

Pilots downplay impact of stress on flight safety

April 20 2021, by Wendy Davidson



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Research from the University of Aberdeen has found that general aviation pilots do not consider stress to be as great a risk to flight safety as other factors such as inclement weather. This is contrary to guidance

from flight safety bodies that state stress can compromise performance.

General [aviation](#) (GA) is the largest, and most dangerous category of [flight](#) in the UK and these pilots frequently fly for recreational or business purposes and, unlike commercial aviation pilots, often fly alone. Risk perception and management are therefore key areas of research vital to improve [safety](#) in this group.

A team of researchers from the Applied Psychology and Human Factors (APHF) group at the University led by Dr. Amy Irwin along with Ph.D. researchers Nejc Sedlar and Oliver Hamlet set out to examine the [risk perception](#) of GA pilots and how this impacts decision-making in relation to take-off—specifically in deciding whether it is suitable, and safe, to take-off or not.

The study, published in the journal *Aviation Psychology and Applied Human Factors* showed that GA pilots were more likely to take off than not in scenarios involving a pilot under [stress](#), or missing equipment such as checklists or sunglasses. However, they were less likely to proceed in scenarios depicting a pilot who was ill, an aircraft with a faulty air speed indicator, or a faulty seatbelt.

Postgraduate researcher Nejc Sedlar who worked on the project explained: "The idea behind the study was to determine whether GA pilots viewed all the various categories of risk as equally risky, or whether certain types of risk might be more likely to be ignored or managed in favor of a positive take-off decision.

"In terms of decision making, GA pilots face very different challenges than their commercial counterparts. To address these GA specific challenges, studies like this are necessary so we can better understand potential areas of concern for future safety and training programs."



Postgraduate student and researcher, Oliver Hamlet learning to fly Credit: University of Aberdeen

The team presented 101 pilots with a series of 12 take-off scenarios across four categories—compromised performance ([pilot](#) stressed, fatigued or ill), environmental hazards (thunderstorm, ice, wind), faulty equipment (power, noise, ASI) and missing equipment (checklist, sunglasses, seatbelt). Pilots were then asked if they would proceed in each scenario and to explain their reasoning.

"The results suggest that not all of our scenarios were judged to be equally risky," Dr. Amy Irwin who led the study explains.

"The pilots' reasoning for their decisions suggests that although they were aware of the risks of flying while ill or tired, the pilots considered flight to be a stress relieving activity, and so they were less likely to cancel a flight based on being under stress. This is despite guidance from

aviation regulatory bodies such as the Federal Aviation Authority indicating that stress can potentially compromise flight performance.

"General Aviation pilots are generally safety conscious, but not all risks are considered equal, so it is important to highlight the potential impact of stress on [flight safety](#) going forward to encourage pilots to consider the risks of flying stressed.

"The more we know about how and why GA pilots make decisions and manage risk, the better able we will be to develop interventions and training solutions to improve safety.

"Based on our research it seems apparent that training on the impact of stress on cognition and performance would be useful, along with training in situation assessment and the validity of various risk mitigation strategies."

More information: Amy Irwin et al. Flying Solo, *Aviation Psychology and Applied Human Factors* (2020). [DOI: 10.1027/2192-0923/a000189](https://doi.org/10.1027/2192-0923/a000189)

Provided by University of Aberdeen

Citation: Pilots downplay impact of stress on flight safety (2021, April 20) retrieved 9 April 2024 from <https://techxplore.com/news/2021-04-downplay-impact-stress-flight-safety.html>

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