

Current Research projects: Dr Carlo Caponecchia

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The following is a description of the main research projects I'm involved in at the moment.

Do WOMBAT scores predict performance?

with Prof Mike Regan and Dr Wuyi Zheng

The WOMBAT is a complex computerised test designed to measure the situation awareness, stress tolerance and attention management abilities of complex system operators (Roscoe, Corl and LaRoche, 2001). WOMBAT incorporates a range of tasks comprising target tracking, spatial orientation, pattern recognition and short-term memory. While widely used around the world, little is published regarding its validity (ie. whether it measures what it intends to measure). We're addressing this by asking student pilots to complete the WOMBAT test and examining the relationship between those test scores and measures of trainee performance, such as instructor ratings, and time taken to achieve particular license grades.

What's happening up there? The Naturalistic flying project

with Prof Ann Williamson, Prof Mike Regan and Murray Terwey

Naturalistic research methodologies have a range of advantages, including that they can provide important baseline data to help understand complex tasks. Numerous questions can be answered from such data, for example, regarding training schedules, the development of skills over time, and validation of other



types of available data (eg. from simulation, surveys etc). This collaborative project uses equipment installed into DA-40s at Bankstown airport to collect data on flying performance. A range of questions will then be examined using the resulting data set, including, for example, understanding differences between novices and experts in flying; knowing which instruments and protocols are being used, and when, how and by whom they are being used.

Left: Appareo Vision 100 equipment installed in DA-40 at UNSW Aviation's Flight Operations Unit at Bankstown airport

Is safety your priority? Factors that affect airline choice

with Dr Tay Koo and Prof Ann Williamson

Some information about the factors that influence people's airline choices are known, but the role of safety information has not been extensively explored. This ongoing project uses a stated-choice methodology to examine whether safety information has a role in deciding which hypothetical airline to fly, and also how the format of safety information might have an effect on choices.

This project represents an important collaboration between colleagues interested in aviation safety and those interested in aviation management and tourism.

More information on this project can be found here:

[doi:10.1016/j.ssci.2014.10.008](https://doi.org/10.1016/j.ssci.2014.10.008)

Student projects

Nurul Ikhmar Ibrahim (supervised with Prof Mike Regan)

Do voice control interfaces make using your phone safer while driving?

Murray Terwey (supervised with Prof Mike Regan)

What should we measure and when to assess development of skills in student pilots?



Left: Murray Terwey calibrating measurement equipment in DA-40 at UNSW Aviation's Flight Operations Unit at Bankstown airport

Other projects

I'm involved in a range of other projects many of which are related to my interest in psychosocial issues at work. These include recent and ongoing projects on psychosocial impacts of activity based work arrangements; cataloguing the features of workplace investigations, including their follow up; and developing and refining a taxonomy of organisational interventions for workplace bullying.