



Australian Government

Australian Transport Safety Bureau

Exploring the decisions behind fatal flights into low visibility conditions: safety investigation challenges and outcomes

Presented by:

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PART 1: Common factors of flights into reduced visibility



PART 2: Investigation: what evidence we start with



PART 3: Investigation: where we often end up

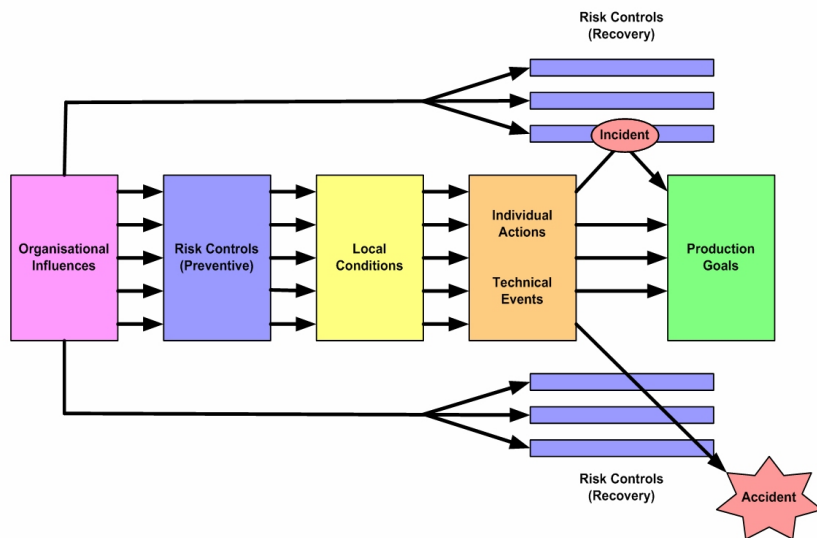


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The Australian Transport Safety Bureau is Australia's national transport safety investigator. We don't investigate to lay blame but to improve safety.



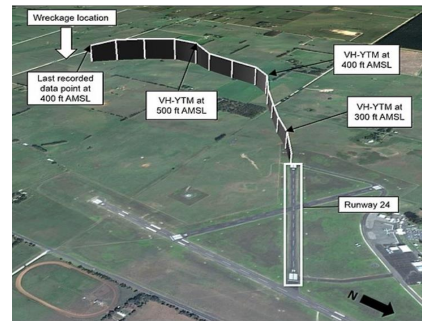
ATSB investigation analysis model



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Part 1:

Common themes in 'VFR into reduced visibility' occurrences



Expectancy

Spatial disorientation with
reduced visual cues

Instrument
flying
proficiency



**VFR into reduced
visibility: common
themes**

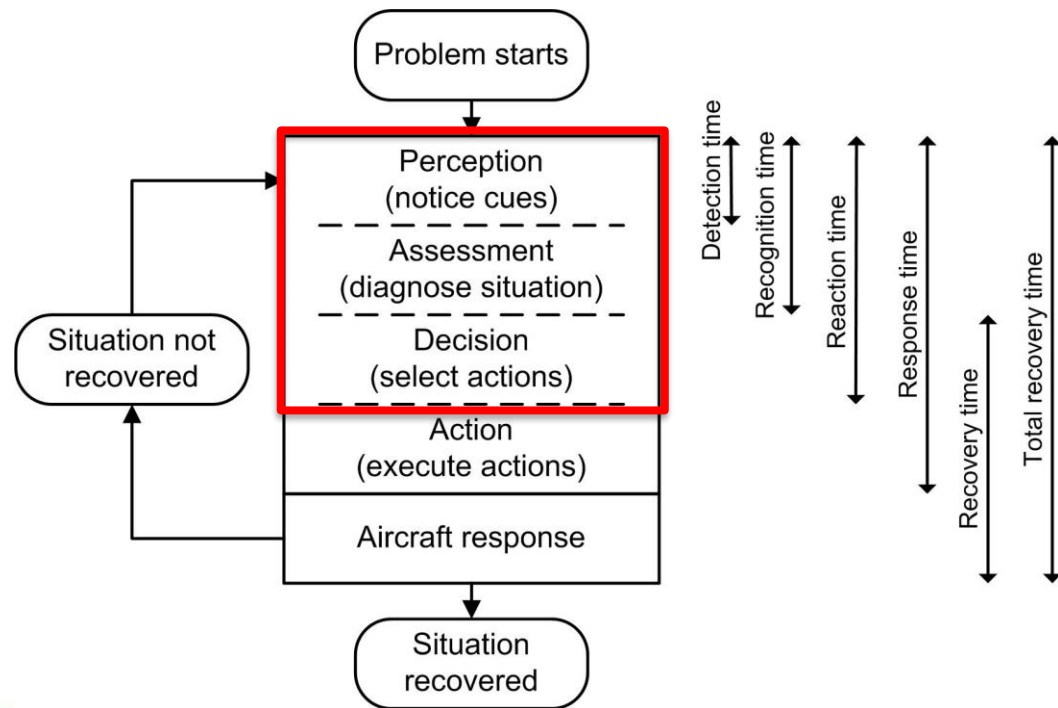
Salience of
perceptual
cues

High workload and distraction

Focus of attention: not
on instruments,
horizon

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Recognition and recovery considerations



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Extracts from AO-2011-100

Part 2: Investigation: evidence used

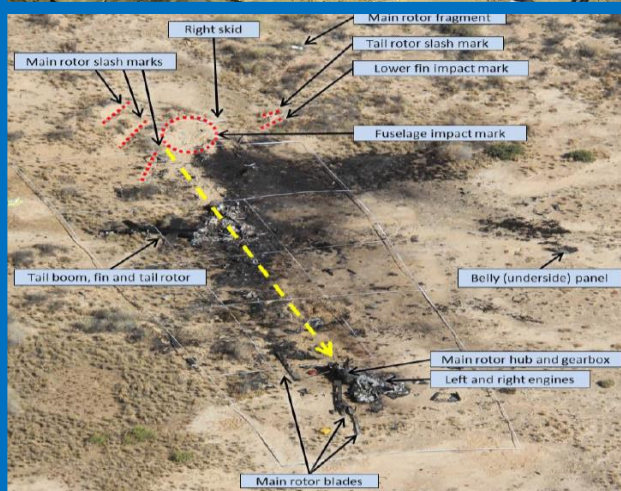
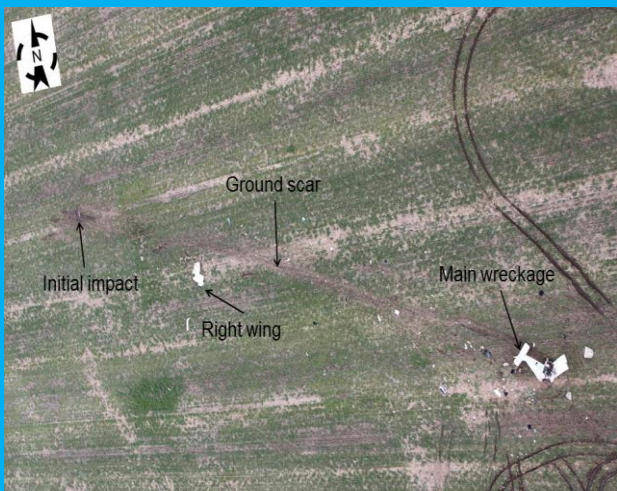




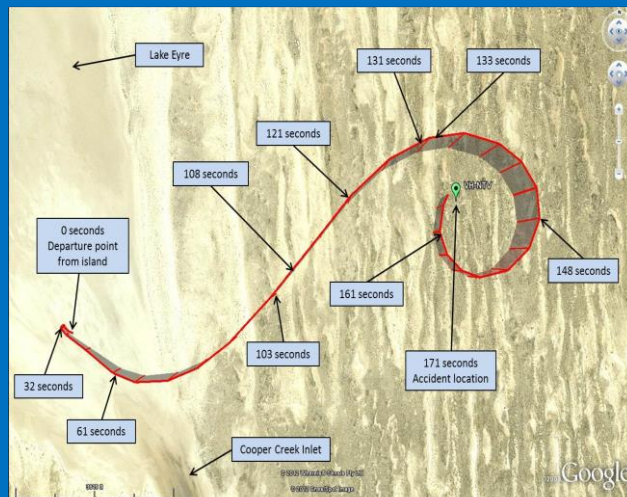
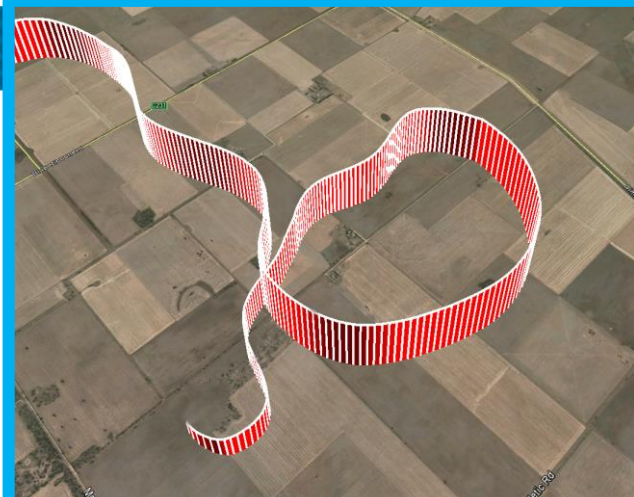
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Part 3: Investigation: where we often end up



AO-2011-100

- The pilot departed...with a high risk of encountering forecast cloud and dark night conditions...
- ...the pilot probably experienced a loss of visual cues and became spatially disorientated...

AO-2011-102

- The pilot probably became spatially disorientated...
- The flight was conducted in dark night conditions...
- The pilot was experiencing a high workload...
- The pilot had limited recent night flying experience...

AO-2016-006

- Continuation of the flight...was likely influenced by the inherent challenges of assessing low visibility conditions, particularly without instrument flying proficiency.
- ...the pilot likely experienced a loss of visual cues and became spatially disorientated

**FLIGHT INTO REDUCED VISIBILITY,
FOLLOWED BY SD REMAINS A SAFETY
CONCERN**

**WE OFTEN CAN'T EVIDENCE REASONS
FOR DECISION TO FLY INTO REDUCED
VISIBILITY...**

**...BUT YOU CAN LOOK AT THE
CONDITIONS IN WHICH THESE
DECISIONS WERE MADE**

**...AND ONGOING WORK INTO
RECOGNITION AND RECOVERY**

- Example – the Cirrus Blue 'LVL' button
- Cue-based weather training
- Advanced weather systems



Auto Level

engages the autopilot LVL function if the aircraft maneuvers outside of the ESP envelope for more than 20 seconds in any 40 second period. The system will give both a visual and aural alert to announce that autopilot has been engaged in LVL mode.



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Thank you

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