

PARLIAMENT OF NEW SOUTH WALES

JOINT SELECT COMMITTEE

ON

BUSH FIRE FIGHTING



Goobang National Park 26 December 2001

SUBMISSION BY

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TERMS OF REFERENCE

\* THE USE OF AIRCRAFT IN FIRE FIGHTING

## 1. INTRODUCTION

The potential for devastating bush fires is an inherent feature of the Australian environment. Unlike other natural disasters such as floods, storms or earthquakes in which we are essentially passive recipients trying to manage the consequences of what nature dishes out, with fires at least we have the opportunity to be pro-active and have some influence over our destiny. The recent NSW fire catastrophe should be viewed as a failure of our fire management system rather than an event to be celebrated by parades and glad-handing.

Fire management, like disease management in human / animal populations can be broadly divided into three key elements. The first is prevention, which includes reducing the susceptibility of the environment to fires. The second is early detection and aggressive suppression of fires. The third stage, and **the** costly one, is the management of fires once they have become established. While no management plan can prevent fires from starting, there is little excuse for not having effective strategies in place to minimize the risk of fires developing to a stage where heroic and expensive measures are required to protect life and property.

My submission relates to the second element – rapid detection and suppression of fires. This is an area in which I have considerable experience and perhaps a bit of expertise. I have been flying fixed-wing agricultural aircraft in firebombing operations for nearly 30 years and I believe that they are extremely effective if used appropriately. The basic premise of my submission is that if fires are dealt with while they are still small, they don't develop into large fires. While this statement may seem self-evident, I contend that the RFS does not have an effective strategy for prompt suppression of fires, particularly those that start in remote or rugged locations. As a case in point, many of the recent large fires had been burning for some days in remote country without any attempt to contain them with fixed-wing aircraft or any other means. I believe that many of these fires could have been extinguished within hours of them starting if aircraft were used for initial containment and this followed up by helicopters and ground crews.

## 2. BACKGROUND

Most modern fire control authorities regard the use of aircraft as “fire bombers” as an integral component of their fire fighting strategy. Early suppression of fires in inaccessible and remote locations, supporting and protecting ground crews and property with precision delivered retardant and foam is where these aircraft excel. Under Australian conditions, the more advanced fire control authorities regard suitably equipped large capacity agricultural aircraft as the most cost-effective aircraft to deploy. These aircraft can deliver 2,000 – 3,000 litres of retardant/foam quickly to a fire site, can operate off basic airstrips (paddocks) and are cheaper to operate (on a \$/litre delivered or any other measure) than smaller capacity helicopters. Both Victoria and South Australia have a veritable squadron of “fire bombers” under contract and they are extensively and very effectively utilized each fire season. West Australian authorities have also recently

recognized the value of agricultural aircraft in fire fighting and they are now used extensively in that state.

The Victorian Department of Natural Resources has used agricultural aircraft for fire fighting for more than 30 years. Over that time they have developed considerable expertise in the deployment and utilization of aircraft in fire control. In summary, the Victorian system works as follows:

2.1 Aircraft Availability – to ensure availability of suitably equipped aircraft they have around 23 aircraft (fixed and rotary wing) contracted each fire season. The pilots are also experienced in fire bombing. Contractors are paid a retainer fee to have the aircraft available and are then paid for their flying time.

2.2 Infrastructure – there are 16 dedicated firebases located throughout the state. These firebases comprise an airstrip, retardant and foam storage, mixing facilities for retardant and fuel for the aircraft. At many of these bases the retardant is already mixed and stored in reservoirs ready for immediate use. These bases are located in high-risk areas and the longest time it would take to fly a round trip to a fire in the area covered by the bases would be around 25 minutes. In addition to the fixed bases a further 9 mobile retardant bases are located throughout the state.

2.3 Deployment- during periods of high fire danger (storms etc) the contracted aircraft are moved to the firebases. Personnel in strategically located fire towers, often assisted by spotter aircraft detect fires. As soon as smoke/fire is detected an aircraft is loaded with retardant or foam (whatever is considered appropriate under the circumstances) and dispatched to the location to contain the fire. With the fire contained in this manner, ground crews then proceed to the site to ensure the fire is extinguished. These ground crews are often inserted and assisted by helicopter. Time frame from first detection to the first load of retardant being dropped is generally in the vicinity of 10-20 minutes. (I believe the NSW National Parks and Wildlife Service would like to run a similar operation)

The South Australian and West Australian systems are similar with contracted aircraft being kept on immediate availability – as soon as a fire is spotted they are loaded and dispatched and are generally at the fire scene within 5 – 15 minutes.

### 3. NSW SITUATION.

The NSW Rural Fire Service has always exhibited a reticence to fully utilize aircraft, particularly for early fire suppression. Many a cynic has suggested that small fires do not make headlines or keep the public purse strings open. Whatever the reason, I believe that the taxpayers of NSW are being short-changed by the reluctance of the RFS to embrace a system that is used effectively in other states and overseas. I would like to make a few observations on the NSW situation:

3.1 Aircraft Availability – to my knowledge there are only 9 fixed wing aircraft in NSW that are appropriately equipped for firebombing with some of these contracted to other states. The RFS currently has 3 on contract for the “fire season” and has steadfastly maintained that it could meet any further requirements locally on an ad-hoc basis. At the NSW Upper House enquiry into the NSW Rural Fire Service in February 2000, the

Commissioner stated that "...we have some 200 casual contractors who have made themselves available for deployment across the state". This is patently not correct – there are less than 140 aerial agricultural operators in the whole of Australia, very few of these with aircraft available, equipped or experienced for short notice ad-hoc firebombing. During January 2000, just weeks before the above mentioned inquiry, the RFS had occasion to need fixed wing aircraft for fire suppression. None were available, not even the contracted aircraft. The contracted aircraft were not due to start their contracts until the end of January (over halfway through the fire season) and at the time they were needed they were engaged elsewhere! With the recent fires the RFS were fortunate to be able to engage a number of Victorian contracted aircraft due to the benign fire conditions in that state (during the 1994 fires there were no suitable aircraft available in NSW and again they were able – albeit reluctantly – to avail themselves to Victorian resources). The RFS also spent a lot of taxpayers money (by my information, in excess of \$200,000.00) engaging agricultural aircraft that were not equipped for fire fighting – they looked like fire bombers to the general public but they were not equipped to do the job properly.

3.2 Infrastructure – NSW RFS does not have a suitable infrastructure for utilizing aircraft. There are only a handful of retardant mixers for the whole of the state, (the NPWS have their own mobile mixing station) with these often subject to breakdowns. Due to lack of resources (or planning) the RFS often run their aerial operations from bases far removed from the fire site. As an example, at the Goobang National Park fire in December 2001, aircraft working from an airstrip near Peak Hill (5-7km from the fire site) were moved to Dubbo where the retardant mixers were set up (25-30 minutes flying time from the fire). On arrival at Dubbo on 24/12/01 there was only enough retardant mixed for 2 decent loads and the mixers had broken down or were blocked. Moving back to Peak Hill on Christmas Day and using a privately owned mixer, 2 aircraft delivered 6 tonnes of retardant (69,500 litres) in less than 5 hours. On Boxing Day a further 4 tonne of retardant was **mixed**, loaded and delivered to the fire by 3 aircraft in less than 4 hours. This retardant line made an incendiary operation possible which secured the fire. This example illustrates how effective aircraft can be when they are located close to the fire site and adequately resourced. At Coonabarabran in late January 2002 the RFS retardant mixer again broke down and staff had to resort to mixing it with a shovel! (mixing retardant is similar to cement- needs water and agitation) There are many other examples of substandard equipment and organization that point to either lack of planning or lack of understanding of how to manage aerial fire fighting. These can be forwarded to the inquiry if required.

3.3 Deployment – the usual situation in NSW is to wait until a fire has become dangerous before aircraft are called in. This may be related to perceived costs – after a Section 44 emergency is declared the Commonwealth picks up a lot of the tab. While aircraft can be very effective in these situations (provided they have the infrastructure in place), I believe that they should be used more extensively in the initial suppression of fires. A fire in the Pilliga Scrub in mid January 2002 was restricted to 13 ha by 2 aircraft (again using private loading equipment) that happened to observe the fire while doing other work – they were able to contain the fire that was subsequently put out by ground crews

(by comparison, the 1997 Pilliga fire cost in excess of \$5 million). The fatal fire at Wingello in January 1998 was one that still haunts me – I am certain it could have been contained if it was dealt with from the air when it was first detected. The reasons the RFS gave to the Coroner as to why firebombers were not used are in complete contradiction to the facts. Our aircraft were available and idle on the ground at Camden airport while we awaited directions for our next job (the first one for the day). Within the hour of the Wingello tragedy we were directed to a fire at Mt Jelore, only 20 miles away from the scene. Despite our strong advice that the targeted fire was in fact under control on arrival with our first loads, we were directed to drop another 9 loads on it (12 loads in total). Why was this order given? No one has ever asked why! I may be a cynic, but I believe that the order to ‘bomb’ the Mt Jelore fire was calculated to convey the impression that aerial resources were fully committed elsewhere and not available to attend the Wingello fire in the early stages – a situation which is patently untrue. Had we been sent to Wingello (instead of sitting on the ground at Camden), that fire could have gone down in the records as a minor lighting strike that was eliminated within an hour or so of it first being detected.

Using aircraft on large fires is often a case of closing the stable door after the horse has bolted. In many cases during the recent fires we sat idle during periods of low fire activity but were asked to fly when the winds picked up and the fire started to get away again. Early morning is an ideal time for fire suppression with winds calm and fire activity low. I believe we should be using these periods of low fire activity to really hit the fire – reinforce containment lines with retardant and knock down the hot spots with foam. There also appears to be a reluctance to use retardant (e.g. Phoscheck) by the NSW authorities. This may be related to their inability to mix it due to substandard equipment. Much of my flying in the recent fires was to drop foam – a futile and costly exercise during the high wind periods in which we were instructed to fly. Retardant dropped under the same conditions will have a far greater effect and remain effective until the next rain.

#### 4. RECOMENDATIONS

I believe that the NSW Government (NPWS) should develop a fire fighting capability based on the Victorian model which puts heavy emphasis on early detection and elimination of fires. Aircraft should be an integral **part** of the early intervention strategy. In broad terms I would recommend:

4.1 Aircraft Availability – contract an appropriate number suitably equipped and I *stress* suitably equipped agricultural aircraft and helicopters for use each fire season. The number of aircraft could be determined through a detailed risk assessment – it would certainly be more than the 5 currently on contract. A review of the current contractual arrangements should be undertaken to ensure that the taxpayer is getting value for money. Again, the Victorian arrangements may be more appropriate.

4.2 Infrastructure – develop a network of aerial fire bases where retardant/foam supplies, mixers and fuel are available at short notice. Determining the number of bases and their

location would require careful planning. These should be located close to areas where remote origin fires have a history of causing problems. They don't have to be single purpose fire fighting airfields, but they need to be at an airfield where fire fighting aircraft have priority for their operations. Early detection of fires could be enhanced through the extension of the current State Forests fire-spotting tower network to cover most of the eastern seaboard and other high-risk areas as well as the use of spotter aircraft during times of high risk.

4.3 Deployment – the main challenge here is to change the mindset of fire control authorities from defensive to offensive fire fighting. It would be highly desirable for NSW authorities to spend some time working with the other states to get an understanding of how their systems work. The main thing is for NSW to have a system in place where aircraft can be promptly dispatched to remote fires and be backed up by suitably trained and equipped ground crews.

4.4 Cost – the cost of this type of proposal has to be weighed against the benefits it is likely to bring. The recent fires in NSW reportedly had a direct cost of around \$100 million, Add to this figure another \$35 million cost to the community for the volunteer's time (estimated at 22,000 volunteers X \$160/day X 10 days) and there is a total of around \$135 million. If fires of this magnitude could be reduced to a 1 in 10-15 year event rather than 1 in 4-5 year event, then the savings to the community would be considerable. It is also worthwhile noting the comparative cost of the Erickson Air-Crane ( the darling of the media) as opposed to the fixed wing alternative. For the cost of 1 Air-Crane with a 5,000 – 9,000 liter capacity, the RFS could contract at least 10 Airtractor 802/ M18 Dromader fixed wing aircraft with a total 25,000 – 30,000 liter capacity and have the flexibility to use them in multiple sites as required. While the Air-Cranes are formidable firefighting machines, they are costly and their use may only be justified at times when fires have become out of control. Hopefully, with the implementation of an effective early suppression policy, their capacity would seldom be required.



Col Adams 17 March 2002.