

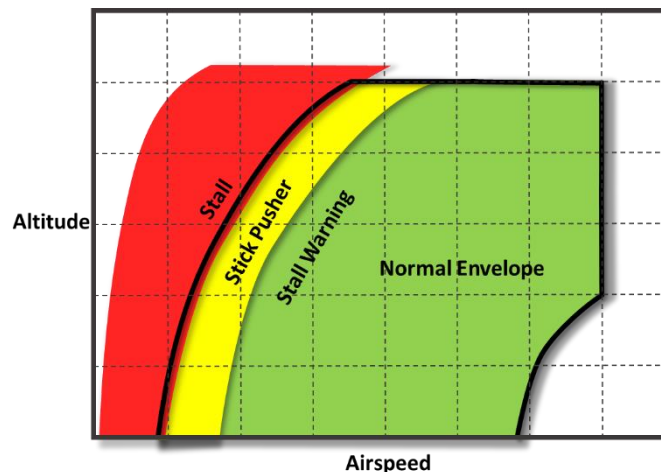
J2 AIRCRAFT DYNAMICS STALL AND STALL RECOVERY

J2 AIRCRAFT DYNAMICS HAS COMPLETED PHASE TWO OF ITS WORK ON STALL AND STALL RECOVERY AND THE RECOGNITION OF AIRCRAFT BEHAVIOUR PROVIDING QUEUES TO PILOTS, EVEN IN THE EVENT OF INSTRUMENT FAILURE.

This is a growing area for improvement and the principles applied within the **j2 Universal Tool-Kit** have unlocked a significant evaluation capability that can now be rolled out across a range of fixed wing platforms.

The capability of being able to fly the high fidelity model direct to SIM in flight regimes that are both abnormal as well as extending outside of the envelope is unique to the **j2 Universal Tool-Kit**.

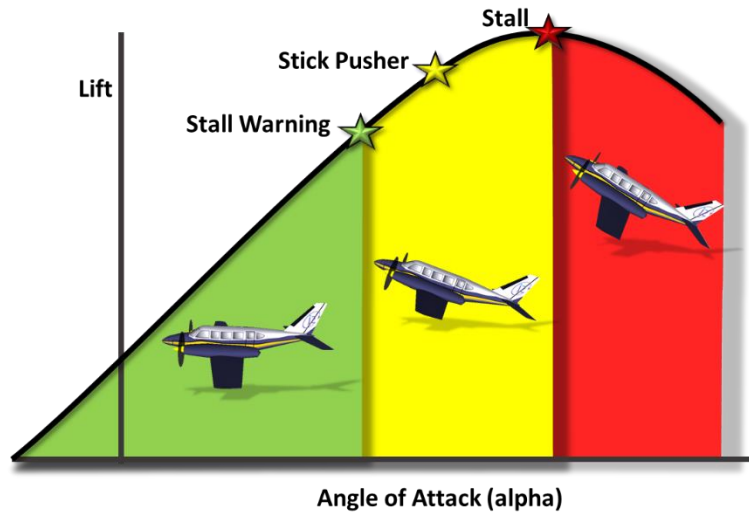
- Fly in abnormal flight regimes
- Range of Fixed Wing Platforms
- Fly directly on simulator
- Enhanced through flight test
- Supported by strategic alliances
- Increased pilot understanding outside the envelope



This capability and study findings are further enhanced through the application of the flight test experience from the strategic alliance with Kohlman Systems Research (KSR) as a technical leader in flight test practices and the strategic alliance with Engineering Systems Inc (ESI) a leading forensic engineering company in the US.

The **j2 Universal Tool-Kit** has already complete this work across a large wide bodied aircraft model and a variety of general aviation aircraft types and this work is expected to continue as more information becomes available on outside of envelope operations across a broader range of aircraft.

It is hoped that this powerful predictive toolset can help deliver a greater capability in simulated pilot training environments than having to consider flying higher risk outside of envelope manoeuvres e.g. approaching and beyond stall.



Training Benefit	Within Normal Envelope	Near Stall Limits	Stalled Flight
Longitudinal Control	Awareness of flight envelop, recognition of stall warnings, avoidance of stall	Recognition, avoidance and recovery by reducing alpha.	Recovery by immediate reduction in alpha; awareness that increasing alpha can result in deep stall
Lateral Control	Awareness of effects of manoeuvring on stall speeds	Avoidance of excessive lateral control inputs	Awareness of potentially complex lateral handling during recovery
Increase Power	Little impact on upset prevention	Class dependant; may increase alpha	Class dependant; may increase alpha
Classical Simulator	Available	Generally Available	Not available, difficult to add in to current architecture
Simulator with j2 Host	Available	Available	Available



AIRCRAFT DYNAMICS
Predicting Performance

