

→ Fighting bushfires from the air

A Bushfire CRC report on the merits of aerial suppression has been released

Considerable attention has been given to suppressing bushfires with aerial fire bombing in recent years. The public has strongly identified aerial programs with successful bushfire suppression but public policy makers and fire agencies have been keen to more fully understand the costs and the effectiveness of using aircraft for firefighting operations.

Bushfire CRC Project A3.1 and C4 has released a study on *The Effectiveness and Efficiency of Aerial Fire Fighting in Australia*. The study aims to help fire agencies identify the most effective combination of suppression resources for minimising the impact of bushfires.

Data was collected from 284 fires that used aerial suppression during the 2004/05 and 2005/06 fire seasons in Australia and New Zealand. There were 76 reports from forest fires and 32 reports from grass fires that were suitable for detailed analysis for the report. The forest fire dataset was suitable for limited statistical analysis. However, more data is required to fully examine the effectiveness of aerial suppression on different fire intensities and in different fuel types. The collection of operational data will continue over the coming fire seasons and researchers will continue follow up to complete data records.

The data was analysed to determine parameters for predicting the probability of first attack success. In this study first attack success was defined as fire containment within eight hours of detection. First attack success was influenced by such factors as the area burning at time of



KEY FINDINGS

- Aerial suppression can be effective in providing support to ground crews and improving the probability of first attack success by 50 percent or more.
- For an aircraft to provide effective assistance it must be available at call, rapidly dispatched with minimal travel time and with logistical systems in place.
- Air operations effectively integrated into the incident management structure and competent personnel are needed to be available to direct the operations for good outcomes.
- The use of ground resources with initial aerial support is the most economically efficient approach to suppression.
- The use of aircraft for first attack until ground resources reach the fire produces the best suppression outcome.
 - Large fixed wing air tankers such as a DC 10 are at a cost disadvantage. This is particularly the case for first attack when fires are small and where water drop accuracy is required.

arrival of first resources, forest fire danger index, time to first air attack and overall fuel hazard score.

The report also examines the economic efficiency of aerial fire suppression based on a cost plus loss approach (cost of suppression plus fire losses). Given the availability of alternatives to aerial suppression such as tankers and dozers, the analysis also looks at the economic efficiency of other suppression methods.

ABOUT THE PROJECT

This report is an output from the Bushfire CRC project A3.1 Evaluation of Air Suppression Techniques and Guidelines and Project C4 Bushfire Economics.

The key people involved in this research are Jim Gould of Ensis-CSIRO Bushfire Research Group and Professor John Handmer of the Centre for Risk and Community Safety at RMIT University.

The report has been released to internal stakeholders. An Executive Summary can be found at: www.bushfirecrc.com