syracuse, NY, to Detroit, MI, was firmly established in the climb passing FL100. The Douglas DC-9-31 was still performing its duty reliably despite having accumulated more than 83,000 hours since leaving the Douglas factory 38 years earlier in 1969.

As the aircraft passed FL200, a loud 'pop' interrupted usual operations. Both pilots felt a sudden decrease in pressurization. The crew reacted immediately and donned their oxygen masks. Then, they initiated an emergency descent. The commander decided to divert the flight to Buffalo, NY, where they made an uneventful landing.

Inspection of the aircraft after landing revealed a puncture in the fuselage approximately 2 meters forward of the forward baggage compart-

ment door on the right hand side of the fuselage. The puncture was around 12 by 5 inches and showed signs of an impact damage from the outside.

A Broken Down Belt Loader

Further investigations with the handling company responsible for loading the aircraft in Syracuse revealed that the belt loader had broken down during the loading process. This had immobilized the vehicle. The ground crew attempted to push the belt loader by hand. But when the crew realized that they could not move it, they used a tug to push the belt loader away from the aircraft. As the tug could not pass under the aircraft, the ground crew approached the belt loader, which was positioned on the right hand side of the fuselage from the front of the aircraft, and pushed it backwards and away from the aircraft. Scratches and paint marks on the belt loader and on the bumper of the tug matched. The force required to push the belt loader aside caused the tug to leave tire marks on the pavement.

At some point during this 'push maneuver,' the tug made contact with the fuselage of the aircraft. Metal shavings from the contact between the tug and the aircraft fuselage were found.

Fit for Purpose

The ground handling manual of the contracted ground handling organization clearly stated that vehicles were not to be used for purposes other than those for which they were designed. The tug was designed to pull baggage carts, aircraft stairs and the like. Using a tug to push a stalled belt loader was a blatant violation of this rule.

Experimenting with Creative Solutions

The broken down belt loader was a non-normal situation for the ground crew. Not having trained for this scenario and without laid down procedures to guide them, the ground crew simply improvised to complete loading under time pressure and to allow the aircraft to depart. Trying to push one vehicle with another vehicle is

MISHAP
Northwest Airlines' Flight 1411 experienced cabin decompression during climb in 2007 and made an emergency landing.



not a maneuver they had been trained for. It cannot be found anywhere in the operator instructions of the tug or the belt loader. Being creative and experimenting with new applications for existing vehicles is a recipe for disaster. It is not a professional attitude.

The Safety Zone

According to the procedures of the ground handling company, there was a 5 foot safety zone around every aircraft within which only designated ground equipment was allowed. Tugs were not designated for operation within the safety zone. Hence the creative use of the tug clearly contravened established regulations.

Silence

When the tug impacted the aircraft fuselage, the ground handling supervisor decided against reporting this occurrence to his supervisor or to the operating crew. The ground crew supervisor realized that a mistake had been made, but chose not to report this mistake to his manager. He also did not inform the flight crew. He reportedly advised his ground staff 'don't say anything'. The ground crew intentionally attempted to cover up their actions.

They had knowingly violated the rules in an attempt to get the belt loader removed. This initial violation resulted in damage to the aircraft. Had they reported the damage to the aircraft, they would have had to explain why they had violated the rules in the first place. This would

likely lead to disciplinary action. They decided to attempt to cover up the damage to avoid any disciplinary sanctions.

From the outside, the damage looked like a 'harmless' dent in the fuselage. The consequence of this 'harmless' dent once the aircraft started to pressurize was obviously not clear to the ground crew. They thought nobody would notice and a few flights later the origin of the dent would be impossible to trace.

The decision of the ground handling supervisor to keep quiet about the fuselage damage put the aircraft and its 95 passengers and 4 crew at risk.

Just Culture

From the moment the ground supervisor decided to use the ground tug to push aside the belt loader he was acting against the rules. This was the first step to creating a serious flight safety risk. Even if his employer had established a culture based on 'just culture principles', his actions would have caused disciplinary action. In a 'just culture', honest mistakes do not lead to disciplinary action as long as they are reported. Using the tug to push aside the belt loader was a conscious violation of an operating rule and as such would have been sanctioned even if he had reported it to his manager.

The accident occurred during the maneuver which was prohibited by operating regulations and was performed intentionally and knowingly. The damage itself could have been tolerated in a 'just culture' environ-

ment, would it not have been the result of an intentional decision to violate operating procedures.

A professional would not have put himself into a situation which he needs to get out of by hiding it.

Cornered and Selfish

The ground supervisor violated the rules intentionally and caused a damage to the aircraft. He knew that he had put himself in a corner. He didn't know how to get out of the situation without harming himself and opted for denial.

By looking after his own self-interest and looking away from the damage he did, the ground supervisor created a real flight safety hazard. Had he reported the damage to the pilots, he might have faced disciplinary action, but he would have protected the lives of those trusting him. Luckily, nobody perished this time.



Michael R. Grüninger is Managing Director of Great Circle Services (GCS) Safety Solutions and Capt. Carl C. Norgren is a freelance contributor to Safety Sense. GCS assists in the whole range of planning and management issues, offering customized solutions to strengthen the position of a business in the aviation market. Its services include training and auditing (IS-BAO, IOSA), consultancy, manual development and process engineering. GCS can be reached at www.gcs-safety.com and +41-41 460 46 60. The column Safety Sense appears regularly in BART International since 2007.

PERIL
Aircraft ground damage is dangerous; yet, unreported damage is even more alarming.