



EMC Guidance Note

Factors to Consider when Allocating Firefighting Aircraft to Bushfires

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Date	

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State Response Controller
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1. Purpose

To provide principles to guide decision making when allocating firefighting aircraft to bushfires

2. Background

Firefighting aircraft provide unique advantages and opportunities for bushfire suppression. They are responsive, flexible and can provide a decisive positive edge to the success of ground based firefighting operations.

Firefighting aircraft have a number of operational advantages in that they:

- ❑ Have the potential to acquire intelligence that supports and enhances the provision of information and warnings to firefighters and to the community. Intelligence has become a “strategic resource” that may prove as valuable in modern firefighting and emergency management as water and hoses were in the last century.
- ❑ Are most effective on small and incipient fires.
- ❑ Are capable of rapid dispatch and travel, and so can be deployed and re-deployed quickly.
- ❑ Are capable of providing fast, effective and large first attack responses to fires, in timeframes much smaller than an equivalent ground based first attack for most fires.
- ❑ Can conduct parallel operations at all levels of firefighting, simultaneously. Meaning aircraft can be used for rapid first attack, whilst also used for aerial intelligence gathering and for the strategic movement of key personnel.
- ❑ Are a “force multiplier” to ground resources.
- ❑ Can be used selectively, and with accuracy, on small sections of large fires.
- ❑ Can be concentrated, or used in combination, to increase effectiveness.
- ❑ Can give initial responders an early “aerial view” of the fire.
- ❑ Can be used to suppress fire where the terrain may be inaccessible or unsafe for ground resources.
- ❑ The effect of Firefighting Aircraft is assymmetric – meaning it can quickly intervene anywhere in the state, regardless of whether it is for tactical response to individual fires or a strategic response to using retardant for line building.

On the other hand, firefighting aircraft have a number of risks and constraints. These include:

- ❑ The effectiveness of firefighting aircraft decreases with increasing rate of spread and fire intensity.
- ❑ They are expensive to procure and operate and have a large logistical tail. This must be considered and a solution provided in conjunction with any request for aircraft.
- ❑ They can be resource-intensive and require specialist teams to crew and manage their operations.
- ❑ They are a finite resource.
- ❑ There are atmospheric, environmental and operational limits to their safe and effective operation.
- ❑ Aviation is unforgiving of mistakes and the consequences of error can be very high.
- ❑ Firefighting aircraft are high profile and attract high media and stakeholder interest.

3. Principles

In considering firefighting aircraft resource allocation, a number of principles can be proposed. These include:

- ❑ **All aircraft are a State resource.**
- ❑ **Safety:** Safety is an over-riding consideration. Allocation, deployment and tasking will, at all times, consider the safety of responders including air crews.
- ❑ **Follow Standard Operating Procedures:** Firefighting aircraft should be used in accordance with established procedures.
- ❑ **Early use:** The greatest return on investment in aircraft comes from early use on bushfires.
- ❑ **Rapid response:** Rapid response and deployment will underpin success in initial attack.
- ❑ **Ground follow-up:** Ground crews must be available to be deployed to consolidate the gains made by firefighting aircraft.
- ❑ **Task to the highest priority:** The priority for allocation, deployment and tasking of firebombing aircraft will be to achieve maximum benefit in the:
 - Protection of life
 - Minimising loss and damage
 - Protection of critical infrastructure
 - Safety of the fire operation. (The availability of aircraft should not be relied upon to provide or maintain a safe work environment for firefighters.
- ❑ **Mission:** The firefighting aircraft mission must be clear, reasonable and achievable.
- ❑ **Effective work:** As a bushfire escalates, the effectiveness of the firefighting aircraft needs to be constantly reviewed in comparison to other, perhaps more productive, taskings. In other words, firefighting aircraft should be allocated to the “next most effective task” (taking into account travel time).
- ❑ **Appropriate aircraft:** the aircraft that is most appropriate to the mission and atmospheric conditions should be used.
- ❑ **Appropriate supervision and management:** Prior to having firefighting aircraft allocated to a fire, appropriate incident management and aircraft management arrangements need to be put in place.
- ❑ **Value for money:** The tasking needs to be seen as a worthwhile investment given the effectiveness of the operation, the assets at stake, and risk assessment.

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4. Questions to Ask of Aerial Firefighting Resource Allocation

In order to ensure that firefighting aircraft are used in the safest and most effective way, a number of questions need to be asked of actual or proposed deployment and resource allocation:

- Are there clear objectives for the deployment?
- Are aircraft mission and tasking priorities consistent with the State control priorities?
- Are aircraft able to be used safely?
- Can aircraft do productive work?
- Is this the most productive and efficient tasking for the aircraft?
- Is this the most suitable aircraft for the proposed mission?
- Is the aircraft doing work that cannot be done by ground crews (or is more effective than ground crews alone)?
- Are there unacceptable safety risks to ground based firefighters, e.g.:
 - Difficult, uneven, unsafe ground access
 - Fire(s) in burned over Mountain Ash or Alpine Ash forest or forest with unacceptable risk from hazardous trees;
- Are ground crews available to consolidate control lines established by aircraft?
- Are there appropriate incident management and aircraft supervision arrangements in place for ongoing deployments and when multiple aircraft operating?
- Is there sufficient support to enable ongoing firebombing operations (eg: air base crews, air attack supervision)?
- Are there sufficient consumables in place (fuel, foam, retardant)
- Prioritisation of aircraft tasking needs to take account of the fact that firebombing aircraft are most effective on the initial attack of small and incipient fires, e.g.
 - Fire(s) less than 10 ha, less than 800 m perimeter;
 - Multiple small fires;
 - Remote – difficult access;
- Can aircraft productivity be increased by using multiple aircraft in combination?
- Are aircraft being used in such a way that they can be quickly re-tasked or re-deployed to an emerging (more appropriate) priority?
- Is the organisation getting good “value for money” from this tasking?

5. Specific Questions to Ask of Large Air Tankers

- Does this mission possess key characteristics for LAT priority?
 - Fire has potential, if not controlled, to cause very significant consequences (life, critical infrastructure, property, assets);
 - Fire has potential, if not controlled, to develop into a long duration campaign fire involving significant time and resources to control;
 - The probability of mission success will be increased by extra suppressant volume;
 - Ability to lay a continuous retardant control line;
 - Deployment of a LAT(s) will allow less aircraft congestion;
 - Deployment of a LAT(s) will allow other aircraft to be released for deployment on other fires for better overall outcome;
 - Part of a strategy approved by the Incident Controller and State Response Controller or Emergency Management Commissioner.
- Are other firefighting aircraft available and have they been considered?