



UPRT: More Than Compliance



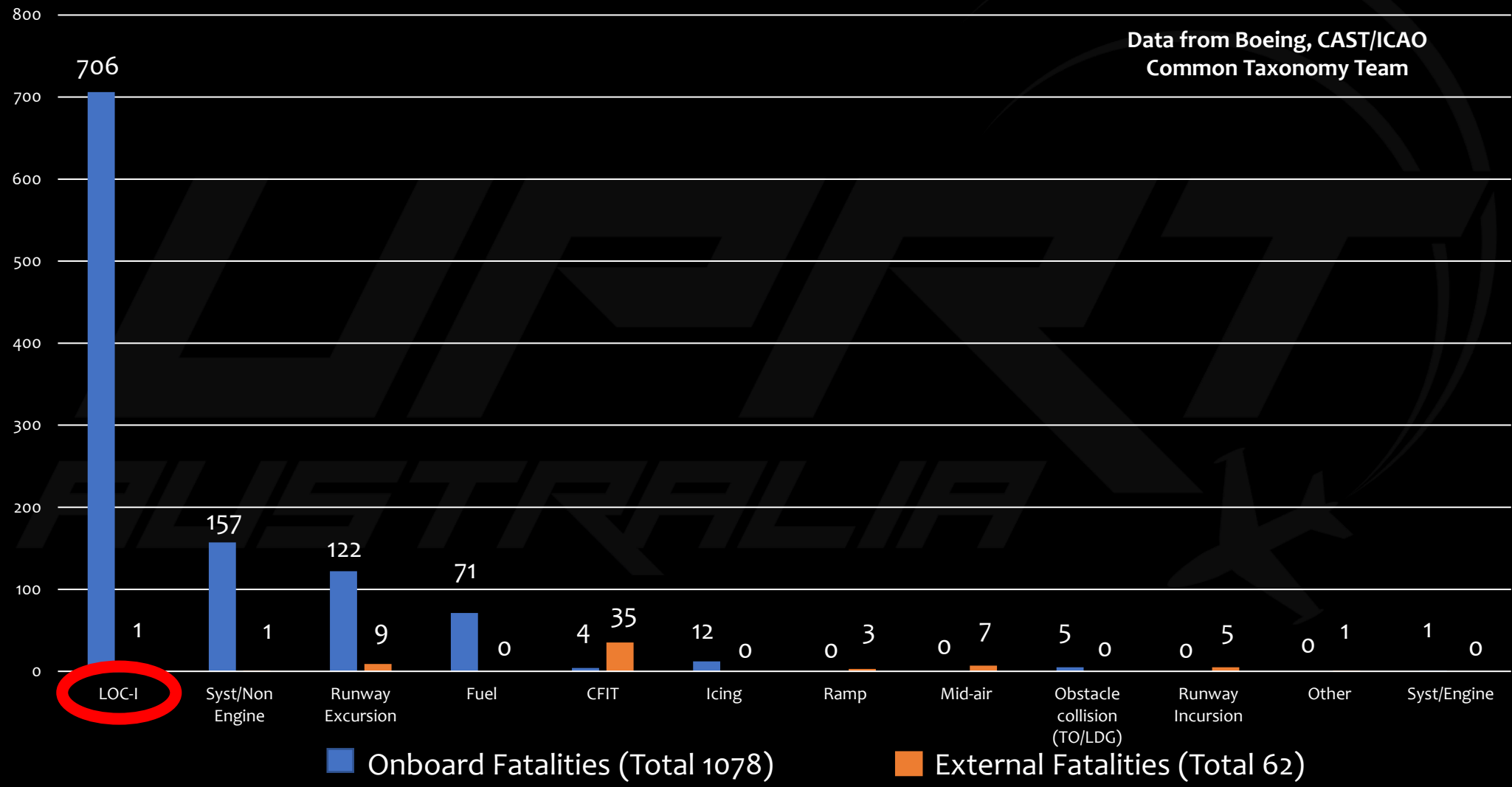
Shane Tobin
CEO- UPRT Australia

About

- Instructors: Airline Training and Checking, Military, General Aviation, Aeromedical, Charter
- Courses for all levels of pilots designed to combat Loss of Control-Inflight accidents
- Based in Brisbane, Australia- courses delivered internationally and nationwide
- International and domestic recognition
- Multiple contract partners



Fatal Accidents, Worldwide Jet Fleet 2014 to 2023



Voepass 2283- 9th August 2024

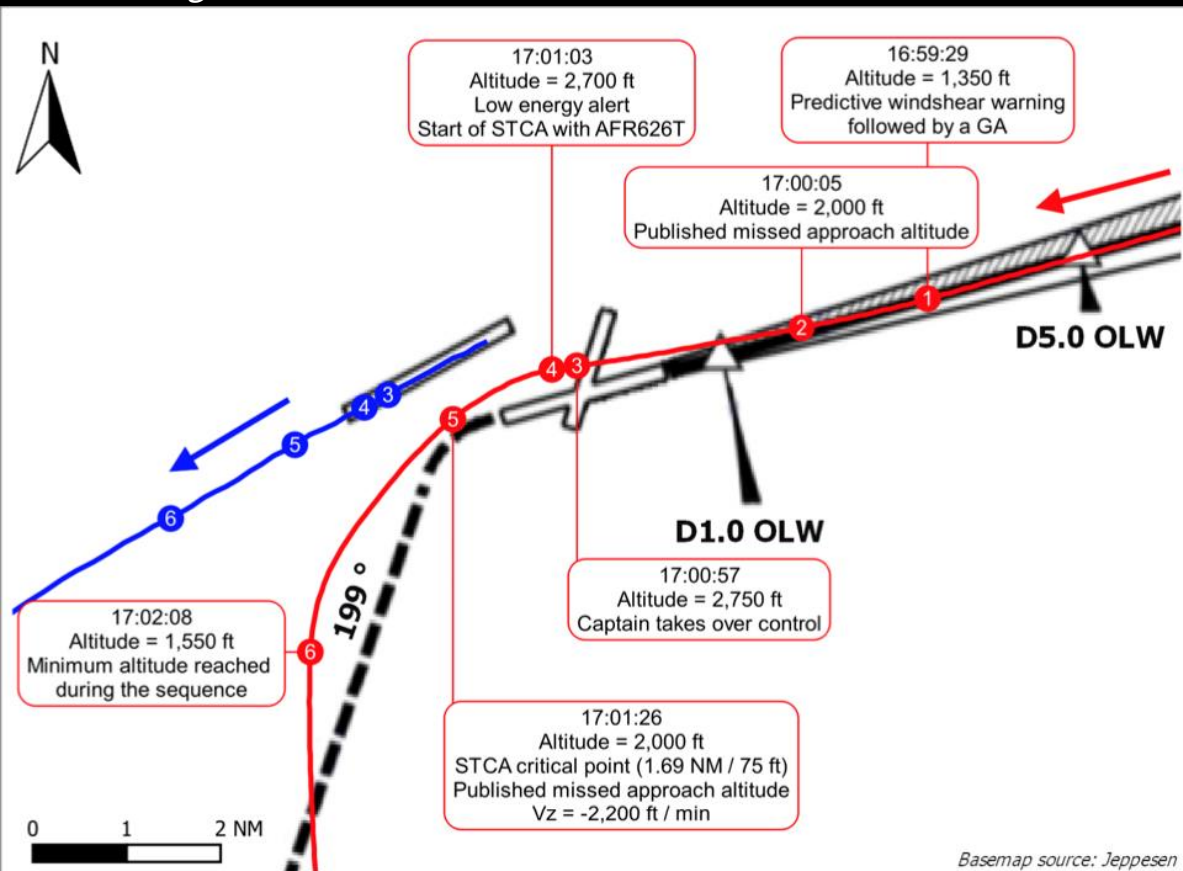


French Bee 711: 4th Feb 2020



FULL REPORT

BEA Investigation



Olivier Cabaret – Attribution 2.0 Generic (CC BY 2.0)

— Flight path of flight FBU711/F-HREV based on recorder data
— Flight path of flight AFR626T based on radar data

Times are UTC

BEA

Prime Air 3591: 23rd Feb 2019



FULL REPORT

- Approach into Houston, Texas.
- Inadvertent activation of go-around mode.



Lawrence



**National
Transportation
Safety Board**

Rapid Descent and Crash into Water

Atlas Air Inc. Flight 3591

Trinity Bay, Texas
February 23, 2019

What Is Happening?

- Loss of awareness: modes, position, altitude, energy.
- Communication breakdown- flight deck and ATC.
- Lack of clarity over roles (PF vs. PM).
- WHY?



AUSTRALIA

Startle

STIMULUS



Sensory
thalamus

Amygdala

Assesses the threat

Hypothalamus

Launches SNS /Stress Response

- **5ms**: muscles flinch and amygdala commences recognition
- **15ms**: Adrenaline shot activates the Stress response and focus increases
- This is the “**Startle Effect**”
- **500ms**: Prefrontal Cortex receives information via the insula

Fear Response

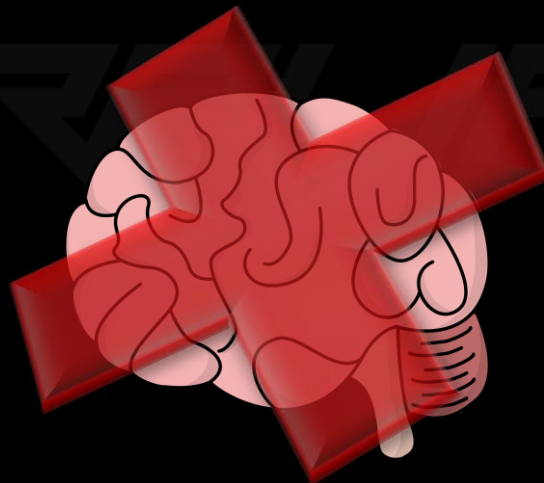
- Cognitive behaviours affected by fear:
 - Attention deteriorates.
 - Perception narrowing (“Landscape” incorrect).
 - Situational Awareness disintegrates.
 - Problem Solving and Decision Making capabilities diminish.
 - Incoherent and disorganised communication.



Amygdala Hijack

- Stress response escalates to adrenaline and cortisol overload

The higher the perceived threat, or the longer the threat persists, the more cortisol is released, and the more the Sympathetic Nervous System ramps up and feeds the Amygdala.



Reflective and Reflexive Processes

- Matthew Lieberman, Professor of Neuroscience at UCLA, proposes that mental activity can be categorised into two types:
 - Reflective processes
 - Reflexive processes



X-System: Reflexive

- Automatic and non-conscious.
- Patterns , correlations, and immediate responses.
- It is not flexible in its immediate reaction.
- The reaction comes from instinct (startle) and learned (tying shoe laces).
- Repetition is required to become proficient.



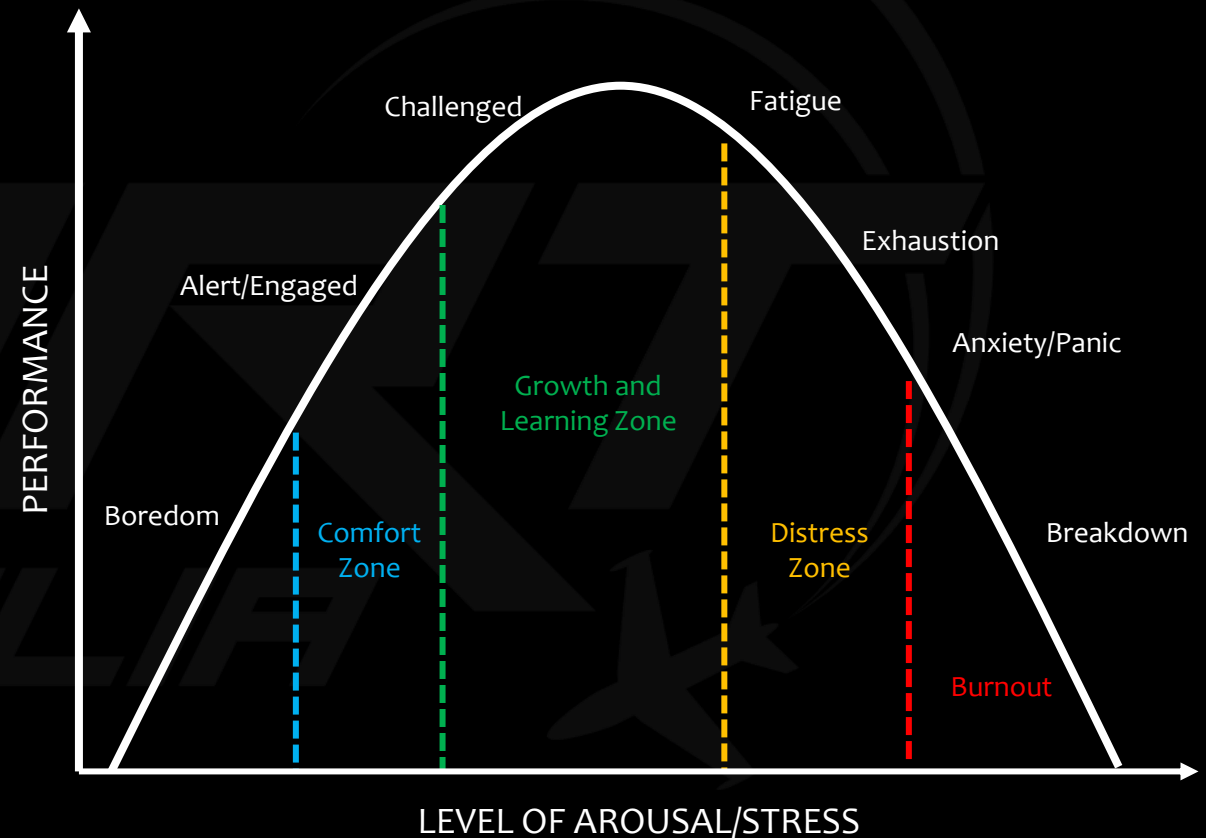
C-System: Reflective

- Intentional and effortful processing - takes time.
- It can make adjustments to the X-system.
- Flexible and rational - uses the Pre-Frontal Cortex.
- Under times of low-optimum stress, can be used for up to 5-7 different processes.

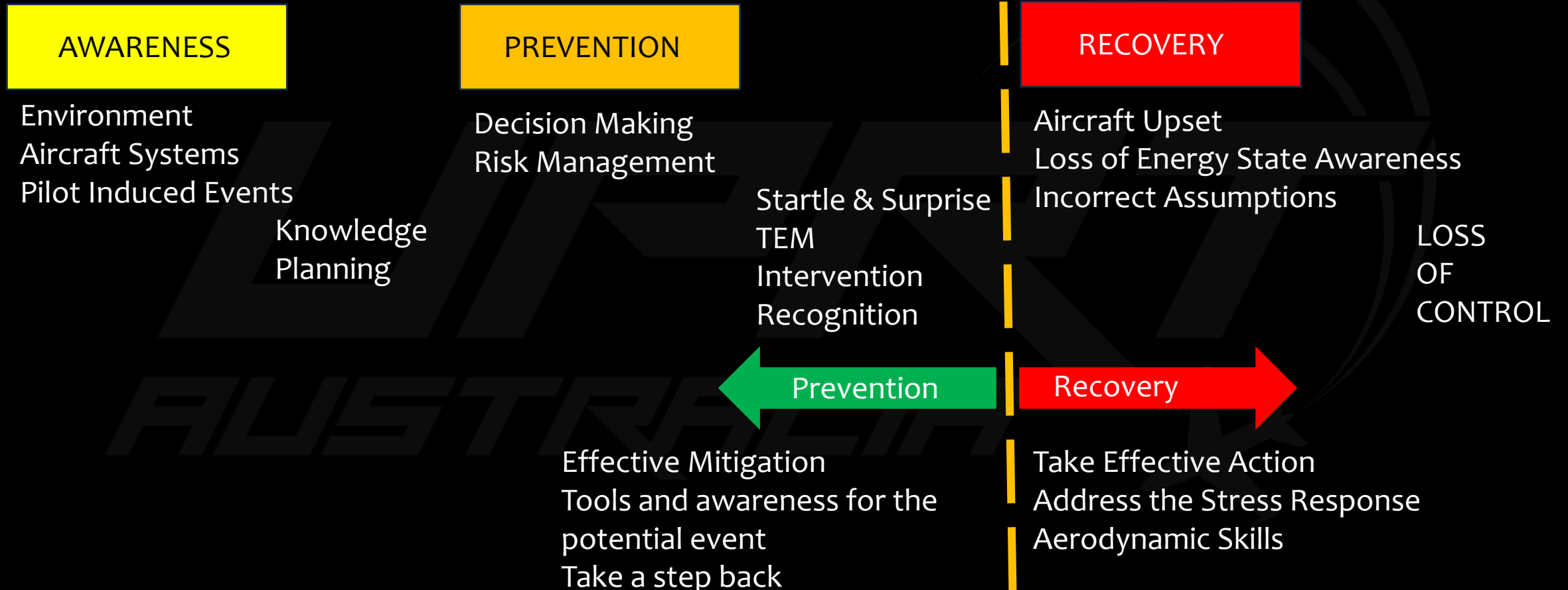


Yerkes-Dodson Law

- As stress increases, cognitive performance increases to optimum, then decreases.
- X-system is resilient to stress: **C-system is not.**
- Emergency responses must be embedded in the X-system.



Loss Of Control Escalation



Resilience Training

- *Knowledge*
- *Intensity*
- *Immersion*
- *Repetition*
- *Primacy*

“Exposure” does not embed resilience



UPRT Integration

- Understanding the concepts of UPRT: not just stick and rudder!
- Instructor training.
- Insertion of UPRT/resilience embedded within the training framework.
- Review of process and outcome.



Thought for the day

“Frightened human beings don’t rise to the occasion; they sink to their level of training”

Lt. Col. Dave Grossman
US Army Rangers (Ret)



Thank You



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