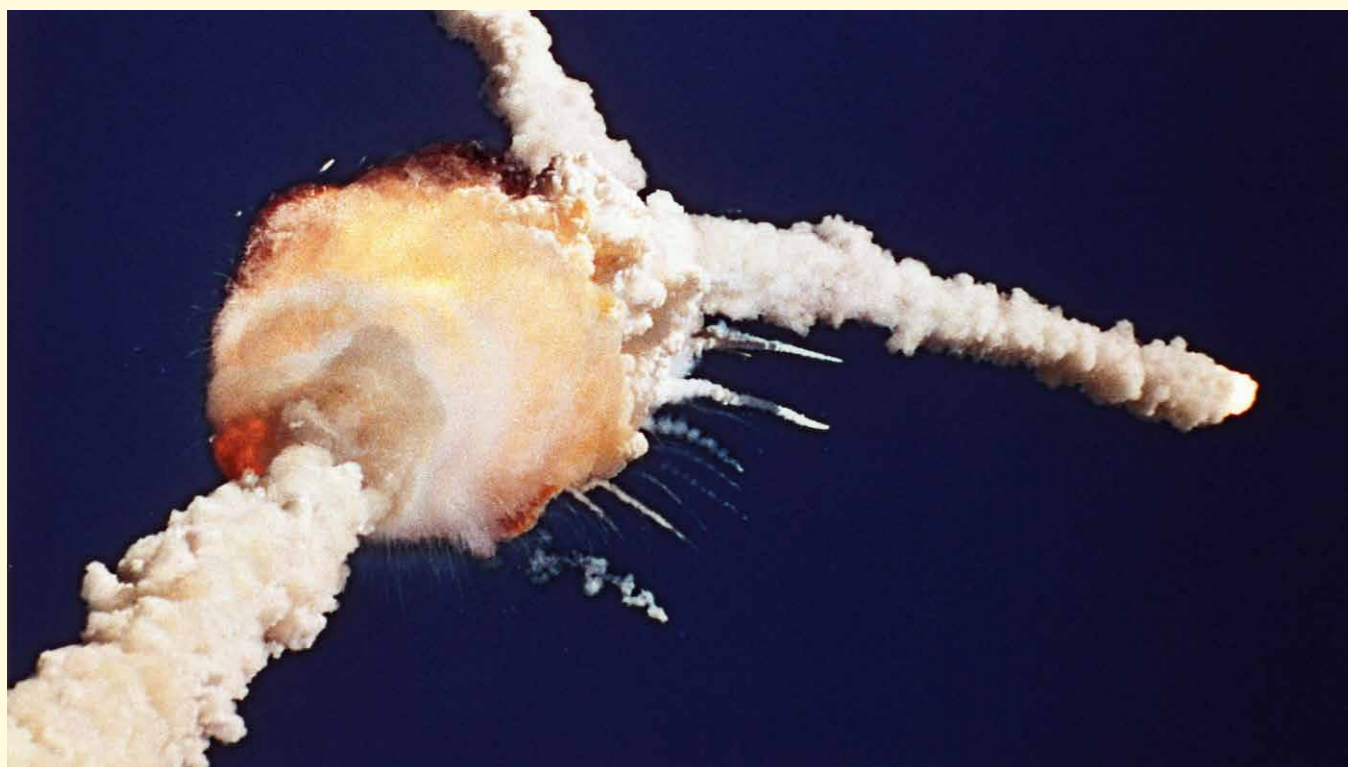




Normalisation of deviance can mean disaster

When breaking the rules becomes a habit, you're asking for trouble, says **Chloe Eriksen**



The Challenger disaster – what can happen when deviance becomes normal

IN a book examining the Shuttle Challenger disaster and its root causes, sociologist and professor Dr Diane Vaughan coined the term “normalisation of deviance.”

She defined it as “the gradual process through which unacceptable practices or standards become acceptable.”

But what is “normal”? This can be a tricky question to answer. “Normal” is often perceived as average, but averages change over time. As perceptions and habits shift, a new normal emerges. When deviations from the rules become accepted practice, this phenomenon is known as the normalisation of deviance.

Recently, my village introduced a 20mph speed limit. Many people, from what I hear, find this an enormous inconvenience, and based on what I observe on my road, many choose to ignore it.

Some don't believe there's anything wrong with this, and I would even suggest – albeit with little statistical evidence – that for some, it has become normal to regularly exceed the speed limit. It seems, in this case, that disregarding the rules has become acceptable; in other words, normalised deviance.

Similarly, I have recently received reports of pilots wilfully ignoring the maximum takeoff weight (MTOW) limits for their aircraft and not adhering to the guidelines set out in the pilot's operating handbook (POH).

Upon further investigation, it appears that it could be one of those widely accepted practices that does not align with safety standards, much like having the rear shoulder harness on a flexwing permanently cable-tied in place.

The POH outlines the performance characteris-

tics of an aircraft only within specified weight and balance parameters.

Operating outside of these parameters can affect takeoff, climb and landing performance. It could mean the difference between clearing an obstacle at the end of the runway or not.

Overloading can reduce the angle of climb, lower the range, decrease braking effectiveness and increase the stall speed of an aircraft, among other effects. What starts as a minor violation of safety protocols can become habitual, as adverse effects might not immediately manifest during every flight.

The POH typically specifies the minimum and maximum allowable weights for the pilot, passengers, baggage and fuel. Often, the centre of gravity (CofG) is calculated to remain within safe limits as long as these weights are adhered to. Beyond these limits, the aircraft's performance becomes unreliable, with potentially catastrophic results.

Overloading affects nearly every aspect of an aircraft's performance. One of the most immediate effects is a reduction in acceleration and an increase in the speed required for takeoff, resulting in a longer takeoff run.

The reduced angle of climb means the aircraft struggles to gain altitude efficiently, reducing the margin for error when navigating obstacles.

Overloading also impacts the aircraft's ceiling, climb rate, and range – factors critical to its performance in both normal and emergency conditions.

Any deviation from the weight and balance limits introduces an element of unpredictability, particularly during takeoff and landing, phases of flight that demand precise control.

Regardless of opinions on the widespread introduction of 20mph zones, it's a fact that a child hit by a car traveling at 20mph has a significantly better chance of survival than if the car were going at 30mph.

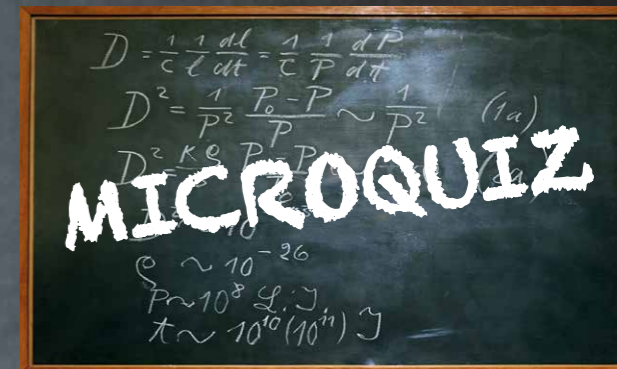
Likewise, the driver is also less likely to be seriously injured at lower speeds. Equally, overloading an aircraft beyond its MTOW can have unpredictable and dangerous consequences. So why do drivers and pilots break these rules? There are a few theories on this...

In-the-moment decision-making in aviation is critical, as pilots often face situations requiring immediate judgment and action. However, when deviations from standard procedures become normalised over time, it can cloud decision-making.

The normalisation of deviance highlights how pilots may gradually accept unsafe practices as no immediate conse-



Ignoring the pilot's operating handbook has potentially catastrophic results



- 1 If the static vent becomes blocked during a descent, how will the airspeed indicator read?
 - a Zero.
 - b Higher than actual indicated airspeed.
 - c Lower than actual indicated airspeed.
 - d It will not be affected.
- 2 How can engine cooling be improved during a full power climb?
 - a Fly at a higher indicated airspeed.
 - b Fly at a lower indicated airspeed.
 - c Lean the fuel/air mixture.
 - d Apply carburettor heat.
- 3 What is the effect of deploying full flaps?
 - a An increase in lift and a decrease in drag.
 - b A decrease in lift and a decrease in drag.
 - c A decrease in lift and an increase in drag.
 - d An increase in lift and an increase in drag.
- 4 What happens to lift and drag as the angle of attack approaches the stalling angle?
 - a Lift increases and drag increases.
 - b Lift increases and drag decreases.
 - c Lift decreases and drag decreases.
 - d Lift decreases and drag increases.
- 5 How will an increase in the load factor affect the stall? It will:
 - a decrease the stalling speed.
 - b increase the stalling speed.
 - c increase the stalling angle.
 - d decrease the stalling angle.

MF's quizmaster Lawrence Bell is the developer of QuizAero, the online groundschool for microlight student pilots, quizaero.co.uk. *Answers overleaf*

GASCo
General Aviation Safety Council

QuizAero

GASCo, the General Aviation Safety Council, is a charity whose members are aviation organisations. Its aim is to make aviation safer through education. It presents the CAA safety evenings, runs seminars and provides safety information through its magazine and website, gasco.org.uk.

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quences are observed. In high-pressure moments, pilots might ignore safety protocols or performance limits, relying on past experiences to justify their decisions.

Past experience can shape current practices, but it can also lead to the normalisation of deviance if not properly managed.

When pilots repeatedly bend the rules – such as exceeding MTOW – without immediate negative outcomes, these deviations can start to feel acceptable. This mindset, often reinforced by uneventful flights, creates a dangerous new “normal.”

However, past success does not guarantee future safety. The effects of deviating from established safety standards are unpredictable. While experience informs decisions, it should never override adherence to certified limits, as these are essential to ensuring long-term flight safety.

In aviation, arrogance can foster the belief that experience justifies bending established safety protocols.

This mindset often plays a key role in the normalisation of deviance, where pilots or operators become comfortable with breaking rules, believing their expertise allows it.

For example, pilots might assume that their knowledge overrides the need for compliance.

However, this overconfidence can blind them to the very real risks of deviating from established guidelines, ultimately endangering lives.

The mindset of “everybody else does it” is often cited as an explanation for why drivers speed on the roads, and the same could be said for the deviation from the rules in aviation.

This mentality leads to dangerous practices becoming accepted because they seem widespread.

When pilots see others exceeding MTOW limits or bypassing safety protocols without immediate consequences, they may start

MICROQUIZ answers

- 1b Higher than actual indicated airspeed.
- 2a Fly at a higher indicated airspeed.
- 3d An increase in lift and an increase in drag.
- 4a Lift increases and drag increases.
- 5b increase the stalling speed.

to believe these deviations are harmless.

But this erosion of safety standards can have catastrophic results, as aircraft performance is only guaranteed within the certified limits in the aircraft flight manual or POH. When these deviations become normalised, they jeopardise both the pilot and passengers.

The mindset of “we’ve never been caught, and nothing has ever gone wrong” is another example of the normalisation of deviance.

Pilots or crews may gradually stray from safety protocols, believing that past success without incident justifies rule-bending.

Over time, practices like ignoring MTOW limits or skipping pre-flight checks become routine and are no longer seen as risky, but this complacency overlooks the unpredictable nature of unsafe practices.

In aviation, where margins for error are slim, even minor deviations can lead to catastrophic consequences when unforeseen circumstances arise.

As I have said many times before, we are all human, and we all make mistakes. It takes courage to stick to the rules when all around you are not.

So I am just asking everyone to take a look at the practices that may have crept in to their flying behaviour, and just check whether they are safe or not.

Even the most experienced pilot may need a refresh on their skills and drills.

Every single person involved in aviation has an important role to play in flight safety, and we must continue to strive for the highest standards.

As the CAA puts it: “As pilot in command, you are legally responsible for ensuring your aircraft remains within weight and balance limitations throughout a flight, and that the aircraft can safely take off, climb and land within the applicable runway lengths and operating areas.”

Advice to pilots is laid out in the CAA *Safety Sense* leaflet 09: *Weight, balance and performance*.

Are your training documents up to date? Check the *BMAA NPPL syllabus, second edition*, amended July 2023. □

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