McDERMOTT AVIATION
HELI-LIFT AUSTRALIA
The Helicopter Specialists

The Secretary
Senate Select Committee on Agricultural and Related Industries
PO Box 6100
Parliament House
CANBERRA ACT 2600

22 July 2009

Dear Secretary,

Inquiry into Bushfires in Australia – Submission by McDermott Aviation P.L.

This submission primarily addresses the Inquiry's Terms of Reference d, e and g; particularly with respect to the use of helicopters in fire fighting. Comments are made based on our experience and observations from aerial operations on bushfires in Australia, North America, Europe and the Pacific.

Background

McDermott Aviation is a Queensland based owner and operator of one of Australia's largest helicopter fleets (in terms of numbers and type of aircraft). The company carries out forestry, agricultural and pesticide application operations as well as aerial fire fighting in several States of Australia and in other countries (US, Spain, Portugal, New Caledonia). McDermott Aviation currently holds National Aerial Firefighting Centre contracts for fire fighting in South Australia and New South Wales using Australia's largest domestically owned helicopters (Bell 214B).

Terms of Reference:

d. The identification of measures that can be undertaken by government, industry and the community and the effectiveness of these measures in protecting agricultural industries, service industries, small business, tourism and water catchments;

Protection of assets during periods of extreme fire risk can only be achieved if wild fire ignitions are attacked quickly and with maximum available resources. Even where pre-fire mitigation actions such as fuel reduction burning have been carried out, weather conditions on days of extreme fire danger will assist a small fire to build rapidly to an uncontrollable state. Work done by the Australian Bushfire CRC[1] and researchers in other countries clearly

[1] Plucinski, Gould, McCarthy and Hollis (2007) The effectiveness and efficiency of aerial fire fighting in Australia. Part 1. Bushfire Cooperative Research Centre. Technical Report A0701

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shows that the initial attack is critical to controlling and extinguishing a wildfire and that use of aircraft in this initial attack phase significantly increases the chances of successful result. In particular, the first 20-30min are the most crucial to increasing the probability of controlling and/or extinguishing a fire. From our experience, the rapid dispatch of aircraft has a large effect on reducing the amount of area burnt. There are many cases where our large capacity machines (when called early) have extinguished fires before the arrival of ground attack resources (e.g. NSW, New Caledonia).

Also from experience (in particular South Australia) the combined and coordinated use of fixed and rotary wing aircraft in the fire exclusion zone around Adelaide has resulted in minimal loss of life and property to wildfire. Fixed wing water bombers are dispatched first (they fly faster, carry useful water loads but have longer turn around times between loads) followed by helicopters (fly slower but have faster turnaround time with water loads) in response to the first signs of fire. Once a large fire is fully established, aircraft are most effective for attacking spot fires ahead of the main fire front and/or for protecting specific assets (buildings and infrastructure).

Although this is well understood, there are still a range of factors which impact on the effectiveness of helicopters both during the fire season and in the preparation periods before the seasons commence. Aircraft are a relatively expensive resource available to fire managers and we believe there is often a reluctance to use aircraft in the first instance in an attempt to save money. This is a false economy. In addition we offer the following comments:

1. The National Aerial Fire Fighting Centre is a company owned and operated by the State Governments to manage the development and implementation of a national fire fighting capability using combined State and Federal Govt funding. This organisation is responsible for bringing into Australia aerial resources which are not available onshore (e.g. the large "Elvis" type 1 helicopters).

   In spite of the existence of NAFC, there is a general lack of either ability or willingness to deal with aerial fire fighting issues on a national basis. In particular: the disparate radio platforms, aircraft identification (labelling and designation), training regimes, and ancillary equipment specifications as well as general aerial fire fighting tactics and strategy all impact on the efficiency of helicopter use and the ability of aircraft to be shared between NAFC partners and to cross State boundaries during emergencies. Addressing these issues would allow more seamless integration and movement of aircraft during emergencies and greater resources available for first strike and follow up support during extreme conditions.

2. There is no focus on building Australia's domestic fleet capacity. When the NAFC arrangement started, there was a significant gap in the availability of suitable fire fighting machinery and experienced personnel onshore. This gap has closed somewhat and there are now Australian operators like ourselves with significant capability and skilled staff. However we undertake relatively few of the available contracts and there is still a large reliance on overseas machinery and crew. These resources are available for a strictly specified period and, as our fire seasons become more dynamic, there is an increasingly likelihood that off shore based resources will not be available when needed. The larger machines which do not exist in Australia (e.g. the "Elvis" type Skycranes) will continue to need to be brought in from elsewhere for the foreseeable future but there are a range of highly competent machines and crew available in Australia which are currently competing with overseas equipment for fire fighting time. Some countries which currently supply aircraft and crews to Australia under NAFC contracts do not allow reciprocal arrangements for our machines and crew to operate in their jurisdictions. These arrangements stifle the development of Australian capability and innovation in this arena.

3. Appropriate equipment (machines and bombing equip) – Research carried out by State and Federal agencies and the Bushfire CRC lacks critical evaluation of the effectiveness of different rotary wing aircraft types. We urge the users of aircraft (including NAFC) to undertake some research on the effectiveness and limitations of a range of commonly used rotary wing aircraft to assist in more effective use and allocation to task. It is increasingly obvious during events like the Feb 09 fires in Victoria that certain aircraft suffer significant degrade from their performance specifications under "ideal" conditions when operating conditions become extreme (wind and ambient temperature in particular). We have observed aircraft having trouble extracting water from exposed water points (strong wind, high temp) and some aircraft restricted to using buckets on a long line (rather than belly tanks) having problems maintaining clearance in the poor visibility conditions.

   The actual number of aircraft available for fire-fighting in Australia is relatively small and they are commonly used in other bushfire prone areas overseas so it should be possible to collect data on performance under extreme conditions. Likewise the better integration of fixed wing and rotary wing aircraft exploiting their complementary capabilities.

   As an operator of a large fleet of aircraft we have undertaken extensive homework to find aircraft with the best performance profile for fire fighting operations in Australia and we are committed to building the domestic capacity for aerial fire fighting. The composition of our fleet represents the results of that analysis and we

are in a position to change the configuration of our fleet if evidence shows that particular aircraft have characteristics that make them better suited to Australian conditions than those currently being used. We would welcome the opportunity to share our views on the advantages and deficiencies of various aircraft under routine or extreme fire conditions with the fire agencies.

e. Any alternative or developmental bushfire prevention and mitigation approaches which can be implemented;

Use of restricted aircraft for fire bombing – NAFC contracted aircraft (particularly in the medium rotary wing category) are largely selected on their capacity to undertake multiple roles including carriage of fire fighters. On extreme days like the Black Saturday fires, consideration should be given to using more restricted medium helicopters for water bombing duties due to their cost effectiveness in the specific role of water bombing to support other single use aircraft like the Skycrane.

g. The adequacy and funding of fire-fighting resources both paid and voluntary and the usefulness of and impact on on-farm labour;

Training of aircrew – Given the sudden nature of events like the Feb fires, it can be difficult to access sufficient trained and experienced aircrew to operate machines. McDermott Aviation has played a significant role in the training of pilots to the exacting standards required for the fire fighting operations. These emergencies highlight the need to be able to access these skills close to home. We regularly use overseas pilots and have contributed to the global pool of trained and qualified pilots but during these emergency times and at times where fire seasons run beyond their projected end-dates especially, it is often not feasible or timely to source overseas crews. A pool of Australian-based pilots with fire fighting experience is needed to meet these eventualities and to build a level of domestic self reliance. (see also above – restriction on use of Australian crew in certain countries)

A couple of options for tackling this are: – firstly that some consideration be given to preferentially using operators that commit to using and training Australian crews (perhaps a minimum level of Australian content in operations (for NAFC and State contracts) and secondly to ensure these crews are world class by facilitating the exchange and use of these pilots in other countries where local employment restrictions are sometimes an impediment to Australian crews gaining more experience. This probably needs to be done at a high level (Government agency level); perhaps as an adjunct to the fire-fighter exchange programs currently running between Australia and the US and Europe.

Air attack supervision – high quality, experienced air attack supervisors (AAS) are essential for effective use of aircraft at the fire ground. Pilots are under a heavy work load water bombing and refilling, maintaining aircraft separation, managing communications and fuel and just flying the aircraft. AAS can significantly reduce turnaround times by: identifying and prioritising targets, providing positive and proactive co-ordination with other aircraft and ground crews, and generally integrating aircraft activities with overall fire fighting strategy.

There is a shortage of trained and experienced AAS and this particularly shows during a big event like the Black Saturday fires. AAS need to understand the capabilities of the aircraft (and aircrew) at their disposal and to spend time before and after fire events briefing and debriefing with aircrews and ground crews to increase the level of trust and understanding both ways. More regional personnel with AAS training and experience and allowing aircraft operators to train and supply AAS would help marry the combination of central command and control with local knowledge and experience.

Conclusion

McDermott Aviation would be pleased to provide any additional information or support that the Inquiry may require – particularly in the area of fire fighting aviation. We hope that the preceding material will be of use to the Inquiry and that it will be successful in identifying opportunities for better fire fighting response in the future. Please contact us if we can be of further assistance.

Yours sincerely,

for John McDermott
Chief Pilot and Director
McDermott Aviation