
Regaining Control - UPRT

Half a decade after EASA-mandated Advanced Upset Prevention and Recovery Training for new commercial pilots, **MARK 'GREENERS' GREENFIELD** FRAeS, from Ultimate High, looks at what progress has been made to date.



It is hard to believe, but it has already been five years since EASA made Advanced Upset Prevention and Recovery Training (UPRT) mandatory for all new commercial pilots under FCL.745.A. This was a significant move, designed to tackle one of the aviation industry's most persistent issues: Loss of Control in Flight (LOC-I). Now that half a decade has passed, it is worth asking – how is it going? Has this step made a real difference in flight safety and how effective has the training been?

Answering those questions is not straightforward. LOC-I remains the leading cause of fatalities in both commercial and general aviation, a position it has stubbornly held for over 25 years. That said, the absolute number of crashes is not enormous, making it tricky to measure progress. Boeing's safety report for the decade ending in 2023 identified eight hull losses and 714 fatalities globally due to LOC-I. While that is still higher than any other cause, the numbers have not shifted much. Europe performed better last year with no LOC-I fatalities, which is encouraging, but it is too early to call that a meaningful trend.

Given these challenges, a purely data-driven assessment is difficult. Instead, let us take a more subjective approach, drawing on observations from Ultimate High UPRT Academy, the longest-established UPRT provider in Europe. With clients spanning the aviation industry and feedback from pilots trained at various UPRT schools, we have valuable insights to share about what is working and what is not.

The core of effective UPRT



Ultimate High conducts UPRT training using a fleet of Slingsby T-67 Firefly aircraft.

Let us start with what a comprehensive UPRT programme should include. The foundation lies in a combination of theoretical knowledge, simulator training and on-aircraft practice. Theory forms the backbone, giving pilots the technical understanding needed to recognise and address flight upsets. Simulators play a vital role, especially in teaching pilots how to avoid and recognise upsets. They are great for controlled, repeatable scenarios and for introducing the basics of recovery.

However, simulators have limits. They cannot replicate the physiological and psychological stress of a real-life upset, where adrenaline surges and cognitive clarity diminishes. It is often said that teaching upset recovery in a simulator is like teaching someone to swim without ever letting them touch water – it is useful, but it is not the same as the real thing.

This is why on-aircraft training is so critical. It brings the physiological and psychological elements into play, allowing pilots to experience the sensations of an upset and learn

how to manage their response. Because here's the truth: under pressure, we do not rise to the occasion; we fall to the level of our training. Critically, around 80% of LOC-I accidents occurred in aircraft that were still flyable. That is not a mechanical problem – that is a training problem.

What is working well



While an element of Ultimate High's business involves giving aerobatic training, the importance of conducting UPRT can not be understated.

The good news is that on-aircraft UPRT, when delivered effectively, makes a real difference. At Ultimate High, we have seen significant improvements in pilots' recovery skills during training. Almost universally, pilots report feeling more confident and better equipped to handle unexpected upsets. This boost in confidence is not just a nice bonus – it is a critical factor in real-world flight safety.

Perhaps the most important area where UPRT has had an impact is in addressing human factors. Upsets can trigger a 'shock and startle' response, which can hijack a pilot's cognitive abilities. Managing this response is crucial for effective recovery.

Experts, like Professor Eric Groen at TNO/Cranfield and Savio Schmitz at Emirates have done excellent work in this area, highlighting the importance of understanding and mitigating the cognitive impact of startle. Pilots who can regain control of their mental state are far better equipped to regain control of their aircraft. We worked with HF expert, Owen Sims to produce a YouTube video explaining this challenge called Startle and Surprise – Upset Recovery.

Simplifying recovery techniques



"In a high-stress situation, the startle effect can make it very difficult to assess the exact nature of the upset, let alone recall the correct recovery technique."

One of the most significant advancements in UPRT has been the adoption of simplified recovery techniques. Traditionally, pilots were taught multiple recovery methods for different types of upsets, as outlined in ICAO Doc 10011. These include stalls, nose-high, nose-low, spiral dives and incipient spins. Depending on the organisation, OEM or regulatory body, pilots might be trained in two to five different recovery techniques.

The problem? In a high-stress situation, the startle effect can make it very difficult to assess the exact nature of the upset, let alone recall the correct recovery technique. This cognitive overload can delay recovery and worsen the situation.

The solution is simplicity. A universal recovery strategy – ‘Push, Roll, Power’ – has emerged as a gamechanger. This approach works for all five types of upsets, reducing the need for split-second decision-making. Many airlines and commercial operators have adopted this method, and the feedback from pilots has been overwhelmingly positive. “This is so simple and it really works. Why haven’t we been doing this all along?” is a common refrain.

Challenges and limitations



Ultimate High's team of instructors have made UPRT a speciality.

Of course, it is not all smooth sailing. One major limitation of FCL.745.A is that it only mandates UPRT for new pilots. This was very much a cost-driven decision, but it overlooks the fact that LOC-I accidents are coming from the existing pilot population who have not received on-aircraft UPRT. Extending this training to all pilots would, undoubtedly, enhance safety but would also be regarded as a prohibitive cost by operators. But if you think the cost of safety is expensive...

Another issue is that UPRT, as implemented with FCL.745.A, is a one-off event early in a pilot’s career. The skills learned during training are perishable, and without regular refreshers, they can fade. Some operators recognise this and voluntarily undertake recurrent training, typically every 18 months to four years. This is a step in the right direction, but it is a long way from being standard practice across the industry. There is also significant variability in the quality of training across UPRT providers. While some programmes focus on human factors and effective recovery techniques, others (particularly the bargain basement providers) simply deliver aerobatics that will tick regulatory boxes but do nothing to help recover from unexpected flight upsets. This inconsistency means that not all pilots receive the same level of preparation, which undermines the overall effectiveness of UPRT.

The importance of human factors



"Bank Angle!" This test pilot is demonstrating the manoeuvrability of their aircraft, but are all pilots capable of recovering from unusual attitudes? (Airbus)

The role of human factors in UPRT cannot be overstated. Cognitive overload, startle response and emotional regulation are at the heart of upset recovery. If pilots cannot manage their mental state, they are unlikely to execute the mechanical control inputs needed for recovery. This is why training must emphasise these aspects. At Ultimate High, we ensure that human factors are integrated into every stage of training, from initial theory to on-aircraft practice. Unfortunately, this is not the case everywhere. Providers that focus solely on mechanical techniques without addressing cognitive challenges leave their trainees underprepared for real-world scenarios.

Expanding awareness and access



Does PPL and ATPL training need to more closely align to UPRT methodologies?

One positive outcome of FCL.745.A has been a broader awareness of the benefits of on-aircraft UPRT. Many operators and individual pilots who were not initially required to undergo this training are now choosing to do so voluntarily. At Ultimate High, more than half of our clients come from operators whose pilots were 'grandfathered' under the regulations but have since recognised the very real value of on-aircraft UPRT.

However, there is still work to be done. Initial training programmes for private pilot licences (PPL) and airline transport pilot licences (ATPL) should align more closely with advanced UPRT methodologies. This would create a seamless progression for pilots, ensuring consistency in training, reducing gaps in their preparation and ensuring a real primacy of training for upset events.

Room for improvement



The backbone of Ultimate High's fleet is the Slingsby T-67M Firefly.

While UPRT has made great strides, there is room for improvement. One issue is regulatory resistance to adopting newer, more effective methodologies.

For example, while Europe has embraced the 'Push, Roll, Power' approach, the UK's Civil Aviation Authority (CAA) continues to use a decades-old methodology. This reluctance to

change limits the effectiveness of training and leaves UK-trained pilots at a disadvantage. It is unreasonable to stick with a strategy that depends on clear cognitive processing to assess an upset, remember the correct recovery technique (of a multitude of possibles) and execute it precisely and effectively. Anyone with hands-on experience in upset recovery training understands this reality.

Another area for improvement is the training of flight instructors (FIs). The EASA working group on UPRT were divided on the need for all FIs to undertake UPRT. At the last minute it was decided that GA and commercial pilots would not require additional training themselves. This leaves FIs ill-equipped to teach upset recovery effectively. Given that a significant proportion of LOC-I accidents involve an instructor on board, this is a gap that urgently needs to be addressed.

Five years on, it is clear that on-aircraft UPRT has delivered significant benefits. When done well, it builds confidence, enhances skills and addresses the human factors that are so critical in real-world scenarios. However, for its full potential to be realised, the industry needs to address several key issues.

Extending UPRT to all pilots, standardising quality across providers and ensuring regular recurrent training would go a long way towards improving safety. Aligning methodologies across training programmes and updating practices would further enhance the effectiveness of UPRT.

In summary, on-aircraft UPRT is a powerful tool for improving flight safety. The implementation has not been perfect, but it is a step in the right direction and, with continued effort and refinement, it can make an even greater impact in the years to come.

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