

Human Factors and Criminalisation of an Aircraft Accident

The Prosecution of Leslie Woodall



Just Culture
CONSULTING

Welcome

This presentation is focused on the prosecution of Leslie Woodall, and the role of human factors in the prosecution.

I'll cover:

- History of the Operator & summary of the event
- Evolution of the prosecution case
- The Trial
- Implications for Just Culture
- Q & A



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Case Study – R v Woodall



History of the Operator

- 2007 Complaint & Prosecution
 - Chief Pilot/Director conducted aerobatic and erratic maneuvers with passengers on board
 - CASA suspended his license and required him to undertake an examination and flight test – he completed these and his suspension was lifted
 - CASA referred him to CDPP who charged him with several regulatory breaches:
 - 1) Conducting commercial operations without an Air Operator's Certificate
 - 2) Giving flight instruction without an instructor rating
 - 3) Failing to record aircraft total time on a maintenance Release
 - 4) Failing to record flight details in a pilot logbook
 - 5) Reckless Operation of an aircraft
 - 6) Conducting aerobatic maneuvers outside provisions of an aircrafts flight manual
 - He pleaded guilty to charges 1-4 (5 & 6 withdrawn by agreement)



History of the Operator

- 2009 Complaint
 - The Operator's website was advertising "limited aerobatic flights" (Neither the operator nor the pilots were approved for aerobatic flights).
 - CASA spoke to the operator, who maintained flights were conducted in accordance with regulations and flight manuals
 - Insufficient evidence to warrant further investigation
- 2012 Complaint
 - Allegation the operator was conducting aerobatic maneuvers on flights with passengers, who were frightened
 - Alleged the practice was common knowledge in the local area
 - Video submitted taken from the ground of an aircraft performing maneuvers
 - CASA – the video evidence on inconclusive as to registration and the nature of the maneuvers – insufficient evidence for regulatory action



Accident Summary

On 10 January 2017, at about 1030am, the accused, Leslie Woodall departed in a Cessna 172M, registered VH-WTQ, from Agnes Water, Queensland on a passenger charter flight to a beach on Middle Island. There were three passengers on board.

On the way to the beach, Woodall performed a series of manoeuvres between 600-1000FT including steep turns, steep climbs and descents, and yawing left & right, which provided a thrill for the passengers.

At about 1038, Woodall was conducting an airborne inspection of the beach at about 60FT AMSEL to ensure that it was suitable for a landing. After the inspection, Mr Woodall elected to conduct a significant left turn to the beach. During the continued turn, the aircraft aerodynamically stalled and crashed.

One of the rear-seat passengers was fatally injured and the other three occupants sustained serious injuries.



The initial picture – 1st Theory

An operator known for reckless flying run by an individual with a history of regulatory breaches for similar conduct.

A pilot conducting borderline illegal manoeuvres just prior to the accident.

Was he trying another aerobatic stunt over the beach, misjudged it and stalled the aircraft?

Accordingly, the Mr Woodall's claim of sudden engine failure in his police interview were received with scepticism.



Investigations

CASA Investigation

11 January 2017 – CASA request the operator ceases all flight operations

27 January 2017 – CASA immediately suspends the operator's AOC and Mr Woodall's licence

ATSB Safety Investigation – Final Report Published 10 January 2019

There had been a total engine failure – they could not identify the cause

Police Investigation

Brief of Evidence sent to the QLD DPP

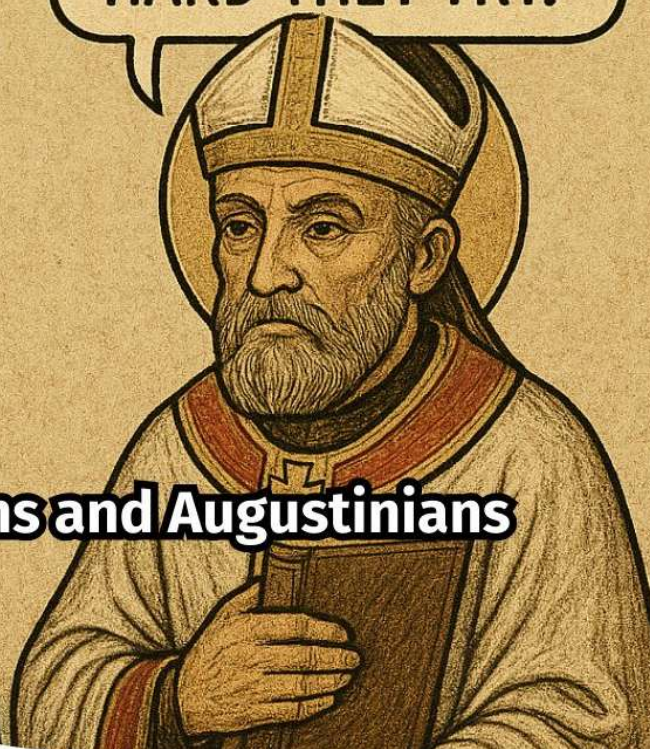
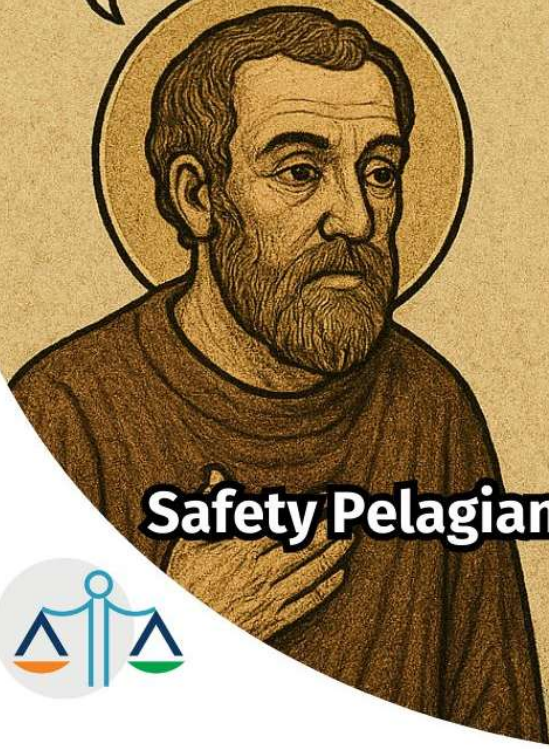
Technical Assistance & Expert Witnesses provided by CASA

13 March 2020 – The QLD DPP lays criminal charges laid against Mr Woodall



HUMANS CAN AVOID UNSAFE ACTS IF THEY EMPLOY SUFFICIENT WILL AND EFFORT.

HUMANS ARE FALLIBLE AND WILL COMMIT UNSAFE ACTS NO MATTER HOW HARD THEY TRY.



Safety Pelagians and Augustinians



Criminal Law Basic Assumptions

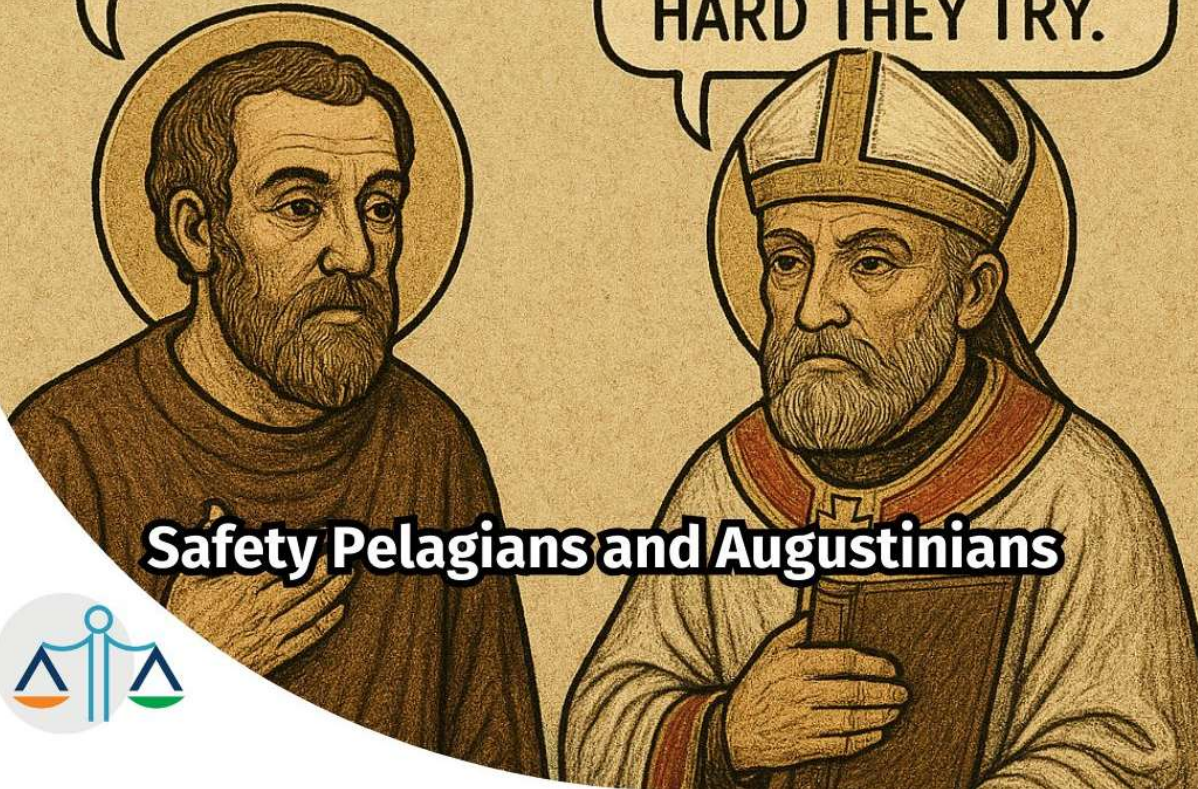
Absent convincing evidence to the contrary in a particular case:

- People can always choose to comply with the rules
- People can always operate to a reasonable standard if they choose to

Therefore: sanction is just if people disobey rules or operate below reasonable standards

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Safety Pelagians and Augustinians



Safety Basic Assumptions

Absent convincing evidence of malicious intent or gross recklessness

- People generally go to work intending to do a good job
- People are fallible and will make errors from time to time (even when trying their best)
- Human Performance is an ever-changing range and people will fall below reasonable standards from time to time (even when are trying their best)
- Errors and rule violations can be system induced
- Errors and violations are an opportunity for organisational learning to improve work systems to reduce the chance of reoccurrence

Therefore: sanctioning individuals for making honest errors, and even certain deviations from the rules, is unjust.



Prosecution

QLD DPP charged Mr Woodall with dangerous operation of a vehicle causing death and grievous bodily harm, contrary to Section 328A of the *Criminal Code 1899* (QLD).

(4) A person who operates, a vehicle dangerously in any place and causes the death of or grievous bodily harm to another person commits a crime and is liable on conviction on indictment—.....

The test is an objective standards, *“that involves a failure – falling below the care and skill of a competent and experienced driver in relation to the manner of driving in the particular circumstances of the case.”* – R v Bathe [2006] QCA 201 at [37]



Prosecution Theory 2 – Particulars of Charge 19 April 2021

The reckless flying consisted of:

- Conducting aerobatic manoeuvres and a low level flying run.
- A sharp turn to the left shortly prior to the impact was a reckless stunt, undertaken for reasons unknown.
- The engine failure was a consequences (in whole or in part) by Mr Woodall's earlier aerobatic maneuvers – causing fuel starvation.



Cause of the Engine Failure

At a preliminary hearing Kevin Swash, an insurance assessor and aircraft maintenance engineer gave evidence as to the cause of the engine failure

- Improper installation of the fuel transducer leading to a fracture, eventual failure and resulting fuel starvation.
- The 'aerobatic' movements earlier in the flight would not have caused the fuel starvation.

In light of this the defence asked the DPP to consider dropping the case. The DPP elected to proceed.



Prosecution Theory 3 – Case at Trial – December 2024

Crown Case

The decision to turn back towards the beach after the engine failure went against standard training and was dangerous.

"It was not engine failure that caused the crash ... The danger was created by the defendant's choices." - Crown Prosecutor David Nardone.

Mr Woodall should have maintained control and landed straight ahead into water or made an immediate more moderate turn to the left to an area of beach.

Pilots are trained to deal with emergencies.

Defence Case

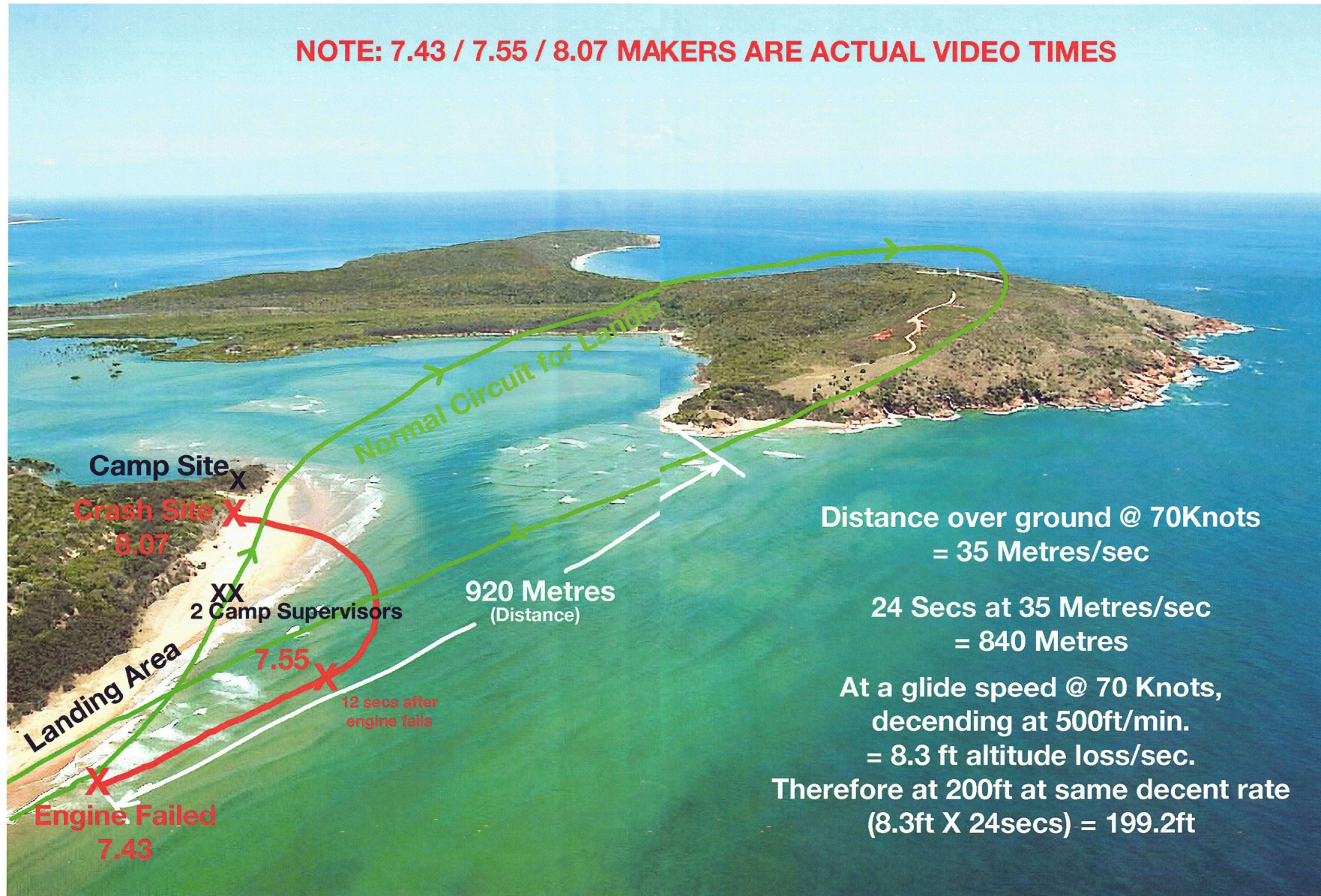
Mr Woodall had to make a split second decision in a high stress emergency situation where available options were very limited.

"I decided not to land in the water as it was deep, and I was concerned about the risks of drowning and the risk of bull sharks, ... I turned 80 to 90 degrees to the left and tried to reach the sandbank." - Leslie Woodall

Mr Woodall's took what he believed to be the safest course of action, which was reasonable as pilot in command under the circumstances, even if with hindsight it wasn't necessarily the optimal one.



NOTE: 7.43 / 7.55 / 8.07 MAKERS ARE ACTUAL VIDEO TIMES



Distance over ground @ 70Knots
= 35 Metres/sec

24 Secs at 35 Metres/sec
= 840 Metres

At a glide speed @ 70 Knots,
decending at 500ft/min.
= 8.3 ft altitude loss/sec.
Therefore at 200ft at same decent rate
(8.3ft X 24secs) = 199.2ft



The Trial

Focused purely on the pilot's actions in response to the engine failure – were they dangerous?

Evidence:

- Onboard video of the crash taken by a passenger
- 3 Expert Witnesses (Current or Retired CASA Flight Operations Inspectors)
 - Testified the Mr Woodall's actions went against training and that ditching in the water or an immediate lesser turn towards the remaining beach was what he should have done.
- Accused record of interview
- Evidence of human factors and organisation factors did not feature significantly, either for tactical reasons or issues of admissibility of such evidence



The Trial

- The Jury found Mr Woodall guilty and he was subsequently sentenced to 2 year suspended gaol sentence.
- BUT – if the full facts were known earlier, would the decision to charge Mr Woodall still have been made?



Human Factors Considerations – ATSB

- During the period immediately following the power loss, the full length of beach available to use for an emergency landing north of the landing area was not visible from the cockpit.
- Effects of stress/time pressures
 - Attentional narrowing – focusing on cues that are perceived most salient or threatening
 - Working memory and ability to perform complex calculations is impaired
 - Ability to retrieve facts from long term memory is affected
 - Propensity to act more impulsively
 - More likely to make recognition primed-decisions rather than systematically compare all options
- Startle effect making responses slower and more variable (including with experienced pilots)
- Despite pilots being trained not to turn back if an engine fails soon after take-off, unfortunately such turnbacks often still occur, even with experienced pilots.



Human Factors Considerations – ATSB

Decision to turn back towards the beach was:

- consistent with the known effects of stress and time pressure on human performance.



How did we end up here?

Why was the pilot in this situation in the first place?

- Faulty plane
- Low level
- Limited safe landing options

Engine failure – appears resulted from an inappropriate part installed during maintenance

Personal Professional Factors

- Lack of emergency planning & self-briefing
- Selection of beach inspection height

Organisational Factors



Organisational Considerations - ATSB

- Poorly designed airborne inspection procedures (low level, nil flaps, and gap in escape options)
- Lack of proper risk assessment
- Lack of emergency procedures
- Lack of check & training on ALA inspection operations and emergency procedures
- Life Jackets not carried (not a legal requirement)
- Previous safety issues not properly addressed
- Poor Safety Culture



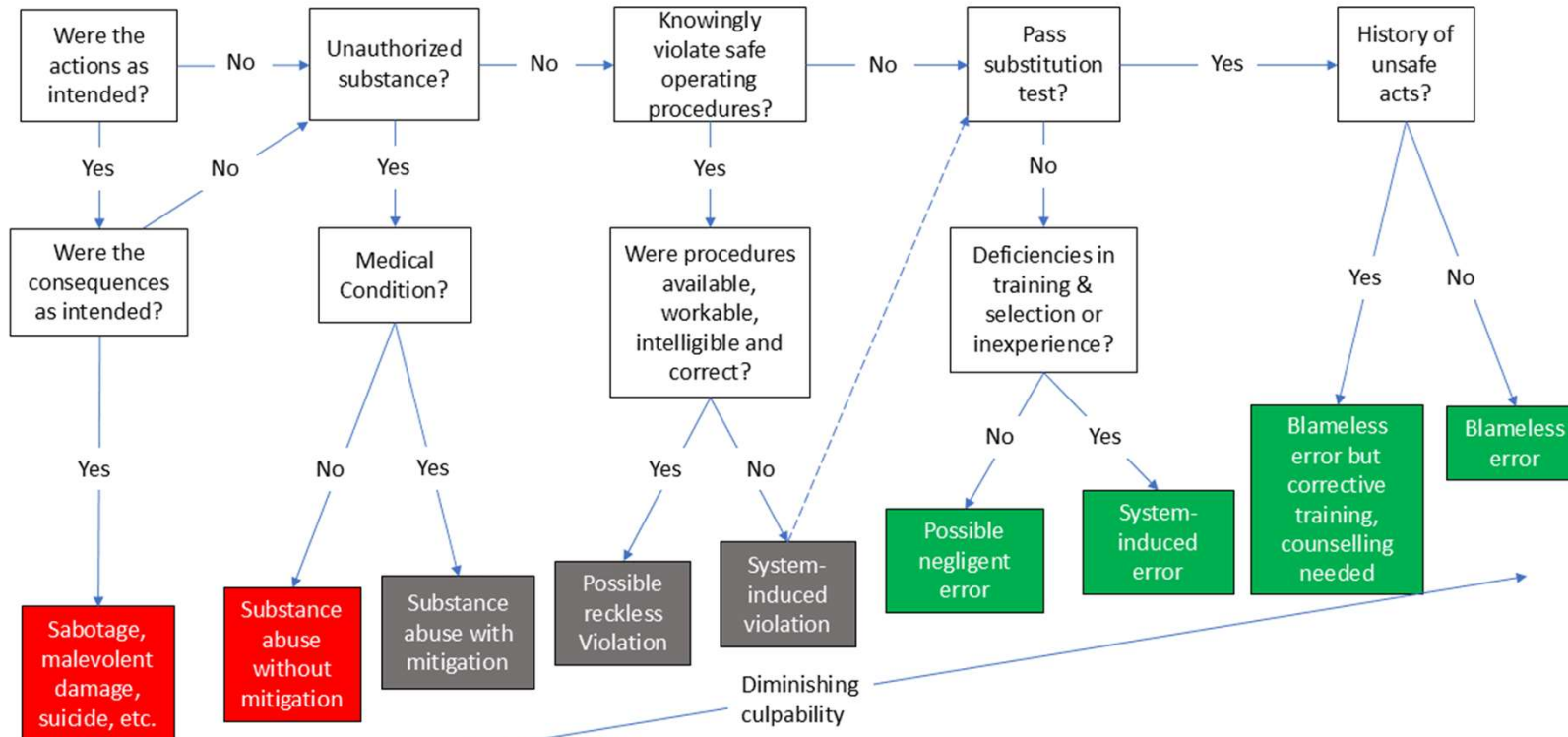
Human Factors Considerations – ATSB

Decision to turn back towards the beach was:

- consistent with the limited risk controls put in place by the operator to manage the risk of an engine power loss during an airborne inspection of an ALA.



Classic Just Culture – James Reason’s Original Model



Features of the Criminal Trial

The trial focused narrowly on the decision making of the pilot after the engine failure – excluding the wider context - but how do you judge the quality of his decision making without it?



Implication for Just Culture

At the Federal level CASA has a Just Culture directive relating to:

- Administrative Action
- Infringement Notices
- Criminal Prosecution

It's worth knowing this directive so you can utilise it

There is a gap in Just Culture protections at the State level – It is prudent for operators not to make promises they cannot keep (protection of safety data, potential for adverse action)

Poor systems of work will leave front line staff exposed – decision making is not always judged in context by the law



Implication for Just Culture

More needs to be done to engage with the legal, political and social systems on human factors, Just Culture, and systems thinking

- especially looking at our starting assumptions
- thinking about what is in the public interest when comes to prosecutorial decision making

The law is not neutral – like all human systems it is influenced by human factors – cognitive biases, assumptions, norms, resources constraints



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Just Culture Implementation Guide

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