



Research Directions

Office of Research Services

Analysing Aviation Safety

Dr Renee Glass and Associate Professor Mark Wiggins from the MARCS Auditory Laboratories are exploring ways to improve the analysis of aircraft accidents and incidents through collaborative research with the Australian Transport Safety Bureau (ATSB).



'ATSB statistics show that flying is one of the safest forms of transport available in Australia, and the rate of accidents involving aircraft in Australia has been falling steadily over the last 5 to 6 years,' says Dr Glass. 'But even with this low accident rate, safety and a focus on decreasing air safety incidents is a major priority for the ATSB. Significant resources are devoted to analysing major occurrences in an attempt to prevent similar events and identify possible trends that might affect flight and aircraft safety. Currently, the bureau uses text-based descriptive analysis and categorisation to analyse occurrences. In this research, we want to apply the technique of concept mapping to develop a standard process that the bureau can use to highlight trends and make connections between various incidents that might not have been apparent using previous analysis methods.'

Concept mapping is a relatively new methodology that has been applied in education to record how students learn and apply scientific knowledge. Organisations have also used concept mapping to capture organisational memory. Concept mapping allows the user to draw a picture or map of how various pieces of information fit together, influence one another, and give rise to new knowledge. The research team will apply concept mapping techniques to ATSB aircraft safety occurrence data to try to create visual relationships between different factors involved in air-safety incidents. These concept maps can then be used to generate new ideas about aircraft safety and aid in creating innovative solutions to aviation safety problems.

By giving investigators and policy makers new ways of looking at air safety issues, this project will improve the ATSB's ability to analyse aircraft safety incidents and accidents, and may ultimately result in even safer air travel for the Australian public and international visitors.

Project Title: Aviation Safety Factor Maps: Applying concept mapping techniques to the analysis of aircraft occurrences

Funding has been set at: \$21,437

October 2007

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