



**Australian Government**  
**Civil Aviation Safety Authority**



**School of Engineering**  
**STEM College**



# Implementing Human Factors Solutions for Australian Flight Training Schools

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# Program Overview

- Effort to make aviation jobs more representative (Hansen & Oster, 1997)
- Trickled into flight training schools
- Cultural differences affect communication and flying
- Education initiatives for improving training culture
- Improve aviation safety
- Reduce findings

# Operational examples – Culture in action

Communication and culture – Darwin training flight (solo)

Runway incident PA28

Operational misunderstanding – Melbourne international flight

Go around incident B777

# Preliminary Visits – Operator 1

Relating to students



ATC/Student Comms



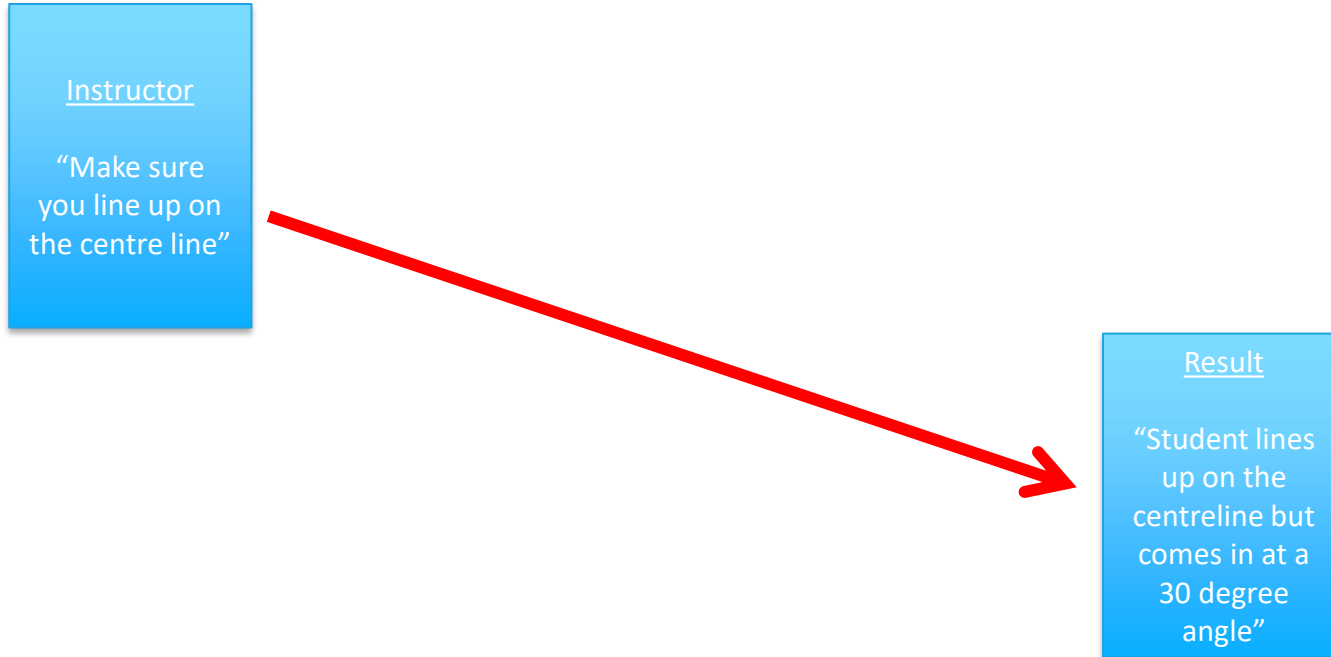
Limited praise



Student loses confidence



# Preliminary Visits – Operator 2



# Preliminary Visits – Operator 2

Student gives  
no emotional  
feedback

How to  
measure  
competencies?

What is  
Assertiveness?

Student  
ignores radio  
calls when  
busy

Must focus on  
technical  
instructing  
(not HF)

# Program Modules

## Module 1

Safety Culture and Communications

## Module 2

Assertion Skills

## Module 3

Behavioural Competency Measurement Inflight

## Module 4

Instructor Heuristics for Behavioural Change

# Safety Culture and Communications

- Evolution of Safety Culture
- Drivers of Safety Culture
- Components
- Compliance Culture
- Communication, Barriers, Types
- Improvement Strategies
- Communications in FTS
  - Consider more cross-checking, readbacks
  - Expect more errors to be made
  - Use these techniques more with ESL students



# Assertiveness

- Definition
- Advantages
- Learned Behaviour
- Strategies
  - Clear, concise and unambiguous communication
  - Ask what you could have done differently
  - Use assertive language such as 'I feel...' and 'I think...', which takes responsibility for and explains exactly how you are feeling, rather than aggressive language such as 'You always...' and 'You...', which blames the other and escalates conflict
  - Expand CRM training to include role-playing or simulator exercises where FOs voice their concerns and captains develop a leadership style that supports FO assertiveness

# Behavioural Competency Measurement Inflight

- Behavioural Markers, How Derived, Good Markers
- Uses and Characteristics
  - Validity, Reliability, Sensitivity, Transparency, Usability
- NOTECHS and ICAO competencies
- FTS Considerations
  - Competencies are in a learning environment where there are poor decisions and errors
  - Expertise in developing rating scales and descriptions may be difficult to access
  - Instructors turnover may be high, which affects inter-rater reliability
  - Need to consider cultural interpretations
- Resources

# Heuristics for Behavioural Change

## Module 4: Heuristics for Behavioural Change

A heuristic is a process or method used, drawn from operational experience and subject matter knowledge, that is used to expedite solutions and for training.

Strategies		
Empathy	Understand Different Interpretations	Manage Ego
Range of Methods	Standard Phraseology	Student Support People
Patience	Education and Reassurance	Calmly Discuss
Set Boundaries	Maintain Policies and Procedures	Maintain Self Discipline
Consistency	Beware Rote Learning	Adequate Classroom Time
Investigative Style of Questioning	Join Concepts Together	Make a Decision
Remove Assumptions		

# Initial Delivery Feedback - Instructors

- Welcome the assistance
- List of techniques is useful
- Need to maintain Just Culture
- Builds up trust



# Initial Delivery Feedback - Students

- Example-based scenarios
- Role play communications
- Supportive tools in primary language
- Retain confidence with instructor guidance
- English is high Workload



# Student Comments

*Feedback and talking about how I perform. I will usually just listen to the instructor's feedback and I wouldn't say a thing and I would be shy. As time went on I started talking, reflecting on how I did and depended on instructor attitudes, some I was less comfortable. Depends on the instructor.*

*Some instructors they beat us up a lot on small errors. For myself if I make an error and I get beat up about it, it will affect me the whole day. Stay in my mind. One example, I didn't know how to do my tie and I had an early flight in the morning. So, I came here with my tie undone and every instructor was beating me on it. They said it's not professional. I know it's not professional but what can I do?*

*Every day on the train home I'll think about what the instructor said. I'll put notes about problems that I face and show notes with instructor later.*

*Most of the time I'll find something you have in common with the instructor. Sport, holiday destinations, something like that.*

*When I was learning to fly a mate of mine brought along a cheese platter. It was the relationship. I've had instructors like that and my ability to learn was much better.*

*Was pushing and pushing and then led to handing over. It got to a point where I was uncomfortable going up. So, it's important to be very clear 'Handing over'. They take over and making sure they know (you're getting stressed).*

*The instructor approach was I was still new so when I went to my pre-flight, I didn't know you could go onto canvas and have a look at what they all are, so I accidentally prepared for a different flight. When he asked me all these questions, well are you prepared for that? Instead of cutting you off, you're going back and that's it, he had the understanding that 'this is where you find it, I'll teach you the concept now but next time get on top of that because obviously if it happens again it's not safe'. It was about that communication and understanding. Having that relationship if you feel at ease with them. Even just talking about general life, you've got to develop that relationship with your instructor is what makes it comfortable and enjoy the flight instead of it being awkward or how do I ask these things.*

*I didn't know how to deal with ATC, changing aircraft...but having someone there who can jump in, having that relationship and being able to talk about each other's flying.*

*One of my instructors they were able to tell from my name that I am Muslim and it was around the period of Ramadan, the month when we fast. They recommended only doing am flights, as not having anything in my stomach. They kept giving me am flights the whole month just to ensure safety. I was really happy about it, I didn't say anything about it, they said it by themselves.*

# Student Themes

- Consistency
- Rapport
- Ask about my feelings
- Don't nit-pick the small things
- Get to know me
- Shared interests

# Students' Number 1 Wish

- A fair attitude.
- Asking questions. Sharing.
- Being specific.
- I think there should be a get to know you session in place.
- More feedback.
- Consistency.
- Good relationships.
- Instructors expect students to make errors in the training environment.
- Clear communication.
- A follow up chat. There's so much going on at the time. You have it going over in your mind.
- Sitting down the next day and saying 'yes, this was good' and getting further clarification.  
Techniques. Dot points post-flight briefing.
- The right level of authority gradient. Someone in charge/leader but also approachable.
- Feedback after the flight. Ask how I'm feeling about what just happened.
- Feel like being assessed when should be in a more relaxed learning environment.



# Next Steps

- Safety booklet
- Deliver to other FTS
- Roll out 'Train the trainer'

# Questions and Contact Details

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