

Flying in Formation – Collaborative Approach to Aerial Fire Management in Australia

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Background to the National Aerial Firefighting Centre (NAFC)

During the very large bushfires of 2002-3 in eastern Australia, hundreds of millions of dollars had been expended by individual States on aerial fire fighting. The Federal Government provided funding to support the coordinated acquisition of leased aircraft that could better enhance the fire fighting capability in the high risk areas of Australia. The Australasian Fire Authorities Council (AFAC) was instrumental in forming a National Aerial Firefighting Strategy to guide the allocation of this funding across Australian fire services.

The National Aerial Firefighting Centre (NAFC) was incorporated in July 2003 by Australian States and Territories to provide more effective support for the combating of wildfires. It achieves this through national co-operative arrangements for aerial firefighting.

NAFC facilitates the establishment of a fleet of highly specialised firefighting aircraft that are readily available for use by State and Territory emergency agencies across Australia. This national aircraft fleet complements aerial firefighting resources that are arranged directly by the States and Territories. The national fleet receives funding support from the Australian Government as well as State and Territory Governments.

This national fleet of aircraft enables the sharing of aerial fire fighting resources over peak times of wildfire risk so no single jurisdiction has to individually scale up for the worst possible fire event. NAFC plays a key role in the sharing of these resources between fire agencies throughout Australia, and in the development of national protocols and systems for aerial firefighting.

South Australia's Aerial Firefighting Strategy and Expansion under NAFC

The SA Country Fire Service (CFS) has been using aircraft for aerial fire fighting since the early 1980s however, had limited opportunity to expand this capability despite the escalation of bushfire risk with changing land use and repopulation of areas post the 1983 Ash Wednesday bushfires.

During the 1980s until the mid 1990s, South Australia's approach to aerial firefighting was responsive to the needs of incident managers when other suppression techniques had not succeeded. Aircraft responded well after a fire had started and bombing offered some improvement in defensive tactics in fire control. CFS had used piston engine and small turbine aircraft with a capacity up to 1900 litres. Although aircraft had been based centrally near Adelaide aircraft were used around the State as required.

When CFS undertook a new State tender process for aerial firefighting, the successful bidder sought to transform CFS tactics for aerial firefighting. Through financial incentives, the provider Australian Maritime Resources offered to respond to any report of bushfire in a predetermined area of the Mt Lofty Ranges as soon as a fire was reported. From this concept CFS developed a rapid initial attack strategy for aircraft response. This was contractually tied to performance requirements detailing the amount of suppressant to be dropped by a pair of larger capacity Airtractor AT802 bombers on an incipient fire within a short and specified time frame.

This strategy proved to be highly effective in the early control of fires on days of very high fire danger and above, so much so that some CFS volunteers were concerned that there was a loss of experience in fighting high intensity fires in the hills near Adelaide. Other at risk areas of South Australia such as the forest industry in the southeast of South Australia, were interested in accessing this approach to early fire control and limited numbers of small bombing aircraft were made available.

In comparison to other States with well established systems for aerial fire management, South Australia was resource poor and only slowly built an enhanced capacity based on seasonal variations. CFS saw the establishment of NAFC combined with match funding from the Commonwealth as an opportunity to lobby State government to improve support for aerial fire fighting.

Benefits of South Australian Membership of NAFC

With the formation of NAFC, South Australia has realised major benefits from these newly created arrangements. This has included the access to specialised aviation resources through the collective procurement that NAFC and its member agencies manage, and the development of information and knowledge network across aviation operatives that have enabled significant learning and operational improvements in CFS systems of aerial operations.

CFS has built upon the goodwill provided by the Victorian State Aircraft Unit from opportunities of training it has provided in the formative years of SA aerial firefighting, to well established relationships within AFAC and NAFC groups for staffing and aircrew shortfalls, research and development for aerial suppressants and systems, and participation in learning and development in aerial fire management.

With the Commonwealth matched funding and support from the State, CFS through its procurement with NAFC, has established a capacity for rapid and early initial attack across 3 high bushfire risk zones across South Australia using fast responding Airtractor aircraft. Supplemented with medium and heavy helicopters, and surveillance aircraft, CFS has a mix of aircraft to match the diversity of response tactics necessary for effective aerial firefighting across the unique South Australian landscape.

South Australia through the NAFC Resource Management Agreement has been able to source additional high capacity firefighting aircraft during major bushfire and potentially catastrophic fire weather events. Of note South Australia has accessed additional Erickson

Aircrane aircraft in each of the past 3 fire danger seasons, and also provided aircraft to support operations in Western Australia and Victoria.

National Benefits from the Establishment of NAFC

States new to the management of aerial firefighting aircraft had to embrace an aviation culture and language that is quite foreign to the fire services. It means asking the 'obvious' in national forums of peers and feeling a sense of organisational vulnerability as systems and procedures to manage aircraft effectively had not been established in an agency now responsible for control of highly expensive high risk aerial activities. The formation of AFAC's Wildfire Aviation Technical Group was instrumental in providing support amongst peers in the development of a capability for aerial firefighting.

The development of agreements with NAFC members have enabled seamless sharing of NAFC contracted aircraft across States during significant bushfire events such as the Kangaroo Island fires in 2007 and the Victorian fires earlier this year. The staging and strategic repositioning of aircraft to support interstate jurisdictions during these events has minimised operational down time while operational standards and contracts developed by NAFC have allowed agency personnel to have consistent frameworks for management.

During the past two seasons NAFC has coordinated the Aerial Suppression Operations Group where fire agency executive and senior air operations personnel get together regularly to discuss each State's respective level of bushfire activity and commitment of aerial resources. It enables States and Territories to have an awareness of national fire risk and facilitate resource sharing opportunities when a particular jurisdiction is under real pressure.

With NAFC, Australian fire agencies have seen significant increases in support from the Australian Government for aerial fire fighting operations and contributed to the expansion of these operations across Australia. Since 2003 Commonwealth support has jumped from \$5 million per annum to the current provision of \$14 million per annum.

Most importantly NAFC has enabled fire agencies to informally benchmark their aerial fire management service delivery against other agencies, providing a catalyst for service improvement and performance.

Flying in Formation – Cooperation, Coordination or Collaboration. How far do we want to go?

Australia as a continent and a single nation has great potential to progress simple and workable processes for common aerial fire management in the national interest as there are few agencies managing these specialist resources, and there are already well established networks.

Europe in comparison has differing nations, languages and cultures in a relatively small geographical area yet the European Commission (EC) has established cooperative arrangements for reserve of firefighting aircraft to assist Member countries facing major forest

fires or wildfires. EC Environment Commissioner Stavros Dimas in July this year during the recent major fires in Corsica France when 2 reserve aircraft were deployed said, “...*Solidarity among Member States remains at the heart of our cooperation in disasters, but we have to make sure we have the right tools at our disposal to react to any emergency situation.*”

NAFC's intent is creating an environment that facilitates the effective coordination of limited aerial firefighting resources nationally, and is reliant on the goodwill of the State firefighting organisations for this to come together. The Australian Constitution rests the control of bushfire management with each State and therefore NAFC depends on each member agency to contribute so any national benefits can be realised. At present no agency needs to act in the best interest of the nation but legislatively only has to act in the best interest of their jurisdiction. How then can Australia have a national aerial fire management strategy that best realises national benefit?

NAFC is a limited liability company and has a Board of Directors and small number of staff, with each State and Territory being Members of NAFC. NAFC has a strategy and guiding constitution that talks about cooperation and resource sharing across the Members. NAFC Board Directors are made up of the Chief Executives or Chief Officers of NAFC Member agencies and are obliged as directors to act in the best interest of the NAFC Company.

It could be implied that Directors when considering NAFC policy or funding allocations to the Members need to act for the Company and therefore their actions should be in the national interest to meet the strategic outcomes of NAFC. Whether this overcomes the constitutional restrictions fire agencies have when working towards a national approach for jointly funded aerial assets remains debatable.

As a participant in NAFC and AFAC aerial fire management processes since its inception, I have seen development of better interagency relationships, but at times the understanding of how national approaches can benefit agencies or the state-centric view of individual jurisdictions, limits the maturity of a collective and national approach to aerial fire management. Saying an agency has a state-centric view is not meant as a criticism but its willingness to contribute to NAFC processes and developments could be related to their perception on what benefits NAFC makes over and above their agency's existing strategy for aerial firefighting.

For progression of a national approach there needs recognition that the foundation for aerial fire management rests with individual fire agencies, however a national strategy should encompass themes of cooperation, coordination and collaboration to clearly define what opportunities and obligations and contribution to NAFC may make to aerial fire management efficiency.

Defining cooperation, coordination and collaboration may guide strategy development. In the journal compilation *The Cult of Collaboration in Public Policy* (2009) by Janine O'Flynn (The Australian Journal of Public Administration, vol 68, no. 1, pp.112-116) these terms are defined.

Cooperation: An informal relationship where there is no common mission/vision, where information is shared on an as needed basis, authority remains vested in the

separate organisations, there is little risk, and resources and rewards remain separate.

Coordination: Involves more formality, missions are compatible and this requires formal planning and more formal communication; risk increases due to the increased intensity of the relationship.

Collaboration: This is more enduring and pervasive relationship involving new structures, a common mission, shared planning, formal communication across multiple levels, pooling and jointly acquiring resources, shared rewards and more risk.

The mechanisms of networking within NAFC and its members have elements of these definitions and participation and interest ebbs and flows within this. If NAFC Members collectively determine they need to improve their agency's aerial effectiveness by having access to a national support system it means more than just coming together to access Commonwealth funding and cooperating when a need arises.

A national strategy should be about developing a capacity that has a common purpose to Members and provides for mutual benefit of all Members and the nation. Such collaboration will mean sharing of risks and responsibilities, but there will be opportunities to reap the rewards in the form of safer and consistent systems of operations, ability to cover times of peak effort, and jointly discover and implement improved work practices. This will involve new levels of trust without 'turf' protection, a greater commitment of time developing these common national goals, and additional sharing of information and lessons learned.

'Flying in Formation' means each NAFC member defining their commitment towards a national strategy and whether they are cooperating as required, participating in the coordination of aerial activities, or being collaborative to embrace collective opportunities. Effective collaboration between NAFC member agencies may result in more effective and demonstrable community safety outcomes when working towards the national interest.

What are the Future Opportunities for Collaborative Approaches to Aerial Firefighting in Australia?

Opportunities for improvements in efficiency and effectiveness in aerial firefighting are broad and varied and the scope is dependent on the commitment of NAFC member contributions. Here are some dot point suggestions that may result from collaborative approaches.

- A national doctrine for aerial fire management encompassing Civil Aviation Safety Authority legislation and frameworks, national standards for aircraft systems and crew, and common policies for aerial fire management to enable seamless use of aircraft and personnel nationally.
- Nationally accreditation of pilots and support air crew with training and development undertaken through established national courses. This would enable the confident use of crew throughout Australia during major fire events.

- National exercises incorporating research opportunities to improve operational effectiveness, such as field testing new aerial firefighting chemicals or drop systems of aircraft.
- Nationally run trials of new innovations in aerial fire management such as very large air tankers, unmanned aerial vehicles, or ground support systems.
- A national monitoring of fire risk with a resource coordination capability that activates as the level of threat escalates.
- Nationally coordinated testing, evaluation and procurement of aerial firefighting chemicals.
- A national safety register for aerial fire management activities, with national investigation team made up accredited agency representatives.
- A national association for aerial fire management that encompasses fire agencies, suppliers and providers, legislators and safety authorities.
- National benchmarks for performance incorporating reporting of effectiveness and efficiency of aerial firefighting strategies.

As can be seen from this list such collaboration would involve constructing a common national vision with potentially new structural arrangements. Shared planning with communication across many levels would be common and pooling and jointly acquiring resources would be necessary. The risks here are opening up an individual organisation to greater scrutiny of its current operation but the rewards are safer and more robust systems that the community can depend on during major emergencies and disasters.