State Government Victoria

STATE AIRCRAFT UNIT
V I C T O R I A

Version 1 draft 2
(2001 777)

Very Large Airtanker
Project Victoria 2009/10

Very Large Air Tanker Operational Trial Project

Approved DRAFT Operational Program 2010

Commissioned by the Country Fire Authority Victoria on behalf of the State of Victoria, developed, implemented and managed by the State Aircraft Unit Victoria.

Hayden Biggs State Aircraft Unit Victoria, February 2010

This Very Large Airtanker Project (VLAT-Project) Operations Program document is a supplement to DSE Air Operations Manual and associated State Aircraft Unit Procedures 2010 specifies approved procedures for the conduct and support of VLAT-Project operations and provides the required information for the training of selected Agency personnel to perform safely and competently in all aspects of the VLAT-Project operations.

Table of Contents

Front Cover: Bomber 391 returns to Avalon Airbase after a CASA[1] regulatory flight operation, image supplied Bryan Rees State Aircraft Unit.

[1] Civil Aviation Authority Australia.

1.0 General

1.1 VLAT-Project[2]

The Victorian Government recently announced an operational trial of a Very Large Air Tanker (VLAT/s) for the 2009/10 bushfire season. The operational trial will require the aircraft to perform a series of firebombing drop tests in a controlled environment in a wide range of vegetation and landscape types as well as firebombing for active fire suppression operations.

The drop tests will be conducted, monitored and evaluated over a series of pre-determined target sites, in a range of weather conditions and at times as part of active fire suppression operations.

1.1.1 Overview

The aim of the VLAT-Project is to engage a high volume fixed wing fire bombing service that provides coverage across the State in a timely and effective manner and continues to operate without restrictions.

The VLAT will be procured for a Service Period during the 2009/10 fire season and an operational trial will be conducted, monitored, evaluated and reported upon. The outcome of the trial will provide the basis upon which the Government will decide whether or not to increase the aerial firebombing capability of the State for future fire seasons using a VLAT.

Depending on the outcome of the trial and the prevailing fire risk, the service may become increasingly involved in fire suppression operations and the service period may be extended.

The key responsibilities of the VLAT Service require that the service provided:

a) responds to fire incidents or other associated operations and to carry out firebombing, lead plane and/or other work to specified standards and protocols;

b) participate in operational exercises and trials – requiring flight of the VLAT and lead plane – aimed at evaluating the effectiveness and efficiency of the VLAT category of aircraft.

c) ensure that the preparedness to respond is maintained throughout the required period, and

d) when required, stand-by and maintain readiness to respond to incidents.

1.1.2 VLAT A[3] Service

The VLAT Service requirement is for an aircraft Contractor to supply the services of:

a) a VLAT capable of at least 40,000 litre[4] load of SG[5] 1.07 and capable of a ≤ 400nm return flight,

b) a suitable lead-plane with appropriate lead-plane pilots,

c) retardant handling, mixing, and loading into aircraft at the Nominated Operational Base(NOB) (the retardant product itself will be supplied)

d) base facilities inclusive of: office, communications, rest areas, including facilities for at least two Agency[6] personnel;

e) maintenance, support facilities, that may be required; including aircraft fuel

f) capacity to train local Air Attack Supervisors (AAS) in lead-plane operations and in supervision of VLAT operations,

The retardant product and water supply will be supplied by the State of Victoria.

[2] Very Large Air Tanker-Project
[3] NAFC Service description.
[4] Conversion US-gal equal to 3.785 litres.
[5] Specific gravity
[6] Department of Sustainability and Environment, the Country Fire Authority and inclusive of NAFC Member agencies.

The VLAT–Project consists of two readiness periods:

a) a Training Period consisting of fifteen (15) days commencing 15th. December 2009, concluding 31st. December 2009 and succeeded by

b) a minimum Service Period of seventy (70) days, commencing 01st. January 2009.

1.1.3 Participants VLAT-Project

Several parties are identified as major stakeholders in the VLAT-Project:

a) the Country Fire Authority, Victoria and the Department of Sustainability and environment Victoria,

b) the State Aircraft Unit (SAU), who will manage the Operations Program of the VLAT-Project project,

c) the National Aerial Firefighting Centre (NAFC) will assist with the VLAT A Service procurement, and

d) the Bushfire Cooperative Research Centre (Bushfire CRC) will assist with the evaluation and effectiveness program and

e) the VLAT A Service provider, AG Airwork and 10 Tanker LLC.

1.1.4 Flight operations

All flight operations undertaken within the VLAT Availability Period will be authorised by the Victorian State Fire Controller or his delegate.

All flights undertaken with in the Training Period are to be notified to the Victorian State Fire Controller or his delegate.

All dispatches and operational flights undertaken by the VLAT during the Service will be coordinated by the State AirDesk (SAD), authorised by the Victorian State Fire Controller (SFC) or his delegate.

All VLAT aerial fire fighting operations will be subject to the standard SAU and Agency[7] air operations procedures, inclusive of the State Aircraft Unit Procedures-2010 (SAUPs) and are subject to the provisions the Visual Flight Rules (VFR).

No suppression, operational trials, training flights and evaluation flights will be undertaken without the supervision of an approved Air Attack Supervisor (AAS) and the use of a fully crewed Lead Plane.

The Operational Program includes a series of pre-determined flight missions to fulfil the requirements of the VLAT–Project and will incorporate components of the VLAT-Project Effectiveness & Evaluation Program.

a) **VLAT aircrew proficiency flights**

Subject to the formal Contractor planning and management program which includes all flights undertaken pursuant to training and proficiency requirements,

- Where possible proficiency flights will include recurrency training for Lead Plane Air Attack Supervisor (L-AAS)and potential incident Air Attack Supervisors (AAS),
- Where practical incorporate the provisions of the VLAT-Project Evaluation and Effectiveness Program and
- Where practical incorporate capability and performance flights to fulfil the requirements of the VLAT-Project Communications and Media Plan.

[7] Department of Sustainability and Environment and the Country Fire Authority Victoria.

b) **Training flights**

Subject to a formal planning and management program for Agency personnel and consistent with the VLAT aircrew proficiency flights,

- As part of the VLAT-Project Operations Program and VLAT-Project Evaluation and Effectiveness Program specific flights undertaken to assist in determining operational flight performance and limitations and
- Where practical incorporate capability and performance flights to fulfil the requirements of the VLAT-Project Communications and Media Plan.

c) **Suppression flights**

Determined to be an ***essential operational flight,***

- Subject to formal request and dispatch protocols and
- Subject to appropriate incident management provisions and including an Incident Shift Plan (ISP, Joint CFA &DSE).

d) **Operational trial flight**

Determined to be an ***operational flight,***

- Subject to formal request and dispatch protocols, including the State Fire Controller's authorised discretionary deployment,
- Subject to appropriate incident management provisions and including an ISP and
- Incorporating the provisions of the VLAT-Project Operations Program and VLAT-Project Evaluation and Effectiveness Program.

e) **Evaluation and effectiveness flights**

Subject to the formal VLAT-Project Operations Program and operational performance and aerial supervision training requirements and the VLAT-Project Evaluation and Effectiveness Program planning and management program which includes all flights undertaken pursuant to proficiency training and requirements,

- Determined to be a ***non-essential operational flight,***
- Subject to formal request and dispatch protocols and
- Subject to appropriate incident management provisions and including an ISP.

f) **Interstate operational flights**

Determined to be an ***essential operational flight,***

- Subject to formal request and dispatch protocols,
- Subject to appropriate incident management provisions and including an incident action plan and
- Incorporating the provisions of the VLAT-Project Operations Program and VLAT-Project Evaluation and Effectiveness Program.

1.1.5 Utilisation of water

The VLAT-Project will be undertaking an aggressive program to minimise water use and to reduce the demand on our water storages.

The VLAT-Project will where possible commit to the use of reclaimed and where possible recycled water to:

a) minimise pressure on domestic water supplies,
b) reduce demand on our water catchments and
c) contribute to the Government's water recycling target of 20% by 2010.

For further information and details refer to ***Attachment 1 Water Management Strategy.***

1.1.6 Nominated Operational Base

The Nominated Operational Base (NOB) is Avalon airport, near Geelong, Victoria.

Table 1 Nominated Operational Base.

NOB	Runway length/ft.	PCN[8]/Flex	El. Ft.	Latitude	Longitude
Avalon	10,000	73	35	38 02.4 S	144 28.2 E

Provisions: The NOB will have a fully functional airbase with refuelling and reloading capability co-located with the aircraft.

1.1.7 Alternatives

Two alternative landing and take off airports have been identified.

Table 2 Alternative take off and landing airports.

Alternative	Runway length/ft	PCN/Flex	El. Ft.	Latitude	Longitude
Melbourne	12,000	79	434	37 40.4 S	144 50.6 E
East Sale	8000	47	23	38 05.9 S	147 09.0 E

Provisions: No reloading facility or capacity will available at these two airports.

1.2 VLAT Service aircraft

1.2.1 Bomber 391 (BOM 391)

BOM 391 is a converted wide body passenger McDonnell Douglas DC-10 (DC-10) aircraft used for fighting wildfires in remote areas. The former airliner carries up to 43,500 litres (11,500-galUS) of water or fire retardant in a series of exterior belly-mounted tank, the contents of which can be released in eight seconds.

Plate 1 BOM 391 Avalon Airport VIC 2009.

Image supplied by Graham Briggs SAU 2010.

[8] Pavement Classification Number, standard method of reporting pavement strength.

BOM 391 operates at a reduced take-off weight, which allows for enhanced performance of the aircraft. The aircraft is capable of 2000 feet per minute (fpm) climb rates and cruise speed of 250 knots below 10,000 feet Mean Sea Level (MSL) at maximum load, carrying 43,500 litres (11,500-galUS) actual and flying under Visual Flight Rules (VFR). Fuel consumption is approximately 9,400 L/hr. (17,000 lbs/hr 2500-gal/US/hr) and the endurance of the aircraft fully loaded provides for a ≤ 400 nautical mile (740 km) return trip.

The primary operational use of BOM 391 is retardant line building in remote forested areas and extended attack-retardant application as a secondary resource in support of large fire operations with other aerial suppression resources. BOM 391 has been used in remote areas and has not been directly used in the urban interface area this has only been regulated by the suppressant used, retardant.

For further information and details refer to ***Attachment 2 BOM 391 Information.***

1.2.2 BOM 391 Delivery system information

BOM 391 has a purpose built constant flow gravity delivery system. The tank system is positioned along the centre line of the aircraft belly. The system has a total five tanks, primarily the design consists of three main drop tanks and includes two supplementary fairing tanks.

Plate 2 Purpose built constant flow gravity delivery system, BOM 391.

Image supplied by Hayden Biggs 2010.

The three main tanks consist of two Erickson Air-crane[9] (EAC) helicopter tanks and one larger tank of similar design derived from the EAC tank, providing total capacity is 45,400-litre (12,000-galUS)

The drop rate, controlled from the cockpit, is governed by the opening of the tank doors. Bomber 391 has been designed to deliver a large quantity of fire retardant from the external constant flow gravity feed tanks.

BOM 391 can dump up to 45,400-litre (12,000-galUS) of retardant in as little as eight seconds, it uses the computerized gravity-feed water dump system that is essentially a modified and scaled-up version of the system used by Erickson Air-Crane on its S64 helicopter. The tanks can be re-filled concurrently on the ramp in eight minutes.

For further information and details refer to ***Attachment 3 Delivery System Information.***

[9] Erickson Air-crane LCC, USA.

1.3 Lead plane

BOM 391 will operate with a lead plane (King Air E90).

The lead plane, Birddog 393 (BDG 393) flies the flight profile of the intended drop area prior to the live drop run to asses the weather conditions and other environmental conditions to determine the immediate hazards and show the area of the drop to BOM 391's aircrew.

1.3.1 Birddog 393 (BDG 393)

BDG 393 is a Beechcraft King Air E90, which is a low wing, twin engine pressurised fixed wing aircraft.

The King Air was introduced as a compromise between piston-engine and jet aircraft. It has the capacity to fly further and higher than piston-engine aircraft and unlike many jets it can land on the short runways of most small airports.

Two 500-hp P&W Canada PT6A-6 turboprop engines with three-blade Hartzell propellers give BDG 393 a top ceiling of 27,400 feet and a range of 1,565 miles at 270 mph.

BDG 393 has been fitted with an onboard smoke generator; the equipment allows the pilot to produce a large "puff" of smoke to show the aircrew of BOM 391 the "start" and "stop" points for the intended drop.

Operating in the lead plane configuration and with the installation of the smoke generation equipment and for the provision of the VLAT Service, BDG 393 will be operated and remain in the RESTRICTED CATEGORY[10] airworthiness certification.

The certification allows for the operation of the aircraft by essential aircrew only, the trained and accredited Lead Plane Air Attack Supervisor (L-AAS) is considered to be essential aircrew. No passengers will be carried in BDG 393.

Plate 3 Lead plane Birddog 393 Victorville Airport California 2006.

Image supplied by Hayden Biggs 2010.

[10] Refer to Civil Aviation Safety Authority regulations.

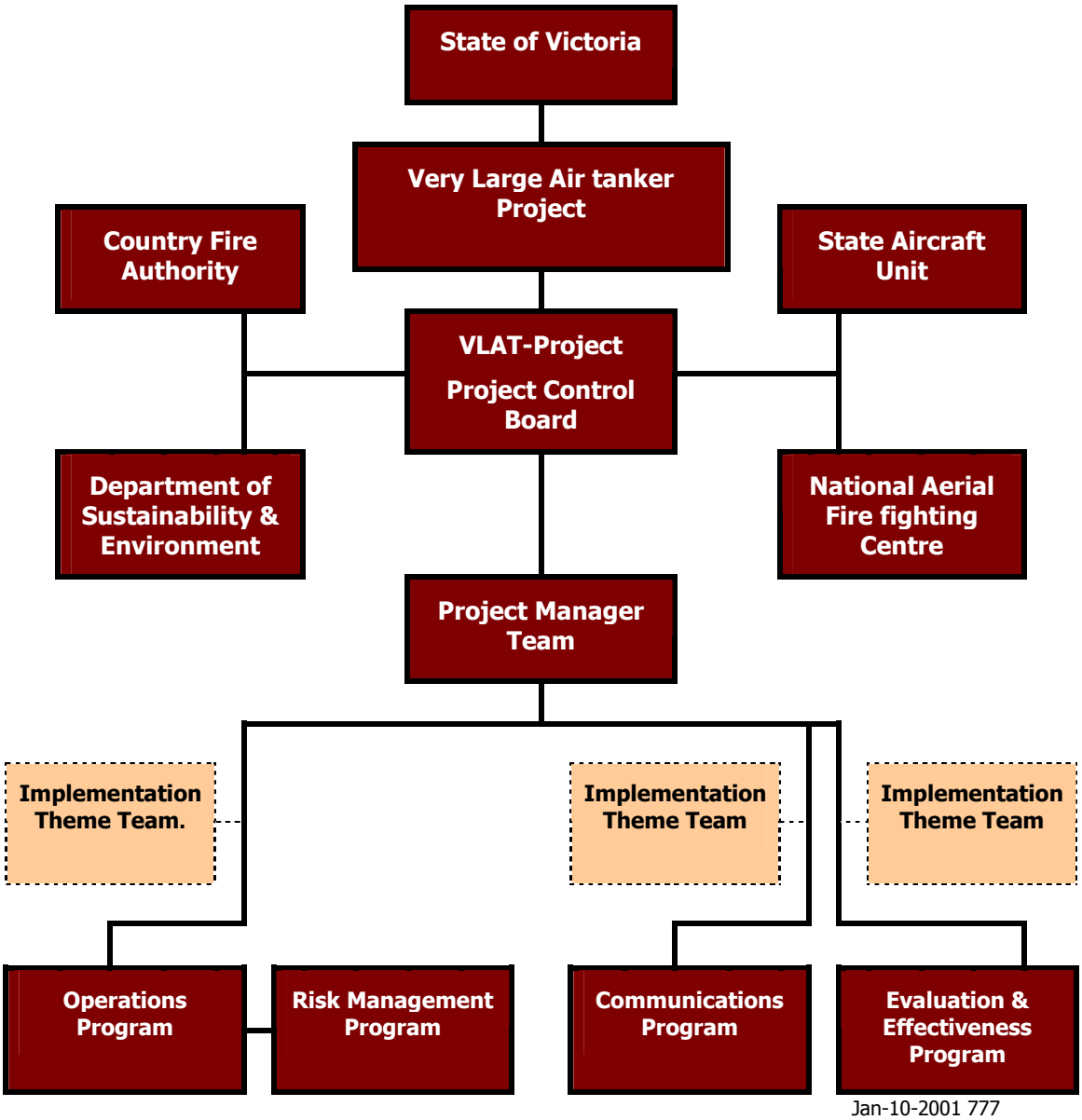
2.0 Project management

This section shows interfaces to entities outside of the project and identifies main stream units in the internal VLAT-Project structure.

2.1 VLAT Project organisation

The flow chart below defines and describes the external lines of communication and management with senior management, administration units and parties convened by the VLAT-Project.

Figure 1 Shows the external interface and organisational boundaries between the project and external entities.



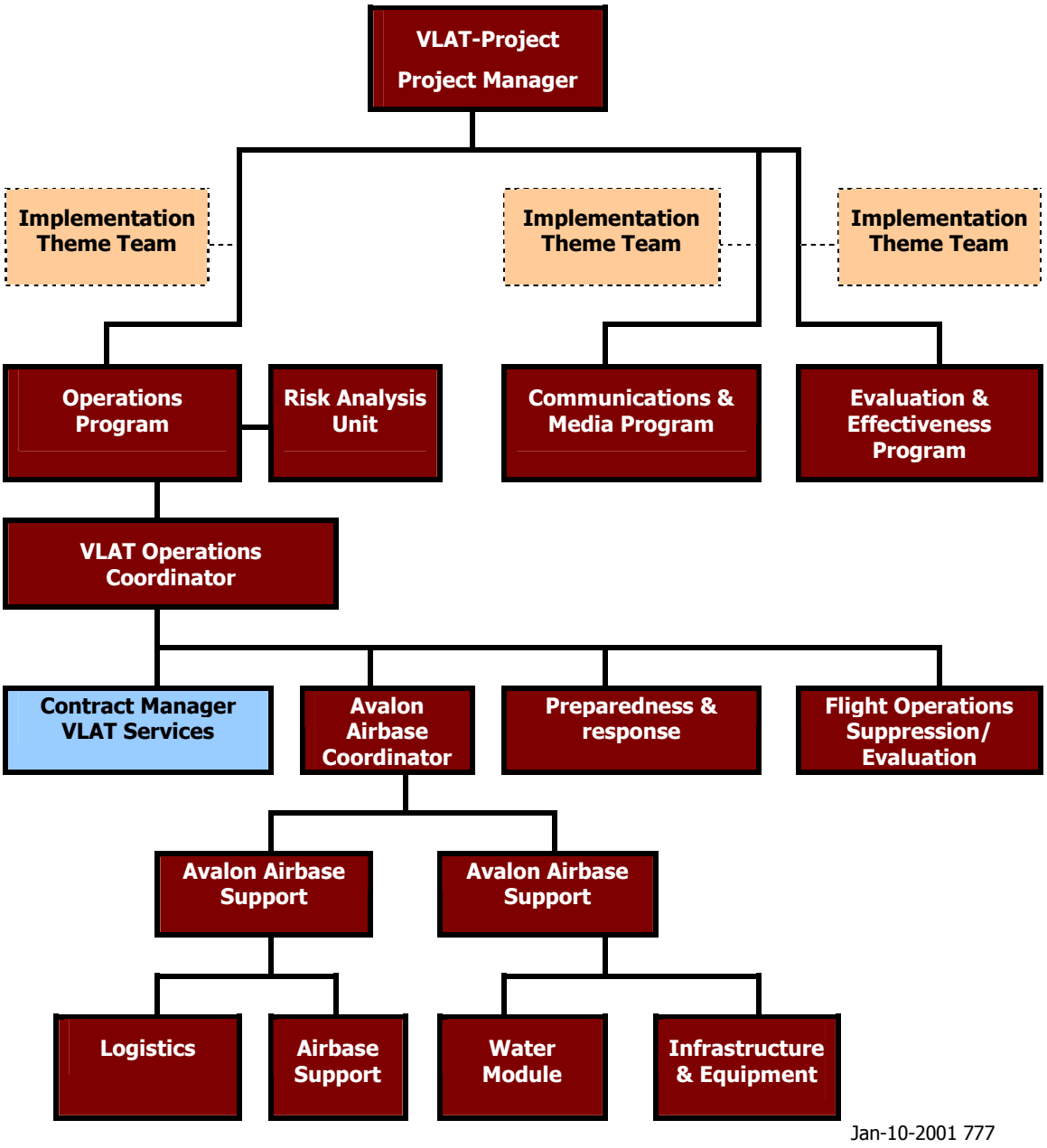
Provisions: The chart above was developed prior to the implementation of the VLAT-Project Management Team, December 2009, no further information or amendments have been provided.

2.2 Operations Program organisation

The flow chart below describes the internal structure and organisation of the Operations Program, including interfaces between the functional units of the VLAT-Project.

It incorporates the organisation chart and matrix diagram to illustrate lines of authority, responsibility, and communication.

Figure 2 Shows the internal organisational boundaries between functional programs of the VLAT-Project and within the Operations Program.

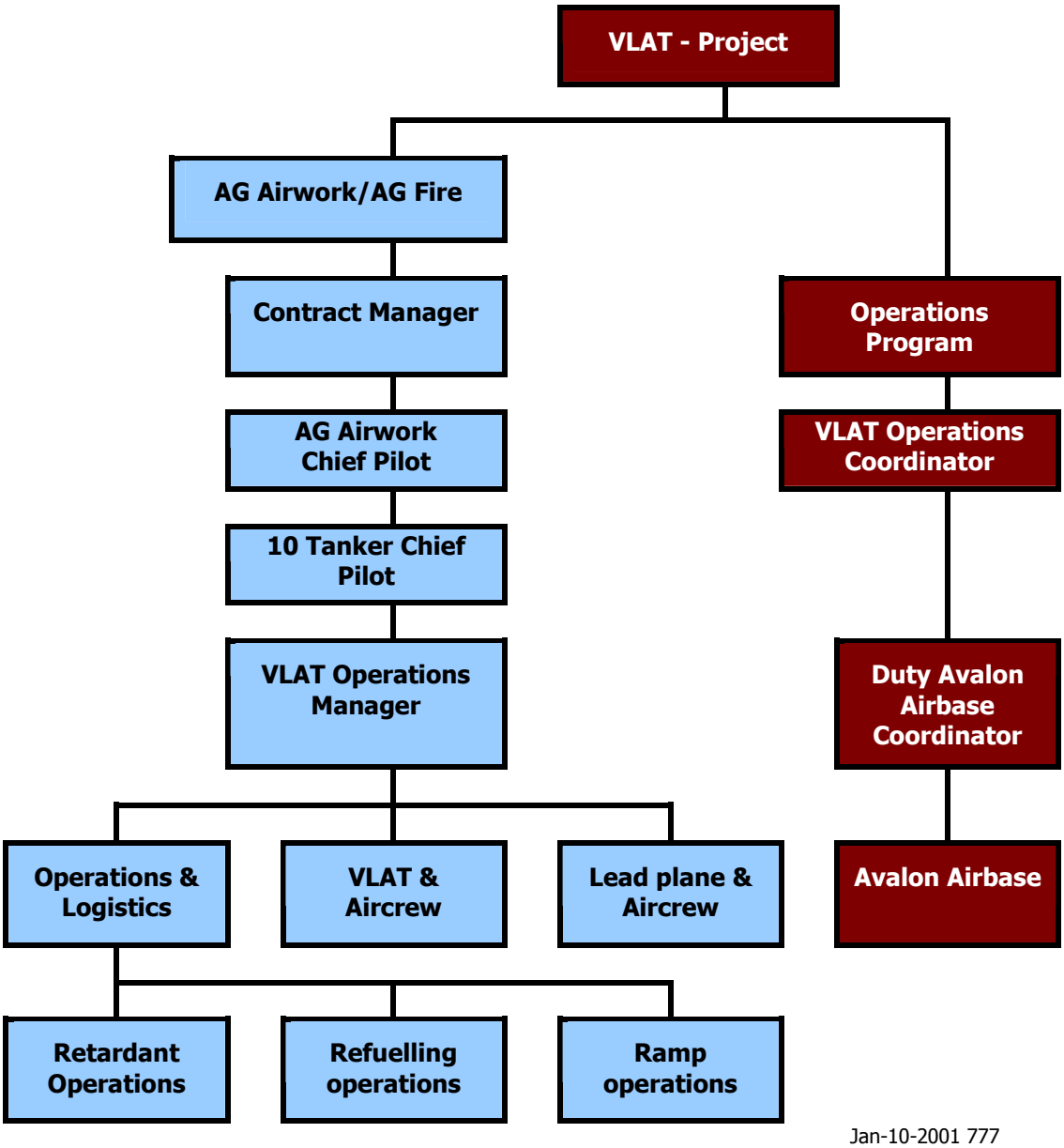


Provisions: See Figure 2, Provisions.

2.3 Contractor organisation

The flow chart below defines and describes the external lines of communication and management with senior management, administration units and parties convened by the VLAT-Project.

Figure 3 Describes the interface and organisational boundaries between the project external entities.



Jan-10-2001 777

Provisions: NIL

2.4 Program administration

The Operations Program will have the ability to produce both scheduled and unscheduled updates for the VLAT-Project, providing mechanisms for new information and reviewed program components to be disseminated.

Administrative procedures will be common to normal operations and include general documentation for directory information; cost reporting, tracking and safety as well as aircraft and retardant contract administration.

2.4.1 Flight Operations Return (FOR/s)

A FOR must be submitted by aircraft operators for all flying or standby conducted on behalf of an Agency, via the State Aircraft Unit.

Aircrew are required to maintain, on SAU FORs, accurate records of operations including flying time. It is imperative that a pilot complete FOR's carefully and accurately, and that they have an appropriate authorised officer sign the verification section.

2.4.1 Contractor invoice management

The FOR constitutes an official document and is the sole authorisation for payment of invoices. FORs must be submitted with any invoice.

2.4.2 Flight time recording

VLAT flight times are recorded from the beginning of the takeoff roll to the end of the landing roll. Flight time is recorded in actual time and calculated to the nearest 1/100th of an hour.

2.4.3 Retardant and suppressant volumes

Records must be maintained to ensure continuous supplies of product to sustain suppression operations and enable a procurement strategy to be maintained. Additionally the volume of product dispended will be required to fulfil the requirements of program management and contribute to the Evaluation and Effectiveness Program.

2.4.4 Water volumes

Records shall be provided by the Operations Program demonstrating compliance with the intent of the water management strategy and contribute to the Evaluation and Effectiveness Program. In addition the monitoring program will assist in the development of a sustainability plan for suppression operations.

2.5 Contract administration

Administration of the contract is a joint responsibility of NAFC and SAU with the ultimate responsibility vested in NAFC. Several Compliance provisions and functions are delegated to the SAU.

Before any person takes an action on behalf of the Contract provisions, they need to ascertain whether authority to act has been delegated to them. All parties are advised to consult with respective representatives for their policy on contract administration.

2.5.1 Contract compliance

NAFC is responsible for all ***contracting*** actions including contracting procedures, contract legality with existing laws, regulations, contract administration, and termination. NAFC may by agreement delegate certain contract administration functions to the SAU.

2.5.2 Audit review

The SAU will assume direct responsibility for assuring compliance with the ***technical*** provisions of the Contract. The SAU will conduct initial inspections and approve the

VLAT A Service provider's equipment, facilities, and personnel prior to, and periodically during the Training and Availability Periods.

2.5.3 Dispute resolution

. Disputes that cannot be readily resolved at the local level by the SAU will be referred to the VLAT Operations Coordinator and NAFC.

2.6 Logistical management

2.6.1 Security

Avalon Airport is a Security Regulated Airport and is subject the ***The Aviation Transport Security Act 2004*** and the ***Aviation Transport Security Regulations 2005.***

The Act and Regulations establish a regulatory framework to safeguard against unlawful interference with aviation. The Act establishes minimum security requirements for civil aviation in Australia by imposing obligations on persons engaged in civil aviation related activities.

The Act and Regulations provide one security regulatory environment for everyone in the aviation industry. They are a result of the changed environment and the heightened threat of terrorism involving the unlawful use of aircraft and airport facilities.

2.6.2 Access

Subject to the provisions of the ***The Aviation Transport Security Act 2004*** and the ***Aviation Transport Security Regulations 2005.*** and the requirements of Avalon Airport management Agency personnel who enter or have been allocated roles and positions to assist in the VLAT-Project will require either an ASIC or will be need to be escorted by a member of the VLAT-Project or VLAT Service provider in possession of an ASIC.

To facilitate entry and escort of personnel a schedule of times have been developed and implemented.

Provisions for entry and exit are specified in the Avalon Airbase Management Plan.

2.6.3 Agency visitor management program

General public access to the Avalon Airport including the Avalon Airtanker Base is highly restrictive. Access and any actions undertaken and for Government representatives, Agency personnel, media and other support personnel are subject to the provisions of Act and Regulations not the Operations Program.

Agency personnel gaining access to visit and access the site will be subject to a visitor management plan.

For further information and details refer to ***Attachment 4 Visitor Management Plan.***

2.6.4 Avalon Airbase accommodation

It will be necessary to secure a number of facilities and buildings to accommodate aircrew, operational support personnel, equipment and services to fulfil the Service. The Contractor and the Agencies will be responsible for each of the functional units under their direct control.

- Site A: VLAT Service provider's office and rest area accommodation.
- Site B: Agency office and rest area accommodation.
- Site C: Tee Pee storage area.
- Site D: Bladder Farm.
- Site E: Water Cells.
- Site F: Retardant plant.

- Site G: Aircraft parking.
- Site H: Stormwater Recovery Area.
- Site I: Aircraft wash area.

For further information and details refer to ***Attachment 5 Avalon Airbase Site Plan.***

2.6.5 Agency personnel accommodation

Accommodation for agency personnel engaged to provide support and participate in the Operations Program has been arranged in Geelong.

A long term housing agreement has been negotiated with a local hotel in Geelong and includes the provision of all meals.

For further information and details refer to ***Attachment 6 Avalon Airbase External Support Program.***

2.6.6 Avalon Airbase communications

A number of organisations including the VLAT Service provider and the Agencies have significant roles in delivering the VLAT-Project. Two major external partners assisting in the delivery of the VLAT-Project are Avalon Airport and Avalon Tower (Air Services Australia.).

A list of organisations and key personnel has been developed to provide assistance to incumbent Agency personnel and associated partners to access key information and assist in issue management and routine daily operations.

Key contacts include:

- Emergency response,
- Agency advisors,
- Avalon Airport Operations,
- VLAT Service provider and
- External support organisations.

For further information and details refer to ***Attachment 7 Avalon Airbase Communications Schedule.***

2.6.7 Aviation fuel

The VLAT Service provider shall arrange for the supply of fuel for BOM 391 and BDG 393.

The refuelling support either fixed or mobile requires a minimum capacity appropriate to the task, with a required capacity of 30,000 litres supply in a 30 minute period.

2.6.8 Ground transport

Each partner will be responsible for the provision of motor vehicle transport for all respective personnel engaged in providing support to the Operations Program.

Agency airbase transport requirements make provision for general road vehicles and specialist ramp access and transport modes including forklifts.

a) Two motor vehicles,
b) Two fork lift trucks and
c) Two all terrain multi wheeled vehicles.

2.7 Welfare

The Avalon Base is located within the environs of the airport. The site is remote from general infrastructure and facilities available to other organisations residing within the airport. The

base is a sanctioned workplace for agency personnel and is subject to standard office accommodation requirements and OH & S requirements.

The VLAT-Project Operations Program will be subject to a Drug and Alcohol Management Program (DAMP).

For further information and details refer to ***Attachment 8 Welfare Management Plan.***

2.8 Water sustainability

The State of Victoria shall arrange for the continuous supply of water for the VLAT Service. The State will be responsible for the storage of the water. A minimum of supply of 500,000 litres is to be stored on site.

For further information and details refer to ***Attachment 9 Water Management Plan.*** and ***Attachment 10 Water Management Equipment Inventory.***

2.9 Retardants and suppressants

Only approved retardant and suppressants listed on the Qualified Products List USFS[11] will be used in the VLAT-Project.

For further information and details refer to ***Attachment 11. Qualified Products List USFS.***

The State of Victoria shall arrange for the purchase and supply of all retardants and suppressants for the VLAT-Service.

The State will be responsible for the storage of the bulk products in an adequately covered storage area. Minimum volumes and weights of the retardants and suppressants to be used are specified in the sections listed below; **Sections 2.9.1, 2.9.2 and 2.9.3**.

The VLAT-Service provider will be responsible for the mixing of the retardant and supply into BOM 391 and will also be responsible for the retardant mixing and storage equipment including ancillary plumbing.

The State will be responsible for the mixing of the other products and supply into BOM 391 and will also be responsible for the mixing and storage equipment including the ancillary plumbing.

Provision will be made within Avalon Airbase to facilitate the ability to "off load" from BOM 391 any mixed retardant or suppressant for either storage of relocation.

2.9.1 Retardant

The retardant product to be used is Phos-Chek® D75R.

A minimum of 250 tonnes is to be stored in the facility to support the VLAT-Project.

2.9.2 Foam concentrate

The State of Victoria will determine if practical the operational use of foam concentrate in suppression operations and be responsible for the procurement and provision of adequate volumes.

The foam concentrate product to be used is Phos-Chek® WD 884. A minimum of 5000 litres is to be stored in the facility to support the VLAT-Project.

2.9.3 Super Absorbent Polymers (SAP)

The State of Victoria will determine if practical the operational use of a Super Absorbent Polymer in suppression operations and engage the services of a suitably qualified organisation to supply and maintain adequate volumes.

Two approved products have been identified for potential use:

[11] USFS

- Phos-Chek® AquaGel-K,
- Thermo-Gel®,

A minimum of 5000 litres of each product is to be stored in the facility to support the VLAT-Project.

2.10 Avalon airbase roles

Both Agencies have adopted the Australian Inter-service Incident Management System (AIIMS) to manage emergency incidents such as fires. The system divides the organisation into four principal areas of Control, Planning, Logistics and Operations.

The roles identified to operate and support Avalon Airbase are roles which are aligned specifically to roles sanctioned within the Aircraft Unit AIIMS. Only Authorised personnel will be engaged for the identified roles.

An Authorised person:

- holds the accreditation or credentials specified in the Aviation Training and Accreditation Program Manual (ATAP) or Fire Training Management System as required to undertake the specific role, skill or task; and
- meets the currency requirements laid down by the Agency for the specific role, skill or task; and
- meets the medical and physical fitness requirements laid down by the Agency for the specific role, skill or task; and
- has been given a legitimate direction to undertake the role, skill or task.

Personnel working at Avalon Airbase shall receive additional training in base operations and specific training for the position(s) to which they are assigned or provide support for.

2.10.1 VLAT Operations Coordinator (VOC)

Is responsible for overall management of the Operations Program, for ensuring appropriate links are maintained with other VLAT-Project programs, functional units of the Operations Program and for ensuring aircraft related input into the all planning process and requirements. The position is full time and will be normally be located at Avalon Airbase.

2.10.2 Duty Avalon Airbase Coordinator (AAC)

The Airbase Coordinator is responsible to the VLAT Coordinator for provision of the operational and logistic support necessary for a safe effective and efficient aircraft operation.

2.10.3 Avalon Airbase Management Support (AMS)

Management support who have a sound knowledge and experience working in an aircraft environment inclusive of fixed wing fire bomber loading and management and maintenance of loading equipment and associated infrastructure. Management personnel will report to the Airbase Coordinator.

2.10.4 Lead Plane Air Attack Supervisor (L-AAS)

The L-AAS will be responsible for tactical operation of VLAT aircraft in consultation with the Incident AAS and the Operations Unit. This includes direction of fire bombing aircraft to targets and maintenance of communication between the fire line and tactical aircraft. The L-AAS is airborne and located in BDG 393.

2.11 Ethics and Behaviour

The VLAT-Project Operations Program aims to maintain the highest practicable standards of probity and integrity in all activities. And it will be important to demonstrate the highest possible standards of ethics and personal behaviour.

2.11.1 Conflict of Interest

Conflict-of-interest may arise for various reasons. Personnel involved in The VLAT-Project Operations Program activities may have personal interests that from time to time conflict, or have potential to conflict, with The VLAT-Project Operations Program duties. Disclosure of potential conflicts of interest is required when dealing in the course of The VLAT-Project Operations Program duties with relatives, close friends or business acquaintances.

It is not possible to define all potential areas of conflict-of-interest and individuals, who are in doubt as to whether a conflict exists, must raise this with the VLAT Coordinator as appropriate.

Agency personnel are required to declare to The VLAT-Project Operations Program any conflict-of-interest that arises or is likely to arise.

2.11.2 Gifts and favours

While it is appropriate to maintain working relationships with the VLAT Service provider and partner organisations, this must be done without subtle and inappropriate obligations being placed on the VLAT-Project.

The general principle to be followed is that personnel should not seek or accept favours or gifts from anyone who could benefit by influencing that person.

Personnel must avoid giving any indication that favours, gifts, gratuities or hospitality will be accepted, or that these may influence decisions. Under no circumstances should gifts or favours be solicited.

Personnel should immediately inform the VLAT Operations Coordinator of any offers received at home or at work. It is unethical for members to accept offers from suppliers on behalf of spouses, relatives or friends.

2.11.3 Patronage or favouritism

Personnel must not use their position to obtain a private benefit for themselves or someone else. Decisions must not be improperly influenced by family or other personal relationships.

2.11.4 Confidentiality and discretion

Personnel shall respect confidentiality of any commercially sensitive or private information, and shall not disclose any such information.

Should information be inadvertently disclosed this must be reported to the VLAT Operations Coordinator without delay. No commercially sensitive information is to be removed from the any Operations Program facility, office or other premises used by the VLAT Project without written approval from the VLAT-Project.

2.11.5 Ethics and behaviour

All agency personnel are expected to maintain appropriate standards of personal behaviour whilst at workplaces or engaged in VLAT-project related activities.

Behaviour which is considered unacceptable includes:

- Discrimination on the basis of race, colour, religion, sex, national origin, age, physical or mental disability, retaliation (participation and/or opposition), sexual orientation, political beliefs and marital and/or family status.
- Falsifying records and/or giving false information.
- Consuming, or being under the influence of any illegal drugs.
- Any illegal activity.
- Making statements or gestures that are derogatory, insulting or otherwise abusive.
- Bullying.
- Making inappropriate comments to the media, governing bodies, co-workers or public.

3.0 Risk mitigation

Description and management assigned to the VLAT-Project, Project Management Team.

3.1 Risk management matrix

Description and management assigned to the Project Management Team, VLAT-Project.

3.2 Risk management plan

Description and management assigned to the Project Management Team, VLAT-Project.

For further information and details refer to ***Attachment 12. Risk Management Plan.***

3.3 Quality Assurance Plan

There is a requirement for a Quality Assurance Plan (QA-Plan) for the VLAT-Project and the management has been assigned to the Project Management Team, VLAT-Project.

The QA-Plan will describe the activities and methods used to build a high-quality program by the application of an appropriate process. It will identify the quality-related tasks to be performed, which are responsible for each, and the target date for completion.

The VLAT-Project will be committed to systematically monitoring and accounting for it's' performance in relation to its deliverables through its cycle of planning and accountability.

4.0 Funding

4.1 Establishment requirements

The Table below outlines the items, unit numbers and costing of equipment, services and personnel support required to implement, sustain and manage the VLAT Project.

Table 3 Initial costing for the establishment of the VLAT-Project.

Establishment, Logistical and Administration Requirement					
Training (days)	**15**	**Capacity (lts)**	**42,000**	**Mission Duration (hrs)**	**4**
S/Period (days)	**70**	**Missions**	**20**	**Loads/mission**	**2**
		TOTAL	**1,680,000**		
Service	**Measure**	**Unit**	**Cost**	**No.**	**Total**
Procurement costs - Agency personnel salaries/wages	Day	1	$500	20	$10,000
Public liability insurance	Day	1	$150	85	$12,750
Technical check flight operations - fuel component	Hour	1	$1.65	24,000	$39,600
Airways & Landing Fees MTOW	Tonne	1	$8.50	10,380	$88,230
Fork Lift Hire (x2)	Day	1	$80	170	$13,600
Pumps (x6)	Each	1	$82	510	$42,000
Plumbing/hoses (x20)	Each	1	$3	1,700	$5,600
Regulators/valves (x20)	Each	1	$4	1,700	$7,000
Office Accommodation	Month	1	$1,000	6	$6,000
Road Vehicle Hire	Month	1	$2,000	9	$18,000
Ramp vehicle hire	Month	1	$2,400	6	$14,400
Retardant storage	Week	1	$1,000	12	$12,000
Dry site hire Avalon	Week	1	$800	12	$9,600
Wet site hire Avalon	Month	1	$1,000	12	$12,000
Water storage	Cell	1	$500	48	$24,000
Berms Assembly/disassembly	Each	1	$35	85	$3,000
Foam injection system (x3)	Each	1	$82	255	$21,000
GEL proportioning unit hire	Each	1	$1,210	70	$84,700
Generator (x2)	Each	1	$282	170	$48,000
Petrol & Oils POD	litre/con	1	$1	1,000	$1,300
Communication devices	IT/Package	1	$59	85	$5,000
Radios (x4)	each	1	$24	340	$8,000
Base communications unit (x4)	Each	1	$12	340	$4,000
Welfare facilities	Package	1	$300	3	$900
Equipment storage	Each	1	$35	85	$3,000
Agency personnel salaries/wages (x5)	Each	1	$160	425	$68,000
PPE provisions (x5)	Package	1	$12	425	$5,000
ASIC ID (x15)	Each	1	$5	1,275	$6,750
Accommodation/Agency (x5)	Day	1	$130	425	$55,250
Personal expenses (x5)	Day	1	$50	425	$21,250
Lighting towers	Each	1	$250	12	$3,000
				TOTALS	**$613,330**

Provisions for Table: Excludes Mobilisation/ demobilisation cost, Training Period - standing costs, Service Period - standing costs, Lead Plane Service Period and the Purchase and Supply of Retardant.

4.2 Lead plane air attack supervisor training program

A key element of the VLAT-Project is to ensure safe and effective integration of BOM 391 and BDG 393 into the standard flight operations conducted in Victoria.

There is an essential requirement that the L-AAS understand the procedures and processes for the operation of the lead plane and VLAT.

A training module has been developed which combines a discrete theory session and comprehensive ground school prior to conducting a number of orientation, training and assessment flights.

It is planned to conduct four training events within the Availability Period, each session will have provisions to train four AAS. A total of four AASs, two AASs from each state New South Wales and South Australia will be incorporated into the training events.

Table 4 Indicative costing for a single training event for Agency and inter-state L-AAS.

Training Requirements					
			Missions	8	Mission duration (hrs)
Resource	**Measure**	**Unit**	**Cost**	**No.**	**Total**
DC-10 operating cost	Hour	1	Reserved	3	Reserved
Lead Plane operating cost	Hour	1	$1,300	8	$10,400
SEAT #1	Hour	1	$2,500	8	$20,000
SEAT #2	Hour	1	$2,500	8	$20,000
Air Attack Platform	Hour	1	$850	8	$6,800
Water supply $ (3000 x 2 x 8)	Litre	1	$0.025	48,000	$1,200
Venue Hire	Day	1	$150	3	$450
Agency personnel salaries (x3)	Day	1	$160	36	$5,760
Personal expenses (x3)	Day	1	$50	36	$1,800
				TOTALS	**66,410**

Provisions: Training program excludes costing for operational flight by BOM 391. Completion of the training module for L-AAS has to be coordinated with the schedule of flight operations identified in Section 1.1.4.

4.3 Preparedness and response requirements

To ensure continued efficiencies and effectiveness whilst operating BOM 391 a need was recognised to ensure there were adequate resources in the western and eastern regions of Victoria for air attack supervision.

Table 5 Indicative costing for the provision of Incident Air Attack Supervisors.

Air Attack Supervision Operation Requirements					
	Training (days)	15			Mission duration (hrs)
	S/Period (days)	70	Missions	20	
Service	**Measure**	**Unit**	**Cost**	**No.**	**Total**
Air Attack West Light fixed wing Standing costs (*Indicative*)	Day	1	$700	70	$49,000
Air Attack West Light fixed wing Operating costs *Indicative*)	Hour	1	$850	20	$17,000
Air Attack East Light fixed wing Standing costs (*Indicative*)	Day	1	$700	70	$49,000
Air Attack East Light fixed wing Operating costs (*Indicative*)	Hour	1	$850	20	$17,000
Office Accommodation (x2)	Month	1	$1,000	6	$6,000
Road Vehicle Hire (x2)	Month	1	$2,000	6	$12,000
Communication devices (x2)	IT/Package	1	$71.43	140	$10,000
Radios (x4)	Each	1	$28.57	280	$8,000
Base comms unit (x2)	Each	1	$11.77	170	$2,000
Welfare facilities	Package	1	$300	3	$900
Agency personnel salaries/wages (x2)	Each	1	$160	140	$22,400
PPE provisions (x6)	Package	1	$14.29	420	$6,000
ASIC ID (x6)	Each	1	$6.43	420	$2,700
Accommodation/Agency (x2)	Day	1	$130.00	140	$18,200
Personal expenses (x2)	Day	1	$50	140	$7,000
				TOTALS	**$227,200**

Provisions: NIL

4.4 Expenditure

The Operations Program will have the ability to produce both scheduled and unscheduled updates for the VLAT Project.

It is recognised that a level of uncertainty in regard to unforseen expenditure will be present.

There will be potential for equipment failures and insufficient levels of resourcing that may develop during the VLAT-Project.

Application will be made to obtain a level of discretionary funding that will accommodate the loss and failure of high value items.

5.0 Preparedness

This section defines the readiness and response requirements and procedures to be adopted by VLAT-Project for the 2010 fire season.

The plan is prepared in accordance with the Code of Practice for Fire Management on Public Land (Revision No 1) (2006)). The section will be revised to fulfil emerging and developing knowledge and operational use of the VLAT.

Amendments will be issued as necessary.

5.1 Resource plan

Personnel may be assigned to more than one position in the base organization dependant on the level of activity. This does **not** relieve the Operations Program from ensuring that the individual is both trained and qualified to fill the position(s) to which he/she is assigned.

The Operations Program must anticipate the need for and request additional personnel during periods of high activity and/or complexity.

5.1.1 VLAT services

Inclusive of, but not limited to:

- Aircrew BOM 391,
- Aircrew BDG 393,
- Engineering personnel,
- Refuelling resources and
- Retardant mixing personnel.

5.1.2 Agency support

Agency personnel will be engaged in fields of expertise and who have demonstrated ability and performance and knowledge relevant to aircraft management and operations.

Various models have been applied to achieve the maximum effectiveness from the Agency personnel whilst minimising the impact on Agency preparedness requirements and their core activities.

The use of multiple teams (i.e. five people) over a short period only where there is a high or greater fire danger has an immediate and cumulative effect on the Agency's service delivery. The use of teams over a longer period (i.e. five days) on a rostered program allows for effective commitment, organisation and atomises the impact on the Agencies.

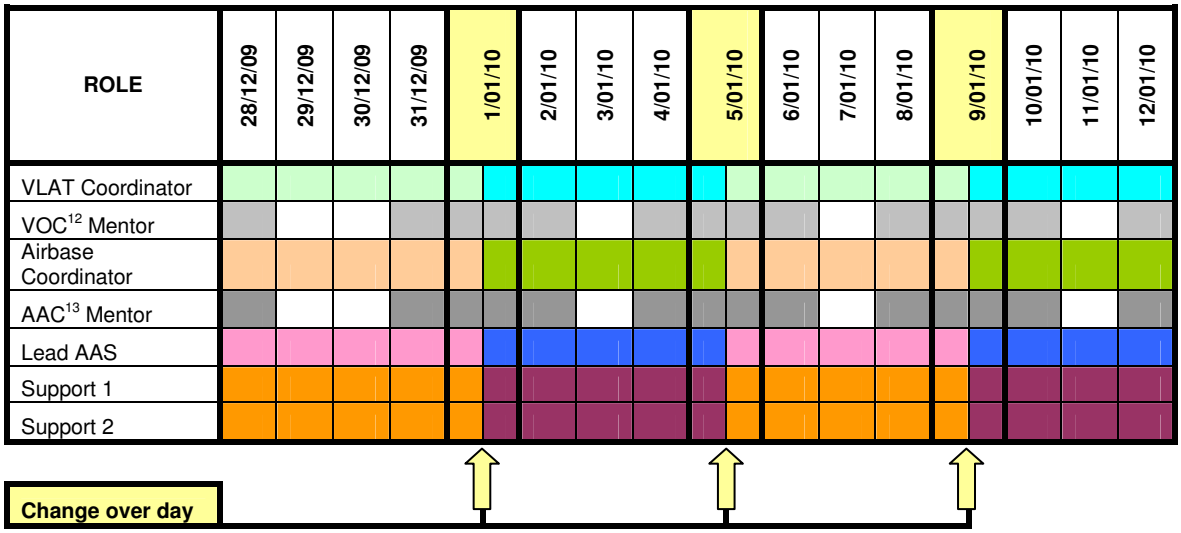
The most suitable and equitable period for the rostered duty will be five days. The commencement period of the rostered program would be starting 28 December 2009 prior to the commencement of the Service Period for BOM 391 and extending through to March 2010.

Subsequent teams are to commence their tours prior to the conclusion of the incumbent rostered team.

The rostered roles are identified as and are inclusive of, but not limited to:

- VLAT Operations Coordinator,
- Avalon Airbase Coordinator,
- Avalon Airbase Management Support and
- Lead Plane Air Attack Supervisor.

Table 6 Indicative deployment roster agency personnel.



Provisions: VOC Mentor and AAM Mentor are present for induction and debrief processes for incoming and out going personnel.

For further information and details refer to ***Attachment 13. Resource Management Plan.***

5.1.3 Additional equipment

Inclusive of, but not limited to:

- Avalon Airport Management
- Third Party contract service providers
  - Infrastructure support organisations
  - Water supply organisations

For further information and details refer to ***Attachment 6 Avalon Airbase External Support Program.***

5.2 Agency support personnel

To facilitate the adequate resourcing of the VLAT-Project Operations Program a "Registration for Participation" (RFP) (Commonly known as and Expression of Interest) process for the roles identified is to be implemented by the commencement of the Availability Period for BOM 391.

The RFP process commenced prior to the Christmas and New Year period to allow enough time for personnel to offer their nominations prior to the 28th. December 2009

5.2.1 Criteria

Agency personnel who participate in the VLAT-Project Operations Program are required to have as a minimum the appropriated training and accreditation for roles and positions which are identified in the AIIMs ICS Aircraft Unit.

The recognised roles are inclusive of, but not limited to:

- Air Operations Manager,
- Aircraft Officer,
- Air Attack Supervisor,
- Air Observer,
- Retardant Mixer and Fixed Wing Bomber Loader.

[12] VLAT Operations Coordinator
[13] Avalon Airbase Coordinator

5.2.2 Nomination

Agency personnel who wish to participate in the RFP process are to consult and seek the approval of their respective managers to offer their services for the VLAT-Project Operations Program.

5.2.3 Approval

Initial approval for agency personnel is obtained from the respective Agency Region and/or Area.

Registrations and approvals for Agency personnel to participate in the VLAT-Project are reviewed and authorised by the Aviation Management Committee[14].

5.3 Lead plane Air Attack Supervisor

The Lead Plane Air Attack Supervisor (L-AAS) role has not been used before in Australia. The demands of the role are significantly different from a standard AAS role. The role requires both clear and accurate communications with the Incident AAS and BOM 391 and close management of the drop to ensure it is safe to conduct the mission, that the line is correct, and that the drop will be effective.

Each drop will be very expensive and there will be a significantly greater level of risk than with standard operations.

5.3.1 Criteria

The proposed L-AAS level of experience has to be in the highest order. To be considered for the role, it is proposed that a nominated L-AAS must have:

- a non-provisional accreditation; and
- considerable experience supervising SEATS dropping fire retardant; and
- considerable experience supervising fire bombing operations from fixed wing aircraft.

5.3.2 Nomination

The SAU has identified people based on a known level of relevant experience, regardless of agency. The approach taken by the SAU is adopted from that applied in the US where an experienced Air Tactical Group Supervisor[15] performs the role. Considerable experience for this role includes supervising a high number of retardant drops, at a large number of fires, in a range of environments, from a fixed wing aircraft.

The list of nominations is currently held with the Manager, SAU on behalf of the Agencies.

This will ensure that the AAS has a high level of experience in using retardant for building line in direct attack on flank/head fire and in indirect attack. It also provides a greater situational awareness when using fixed wing aircraft as a platform and helps the AAS to be more aware of the platforms limitations

5.3.3 Approval

Nominations and approvals for AASs to participate in the VLAT-Project are reviewed and authorised by the agencies Aviation Management Committee.

AASs not performing the lead plane role will still have the opportunity to work with the BOM 391 when it is used on fires for which they are supervising operations.

[14] CFA Chief Officer and DSE Chief Officer and/or their delegate.
[15] The approximate equivalent to a predominately fixed wing based, experienced, AAS.

5.4 Training requirements

This section identifies internal training that will be needed to ensure the necessary skill levels needed for the delivery of the VLAT-Project.

The following tables below identify the minimum training requirements for participants, pre deployment and subsequent operational activities during the VLAT Service.

5.4.1 VLAT Operations

The VLAT-Project Operations Program will be responsible for the maintenance of the training program, including identifying training requirements and working with local resources to provide any additional or supplementary training.

Table 7 Schedule of DSE and SAU training modules for VLAT service provider.

Module No	Comments	Provider
VLAT TRG – 1 Basic Wildfire Awareness (DSE)	The course provides participants with an awareness of wildfire behaviour, wildfire suppression techniques, safety and survival in a wildfire situation and the use of simple strategies and tactics for attacking a small wildfire.	DSE
VLAT TRG – 2 Induction for Overseas and interstate personnel.(DSE)	This course is intended as an induction package for international and interstate fire fighters and incident management personnel assisting with wildfire response in the State of Victoria.	DSE
VLAT TRG – 3 SAU Induction & Briefing. (SAU)	This session identifies the role and responsibilities of the SAU within the State of Victoria and the relationship with the key stakeholders, DSE & CFA. The module will provide an overview and develop awareness of the operating systems, protocols and procedures for aerial fire fighting operations.	SAU
VLAT TRG – 4 Air Attack Strategies and Tactics (SAU)	The course provides detailed information for the VLAT aircrew with an awareness of wildfire suppression techniques in a wildfire situation and the use of simple strategies and tactics for aerial attack of wildfires.	SAU
VLAT TRG – 5 Agency Lead Plane Air Attack Supervisor Training (SAU)	Aircrew of the VLAT participate in the formal theory, ground school and flight training scenarios for agency AASs undertaking the L-AAS role.	SAU
VLAT TRG – 6 Agency Recurrency Programs. (DSE)	Agency recurrency programs provide the opportunity to attend the formal sanctioned forums that will develop and enhance procedural and operational learning and development for the VLAT-Project participants.	DSE

Provisions: NIL

.

5.4.2 Lead plane Air Attack Supervisor

The VLAT-Project Operations Program will be responsible for the development and maintenance of a training module for the L-AAS.

The L-AAS Module is to ensure the safe and effective integration of BOM 391 into the standard flight operations conducted in Victoria. The training module has been developed by the SAU. The module combines a discrete theory session and comprehensive ground school prior to conducting a number of orientation, training and assessment flights.

The VLAT-Project Operations Program will monitor, review and amend the training module were and when necessary to reflect input and advice. The "training program" will identify training requirements and continue working with local resources to provide any additional or supplementary training.

The intention of the training program is to conduct a minimum of three programs which is inclusive of participants from interstate.

Table 8 Indicative training schedule and modules for lead plane air attack supervisors.

Module No	Comments	Provider
L-AAS TRG – 1 AIIMS Accreditation Air Attack Supervisor	Air Attack Supervisors are to be an Authorised person.	Agency Pre-Phase
L-AAS TRG – 2 Operational Experience	Participants must have a **non-**provisional accreditation; and considerable experience supervising SEATS dropping fire retardant; and demonstrated considerable experience supervising fire bombing operations from fixed wing aircraft	Agency Pre-Phase
L-AAS TRG – 3 Air Attack Strategies and Tactics (DSE)	The course provides a review for the L-AAS with an awareness of wildfire suppression techniques in a wildfire situation and the use of simple strategies and tactics for aerial attack of wildfires.	SAU
LAAS TRG – 4 VLAT Project Operations Lead Plane & VLAT Briefings	The module combines a discrete theory session which contains key information and overviews of the implementation of the lead plane and VLAT. Key components are Standard Operating Procedures and Safety.	SAU
LAAS TRG – 5 Lead Plane & VLAT Ground School	Potential L-AAS participate in a number of "dirt dance " ground school scenarios where operational flights are planned and conducted using a number of resources.	SAU
LAAS TRG – 6 Lead Plane & VLAT Flight operations	Potential L-AAS participate in a number of operational flight operations where they undertake a number of roles essential to integrating the lead plane and VLAT into standard flight operations within an incident.	SAU

Provisions: NIL

5.4.3 Avalon Airbase personnel

All personnel who participate in the provision of support for Avalon Airbase shall be trained and authorised to operate in the various roles and positions that have been identified.

Table 9 outlines the minimum requirements for the roles and positions identified. The SAU will conduct additional and further training for personnel for specific components associated with the operation of the infrastructure and resources to support the VLAT Service.

Table 9 Schedule of SAU & Agency training modules.

Module No	Comments	Provider
Avalon TRG – 1 Basic Wildfire Awareness (DSE)	The course provides participants with an awareness of wildfire behaviour, wildfire suppression techniques, safety and survival in a wildfire situation and the use of simple strategies and tactics for attacking a small wildfire.	Agency Pre-phase
Avalon TRG – 1 AIIMS Accreditation	The roles identified to operate and support Avalon Airbase are roles which are aligned specifically to roles sanctioned within the Aircraft Unit AIIMS. Only Authorised personnel will be engaged for the identified roles.	Agency Pre-Phase
Avalon TRG – 2 Working Safely Around VLATs	The module provides participants with an awareness of the important safety features whilst working around all fixed wing bombers and has specific components relating to the working procedures around the VLAT. The module is incorporated into **Avalon TRG – 3**.	SAU
Avalon TRG – 3 VLAT Bomber Loading.	The module provides participants with the skills and knowledge to provide ground support and management of infrastructure for loading the VLAT. The module is incorporated into **Avalon TRG – 2**.	SAU
Avalon TRG – 4 Avalon Retardant Mixer	The module provides participants with the skills and knowledge to provide ground support and management of infrastructure for loading the VLAT using the VLAT Service provider's retardant batch mixer.	VLAT Service

Provisions: NIL

5.4.4 Agency personnel

The VLAT-Project Communications and Media Program will be responsible for the delivery of key information to Agency personnel regarding the VLAT-Project and relevant information.

Operations Program will be responsible for the maintenance of the training program, including identifying training requirements and working with local resources to provide any additional or supplementary training.

Table 10 Indicative delivery formats for VLAT-Project information.

Module No	Comments	Provider
Agency TRG – 1 VLAT-Project Briefing Note.	The VLAT-Project is to develop a Briefing Note for the Agencies which provide general but accurate information which relates to the implementation of the VLAT-Project.	VLAT-Project Communications and Media Program
Agency TRG – 2 VLAT Information Sheets	The VLAT-Project is to develop a VLAT Fact Sheet for the Agencies which provide general but accurate information which relates to the implementation of the VLAT-Project.	VLAT-Project Communications and Media Program
Agency TRG – 3 SAU Web page	Access will be provided on the SAU web page to a number of key documents which relate to the operational management of the VLAT Service and provides clear and accurate information.	VLAT-Project Communications and Media Program
Agency TRG – 4 VLAT-Project Briefing Agency Regions/Areas	The VLAT-Project undertakes a series of information briefings for Agency personnel which provides clear and accurate information relating to the operational management of the VLAT Service and provides a forum for key incident management personnel to discuss the processes and procedures for the operation of the VLAT.	VLAT-Project Communications and Media Program

Provisions: In the absence of a VLAT-Project Communications and Media Program the SAU will provide adequate and suitable information and delivery processes to accommodate the information dissemination.

5.6 Preparedness levels

5.6.1 VLAT aircraft readiness

Requirement includes and not limited to BOM 391, BDG 393, aircrew retardant mixing personnel, refuelling and engineering support.

Daily Standard Hours Absolute Availability

State Aircraft Fleet response arrangements during the fire season apply as follows:

BOM 391

- **30 minute requirement applies between 1000 and 1800 hours** (Eastern Summer Time); or between 0900 and 1700 hours (Eastern Standard Time), after daylight saving finishes.
- during **other daylight hours (**Daylight - 1000, 1800 - Dark.) the aircraft is to remain reasonably **available for deployment** (generally about 30 minutes notice), and the pilot must remain contactable and able to fly.
- on declared days of Total Fire Ban, the **15 minute requirement applies between 0900 and 1900 hours** (Eastern Summer Time).

BDG 393

- **15 minute requirement applies between 1000 and 1800 hours** (Eastern Summer Time); or between 0900 and 1700 hours (Eastern Standard Time), after daylight saving finishes
- during **other daylight hours (**Daylight - 1000, 1800 - Dark.) the aircraft is to remain reasonably **available for deployment** (generally about 30 minutes notice), and the pilot must remain contactable and able to fly.
- on declared days of Total Fire Ban, the **15 minute requirement applies between 0900 and 1900 hours** (Eastern Summer Time)

For further information and details refer to ***Attachment 14. Preparedness Plan.***

5.6.2 Agency personnel

Requirement includes and not limited to VLAT Operations Coordinator, Airbase Coordinator, Management Support and the Lead plane Air Attack Supervisor.

Daily Standard Hours Absolute Availability

Agency personnel response arrangements during the VLAT Service period apply as follows:

- **15 minute requirement applies between 1000 and 1800 hours** (Eastern Summer Time); or between 0900 and 1700 hours (Eastern Standard Time), after daylight saving finishes.
- during **other daylight hour**s (Daylight - 1000, 1800 - Dark.) personnel are to remain reasonably **available for deployment** (generally about 30 minutes notice), and must remain contactable.
- on declared days of Total Fire Ban, the **15 minute requirement applies between 0900 and 1900 hours** (Eastern Summer Time)

For further information and details refer to ***Attachment 14. Preparedness Plan.***

6.0 Decision making matrix

6.1 Process

Identification of Opportunity for Potential Use

- Normal request process (IC request via chain of command to SDO).
- SDO request for deployment after consultation with Area Controller.
- State Fire Controller request for deployment after consultation with Area Controller.

Deployment of the VLAT must be approved by the State Fire Controller (or Delegate) where appointed or by agreement between Chief Officers of CFA and DSE.

If any check box is not ticked (item not accomplished), proceeding with the dispatch must only proceed after being satisfied that safety of the operation will not be compromised.

A tick inside the box means all facets of the required statement are accomplished.

An N/A placed in the box indicates that this does not apply to this specific operation but a comment is to why N/A must be provided.

All required personnel in VLAT operations, shall meet the personnel qualifications and training specified in VLAT Operations Program Manual.

6.2 Deployment priority

Deployment priority to assist in the protection of:

a) Life/property
b) Assets
c) Forests

6.3 Strategy priority

Strategy priority predicated on deployment priority:

a) Initial attack support.
    a. Direct Attack
    b. Indirect Attack – (i.e. laying retardant behind a backburn or beside housing to reduce fire intensity)
b) Extended attack. (failure of initial attack, sustained operations)
    a. Direct Attack
    b. Indirect Attack

6.3 Evaluation and effectiveness determination priority

a) Forest
b) Woodland
c) Grassland
d) Interface

6.4 Decision Process for Bomber 391

Decision Process for Deployment

Table 11 Formal matrix for decision making process.

		Check	Comments
Deployment Decision			
1	i IC **request** via chain of command to State Duty Officer *or* ii SDO **request** for deployment after consultation with Field Managers or Area Operations Controller (when appointed) *or* iii State Fire Controller or Chief Officer **request** for deployment after consultation with Field Managers or Area Operations Controller (when appointed).		
2	Requested use falls within target and strategy priority parameters (see above).		
3	**Approval** from State Fire Controller or both agencies obtained.		
State Agency Commander/State Duty Officer			
4	IMT **Strategy** (or Incident Shift Plan for Extended Attack) identifying use of VLAT prepared in consultation with incident AOM.		
5	Capacity to **work safely** including maintaining firefighter and civilian safety in forest and interface environments and avoid dropping suppressant/retardant on houses is understood.		
6	Suppressant / retardant type stated and **approved** by IC and SFC.		
Mission Checklist (State AirDesk)			
7	AIIMS Air Operations Unit **structure established** for duration of flight/s and relevant roles filled by authorised personnel.		
8	Clear Communications Plan **prepared and communicated** to VLAT Coordinator - a Fire CTAF is established.		
9	Presence of on-site incident AAS **confirmed**.		
10	Clear communications with on-ground resources **in place** with the AAS.		
11	Weather briefing obtained, VMC conditions **can be maintained** during flight and/or at least during drop runs.		
12	Flight following and Agency Aeronautical Procedures **are established**.		
VLAT Coordinator			
13	Avalon take off and Incident on-site wind conditions **are within** VLAT and Lead plane parameters.		
14	Approval of proposed mission **obtained** from VLAT pilot and Lead plane pilot.		

Signature approval block			
15	**State Fire Controller**	Name	Date
16	**State Duty Officer**	Name	Date
17	**State Duty Officer.**	Name	Date

Provisions: NIL.

Refer also to ***Attachment 15. Decision making process.***

6.5 BOM 391 Requests

Refer also to **Section 6.4.**

6.5.2 Assignment

BOM 391 is assigned to the incident for the day of mission it returns to State conclusion of daily flight operations. Any continued operational use for subsequent daily operation requires a formal request the through established protocols in **Section 6.4.**

6.5.3 Release

The Incident must ensure that aircraft are released from operations as soon as practicable. The Incident must ensure that the State AirDesk is notified ***prior*** to the release of BOM 391 and BDG 393.

6.5.4 Re-deployment

Redeployment of BOM 391 and BDG 393 engaged in fire suppression operations to fire suppression operations in a different location is treated as an initial dispatch and requires approval from the State Fire Controller.

6.6 Inter-state request protocols

Reserved.

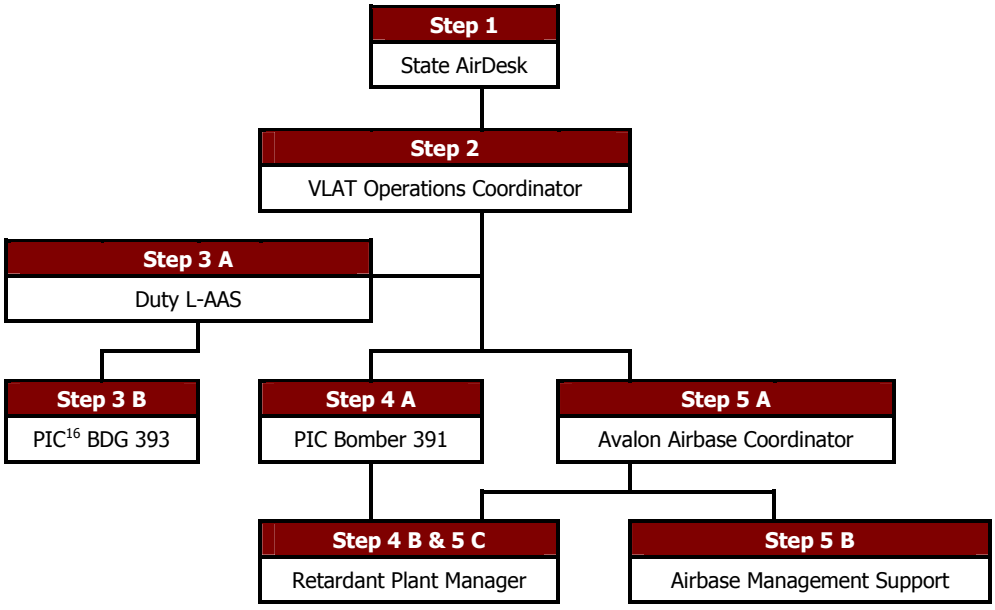
6.7 Dispatch sequence & coordination

6.7.1 Authority

Dispatch coordination has been assigned to the State AirDesk, refer to **Section 6.4** also.

6.7.2 Priority sequence

Figure 4 Dispatch notification process BOM 391, BDG 393 and support services.



Provisions:

1. Notification is provided by State AirDesk to VLAT Operations Coordinator, communication provides advice of Incident and dispatch criteria details.
2. VLAT Coordinator initiates dispatch providing information and hard copy of Incident Dispatch Summary Information Form, with specific details.

3A. Primary advice supplied to L-AAS and coordinates with PIC Birddog 393.

3B. PIC Birddog 393 actions standard preparedness response.

4A. VLAT Coordinator initiates secondary advice to PIC Bomber 391 for action.

4B. PIC or delegate of Bomber 391 confirms dispatch requirements with Retardant Plant Manager.

5A. Avalon Airbase Coordinator is advised of dispatch and actions standard preparedness response.

5B. Management Support actions standard preparedness response in conjunction with Retardant Plant Manager

The process outlined above does not preclude the options of multiple or opportune notifications to any members of the respective operational functions.

For further information and details refer to ***Attachment 16. Incident Dispatch Summary Form.***

[16] Pilot in Command.

7.0 Offload & jettison plan

The establishment of multiple retardant jettison areas to accommodate BOM 391 when it has a restriction on performance and ability to land is important.

The VLAT Operations Program in consultation with the management of Avalon Airport has determined and agreed to acceptable jettison site locations for the planned and emergency releases of retardant and other products.

The location of the jettison sites are on aerial maps at Avalon Airbase and include the latitude and longitude of the sites both of which are contained within the Avalon Airbase Management Plan.

7.1 Static offload provisions

In the event of a cancellation of a mission after being loaded with either retardant, water, super absorbent polymer or water injected with foam concentrate while BOM 391 is stationary on the ramp or is in the processes of a taxi to the take off position an off load plan and facility has been developed.

7.1.1 Water

The expected volume of water to be offloaded will be approximately 45,000 litres.

In the event that the payload is not recycled water it will be recirculated back into the nominated and reserved water cells (ISO-containers) for future use. If the payload is recycled water it will be discharged into the storm water reservoir for further dilution and to be used as aircraft wash down water.

7.1.3 Retardant and other suppressants

One of the water cells Number 2, consisting of two pods (Iso-containers) has been nominated as the emergency "retardant offload storage receptacles". Initially the retardant is to be returned to the retardant holding tanks integrated into the retardant plant. In the event additional retardant offload is required the volume of water that is contained within the nominated water cell will be distributed to adjoining water cells to accommodate the transfer of the volume.

7.1.3 Other suppressants

Water cell Number 2, consisting of two pods (Iso-containers) is identified as the "product[17] offload storage receptacles". The product will be redistributed and at a later date incorporated in flight operations and evaluations pursuant to the requirements of the Aircraft Delivery System Program SAU.

7.2 Planned jettison airborne

Provision has been made in the event that a cancellation could occur of a mission after BOM 391 takes off loaded with retardant, water, super absorbent polymer or water injected with foam concentrate.

Four sites have been identified which allows BOM 391 to safely discharge the load that it may be carrying. The planned jettison is subject to provisions and the jettison zones used will be dictated by the product carried.

The key requirements excluding water and provisional on wind speed and direction of the jettison plan are to

Drop at a height greater than 1000 feet above ground level (AGL) and
Regulate the flow of the drop by selecting a coverage level ≤ 2.

The lower coverage level may require BOM 391 to conduct several parrell drops to discharge the complete load.

[17] Water injected with foam concentrate and super absorbent polymer.

7.2.2 Water

All loads of water, reclaimed and recycled are to be discharged over the plantations and shelter belt tree plantings established by Avalon airport management within the land managed and owned by Avalon Airport. Jettison Zone D.

7.2.3 Retardant and other suppressants

All loads of retardant and other suppressants can be dropped in jettison zones A, B, C & D.

7.3 Emergency jettison airborne

In the event of an incomplete take off, several areas have been identified for the discharge of the load; the areas identified include the planned jettison zones and non utilised areas of cleared land with in the airport environs.

Discharge of the load in onto the airport runway in emergency conditions will be avoided in where practical.

7.3.1 Incomplete take off

Discharge timing and location of the discharge will be at the discretion of the PIC of BOM 391. All of the aircrew for BOM 391, Avalon Airport management and Avalon Tower have been briefed and understand the and requirements of the "emergency jettison airborne" provisions.

For further information and details refer to ***Attachment 17. Offload and Jettison Management Plan.***

8.0 Operational flights

8.1 General

8.1.1 Initial mission instructions

Standard procedures will be consistent with the State Aircraft Unit Operational Procedures.

8.1.2 Departure

On departure every attempt will be made by the aircrew to ensure a "Sterile Cockpit". Procedures by which the crew of the BOM 391 and BDG 393 do not conduct any conversations between each other, with other aircraft, or with any ground activity that are not directly related to flying the aircraft in a safe manner.

Departure calls from Avalon Airbase are to be made to the State AirDesk at the completion of Air Services Australia (ASA) reporting processes.

8.1.3 Flight following

Mandatory requirement where by the method(s) and process(s) through which the BOM 391 and BDG 393 will be tracked from departure point to destination to providing information of aircraft location and condition with a reasonable degree of certainty. Each aircraft will be responsible for conducting flight following independently and the flight following is to be conducted with the State AirDesk.

8.2 Temporary Restricted Airspace (TRA)

REFER to State Aircraft Unit Procedure AM 1 . 0 5 Management of Aircraft at Incidents.

8.2.1 Specific TRA

REFER to State Aircraft Unit Procedure AM 1 . 0 5 Management of Aircraft at Incidents.

8.3 Notice to all Airman (NOTAM)

8.3.1 Standard NOTAM

Air Services Australia (ASA) at the commencement of each fire season publish a generic Fire NOTAM which advises all pilots of the potential of aircraft activity associated with firefighting operations.

8.3.2 Specific NOTAM

ASA will issue an incident specific Fire NOTAM, upon request of the State AirDesk, for a specific incident(s) where it is felt a higher degree of awareness of fire / aircraft activity is required when BOM 391 may be operating.

A request for the implementation of an incident specific Fire NOTAM, shall be made by the incident Air Operations Manager or Aircraft Officer to the State AirDesk, after consultation with the Air Attack Supervisor and pilots.

Requests for the implementation of an incident specific Fire NOTAM to ASA shall only be made by the State AirDesk.

Declaration of a Fire NOTAM in the vicinity of a fire does not prevent itinerant aircraft from potentially conflicting with fire aircraft.

8.4 Drop zone awareness

BOM 391 can carry 42,000 litres of retardant, which allows it to provide a retardant line potentially 20m wide and 700 metres long at coverage Level 8.

To ensure accurate placement of the drop, ensure that ground crews are clear and identify potential hazards, BOM 391 will be supervised by the Incident AAS and L-AAS in the lead plane which will fly over the intended drop zone prior to the drop.

8.4.1 Preliminary advice

The Incident AAS is responsible for communication with the fire ground. Where possible ground crews on the fire line will be advised by radio before impending drops to give them adequate time to coordinate and exit the intended drop area.

For further information on firebombing safety, please refer the SAU "Aircraft Safety" booklet.

8.4.2 Drop zone safety

Ground crews should not be present and avoid the drop zone where practical. In the unlikely event that anyone is present in the drop zone they are to employ the standard SAU drop zone procedures.

Ground crews should be aware that either the drop or the turbulence caused by the aircraft may cause trees or branches to fall and the duration of the drop will be greater than normally uncounted by current fire bombing aircraft.

8.5 Standard operating procedures

For further information and details refer to ***Attachment 18. Standard Operating Procedures.***

8.6 Mission scenarios

The VLAT-project Operational Program includes a series of pre-determined flight missions to fulfil the requirements of the VLAT–Project.

Incorporated into this section is the provision for the Evaluation and Effectiveness Program.

8.6.1 VLAT aircrew proficiency flights

Table 12 Schedule of proficiency flights VLAT aircrew.

Mission No.	Objectives	Operating Environment	Retardant / Suppressant	C/Level	Comments
V-MS 1	Flights undertaken pursuant to VLAT Aircrew training and proficiency requirements	Var.	Water	Var.	Include recurrency training for Lead plane Air Attack Supervisor (L-AAS) and Air Attack Supervisors (AAS). Incorporate provisions of the VLAT-Project Evaluation and Effectiveness Program (VLAT-Project EEP). Incorporate capability and performance flights to fulfil the requirements of the VLAT-Project Communications and Media Plan.

Provisions: NIL

8.6.2 Agency training program

Table 13 Schedule of Agency training flights.

Mission No.	Objectives	Operating Environment	Retardant / Suppressant	C/Level	Comments
AT-MS 1	Formal planning and management program for Agency personnel	Var.	Water	**>** 4 **>** 8.	As part of the VLAT-Project Operations Program (VLAT-Project OP) and VLAT-Project EEP specific flights undertaken to assist in determining operational flight performance and limitations and Incorporate capability and performance flights to fulfil the requirements of the VLAT-Project Communications and Media Plan.

Provisions: NIL

8.6.3 Operational evaluation flights

Table 14 Indicative schedule of essential operational evaluation flights.

Mission No.	Objectives	Operating Environment	Retardant / Suppressant	C/Level	Comments
O- MS 1	Determine the capability of retardant penetration in eucalypt vegetation	Forested area	Retardant	>8	Determine if the primary application of VLAT aircraft has operational capability in South Eastern Australia.
O-MS 2	Determine the impact of high volume drops in interface scenarios	Replicated interface	Water	>4	Asses the impact on assets and infrastructure including vegetation Establish the suitability of VLAT aircraft in the interface areas.
O-MS 3	Determine retardant penetration capability in grassland	Grassland	Retardant	> 4	
O-MS 4	Direct attack	Grassland	Water	>4	Live fire exercise stubble/grass.

Provisions: NIL

8.6.4 Suppression flight operations

Table 15 Indicative essential flight operations.

Mission No.	Objectives	Operating Environment	Retardant / Suppressant	C/Level	Comments
S- MS 1	Initial attack Extended attack Parrell attack	Remote forest	Retardant	>8	Retardant line construction
S-MS 2	Initial attack Extended attack Parrell attack Direct attack	Grassland	Retardant	>6	Retardant line construction
S-MS 3		Remote forest	SAP/GEL	>8	
S-MS 4		Grassland	SAP/Gel	>6	
S-MS 5		Interface	Water	>4	Knock down capacity disjunct boundary Buying time for ground resources.
S-MS 6		Interface	SAP/GEL	>4	

Provisions: No restrictions.

8.6.5 Evaluation trial flights

Subject to the formal VLAT-Project Operations Program operational performance assessment, aerial supervision training requirements and the VLAT-Project Evaluation and Effectiveness Program planning and management schedule which includes all flights undertaken pursuant to proficiency training and requirements.

Table 16 Schedule of planned evaluation flight operations.

Mission No.	Objectives	Operating Environment	Retardant / Suppressant	C/Level	Comments
E- MS 1	Subject to the formal VLAT-Project EEP planning and management program,	Forest	Retardant	>8	Refer to Evaluation & Effectiveness Program
E-MS 2		Grassland	Retardant	>4	
E-MS 3		Forest	SAP/GEL	>8	
E-MS 4		Grassland	SAP/Gel	>4	
E-MS 5		Interface	Water	>4	
E-MS 6		Interface	SAP/GEL	>4	

Provisions: Subject to coordination and approval through the VLAT–Project Evaluation and Effectiveness Program.

8.6.6 Inter-State suppression flights

See Section **13.2.3 Suppression flight operations**.

8.7 Operational capabilities

To assist with over all management and operation use of BOM 391 several "operational capabilities" have been developed to provide guidance and assistance to ensure operational effectiveness in fire bombing operations.

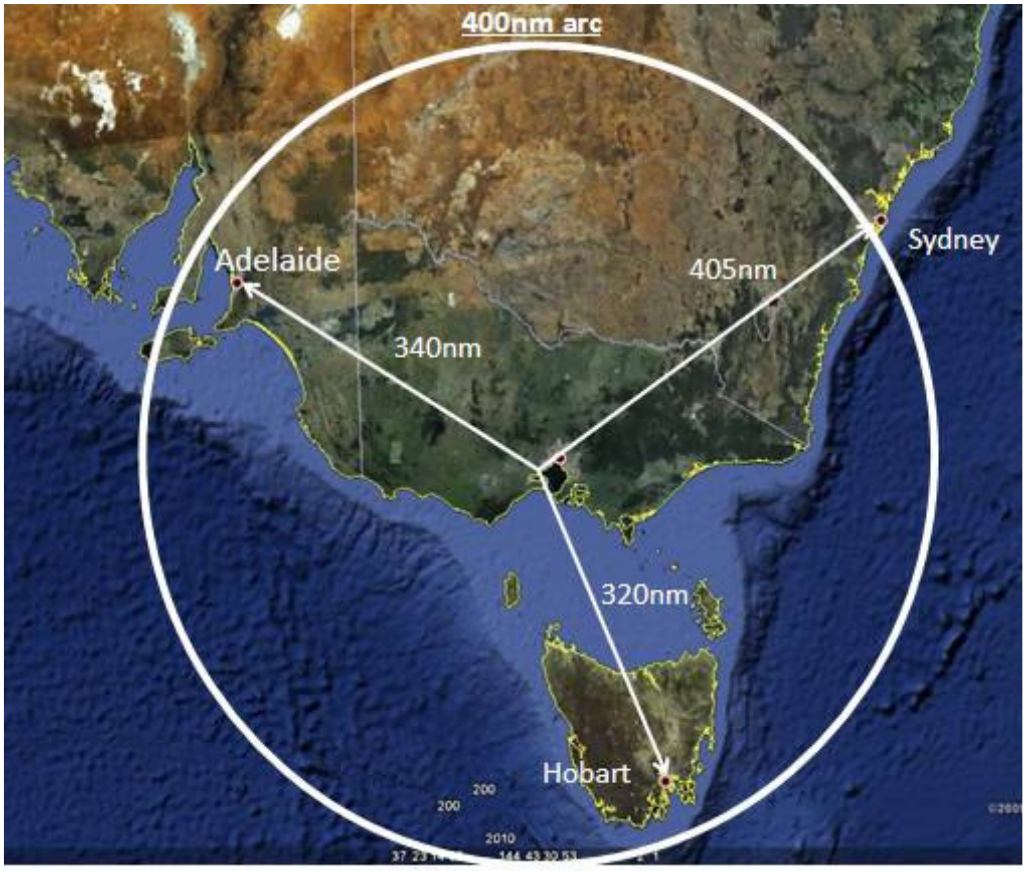
The capabilities are scenarios which are subject to an initial load of retardant or suppressant as a first load capability from Avalon Airbase the NOB.

The performance and operation of BOM 391 in Capability 1, 2 & 3 are designed around certain operating and endurance parameters and specifies the first load dispatched to the incident as retardant:

- ≤ 400 nautical mile radius endurance
- 30 min operating endurance within the F-CTAF for the incident and
- 42,000 litres retardant.

Retardant is the heaviest specific gravity product from the group of retardants and suppressants that will be utilised.

Figure 5 Initial response zone of a ≤ 400 nautical mile radius from Avalon Airbase.



Source Google Earth

The endurance parameters for Capability 2 & 3 remain at operating within the ≤ 400 nautical mile radius to allow a return to at the NOB or and an **Alterative** in the event the inter-State TOB does not become fully operational during the initial period of the wildfire incident.

Regardless of the mission outlined in **Sections 8.3.1** to **8.3.3** BOM 391 has the ability to alternate between the capabilities listed subject to being operated with in the ≤ 400 Nautical mile radiuses.

8.7.1 Capability 1

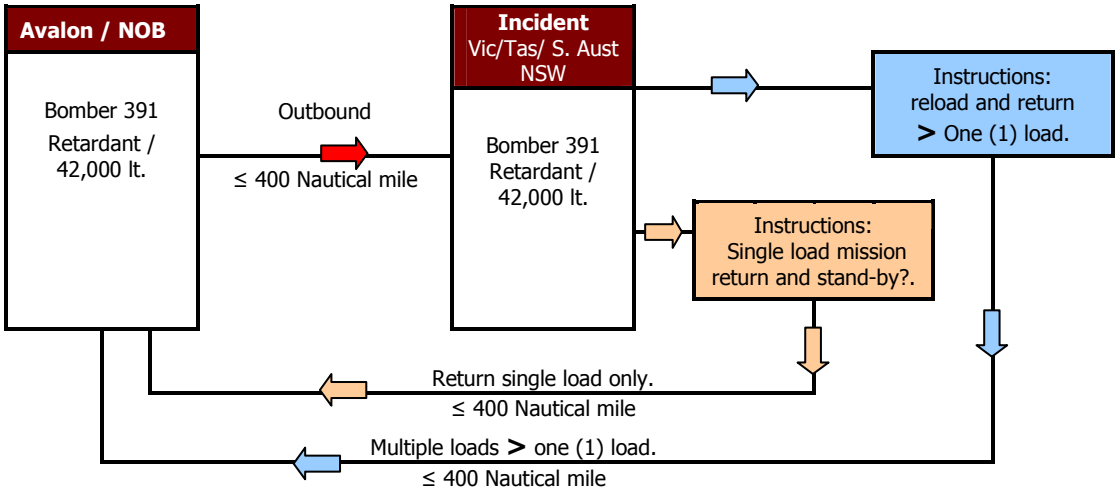
The capability scenario identifies an initial dispatch from Avalon Airbase to an incident located within the ≤ 400 nautical mile radius identified for response.

The scenario shows a mission outline which includes a single load dispatch to the wildfire incident and return to Avalon Airbase.

It also identifies the capability to respond with additional loads as required for the Incident operating out of Avalon Airbase.

The capability scenario includes the State of Tasmania. Avalon Airbase is nominated as the operational base to support fire bombing operations in Tasmania due to the proximity of Avalon and the limitations of Hobart Airport.

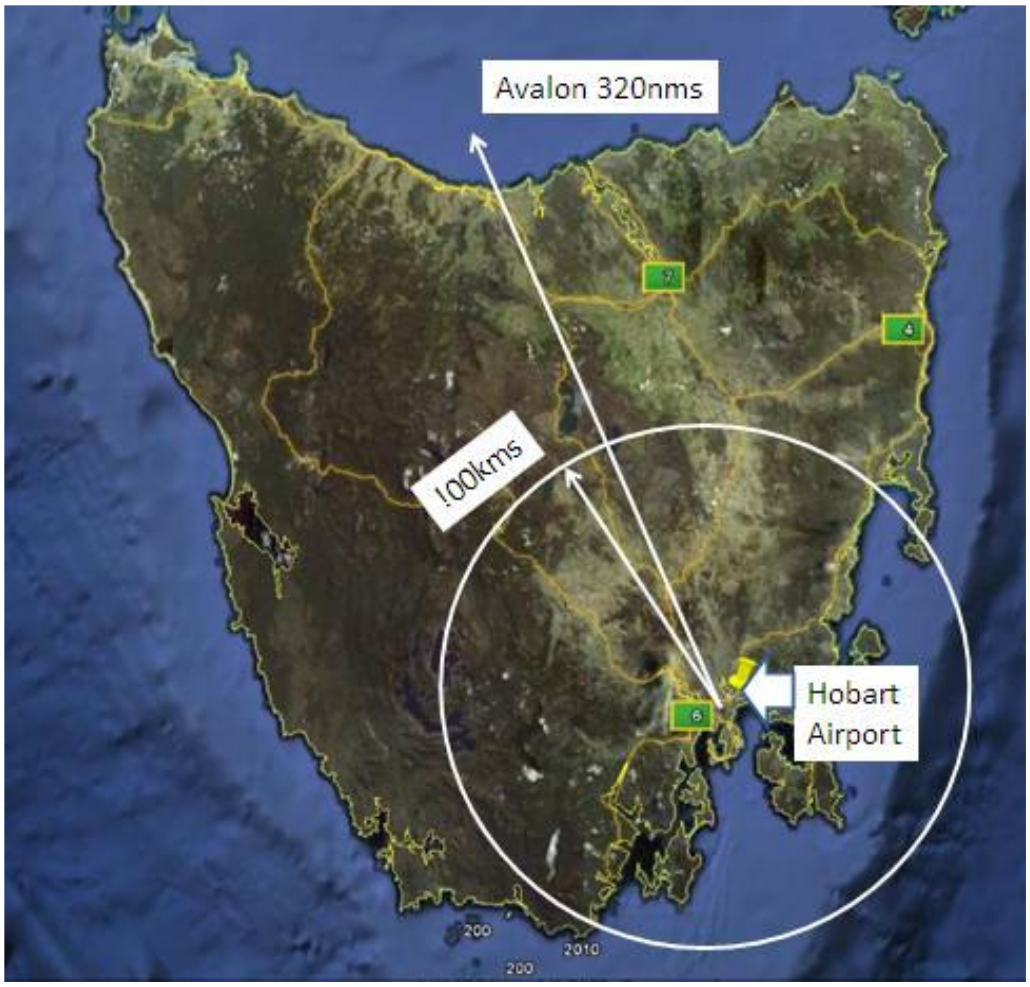
Figure 6 Action process Capability Scenario 1.



Provisions:

1. BOM 391 departs Avalon- 42,000 lt. retardant.
2. Wildfire incident is located ≤ 400 nautical miles from Avalon
3. Instructions from Incident are to reload and return with retardant. ** See Provision 7.*
4. Bulk and continuous reloading capability provided from Avalon Airbase NOB.
5. Fire bombing operations continue using Avalon Airbase for reloading option
6. Bomber 391 continues to reload and return to wildfire incident.
7. Instructions are to return and stand by at Avalon Airbase NOB.
8. Completion of last drop BOM 391 returns to Avalon for wash down.

Figure 7 Initial response zone coverage of Tasmania.



Source Google Earth

8.7.2 Capability 2

Table below shows an enhanced operational capability for BOM 391 when deployed to an inter-State wildfire incident.

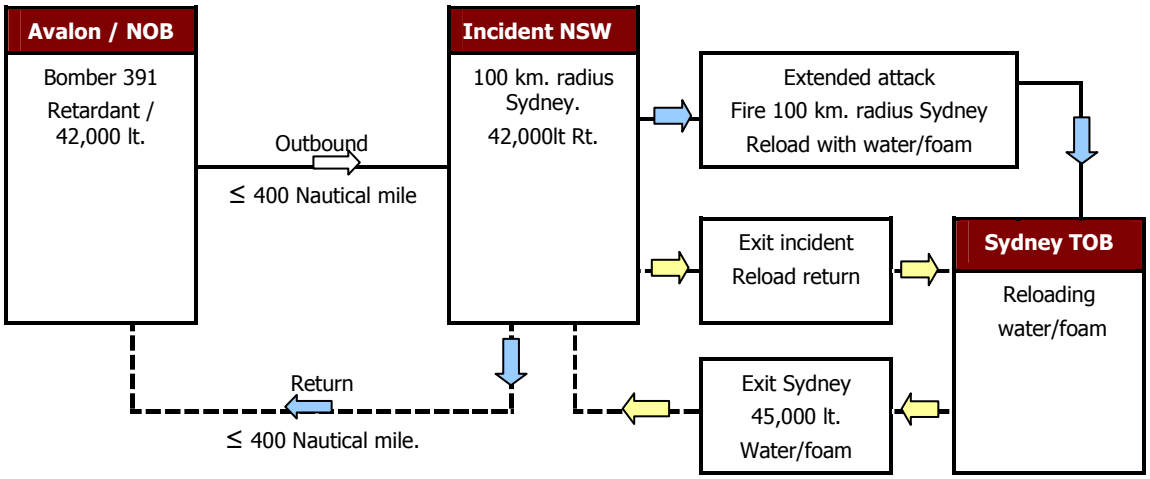
The capability scenario identifies an initial dispatch from Avalon Airbase to an incident located within the ≤ 400 nautical mile radius identified for response.

The example used in Capability 2 and 3 is within the ≤ 400 nautical mile radius, but located inter-State, the initial example used is New South Wales.

The scenario shows a mission outline which includes a single load of retardant dispatch out of Avalon Airbase to the wildfire incident with a subsequent instruction to reload and return to the incident operating out of a Sydney TOB using either a retardant or suppressant.

The scenario includes the ability to return to Avalon Airbase for additional loads of retardant if operations can not be sustained in the early hours of the dispatch or establishment of the Sydney TOB.

Figure 8 Action process for Capability Scenario2.



Provisions:

1. Bomber 391 departs Avalon- 42,000 lt. retardant.
2. Wildfire incident is located ≤ 400 nautical miles from Avalon.
3. Wildfire incident is situated within 100 kilometres of Sydney TOB.
4. Bulk and continuous reloading capability established at Sydney TOB.
5. Bomber 391 is requested to reload and return to incident operating out of Sydney TOB.
6. Fire bombing operations continue using water or water injected with foam concentrate.
7. Bomber 391 continues to reload and return to wildfire incident.
8. Completion of last drop BOM 391 returns to Avalon for wash down. *See Provision 9.
9. * Remain at Sydney TOB.

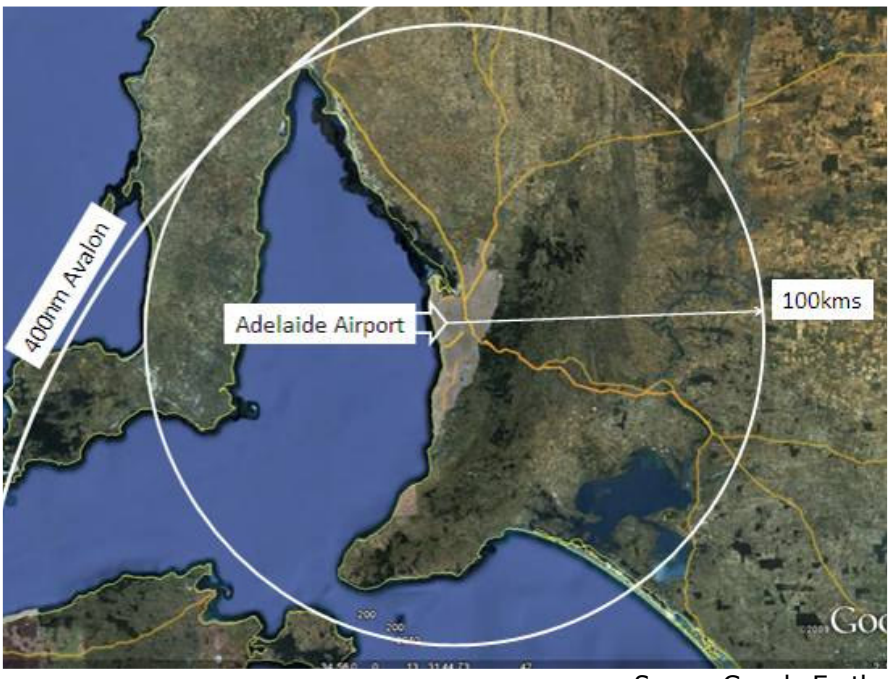
Figure 9 Initial response zone coverage of "Sydney Basin" zone.

Source Google Earth

8.7.3 Capability 3

For deployment to South Australia refer to Section 13.3.2 and substitute ***Incident NSW*** and ***Sydney TOB*** with ***Incident S. Aust*** and ***Adelaide TOB.***

Figure 10 Initial response zone coverage of "Adelaide Hills" zone.



Source Google Earth

9.0 Operational bases Victoria

9.1 Nominated Operational Base (NOB) Victoria

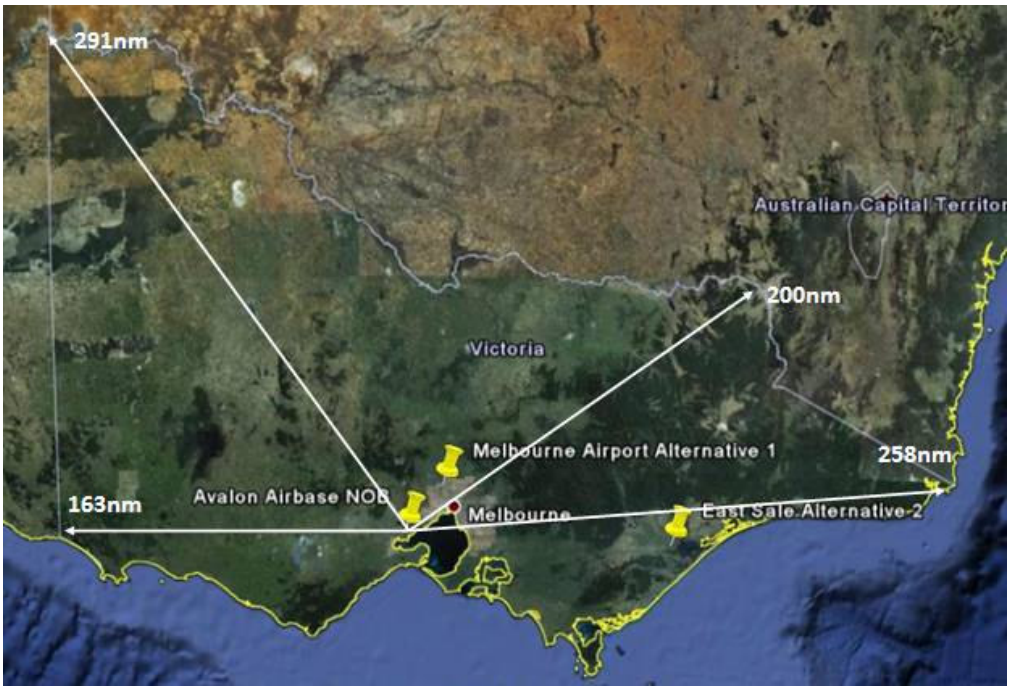
The Nominated Operational Base is Avalon airport, near Geelong, Victoria.

Table 17 NOB Avalon Airport.

Alternative	RWY/Length/ft.	PCN/Flex	Elevation/ft.	Latitude	Longitude
Avalon	10000	73	35	38 02.4 S.	144 28.2 E.

Provisions: NIL

Figure 11 Indicative distances for dispatch within Victoria from Avalon Airport.



Source Google Earth

9.2 Temporary Operational Base (TOB) Victoria

No TOBs have been identified or planned for Victoria al flight operations are to be conducted from Avalon Airbase.

9.3 Alternatives Victoria

Table 18 List of alternative airports Victoria.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Melbourne	12,000	79	434	37 40.4 S.	144 50.6 E.
East Sale	8000	47	23	38 05.9 S.	147 09.0 E.

Provisions:

1. Alternative landing and take off airports have been identified and no reloading facility or support is available at these airports.

10.0 Operational bases interstate

Although based in Victoria, BOM 391 will still be part of a national arrangement.

There maybe a requirement for the VLAT Service provider to temporarily base contracted aircraft at any suitable location in Australia; or to establish a TOB at a different location from that originally specified.

Operation of BOM 391 is subject to the following provisions:

- ≤ 400 nautical mile radius endurance
- 30 min operating endurance within the F-CTAF for the incident and
- 42,000 litres retardant.

10.1 Suitable airports for DC10 operations

The following airports have been identified as suitable for the BOM 391 take off with a load of retardant and enough fuel to carry out a mission within a 400 NM radius and return on a 35 degree Celsius day.

Figure 12 Indicates the location of potential TOBs within Australia.

Source Google Earth

10.2 South Australia

10.2.1 Potential TOB

Table 19 Potential TOB South Australia.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Adelaide	10100	72D	20	34 56.7 S.	138 31.8 E.

Provisions: Take off provisions for Adelaide Airport is subject to aircraft weight, 30,000 lbs. fuel and 33,000 litres of retardant.

10.2.2Alternative

Table 20 Alternative TOBs for South Australia.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Edinburgh	8400	42	67	34 42.2 S.	138 37.2 E.

Provisions: Edinburgh airport is identified but no information is available regarding the access status for non military organisations. South Australian representatives are to provide further information.

10.3 New South Wales

10.3.1 Potential TOB

Table 21 Potential TOBs New South Wales.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Sydney	13000	67	21	33 56.8 S	151 10.6 E
Williamtown	7900	50	31	32 47.7 S	151 50.1 E
Richmond	7000	47	67	33 36.0 S	150 46.8 E

Provisions: Take off provisions for Richmond is subject to aircraft weight, 30000 lbs. fuel and 33000 litres of retardant.

10.3.1 Alternative

Table 22 Alternative TOBs for New South Wales.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Canberra	8800	62	1886	35 18.4 S	149 11.7 E

Provisions: Refer to **Section 10.0**.

10.4 Australian Capital Territory

10.4.1 Potential TOB

Table 23 Potential TOBs Australian Capital Territory.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Canberra	8800	62	1886	35 18.4 S	149 11.7 E

Provisions: Take off provisions for Adelaide Airport is subject to aircraft weight, 30,000 lbs. fuel and 33,000 litres of suppressant.

10.4.2 Alternatives

Table 24 Alternative TOBs for Australian Capital Territory.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Sydney	13000	67	21	33 56.8 S	151 10.6 E
Williamtown	7900	50	31	32 47.7 S	151 50.1 E
Richmond	7000	47	67	33 36.0 S	150 46.8 E

Provisions: Payload and endurance calculations for BOM 391.

10.5 Western Australia

10.5.1 Potential TOB

Table 25 Potential TOBs for Western Australia.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Karratha	7500	53	30	20 42.7 S	116 46.4 E
Learmonth	10000	43	19	22 14.1 S	114 05.3 E
Perth	11300	55	67	31 56.4 S	115 58.0 E

Provisions: Take off provisions for Learmonth Airport is subject to aircraft weight, 30,000 lbs. fuel and 38,000 litres of retardant.

10.5.2 Alternatives

Table 26 Alternative TOBs for Western Australia.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Karratha	7500	53	30	20 42.7 S	116 46.4 E
Learmonth	10000	43	19	22 14.1 S	114 05.3 E
Perth	11300	55	67	31 56.4 S	115 58.0 E

Provisions: Payload and endurance calculations for BOM 391.

10.6 Tasmania

10.6.1 Potential TOB

Table 27 Potential TOB for Tasmania.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
NIL	0	0	0	0	0

Provisions: The runway length and alignment permits take off and landing subject to aircraft weight, minimum fuel load and 30,000 litres of retardant, however the PCN of the ramp areas and taxiways restricts the use of BOM 391.

10.6.2 Alternative

Table 28 Alternative for Tasmania.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Avalon	10000	73	35	38 02.4 S.	144 28.2 E.

Provisions: Refer to **Section 10.0**.

10.7 Queensland

10.7.1 Potential TOB

Table 29 Potential TOBs for Queensland.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Amberley	10000	65	91	27 38.4 S	152 42.7 E
Brisbane	11700	108	13	27 23.0 S	153 07.1 E
Cairns	10500	90	10	16 53.2 S	145 45.3 E
Gold Coast	7700	50	21	28 09.9 S	153 30.3 E
Mackay	6500	55	19	21 10.3 S	149 10.8 E
Proserpine	6800	53	82	20 29.7 S	148 33.1 E
Rockhampton	8600	72	36	23 22.9 S	150 28.5 E
Scherger	10000	46	145	12 37.4 S	142 05.2 E

Provisions: Take off provisions for Scherger Airport is subject to aircraft weight, 30,000 lbs. fuel and 33,000 litres of retardant.

10.7.2 Alternatives

Table 30 Alternatives for Queensland.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Amberley	10000	65	91	27 38.4 S	152 42.7 E
Brisbane	11700	108	13	27 23.0 S	153 07.1 E
Cairns	10500	90	10	16 53.2 S	145 45.3 E
Gold Coast	7700	50	21	28 09.9 S	153 30.3 E
Mackay	6500	55	19	21 10.3 S	149 10.8 E
Proserpine	6800	53	82	20 29.7 S	148 33.1 E
Rockhampton	8600	72	36	23 22.9 S	150 28.5 E
Scherger	10000	46	145	12 37.4 S	142 05.2 E

Provisions: Refer to **Section 10.0**.

10.8 Northern Territory

10.8.1 Potential TOB

Table 31 Potential TOBs for Northern Territory.

Primary	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Alice Springs	8000	60	1789	23 48.4 S	133 54.1 E
Darwin	11000	81	103	12 24.9 S	130 52.6 E
Tindal	9000	71	443	14 31.3 S	132 22.7 E

Provisions: Refer to **Section 10.0**.

10.8.2 Alternatives

Table 32 List of alternatives for Northern Territory.

Alternative	RWY/Length/ft	PCN/Flex	Elevation/ft	Latitude	Longitude
Alice Springs	8000	60	1789	23 48.4 S	133 54.1 E
Darwin	11000	81	103	12 24.9 S	130 52.6 E
Tindal	9000	71	443	14 31.3 S	132 22.7 E

Provisions: Refer to **Section 10.0**.

11.0 Operational hygiene

Refer to:

- Addendum Operational Hygiene - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

Potable and non-potable water will be available at the Nominated Operational Base or Temporary Operational Base for the Contractor's use.

11.1 Retardant

The Contractor will be responsible for aircraft wash down, including provision of appropriate infrastructure and equipment and containment and treatment of run-off.

Refer to:

- Addendum Operational Hygiene - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

11.2 Suppressants

Refer to:

- Addendum Operational Hygiene - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

12.0 Environmental considerations

12.1 Avalon Airtanker Base

Precaution must be taken to contain potential spills while the VLAT operates on the ground. In areas where retardant deliveries are undertaken, aircraft maintenance is performed, or on the tarmac where a loaded VLAT is staged for dispatch, a containment system or barriers should be in place. Spills in these areas will be collected and disposed of by an environmental hazardous waste disposal company.

12.2 Contractor's environmental responsibilities

The Contractor is responsible to

- ensure that all maintenance, fuelling, and flight activities do not cause environmental damage to property or facilities.
- to clean and rehabilitate areas adversely affected by Contractor activities and shall utilise solvents and cleaning agents that are or consistent with safety, health and environmental best practices. Whenever practical and possible biodegradable cleaning agents shall be used.
- for containing, handling and clean-up of fuel, oil, and retardant contamination on airport ramps, retardant sites, parking areas, landing areas, etc., when caused by Contractor aircraft or personnel.

Oil, solvents, parts, engines, etc. shall be stored and utilized in a manner consistent with acceptable safety, health and environmental legislation and best-practice

The Contractor shall immediately report any spill of fuel, hazardous chemical, regulated waste, or hazardous substance to the VLAT Operations Coordinator and spill-reporting authority.

12.2 Refuelling

The Contractor is responsible to ensure that all maintenance, fuelling, and flight activities do not cause environmental damage to property or facilities.

12.3 Retardant

Retardant loading areas must have containment and treatment systems to handle leaks, spills, and/or wash down water used to wash aircraft that may contain metals from the aircraft, fuel, hydraulic fluid, and oils

12.4 Other retardants and suppressants

Additional mixing and pump areas and storage tanks must have containment systems in place if spills or leaks will impact the surrounding airport environment, storm drains, or mineral soil.

12.5 Good neighbour

The SAU has a "good neighbour" policy where by as far as possible, without compromising safety, care must be taken to minimise adverse effects of Agency operations on the public, and in particular, adjacent landholders.

General aircraft noise normally has the greatest potential to be a problem. Consideration will be given to the management of flight paths, take off and landing routes to avoid disturbance. Consideration is also given to working at airports and the needs of other airport users.

12.6 Drop zone management

VLAT firebombing operations should exercise considerable caution when operating around water supplies and watercourses.

13.0 Operational evaluation

Refer to:

- Very Large Airtranker Evaluation – Project Proposal Framework, Gledhill J. Bushfire CRC Australia 2010,
- Very Large Airtanker effectiveness and evaluation plan, Plucinski M. CSIRO Australia. 2010 and
- Addendum Operational Evaluation - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

13.1 Evaluation and effectiveness

Refer to:

- Very Large Airtranker Evaluation – Project Proposal Framework, Gledhill J. Bushfire CRC Australia 2010,
- Very Large Airtanker effectiveness and evaluation plan, Plucinski M. CSIRO Australia. 2010 and
- Addendum Operational Evaluation - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

13.2 Airborne intelligence and data.

Refer to:

- Very Large Airtranker Evaluation – Project Proposal Framework, Gledhill J. Bushfire CRC Australia 2010,
- Very Large Airtanker effectiveness and evaluation plan, Plucinski M. CSIRO Australia. 2010 and
- Addendum Operational Evaluation - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

13.3 Airborne intelligence and data gathering equipment.

Refer to:

- Very Large Airtranker Evaluation – Project Proposal Framework, Gledhill J. Bushfire CRC Australia 2010,
- Very Large Airtanker effectiveness and evaluation plan, Plucinski M. CSIRO Australia. 2010 and
- Addendum Operational Evaluation - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

14.0 References

Air Operations Manual, Department of Sustainability and Environment, Victoria Australia.

Interagency Aerial Supervision Guide- National Interagency Aviation Council. 2009 USA

State Aircraft Unit Procedures 2010 Victoria Australia.

15.0 Acknowledgements

The State Aircraft Unit Victoria wishes recognise and thank the following people and organisations significant assistance in providing support and cooperation during the development of the VLAT-Project Operations Program process.

With out their assistance the process would not have been a success.

A special note of appreciation and gratitude is expressed to Mr. Mike Padilla and Mr. Bill Payne for their assistance and support during the development of the operations program and the many discussions and generosity prior to the development of the 2010 State of Victoria, Very Large Airtanker Project-Operations Program.

Alder	Richard	NAFC Australia
Boschen	Rob	AG Fire
Briggs	Graeme	State Aircraft Unit Victoria
Crothers	Sam	RFS NSW
Coward	Bob	AG Fire / 10 Tanker
Fisher	Scott	United States Forest Service
Flock	Lyn	AG Fire / 10 Tanker
Glunt	Tom	Cal Fire CA. USA (Ret.)
Hall	Perry	Cal Fire CA. USA
Hatton	Rick	AG Fire / 10 Tanker
Hopf	Kevin	AG Fire / 10 Tanker
Maxey	Jack	AG Fire / 10 Tanker
Norbury	Pat	United States Forest Service
Pace	Brad	AG Fire / 10 Tanker
Padilla	Mike	Cal Fire CA. USA (Ret.)
Payne	Bill	Cal Fire CA. USA
Reece	Dan	Cal Fire CA. USA
Tuttle	Brad	AG Fire / 10 Tanker

16.0 Definitions

Refer to:

- Addendum Definitions - Very Large Airtanker Project Operations Program, Biggs H SAU Victoria 2010.

17.0 Addendums

Avalon Airbase Management Plan. - Very Large Airtanker Project Operations Program.
Risk Management Plan – Very Large Airtanker Project Project Management Team.
Operational Hygiene - Very Large Airtanker Project Operations Program.
Operational Evaluation - Very Large Airtanker Project Operations Program.
References - Very Large Airtanker Project Operations Program.
Definitions - Very Large Airtanker Project Operations Program.
Retardant Management Plan
Other Retardants and Suppressants
Agency Position and Roles Outline

18.0 Attachments

Attachment 1	Water Management Strategy.
Attachment 2	BOM 391 Information.
Attachment 3	Delivery System Information.
Attachment 4	Visitor Management Plan.
Attachment 5	Avalon Airbase Site Plan.
Attachment 6	Avalon Airbase External Support Program.
Attachment 7	Avalon Airbase Communications Schedule.
Attachment 8	Welfare Management Plan.
Attachment 9	Water Management Plan.
Attachment 10	Water Management Equipment Inventory.
Attachment 11	Qualified Products List, USFS.
Attachment 12	Risk Management Plan.
Attachment 13	Resource Management Plan.
Attachment 14	Preparedness Plan.
Attachment 15	Decision Making Matrix.
Attachment 16	Incident Dispatch Summary Information.
Attachment 17	Offload and jettison management plan.
Attachment 18	Standard Operating Procedures.

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 1

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Water Management Strategy***

Introduction

Victoria's changing climate and continued population growth are putting unprecedented pressure on current water supplies.

The VLAT-Project Operations Program and the VLAT Service provider acknowledges community efforts to reduce consumption of water and shall observe any local restrictions on the use of water that may be in place.

The effectiveness of fire retardant materials can be impacted by the standard of water used. Sufficient volumes of suitable water must be assured to provide an ongoing fire fighting response for the VLAT-Project.

Objective

Both the VLAT-Project Operations Program and the VLAT Service provider shall take all reasonable steps to conserve water. The VLAT-Project will be undertaking an aggressive program to minimise water use and to reduce the demand on our water storages.

The VLAT-Project will where possible commit to the use of recycled water to:

d) minimise pressure on domestic water supplies,
e) reduce demand on our water catchments and
f) contribute to the Government's water recycling target of 20% by 2010.

Water at Avalon Airbase is provided from local reclaimed supplies and held in onsite reservoirs to maintain operational capacity. This water management program clearly meets State Government targets in the "Environment and Resource Efficiency Plans" and the standards required to produce a quality fire fighting material.

Further information

State Aircraft Unit Victoria 03 9412 4888.

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 2

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***BOM 391 Information***

Image supplied by Graham Briggs SAU 2009

General Specifications

Australian Operator:	AG Airwork	
Aircraft:	McDonnell Douglas DC-10	
Engines:	General Electric CF6	
Certification Basis:	U.S. FAA STC; FAR 36 Stage III	
Drop Tank Capacity:	12,000 U.S. Gallons	45,600 Litres
Drop Rate:	Variable – Cockpit Controlled	
Typical Drop Speed	150 KTS	
Drop Altitude:	200-300 FT. A.G.L.	
Coverage Level:	1-8	
Operational Range	500 N.M. Radius @ 310 KTS. CAS	
Refill Time:	8 minutes	
Ferry Range:	3000 N.M	
Length:	181 ft 3 in	55.5 m
Wingspan	155 ft 4 in	47.3 m
Height	58 ft 1 in	17.7 m
Max. loaded weight	420,000 lbs	195,045 kg
Service ceiling	28,000 ft	12,802 m
Maintenance Program	Boeing	
Engine Support	General Electric	
Tank System	Erickson Air-Crane	
Certification	U.S. FAA ACO-LGB; NIFC, IAB	

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 3

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program

BOM 391 Delivery System Information

General

Bomber 391 has a purpose built constant flow gravity delivery system. The tank system is positioned along the centre line of the aircraft belly.

The system has a total five tanks, primarily the design consists of three main drop tanks and includes two supplementary fairing tanks.

The three main tanks consist of two Erickson Aircrane (EAC) helicopter tanks and one larger tank of similar design derived from the EAC tank, providing total capacity is 45,400-litre (12,000-galUS)

Forward fairing tank and No. 1 Tank

Expanded centre tank, No. 2.Tank.

Aft fairing tank and No. 3 Tank.

The forward and rear fairing tanks are connected to the respective main tanks one and three. Tanks one and three including the additional fairing tank reservoirs have a capacity of 14,307-litre (3,765-gal US). The central tank, number two has a capacity of 16,884-litres (4,443-gal US).

Loading

The three main external retardant tanks are designed to be filled from a standard 3 inch cam-lock coupling, utilising three (3) hoses, the whole system takes approximately eight (8) minutes to fill. Filling ports are located on both sides of the primary tanks.

Standard filling port 3" camlock male fitting.


3 X 25 metre loading hoses and ramp skates.

There is no capacity to transfer retardant between the main tanks. The tanks are vented to atmosphere by a system installed on top of each tank to allow air into and out of the tanks during retardant drops and filling.


Ambient venting port.


Level indicator Tank No. 3.

A quarter turn drain valve is installed on the side of each tank located directly above the fill port near the top of the tank, during filling the fill valve is opened and when retardant peaks at the drain valve the respective tank is full.

Delivery options

Each of the three main tanks has two longitudinal doors. The doors are computerised and are programmable and are capable of dropping variable quantities at regulated coverage levels. The various tank and flow combinations that have been developed do not exceed the centre of gravity requirements for the operation of the aircraft.

The flow rate from the firebombing tank can be controlled so that the coverage level of retardant delivered to the ground is appropriate to the type of vegetation and intensity of the particular wildfire. This is achieved by varying the degree of opening of the drop-doors to regulate the flow of retardant through them.

Longitudinal doors on tank No.1.

Internal baffles and door actuators

Coverage levels

Coverage level is expressed as the volume of retardant per unit area.

The system can deliver coverage levels in nine fixed steps, indicated by the values 1 to 8 and "salvo" on the microprocessor control panel. The indicated steps are in units of gallons (US) per 100 square feet of horizontal surface.

Translated to metric units, the indicated coverage level values of 1 to 8 are equivalent to about 0.4 litres to 3.2 litres per square metre respectively, see table below.

The full-salvo drop, occurs when the flow through the drop-door aperture is unrestricted and the total load is evacuated.

Retardant coverage levels available from the delivery system.	
Indicated coverage level	Coverage level in metric units (litres per square metre)
1	0.4
2	0.8
3	1.2
4	1.6
5	2.0
6	2.4
7	2.8
8	3.2
salvo	total contents evacuated

'Coverage level' as indicated on the microprocessor control panel. This is an expression of the volume—in US gallons—of retardant delivered per 100 square feet of surface.

From experience gained in the use of the delivery system the general guide for the coverage level settings are:

- < CL 6 for light fuels such as grasslands
- CL 6 to 8 for fires in eucalypt forests
- CL 8 and full salvo for high-intensity fires and in areas with high fuel loads.

The pilot can select the number of drops from the one load and the volume and *coverage level* of each drop, providing a variety of options for efficient fire suppression. The volume of a *split-load drop* can be controlled from a minimum of 25% to 50%, 75% or 100% of the volume contained in the firebombing tank.

Further information

State Aircraft Unit Victoria 03 9412 4888.

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 4

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Visitor Management Plan***

General

Access to the Avalon Airport including the Avalon Airtanker Base is highly restricted. As a result, the Very Large Air tanker Project (VLAT-Project) has made provisions to allow Agency personnel, Government representatives and interested parties access to the Avalon Airbase.

This will be conducted under strict guidelines and conditions. The following paragraphs outline the procedures for organising access, and the conditions that must be adhered to, whilst on premises.

All requests must be arranged via Agency/Organisation contact person PRIOR to submission to VLAT Project Team.

Where airport security requires it, visitors must obtain a visitor pass from Avalon Airport Management. Before being allowed onto the ramp, visitors must obtain permission from the Avalon Airbase Coordinator and be given a safety briefing.

- Visitors shall be escorted by agency personnel.
- Visitors will be provided appropriate safety equipment, including hearing protection.
- Members of the media shall be escorted by a Communications Officer

Visitors will be directed to and confined to a secure designated public viewing area while visiting the base to observe operations.

Schedule

For operational purposes, access to Avalon for all parties, aside from operational personnel, has been limited to:

Sundays: 0900-1000 **Wednesdays**: 0900-1000.

Visitor numbers

A maximum of 40 individuals will be allowed access at any one time, and the 'tour' will take approximately 1hr.

Certain conditions will apply:

- A minimum of seven days notice is to be given to the VLAT Project Officer of intended visit.
- All visits are to be coordinated through the VLAT Project Team. Please contact them to discuss arrangements.

Vehicles

A maximum of 2 passenger vehicles **or** 1 bus will be escorted through to VLAT at any one time.

Transport to/from Avalon must be organised by persons requesting tour. A "Temporary Car Park Pass" for the 'employees' car park may be made available. However, as only 2 of these are available, access to these passes can not be assured.

Remember, you will be entering an operational airfield and in their interests, vehicle traffic must be kept to a minimum.

Access

Visitors are to arrive at the main Security gates 20 minutes PRIOR to intended start time.

All individuals are to sign in and receive an "Escorted Visitors Pass" at the main security gate. A designated VLAT Project staff member will be present to facilitate this process & will act as guide and escort throughout the tour.

At all times, visitors are to follow the directions of the VLAT Project staff member who is escorting them.

Security

At no stage are individuals to leave the tour. Visitor passes are provided on the condition that an escort is present at all times. Any breach of this may result

Still and video footage are permitted of the VLAT. However, NO footage is permitted to be taken of Avalon infrastructure or Qantas installations. To do so is considered a criminal offense. Any persons seen to be taking images of these may have equipment confiscated, be escorted from premises and may face prosecution in line with breaching Commonwealth Regulations.

Provisions

Please note: This is a fully operational aircraft on standby for emergency operational purposes. Cancellation, at short notice, of organised tour may occur. The VLAT Project team will endeavor to provide as much notice as possible should this eventuate, to avoid any inconvenience. However, this may not be possible.

Further information

State Aircraft Unit Victoria 03 9412 4888.

STATE AIRCRAFT UNIT
VICTORIA

ATTACHMENT 5

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Avalon Airbase Site Plan***

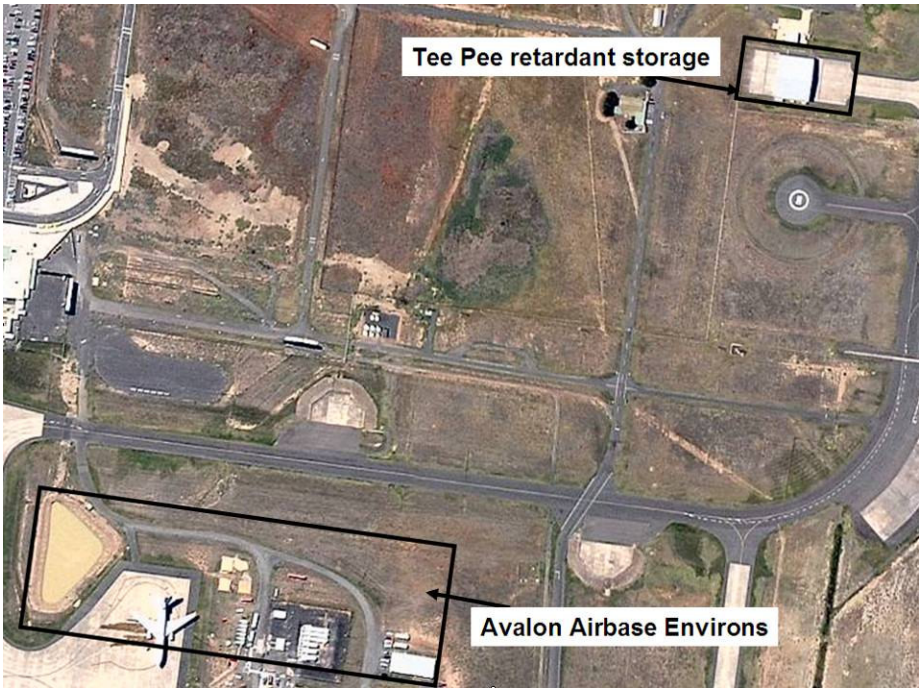
Avalon Airbase January 2010

Both the VLAT Service provider and the Agencies are required to secure and occupy a number of facilities and buildings to accommodate aircrew, operational support personnel, equipment and services to fulfil the Service. The Contractor and the Agencies will be responsible for each of the functional units under their direct control.

- Site A: VLAT Service provider's office and rest area accommodation.
- Site B: Agency office and rest area accommodation.
- Site C: Tee Pee storage area.
- Site D: Bladder Farm
- Site E: Water Cells.
- Site F: Retardant plant
- Site G: Aircraft parking
- Site H: Stormwater Recovery Area
- Site I: Aircraft wash area

Overview of Avalon Airbase

Image shows areas occupied by both the Agencies and the VLAT service provider.



Source: NearMap Pty Ltd.

Key locations shown are the airbase footprint, which is incorporated into operational facilities of Avalon Airport Operations and the location of the bulk retardant storage facility.

Avalon Airbase January 2010

A number of facilities and buildings have been secured to accommodate aircrew, operational support personnel, equipment and services to fulfil the Service. The Contractor and the Agencies will be responsible for each of the functional units under their direct control.

Site A: VLAT Service provider's office and rest area accommodation.

- Requirements and provisions assigned to VALT Service provider.

Site B: Agency office and rest area accommodation.

- This area consists of two 3m x 9m portable buildings 5m apart and facing each other one as an Agency office with phone fax and wireless internet available and the other as a rest area with a kitchenette.

Site C: Tee Pee storage area.

- The Tee Pee storage area in a roofed area 26m x 32m which is used for storing bagged retardant and aircraft maintenance equipment.

Site D: Bladder Farm

- The bladder farm is an area 25m x 25m which has four 95,000litre bladders each 10m x 10m to store bulk water which feeds the water cells.

Site E: Water Module.

- A water cell consists of two 30,000litre ISO container style wet storage units and there are three water cells on site taking up a total area 20m x 6m.

Site F: Retardant plant

- The retardant plant is in an area that can be accessed by machinery during operations and takes up a total area 30m x 40m which includes two dip tanks, approximately 20 bags of retardant and the loading pumps and hoses

Site G: Aircraft parking

- The Aircraft parking is a 75m x 50m area on the North East corner of the keyhole adjacent to the loading area.

Site H: Stormwater recovery area

- The stormwater recovery area is an area on the north west corner of the keyhole that has sufficient water storage for flushing of the Aircraft tanks and pressure washing of the Aircraft

Site I: Aircraft wash area

- The Aircraft wash area is 50m x 55m it is located on the North West side of the keyhole near the stormwater recovery area so that the wash water is collected and recycled.

Source: NearMap Pty Ltd.

Reloading infrastructure

Source: NearMap Pty Ltd.

Image shows key infrastructure to support BOM 391.

- Site C: Bladder Farm
- Site D: Water Cells.
- Site E: Retardant plant
- Site F: Aircraft parking

Environmental hygiene management area

Source: NearMap Pty Ltd.

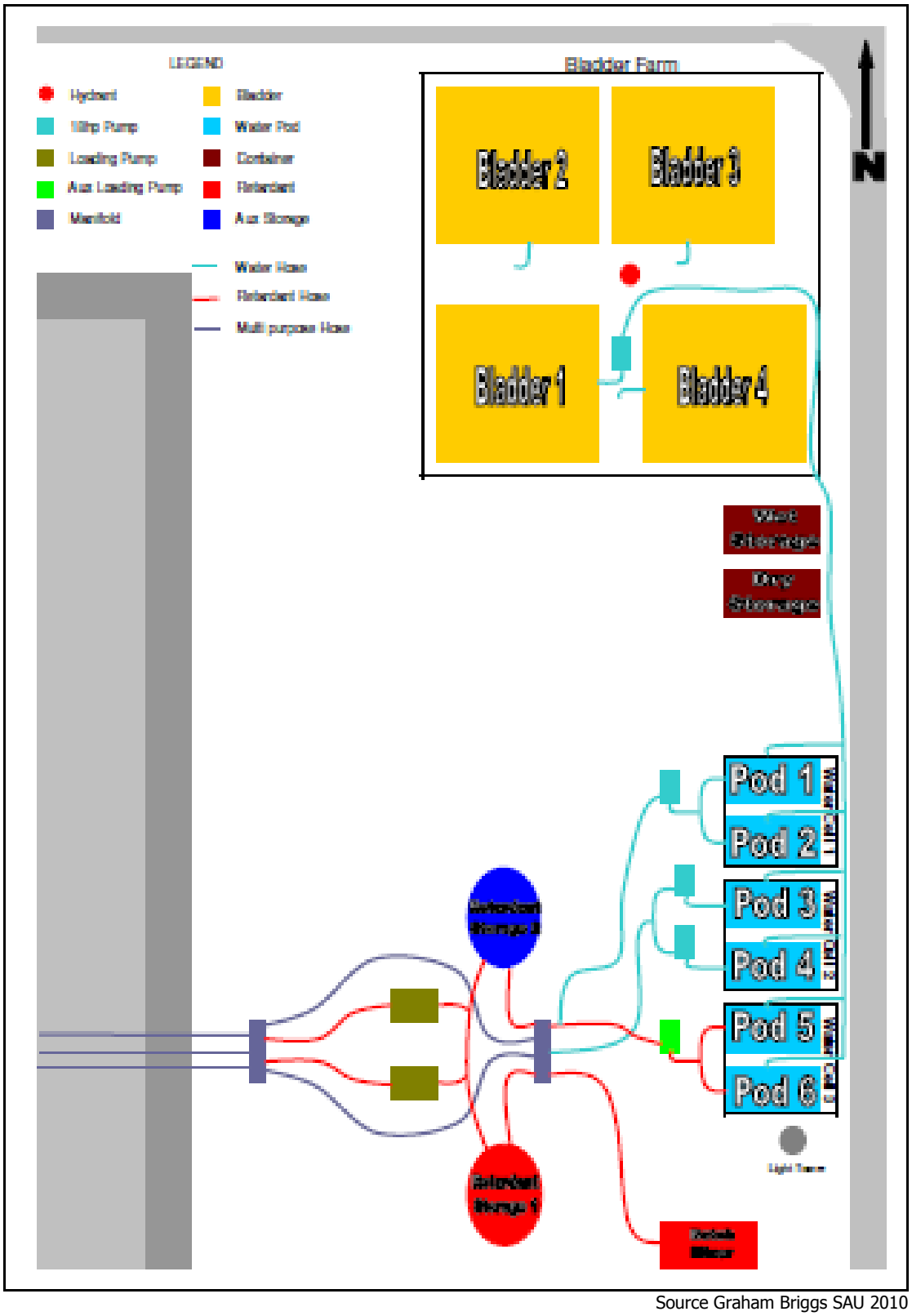
Image shows additional infrastructure to support BOM 391.

- Site F: Aircraft parking
- Site G: Aircraft wash down
- Site H: Stormwater Recovery Area

Volume

The supply of consumables, retardant and fuel are calculated on maintaining a fire bombing operation on a one hour turn around from the operational base. The minimum retardant production rate is 90,000-litres (24,000-gal US).

Schematic January 2010



Source Graham Briggs SAU 2010

Further information

State Aircraft Unit Victoria 03 9412 4888 (Graeme Briggs/Hayden Biggs)

STATE AIRCRAFT UNIT VICTORIA

ATTACHMENT 6

Very Large Airtanker Project Victoria 2010

VLAT-Project Operations Program

Avalon Airbase External Support Program & Contacts

24 hour Avalon Emergency Contact

Contact	Number	Comment
Phone B/H	03 5227 9333	Avalon Emergency

Avalon water supply

Contact	Number	Comment
Phone	03 5215 6213	
Fax	03 5215 0464	
Cell No.	0428 725 337	

External water supply

Contact	Number	Comment
Phone	03 5215 6213	
Fax	03 5215 0464	
Cell No.	0428 725 337	

Accommodation meals

Contact	Number	Comment
Phone B/H	03 5223 6200	Mercure Geelong
FAX	03 5221 5814	Kim Henderson Front Office Manager
Email		H3033-FO01@accor.com

Medical

Contact	Number	Comment
Phone	000	Ambulance
FAX:	03 5226 711	Geelong Hospital

ISO Containers

Contact	Number	Comment
Phone	03 8317 8511	FBT Transwest
FAX	03 9316 0120	
Cell	0400 070 228	Jordan Lark
Email:	jl@fbttranswest.com.au	

Bladder farm

Contact	Number	Comment
Phone	02 8723 6706	Transpacific Gary Davoren
FAX		
Cell	0407 068 507	
Email:		

ATCO accommodation

Contact	Number	Comment
Phone	03 9791 9171	ATCO Trent Fryer.
FAX	03 9791 9271	
Cell		
Email:		

Amenities

Contact	Number	Comment
Phone	03 9391 1829	Altona Equipment and Development Centre
FAX	03 9399 1064	

Hygiene vehicle

Contact	Number	Comment
Phone	03 5338 2100	DMO CFA Ballarat
Phone	03 5278 5958	DMO CFA Geelong
CELL:	0439 577 151	Wayne Rigg CFA Ballarat

Earthworks

Contact	Number	Comment
Phone	03 5282 1545	W & B Dando
FAX	03 5282 1026	
Cell	0419564449	Buck Dando

Agency personnel

Contact	Number	Comment
Phone	1300 134 144	State AirDesk State Aircraft Coordinator
FAX	1300 134 488	

Equipment support

Contact	Number	Comment
Phone	03 9391 1829	Altona Equipment and Development Centre
FAX	03 9399 1064	
Phone	03 9412 4777	State Duty Officer DSE
FAX	03 9650 8575	

Further information

State Aircraft Unit Victoria 03 9412 4888.

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 7

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program

Avalon Airbase Communications Plan

24 hour Avalon Emergency Contact

Contact	Number	Comment
Phone 24 hour	03 5227 9333	Avalon Emergency

Avalon Airbase / SAU

Contact	Number	Comment
Primary Phone	0429 362 451	Avalon Airbase Office
Phone	03 5215 6213	Avalon Airbase Office
Fax	03 5215 0464	Avalon Airbase Office
Trunk	230 2001 780	Avalon Airbase Office
Cell No.		**Rostered VLAT Coordinator**
Cell No.	0428 725 337	Hayden Biggs

Bomber 391 / AG Fire

Contact	Number	Comment
Phone B/H	03 5227 9299	Primary Contact Bomber 391
Phone B/H	03 5227 9285	Secondary Contact Bomber 391B/H
FAX	03 5282 6962	AG Fire / 10 Tanker
Cell No. 1	0428 827 172	Rob Boschen Contract manager
Cell No. 2	0427 861 345	Jack Maxey Chief pilot 10 Tanker
Cell No. 3	0428 838 128	Bob Coward Lead Plane Pilot

Avalon Airport Administration

Contact	Number	Comment
Phone B/H	03 5227 9337	Avalon Airfield Operations Manger
Cell	0417 309 794	Jim McClusky Supervisor
FAX	03 5227 3335	

Avalon Airport Security

Contact	Number	Comment
Phone B/H	0417 307 386	Avalon Security
FAX:	03 5227 9345	

Avalon Airport Operations

Contact	Number	Comment
Phone B/H	03 5227 9470	Avalon Airfield
Cell	0414 694 395	Gary Westwood Supervisor
FAX	03 5227 9108	

Avalon Airport Property Maintenance

Contact	Number	Comment
Phone B/H	03 5227 9138	Avalon Airfield Maintenance
Cell	0411 304 531	David Moreland Supervisor
FAX	03 5227 9533	

Avalon Airbase ground communications

Channel	Description	Usage
Ch 110	Old MFB Liaison Channel	For use Avalon Airbase use only.
UHF Ch 12	Public UHF Ch 12	For use Avalon Airbase use only.

Local incident channels

Contact	Number	Comment
Ch 151	Mt Buninyong (Ballarat)	Test call & monitor
Ch 153	Mt Blackwood (Bacchus Marsh)	Test call & monitor
Ch 155	Arthurs Seat (Dromana)	Test call & monitor
ONLY USE FOR TESTING COMMUNICATIONS WITH AIRCRAFT		

State AirDesk

Contact	Number	Comment
Phone	1300 134 144	24 hour
Fax	1300 134 488	24 hour
Trunk	230 2001 700	24 hour
Email	Ecc.airdesk@dse.vic.gov.au	24 hour

State Aircraft Unit

Contact	Number	Comment
Phone	03 9412 4888	Phone B/H
FAX	03 9650 8575	B/H
Email	Ecc.airdesk@dse.vic.gov.au	

Avalon Tower

Contact	Number	Comment
Phone	03 9412 4888	Phone B/H
FAX	03 9650 8575	B/H
Email	Ecc.airdesk@dse.vic.gov.au	

Resource tracking

Resource	System	username	password
Bomber 391	Blue sky https://www.skyrouter.com	sauusers	tanker911
Birddog 393	Blue Sky	TBA	TBA
Birddog 385	RATS	Fireweb	Fireweb
Firebird 376	Blue sky https://www.skyrouter.com	dse	firewatch

Further information

State Aircraft Unit Victoria 03 9412 4888

STATE AIRCRAFT UNIT VICTORIA

ATTACHMENT 8

Very Large Airtanker Project Victoria 2010

VLAT-Project Operations Program | ***Welfare Management Plan***

General

The Avalon Base is located within the environs of the airport. The site is remote from general infrastructure and facilities available to other organisations residing within the airport. The base is a sanctioned workplace for agency personnel and is subject to standard office accommodation requirements and OH & S requirements.

Protective clothing

Protective clothing and equipment requirements for personnel conducting specialist aviation tasks including the VLAT-Project are provided in the DSE Air Operations Manual section or DSE Air appropriate Operations Manual supplement

Fatigue management

Fatigue is the cumulative effect of several days of long working hours. Aircrew and support personnel need to be aware of the possibility of fatigue and must be able to recognise symptoms, which indicate that fatigue is impairing performance.

Both the Contractor and the Agencies are required to adhere to their respective regulatory controls and policies to ensure compliance.

- VLAT Service Contractor – AG Airwork and 10 Tanker Air Carrier Fatigue Management Program.
- DSE and Parks Victoria - Working Hours and Fatigue-related Risk Guidelines, not excluding the provisions of the
    - VPS Agreement 2006 (Extended & Varied 2009 (DSE))
    - Field Staff Agreement 2009 (DSE)
- CFA – TBA

Accommodation

Both the Contractor and the Agencies will provide separate and compliant aircrew and support personnel office and fatigue management facilities.

Drug and Alcohol Management Program

Fixed Part 99 of the Civil Aviation Safety Regulations (CASRs) came into effect on 23 September 2008. Under this, certain organisations and individuals within the aviation industry are to develop and implement a drug and alcohol management plan (DAMP) to address AOD issues in relation to their potential affect on aviation safety.

The organisations that are required to have a DAMP are certain organisations that have employees, contractors or subcontractors who perform or are available to perform, Safety Sensitive Aviation Activities (SSAA).

Those covered by the CASA program and the minimum requirements of the organisational DAMPs include all individuals, including government officers, who undertake SSAAs. SSAA has been defined to mean an activity that impacts directly or indirectly on the safety of civil air operations in Australian territory or the operation of Australian aircraft outside Australian territory. It does not include passengers.

Safety-sensitive aviation activity also includes the presence, by any individual, on or in either of the following;

- any surface in a certified aerodrome or a registered aerodrome over which an aircraft is able to be moved while in contact with the surface including parking areas; and
- a building located on a certified aerodrome or registered aerodrome that is used:
    - for maintenance of an aircraft or an aeronautical product; or
    - for the manufacture of aircraft or aeronautical; or
    - by an air traffic service provider to control air traffic; or
    - by the holder of an AOC for flying training

The list of safety-sensitive aviation activities is not exhaustive and if a DAMP Organisation considers that a particular activity that is not expressly listed above could impact directly or indirectly on the safety of civil air operations, then the DAMP Organisation may AOD test a person undertaking that activity.

Provision

Activities and infrastructure management at Avalon Airbase will be subject to inclusion within the Agencies drug and alcohol management programs as well as DAMP for the resident organisations with in Avalon Airport including the VLAT Service provider.

Further information

State Aircraft Unit Victoria 03 9412 4888.

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 9

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Water Management Plan***

General

The State of Victoria shall arrange for the continuous supply of water for the VLAT Service in addition the State will be responsible for the storage of the water.

At Avalon Airbase there is capacity to store 580,000 litres of water this consists of a Bladder Farm and three Water Cells. The Bladder Farm consists of four 100,000 litre bladders which feed the three Water Cells; each Water Cell has two Pods which hold 30,000 litres each.

Filling

The Bladder Farm can be filled using road tankers which take 2.0 hour turnaround to deliver 28,000litres or there is a hydrant located at the Bladder Farm which can deliver 110,000litres per hour but requires cooperation with Avalon Maintenance Staff to start and stop the main pump.

Loading

Each Water Cell has a pump which can deliver to the retardant mixer or directly to the Aircraft depending on the application. As the Aircraft has three tanks loading can occur using one Water Cell pump and loading hose per tank making the loading quicker.

Once the water has been used from a Water Pod it is replenished by transferring water from the Bladder Farm using a separate pump to fill the appropriate Pod.

Vehicles

No vehicles are to enter the operational area during an operation.

Access

Access to the operational area is limited to operational staff wearing appropriate PPE gear. Visitors are not to enter the operational area unless they are wearing a high visibility vest and are escorted by an approved escort.

Safety

As Avalon Airport is a secure area all none ASIC holders must be escorted at all times. No one is permitted to approach the Aircraft without the appropriate escort.

Provisions

Please note: This is a fully operational aircraft on standby for operational purposes. It can become an operational Airbase without notice with all visitors being removed from the area

Primary storage

Primary storage will be provided by six (6) 24,000 litre fixed tanks, which will also provide emergency storage of retardant that has been "off loaded".

Series of portable 30,000 litre ISO-containers

Secondary storage

Secondary storage (long term) will be provided by four (4) 100,000 litre flexible bladders to supply the Primary storage units and will also allow direct loading of water to the VLAT and or mixed with foam concentrate or SAP.

Bladder Farm shows 4 portable inflatable containers.

The VLAT-Project will be undertaking an aggressive program to utilise recycled water use and to reduce the demand on essential domestic water supplies.

Supplementary storage

In addition the Operations Program has secured an agreement with Avalon Airport to collect and store surface run off water from the airport infrastructure.

Supplementary storm water retarding basin.

Further information

State Aircraft Unit Victoria 03 9412 4888 (Hayden Biggs / Graeme Briggs)

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 10

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program

Water Management Equipment Inventory

General

The following information identifies the minimum requirements for plumbing and storage equipment which is required to support the VLAT Service. The equipment identified is to support the provision of water, water injected with foam concentrate, the use of Super absorbent polymers and to provide additional mixing and storage capacity for retardant.

Equipment inventory

Quantity	Description
4	100,000 litre bladders
6	30,000 litre ISO pods
6	18HP Powermac Trolley pump
12	75mm x 3m F+F Camlock Hard Suction hose
18	64mm x 15m Layflat hose
6	64mm x 7.5m Layflat hose
7	75mm x 10m M+F Camlock Aircraft delivery hose
3	75mm x 5m M+F Camlock Aircraft delivery hose
26	Aircraft delivery hose skates (8 per hose)
4	75mm F+F Camlock Aircraft loading valves
3	75mm M Camlock 'T'
6	64mm elbows
2	75mm inline flow meter
6	64mm Female 5 thread to 75mm Male Camlock
6	64mm Male 5 thread to 75mm Female Camlock

Equipment details

Quantity	Description	Purpose
4	100,000 litre bladders	Bulk water storage
4	64mm x 15m Lay-flat hose	To fill bladders
1	75mm x 3m F+F Camlock Hard Suction hose	Suction hose between bladder and pump
1	18HP Powermac Trolley pump	Feed water from bladder farm to water cells
4	64mm x 15m Layflat hose	Feed water from the bladder pump to the water cells
6	64mm x 7.5m Layflat hose (1 per pod)	Feed water from the bladder pump lay-flat to each pod
6	64mm elbows	Feed water into top of pods
6	30,000 litre ISO pods	Bulk water storage
9	75mm x 3m F+F Camlock Hard Suction hose	Suction hose between water cells and Aircraft loading pumps
3	75mm M Camlock 'T'	To pair up pods to a Aircraft loading pump
3	18HP Power-mac Trolley pump	Feed water from water cells to the Aircraft
6	64mm x 15m Layflat hose (2 per line)	Feed water from the Aircraft loading pumps to the Aircraft delivery hose
6	75mm x 10m M+F Camlock Aircraft delivery hose (2 per line)	Feed water from delivery lay-flat hose to the Aircraft
3	75mm x 5m M+F Camlock Aircraft delivery hose (1 per line)	Feed water from delivery lay-flat hose to the Aircraft
24	Aircraft delivery hose skates (8 per hose)	To allow hose to be dragged by one person
3	75mm F+F Camlock Aircraft loading valves	Connects the loading hose to the Aircraft

Additional equipment

Quantity	Description	Purpose
2	75mm inline flow meter	To measure and record water used
2	18HP Power-mac Trolley pump	Secondary pump to move water from bladder to pods & spare pump
4	64mm x 15m Lay-flat hose	For secondary pump to move water from bladder to pods & spare
2	75mm x 3m F+F Camlock Hard Suction hose	For secondary pump to move water from bladder to pods & spare
1	75mm x 10m M+F Camlock Aircraft delivery hose	Spare
2	Aircraft delivery hose skates	Spare
6	64mm Female 5 thread to 75mm Male Camlock	To adapt lay-flat to camlocks as lay-flat is 5 thread & spares
6	64mm Male 5 thread to 75mm Female Camlock	To adapt lay-lat to camlocks as lay-flat is 5 thread & spares
1	75mm F+F Camlock Aircraft loading valves	Spare

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 11

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Qualified Products List USFS***

Long term Retardants

USDA Forest Service — Washington Office — Fire & Aviation Management

9/5/09

LONG-TERM RETARDANT

Qualified by USDA Forest Service In Accordance with Forest Service Specification 5100-304b, As Amended

These products are evaluated and qualified only at the specified mix ratio and only for use with the indicated application
Consult individual agencies for specific policies relating to long-term retardant use.

Chemical	Mix Ratio (Pounds concentrate Per gallon water)	Qualified Applications[1] Fixed-Wing Airtanker	SEATS	Helicopter Fixed-Tank	Helicopter Bucket	Ground Engine
Dry Concentrate - Gum-thickened; Permanent or Temporary Base						
Phos-Chek D75-R	1.20 lb/gal	•	•		•	
Phos-Chek D75-F	1.20 lb/gal	•	•		•	
Dry Concentrate - Gum-thickened; Temporary Base						
Phos-Chek 259-F	1.14 – 1.60 lb/gal	•	•	•	•	•
Phos-Chek G75-F	1.12 lb/gal	•	•		•	•
Phos-Chek G75-W	1.12 lb/gal				•	•
Wet Concentrate - Gum-thickened; Permanent or Temporary Base						
Phos-Chek LC-95A-R	5.5:1	•	•		•	•

[1] • Fully Qualified (Product complies with all requirements of a formal specification.)
○ Conditional Approval (Product complies with all requirements in the specification for laboratory evaluation; a field evaluation is required for full qualification.

Foam Concentrates

USDA Forest Service — Washington Office — Fire & Aviation Management

4/5/09

CLASS A WILDLAND FIRE FOAM

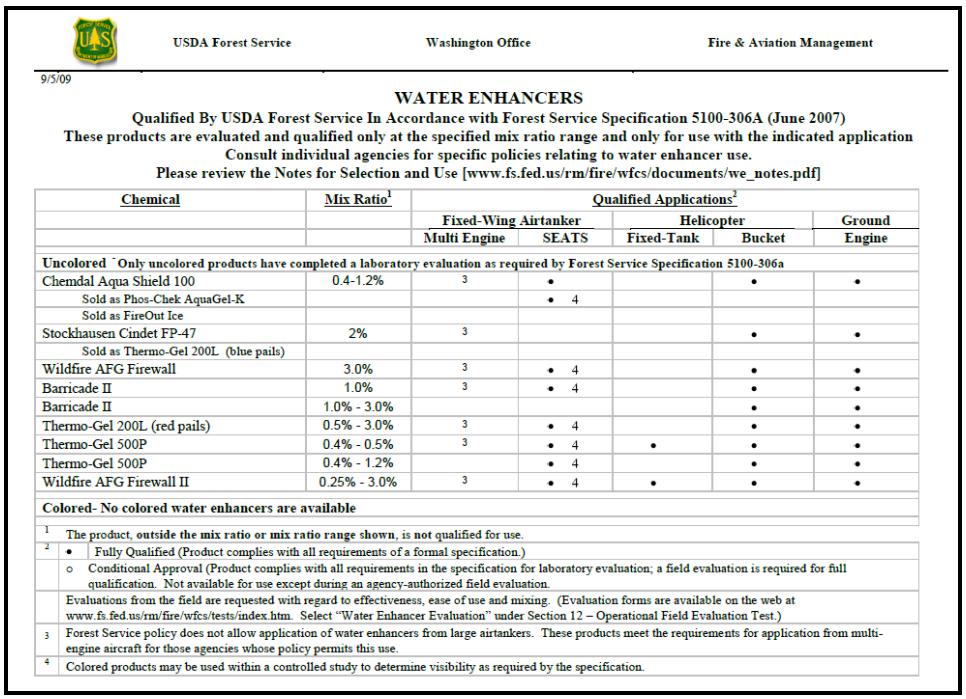
Qualified by USDA Forest Service In Accordance with Forest Service Specification 5100-307a

These products are evaluated and qualified only at the specified mix ratio range and only for use with the indicated application
Consult individual agencies for specific policies relating to wildland fire foam use.

Chemical	Mix Ratio	Qualified Applications[1] Fixed-Wing Water Scooper	SEATS[2]	Helicopter Fixed-Tank	Helicopter Bucket	Ground Engine
Tyco Silv-Ex	0.1-1.0%	•	•		•	•
FireFoam 103B[3]	0.1-1.0%	•	•	★	•	•
Phos-Chek WD 881	0.1-1.0%	•	•	•	•	•
FireFoam 104	0.1-1.0%	•	•		•	•
Angus ForExpan S	0.1-1.0%		•		•	•
Pyrocap B-136	0.1-1.0%		•		•	•
Phos-Chek WD 881-C	0.1-1.0%	•	•		•	•
National Foam KnockDown	0.1-1.0%	•	•		•	•
Summit FlameOut	0.1-1.0%				•	•
Angus Hi-Combat A	0.1-1.0%	•	•		•	•
Buckeye Platinum Class A Foam	0.1-1.0%	•	•		•	•
Chemguard First Class	0.1-1.0%	•	•	•	•	•
Also sold as Thermo-Foam						
Solberg Fire-Brake 3150A	0.1-1.0%	•	•		•	•
Phos-Chek First Response	0.1-1.0%	•	•	•	•	•
Tyco Silv-Ex Plus Class A	0.1-1.0%	•	•	•	•	•

[1] • Fully Qualified (Product complies with all requirements of a formal specification.)
○ Conditional Approval (Product may be included in procurement actions such as solicitations and bids)
★ Administrative Approval (Product complies with all requirements of a formal specification or administrative work plan.)
[2] Within Canada, the wildland fire management agencies apply foam from land-based fixed-wing airtankers (single or multi engine). The presence of a dot in this column indicates
[3] Administrative approval has been granted for application from fixed-tank helicopters. No further approvals are needed.

Water enhancers



USDA Forest Service — Washington Office — Fire & Aviation Management

9/5/09

WATER ENHANCERS

Qualified By USDA Forest Service In Accordance with Forest Service Specification 5100-306A (June 2007)
These products are evaluated and qualified only at the specified mix ratio range and only for use with the indicated application
Consult individual agencies for specific policies relating to water enhancer use.
Please review the Notes for Selection and Use [www.fs.fed.us/rm/fire/wfcs/documents/we_notes.pdf]

Chemical	Mix Ratio[1]	Qualified Applications[2]				
		Fixed-Wing Airtanker		Helicopter		Ground
		Multi Engine	SEATS	Fixed-Tank	Bucket	Engine
Uncolored - Only uncolored products have completed a laboratory evaluation as required by Forest Service Specification 5100-306a						
Chemdal Aqua Shield 100	0.4-1.2%	[3]	•		•	•
Sold as Phos-Chek AquaGel-K			• [4]			
Sold as FireOut Ice						
Stockhausen Cindet FP-47	2%	[3]			•	•
Sold as Thermo-Gel 200L (blue pails)						
Wildfire AFG Firewall	3.0%	[3]	• [4]		•	•
Barricade II	1.0%	[3]	• [4]		•	•
Barricade II	1.0% - 3.0%				•	•
Thermo-Gel 200L (red pails)	0.5% - 3.0%	[3]	• [4]		•	•
Thermo-Gel 500P	0.4% - 0.5%	[3]	• [4]	•	•	•
Thermo-Gel 500P	0.4% - 1.2%		• [4]		•	•
Wildfire AFG Firewall II	0.25% - 3.0%	[3]	• [4]	•	•	•
Colored- No colored water enhancers are available						

[1] The product, **outside the mix ratio or mix ratio range shown**, is **not** qualified for use.

[2] • Fully Qualified (Product complies with all requirements of a formal specification.)
o Conditional Approval (Product complies with all requirements in the specification for laboratory evaluation; a field evaluation is required for full qualification. Not available for use except during an agency-authorized field evaluation.
Evaluations from the field are requested with regard to effectiveness, ease of use and mixing. (Evaluation forms are available on the web at www.fs.fed.us/rm/fire/wfcs/tests/index.htm. Select "Water Enhancer Evaluation" under Section 12 – Operational Field Evaluation Test.)

[3] Forest Service policy does not allow application of water enhancers from large airtankers. These products meet the requirements for application from multi-engine aircraft for those agencies whose policy permits this use.

[4] Colored products may be used within a controlled study to determine visibility as required by the specification.

Further information

State Aircraft Unit Victoria 03 9412 4888

State Government Victoria	STATE AIRCRAFT UNIT VICTORIA	**ATTACHMENT 12** **Very Large Airtanker Project Victoria 2010**

VLAT-Project Operations Program | ***Risk Management Plan***

General

Description and management assigned to the VLAT-Project, Project Management Team.

Further information

State Aircraft Unit Victoria 03 9412 4888

STATE AIRCRAFT UNIT VICTORIA

ATTACHMENT 13

Very Large Airtanker Project Victoria 2010

VLAT-Project Operations Program | ***Resource Management Plan***

General

Personnel may be assigned to more than one position in the base organization dependant on the level of activity. This does **not** relieve the Operations Program from ensuring that the individual is both trained and qualified to fill the position(s) to which he/she is assigned.

The Operations Program must anticipate the need for and request additional personnel during periods of high activity and/or complexity.

Agency personnel will be engaged in fields of expertise and who have demonstrated ability and performance and knowledge relevant to aircraft management and operations.

Various models have been applied to achieve the maximum effectiveness from the Agency personnel whilst minimising the impact on Agency preparedness requirements and their core activities.

The use of multiple teams (IE. < five people) over a short period only where there is a high or greater fire danger has an immediate and cumulative effect on the Agency's service delivery. The use of teams over a longer period (IE. five days) on a rostered program allows for effective commitment, organisation and atomises the impact on the Agencies.

The most suitable and equitable period for the rostered duty will be five days. The commencement period of the rostered program would be starting 28 December 2009 prior to the commencement of the Service Period for Bomber 391 and extending through to March 2010.

Subsequent teams are to commence their tours prior to the conclusion of the incumbent rostered team.

The rostered roles are identified as and are inclusive of, but not limited to:

- VLAT Operations Coordinator
- Avalon Airbase Coordinator
- Avalon Airbase Management Support and
- Lead Plane Air Attack Supervisor

Resource schedule Example

VLAT-Project Operations Program Resource Plan								
December	**2009**	**Role**						
Day	**DATE**	VLAT Coordinator Mentor	VLAT Coordinator	Avalon Airbase Mentor	Avalon Airbase Coordinator	Lead plane AAS	Avalon Airbase Support	
Friday	11							
Saturday	12							
Sunday	13							
Monday	14							
Tuesday	15							
Wednesday	16							
Thursday	17							
Friday	18							
Saturday	19							
Sunday	20							
Monday	21							
Tuesday	22							
Wednesday	23							
Thursday	24							
Friday	25							
Saturday	26							
Sunday	27							
Monday	28							
Tuesday	29							
Wednesday	30							
Thursday	31							

Provisions:

Notes:

Legend

SAU	State Aircraft Unit
CFA	Country Fire Authority
DSE	Department of Sustainability & Environment
PV	Parks Victoria
Other	Inter-State agency / organisation

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 14

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Preparedness Plan***

Readiness

Requirement includes and not limited to VLAT Service provider, lead plane, aircrew retardant mixing personnel, refuelling and engineering support.

Daily standard hours Absolute Availability

Response arrangements during the fire season apply as follows:

- **Bomber 391** has a 30 minute requirement which applies between 1000 and 1800 hours (Eastern Summer Time); or between 0900 and 1700 hours (Eastern Standard Time), after daylight saving finishes.
- The **Aircrew** has a 15 minute requirement applies between 1000 and 1800 hours (Eastern Summer Time); or between 0900 and 1700 hours (Eastern Standard Time), after daylight saving finishes.
- during other daylight hours (Daylight - 1000, 1800 - Dark.) **Bomber 391** is to remain reasonably available for deployment (generally about 30 minutes notice), and the pilot and additional aircrew members must remain contactable and able to fly.
- on declared days of Total Fire Ban, the response time requirement applies between 0900 and 1900 hours (Eastern Summer Time)

BOM 391 & BDG 393 summaries

SUMMARY OF PREPAREDNESS LEVELS BOMBER 391 BIRDDOG 393 2010						
Resource	**Low/ Moderate Fire Danger**	**High Fire Danger**	**Very High Fire Danger**	**Severe Fire Danger**	**Extreme Fire Danger**	**Code Red Fire Danger**
Bomber 391 DC 10 N107 ***Duty Flight Crew***	Standby 30 Minute availability Core time 1000 - 1800 Standby 15 Minute availability Core time 1000 - 1800			Duty specified by SFC requirement Min 09900 – 1900 hrs. Duty specified by SFC requirement Min 0900 – 1900 hrs.		
Lead 393 (Birddog 393) ***Duty Flight Crew (Inclusive of L-AAS)***	Standby 15 Minute availability Core time 1000 - 1800 Standby 15 Minute availability Core time 1000 - 1800			Duty specified by SFC requirement Min 0900 – 1900 hrs. Duty SFC requirement Min 0900 – 1900 hrs.		

Provisions:

Resource Availability: For Low to Very High Fire Danger will be varied to accommodate Inter-State preparedness and suppression requirements subject to SFC authorisation.
Agency Personnel: All agency personnel are alphabetically rostered and in attendance in accordance with the preparedness requirements at Avalon Airbase.
SFC: State Fire Controller or his Delegate.
L-AAS: Lead Plane Air Attack Supervisor.
Reduced Availability: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

Retardant Plant and Refuelling resource summaries

SUMMARY OF PREPAREDNESS LEVELS RETARDANT PLANT, MIXING AND REFUELLING RESOURCES 2010						
Resource	**Low/ Moderate Fire Danger**	**High Fire Danger**	**Very High Fire Danger**	**Severe Fire Danger**	**Extreme Fire Danger**	**Code Red Fire Danger**
Phos-chem Retardant Plant	Standby 15 Minute availability Core time 1000 - 1800			Duty specified by SFC requirement Min 0900 – 1900 hrs.		
Retardant Mixing/loading crew	Standby 15 Minute availability Core time 1000 - 1800			Duty specified by SFC requirement Min 0900 – 1900 hrs.		
Avalon Refuelling Support	Standby 15 Minute availability Core time 1000 – 1800 Standard availability 0500 – 2100hrs.			Standby 15 Minute availability Min 0900 – 1900 hrs. Standard availability 0500 – 2100hrs.		

Provisions:

Resource Availability: For Low to Very High Fire Danger will be varied to accommodate Inter-State preparedness and suppression requirements subject to SFC authorisation.
SFC: State Fire Controller or his Delegate.
Refuelling: Avalon refuelling support standard availability is a commercial operation for large regional passenger transport.
Inter-State refuelling: Is achieved by the commercial network established by the corporate supply organisation.
Inter-State reloading support: Responsibility of requesting organisation.
Reduced Availability: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

Agency personnel

Requirement includes and not limited to VLAT Operations Coordinator, Lead Plane Air Attack Supervisor, Avalon Airbase Coordinator and Avalon Airbase Management Support personnel.

Daily standard hours Absolute Availability

Agency personnel response arrangements during the VLAT Service period apply as follows:

- 15 minute requirement applies between 1000 and 1800 hours (Eastern Summer Time); or between 0900 and 1700 hours (Eastern Standard Time), after daylight saving finishes.
- during other daylight hours (Daylight - 1000, 1800 - Dark.) personnel are to remain reasonably available for deployment (generally about 30 minutes notice), and must remain contactable.
- on declared days of Total Fire Ban, the 15 minute requirement applies between 0900 and 1900 hours (Eastern Summer Time)

Agency personnel, equipment and resources summaries

SUMMARY OF PREPAREDNESS LEVELS AGENCY PERSONNEL, EQUIPMENT & RESOURCES 2010						
Resource	**Low/ Moderate Fire Danger**	**High Fire Danger**	**Very High Fire Danger**	**Severe Fire Danger**	**Extreme Fire Danger**	**Code Red Fire Danger**
VLAT Operations Coordinator	Operational availability 15 Minute Core time 0800 – 1800 hrs.			Duty specified by SFC requirement Min 0800 – 1900 hrs.		
Duty Avalon Airbase Coordinator	Operational availability 15 Minute Core time 0800 - 1800			Duty specified by SFC requirement Min 0800 – 1900 hrs.		
Avalon Airbase Management Support 1	Operational availability 15 Minute Core time 0800 – 1800 hrs.			Duty specified by SFC requirement Min 0800 – 1900 hrs.		
Avalon Airbase Management Support 2	Operational availability 15 Minute Core time 0800 – 1800 hrs.			Duty specified by SFC requirement Min 0800 – 1900 hrs.		
Duty Flight Crew L-AAS	Operational availability 15 Minute Core time 0900 – 1800 hrs.			Duty specified by SFC requirement Min 0900 – 1900 hrs.		
Avalon Airbase	Operational availability 24 hours. Core time 0800 – 1800 hrs.			Operational availability 24 hours. Duty specified by SFC requirement Core time 0800 – 1800 hrs.		
Bladder Farm	Operational availability 24 hours. Core time 0800 – 1800 hrs.			Operational availability 24 hours. Duty specified by SFC requirement Core time 0800 – 1900 hrs.		
Water Module	Operational availability 24 hours. Core time 0800 – 1800 hrs.			Operational availability 24 hours. Duty specified by SFC requirement Core time 0800 – 1900 hrs.		
Bulk Mobile Retardant Mixer- Pricilla	Operational availability 15 Minute Core time 1000 - 1800			Duty specified by SFC requirement Min 0900 – 1900 hrs.		

Provisions:

Agency personnel: All agency personnel are alphabetically rostered and in attendance in accordance with the preparedness requirements at Avalon Airbase.
Resource Availability: For Low to Very High Fire Danger will be varied to accommodate Inter-State preparedness and suppression requirements subject to SFC authorisation.
SFC: State Fire Controller or his Delegate.
L-AAS: Lead Plane Air Attack Supervisor.
Reduced Availability: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

External resources summaries

SUMMARY OF PREPAREDNESS LEVELS EXTERNAL RESOURCES 2010						
Resource	**Low/ Moderate Fire Danger**	**High Fire Danger**	**Very High Fire Danger**	**Severe Fire Danger**	**Extreme Fire Danger**	**Code Red Fire Danger**
Water Supplier	Operational availability 2 Hours Core time 0800 – 1800 hrs.			Duty specified by VLAT Operations Coordinator requirement. Min 0900 – 1900 hrs.		
Infrastructure and equipment suppliers	Operational availability 4 Hours Core time 0800 – 1700 hrs.					
Altona Equipment & Development Centre	Operational availability 15 Minute Core time 1000 - 1800			Duty specified by SFC requirement. Min 0900 – 1900 hrs.		

Provisions: **Resource Availability**. For Low to Very High Fire Danger will be varied to accommodate Inter-State preparedness and suppression requirements subject to SFC authorisation.
SFC State Fire Controller or his Delegate.
Reduced Availability: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

Lead Plane Air Attack Supervisor

PREPAREDNESS STATEMENT FOR BOMBER 391 APPOINTMENT OF LEAD PLANE AIR ATTACK SUPERVISOR (L-AAS)		
Appointment of Lead Plane Air Attack Supervisor **(VLAT L-AAS)**	**Lead Plane Air Attack Supervisors** **APPROVED List** **10 FEB 2010**	**Lead Plane Air Attack Supervisors** **NOMINATED List** **10 FEB 2010**
1. Only trained and approved L-AAS will be appointed to the rostered duty role at Avalon Airbase.		
2. The L-AAS is to be selected from the Approved Lead Plane Air Attack Supervisor list and will be rostered subject to Agency core requirements.		
3. The L-AAS will be located at Avalon Airbase in accordance with the scheduled duty time specified in the VLAT operations Program, Attachment 18 Preparedness Plan.		

Provisions: **Reduced Availability**: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

VLAT Operations Coordinator

PREPAREDNESS STATEMENT FOR BOMBER 391 APPOINTMENT OF VLAT OPERATIONS CORDINATOR		
Appointment of VLAT Operations Coordinator (VLAT VOC)	**VLAT Operations Coordinator APPROVED List 10 FEB 2010**	**VLAT Operations Coordinator NOMINATED List 10 FEB 2010**
1. 1. Only trained and approved VOC will be appointed to the rostered duty role at Avalon Airbase.		
2. The VOC will be selected from the APPROVED List and will be rostered subject to Agency core requirements.		
3. The VOC will be located at Avalon Airbase in accordance with the scheduled duty time specified in the VLAT operations Program, Attachment 18 Preparedness Plan.		

Provisions: **Reduced Availability**: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

Duty Avalon Airbase Coordinator

PREPAREDNESS STATEMENT FOR VLAT DC10 AIRTANKER APPOINTMENT OF DUTY AVALON AIRBASE COORDINATOR		
Appointment of Duty Avalon Airbase Coordinator (VLAT AAC)	**Duty Avalon Airbase Coordinator APPROVED List 10 FEB 2010**	**Duty Avalon Airbase Coordinator NOMINATED List 10 FEB 2010**
1. Only trained and approved AAC will be appointed to the rostered duty role at Avalon Airbase.		
2. The AAC will be selected from the APPROVED List and will be rostered subject to Agency core requirements.		
3. The AAC will be located at Avalon Airbase in accordance with the scheduled duty time specified in the VLAT operations Program, Attachment 18 Preparedness Plan.		

Provisions: **Reduced Availability**: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

Duty Avalon Airbase Coordinator

PREPAREDNESS STATEMENT FOR VLAT DC10 AIRTANKER APPOINTMENT OF DUTY AVALON AIRBASE COORDINATOR		
Appointment of Avalon Airbase Management Support (VLAT AAMS)	**Avalon Airbase Management Support APPROVED List 10 FEB 2010**	**Avalon Airbase Coordinator NOMINATED List 10 FEB 2010**
1. Only trained and approved AAMS will be appointed to the rostered duty role at Avalon Airbase.		
2. The AAMS will be selected from the APPROVED List and will be rostered subject to Agency core requirements.		
3. The AAMS will be located at Avalon Airbase in accordance with the scheduled duty time specified in the VLAT operations Program, Attachment 18 Preparedness Plan.		

Provisions: **Reduced Availability**: In periods of significant **Low Fire Danger** encountered in the State of Victoria and in consideration of Inter-State requirements a *reduced response capability* may be implemented by the SFC.

Further information

State Aircraft Unit Victoria 03 9412 4888.

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 15

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Decision Making Matrix***

Process

Identification of Opportunity for Potential Use

- Normal request process (IC request via chain of command to SDO).
- SDO request for deployment after consultation with Area Controller.
- State Fire Controller request for deployment after consultation with Area Controller.

Deployment of the VLAT must be approved by the State Fire Controller (or Delegate) where appointed or by agreement between Chief Officers of CFA and DSE.

If any check box is not ticked (item not accomplished), proceeding with the dispatch must only proceed after being satisfied that safety of the operation will not be compromised.

A tick inside the box means all facets of the required statement are accomplished.

An N/A placed in the box indicates that this does not apply to this specific operation but a comment is to why N/A must be provided.

All required personnel in VLAT operations, shall meet the personnel qualifications and training specified in VLAT Operations Program Manual.

Deployment priority

Deployment priority to assist in the protection of:

d) Life/property
e) Assets
f) Forests

Strategy priority

Strategy priority predicated on deployment priority:

a) Initial attack support.
    1) Direct Attack
    2) Indirect Attack – (i.e. laying retardant behind a backburn or beside housing to reduce fire intensity)
b) Extended attack. (failure of initial attack, sustained operations)
    1) Direct Attack
    2) Indirect Attack

Evaluation and effectiveness determination priority

a) Forest
b) Woodland
c) Grassland
d) Interface

Decision process for DEPLOYMENT Bomber 391

		Check	Comments
Deployment Decision			
1	iv IC **request** via chain of command to State Duty Officer *or* v SDO **request** for deployment after consultation with Field Managers or Area Operations Controller (when appointed) *or* vi State Fire Controller or Chief Officer **request** for deployment after consultation with Field Managers or Area Operations Controller (when appointed).		
2	Requested use falls within target and strategy priority parameters (see above).		
3	**Approval** from State Fire Controller or both agencies obtained.		
State Agency Commander/State Duty Officer			
4	IMT **Strategy** (or Incident Action Plan for Extended Attack) identifying use of VLAT prepared in consultation with incident AOM.		
5	Capacity to **work safely** including maintaining firefighter and civilian safety in forest and interface environments and avoid dropping suppressant/retardant on houses is understood.		
6	Suppressant / retardant type stated and **approved** by IC and SFC.		
Mission Checklist (State Airdesk)			
7	AIIMS Air Operations Unit **structure established** for duration of flight/s and relevant roles filled by authorised personnel.		
8	Clear Communications Plan **prepared and communicated** to VLAT Coordinator - a Fire CTAF is established.		
9	Presence of on-site incident AAS **confirmed**.		
10	Clear communications with on-ground resources **in place** with the AAS.		
11	Weather briefing obtained, VMC conditions **can be maintained** during flight and/or at least during drop runs.		
12	Flight following and Agency Aeronautical Procedures **are established**.		
VLAT Coordinator			
13	Avalon take off and Incident on-site wind conditions **are within** VLAT and Lead plane parameters.		
14	Approval of proposed mission **obtained** from VLAT pilot and Lead plane pilot.		

Signature approval block			
15	**State Fire Controller**	Name	Date
16	**State Duty Officer**	Name	Date
17	**State Duty Officer.**	Name	Date

ATTACHMENT 16

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Incident Dispatch Summary Information***

Incident Dispatch Information

Pursuant to Section 6.1 DRAFT VLAT Operations Program 2010.

Please Note: All criteria are to be completed.						
Dispatch Officer			**Date**			
(Airdesk/ SAC)			**Time (24hr.)**			
Incident Name / Locality						
Direction / Bearing			**Distance. Approx. NM**			
Location Lat & Long Approx. Decimal	**Latitude** **S**		**Longitude** **E**			
Load Specification	**Retardant**	**Water**	**SAP**	**Foam**		
Reloading information	**Avalon**	**Interstate TOB**	**TOB Load**	**W / F / R / SAP**		
Fire-CTAF		**Simplex**		**Trunk**		
Flight Following	**Conducted with State AirDesk 700 (230 2001 700)**					
Air & Ground Contacts & Resources						
Incident Air Attack		**Aircraft**				
Ground Contact		**Location**				
Helicopter resources	**FBD**					
	HTK					
Fixed wing resources	**SEAT**					
	FW other					
Hazards	**Airborne**					
	Ground					
Avalon Airbase Contacts	**Trunk**	**780 (230 2001 780)**	**Simplex**	**110**		

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 17

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program

Offload and Jettison Management Plan

Requirement

BOM 391 can not land fully loaded with retardant, water, water injected with foam concentrate or super absorbent polymer. A number of jettison zones have been located, identified and agreed to by the VLAT service provider Avalon Airport management and Avalon Tower. The location of jettison sites are indicated on aerial maps and include the latitude and longitude of the sites and are incorporated into the Avalon Airbase Management Plan.

Standard procedure

The key requirements excluding water and provisional on wind speed and direction of the jettison plan are to i) drop at a height greater than 1000 feet above ground level and ii) regulate the flow of the drop by selecting coverage level 2.

The lower coverage level will require BOM 391 to conduct several parrell drops to discharge the complete load.

Drop zone Alpha

38 01.08 S	144 29.25 E	38 01.14 S	144 30.15 E
38 02.01 S	144 29.15 E	38 02.07 S	144 30.05 E

Drop zone Bravo

38 02.01 S	144 29.16 E	38 02.06 S	144 29.49 E
38 02.18 S	144 29.12 E	38 02.23 S	144 29.44 E

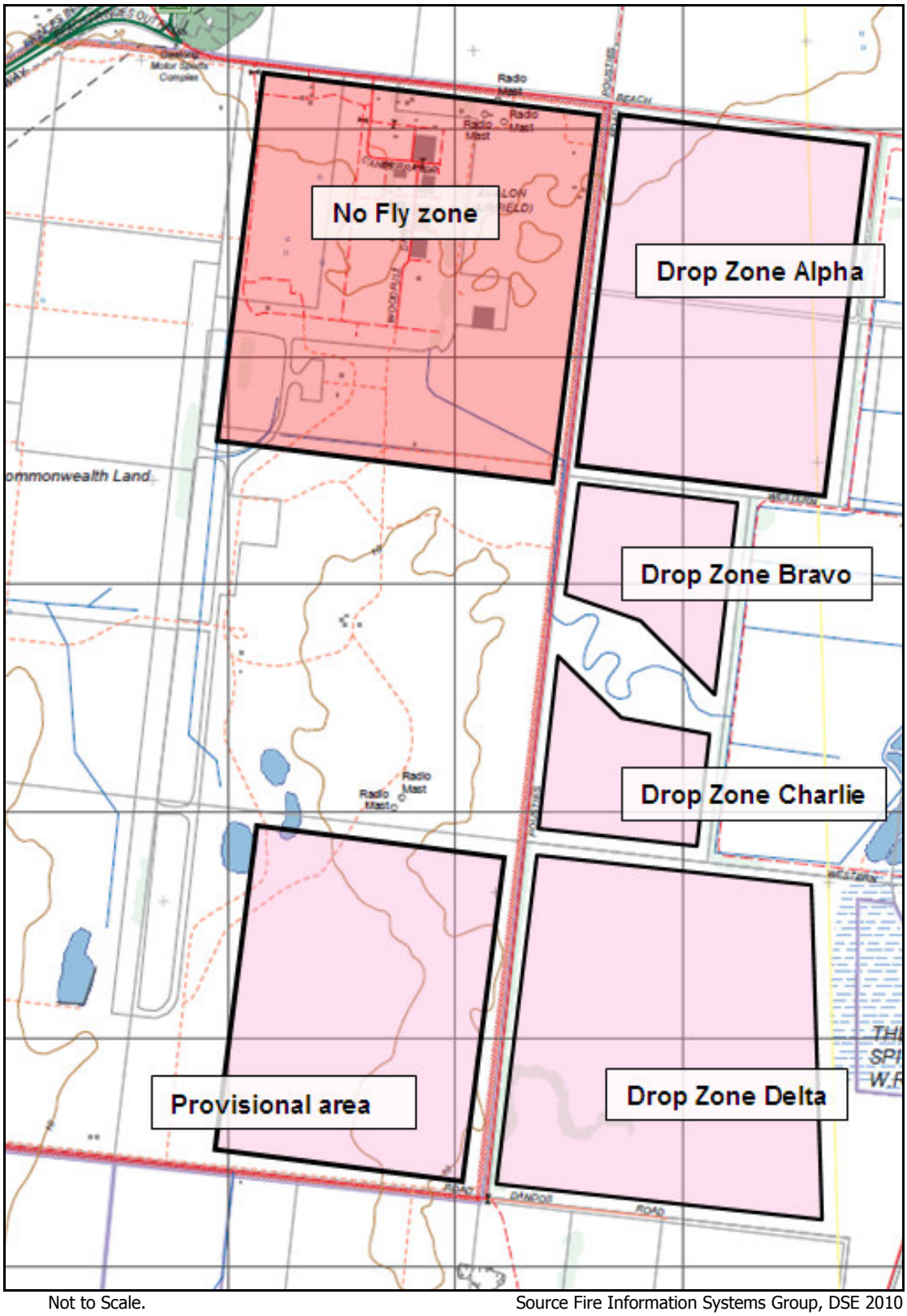
Drop zone Charlie

38 02.33 S	144 29.09 E	38 02.38 S	144 29.43 E
38 02.53 S	144 29.06 E	38 02.57 S	144 29.40 E

Drop zone Delta

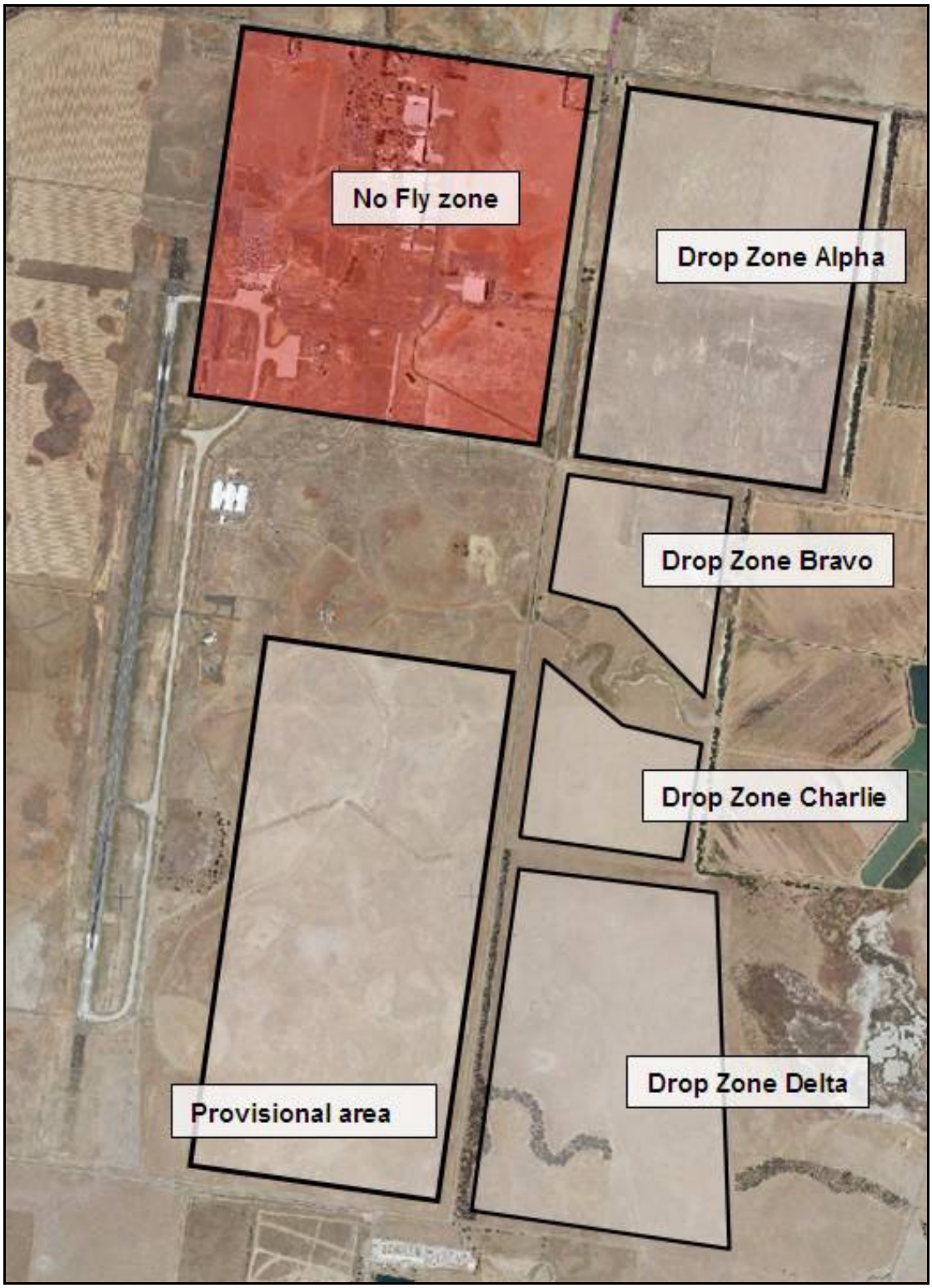
38 02.53 S	144 29.06 E	38 02.58 S	144 29.46 E
38 03.43 S	144 29.57 E	38 03.50 S	144 29.46 E

Map extract jettison zones (1: 25000)



Not to Scale. Source Fire Information Systems Group, DSE 2010

Vertical photo extract jettison zones



Not to Scale. Source Fire Information Systems Group, DSE 2010

Further information

State Aircraft Unit Victoria 03 9412 4888 (Hayden Biggs).

STATE AIRCRAFT UNIT
V I C T O R I A

ATTACHMENT 18

Very Large Airtanker Project
Victoria 2010

VLAT-Project Operations Program | ***Standard Operating Procedures***

Departure and transit Bomber 391

BDG 393 establishes contact and obtains briefing from Incident AAS located over fire area.

BOM 391 departs NOB and maintains listening watch, confirms altimeter settings and establishes communication with BDG 393.

Through the reporting process BOM 391 and BDG 393 confirm altitudes and other resources at F-CTAF, air attack supervisor platform, helicopter and fixed wing fire bombing aircraft.

Standard reporting procedures for BOM 391:

- 40 NM inbound call to lead plane- dist. & altitude- (S*ubject to distance and location of the incident.)*
- Subsequent reporting calls are provided at 30, 20 & 12 NM inbound and entry calls to the F-CTAF.

At 12 NM BOM 391 is configured for pre staged for entry into the fire area- flaps set and speed reduced to 150 knots.

From the 12 NM BOM 391 enters the F-CTAF area at the assigned altitude and altimeter settings.

BOM 391 receives further instructions from BDG 393.

Entry into F-CTAF

When bringing in and positioning BOM 391 there may be a need to orbit not only the SEATS and helitankers in a higher orbit, but other supervisory aircraft; air attack supervisor and air observer platforms.

If SEATS and helitankers are already on scene, the Incident AAS should have them orbit above and out from BOM 391's manoeuvring altitude. If unable to orbit them above, then place them in a specific orbit away from the BOM 391's Initial Point[18] and manoeuvring area or re-task to other sectors on the fire.

This includes media aircraft as well.

Bomber 391 join up with Lead plane Birddog 393

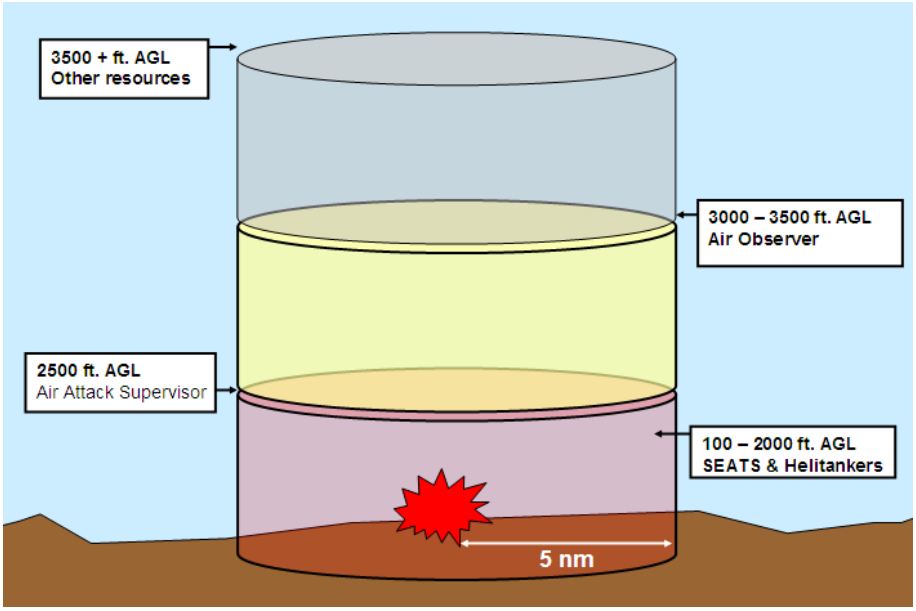
During the join up with BOM 391 confirms altitude and headings and requirements for the drop process.

BDG 393 confirms with the Incident Air Attack Supervisor and BOM 391 the drop configuration including the quantity and coverage level and the start and stop for the drop and whether it is a split or salvo.

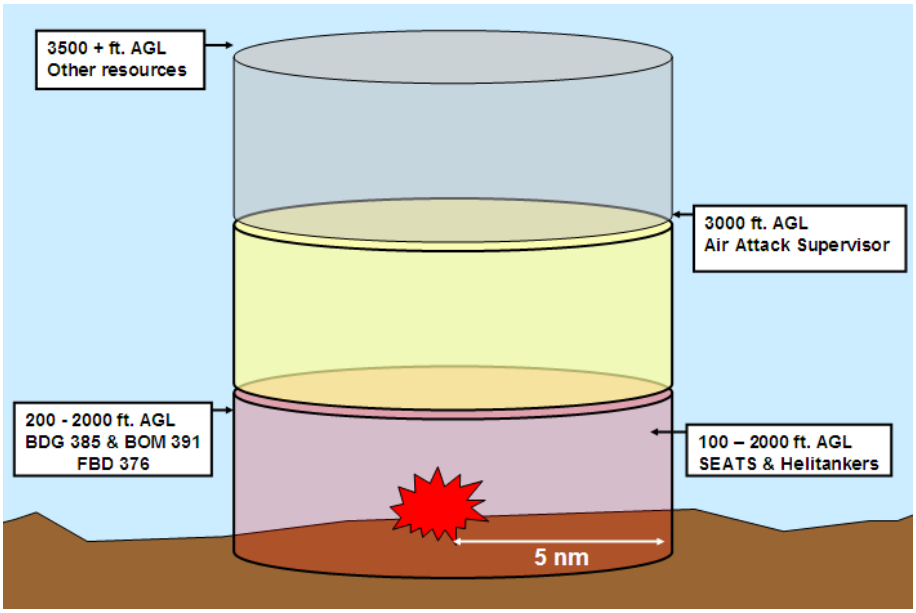
[18] Holding area for Bomber 391 prior to entry.

During the set up for the drop both BDG 393 and BOM 391 confirm escape routes & hazards- including the location of other aircraft.

Indicative vertical airspace management pre entry BOM 391 & BDG 385



Indicative vertical airspace management BOM 391 & BDG 385 operational



Integration

The following procedures listed below are to be considered when using BOM 391 and the lead plane.

Establish flight paths:

Avoid creating hazards to other aerial resources within the F-CTAF along with persons or property on the ground due to any potential wake turbulence created by BOM 391.

When possible:

Drop payloads from all SEATS and helitankers prior to the arrival of BOM 391.

Separation:

When SEATS, helitankers, BOM 391 and the lead plane are on scene, place them in geographically separated circuits.
Additionally the SEAT and helitanker resources may be utilized on other sectors of the fire until the completion of the drop BOM 391 and wake test from and BDG 393.
If geographic separation is not possible place the SEATs and helitankers in an orbit above BOM 391 and BDG 393).

Ensure

Maintain separation of air attack platforms by requesting they maintain an orbit altitude 1000 feet above BOM 391's orbit.

Wake turbulence

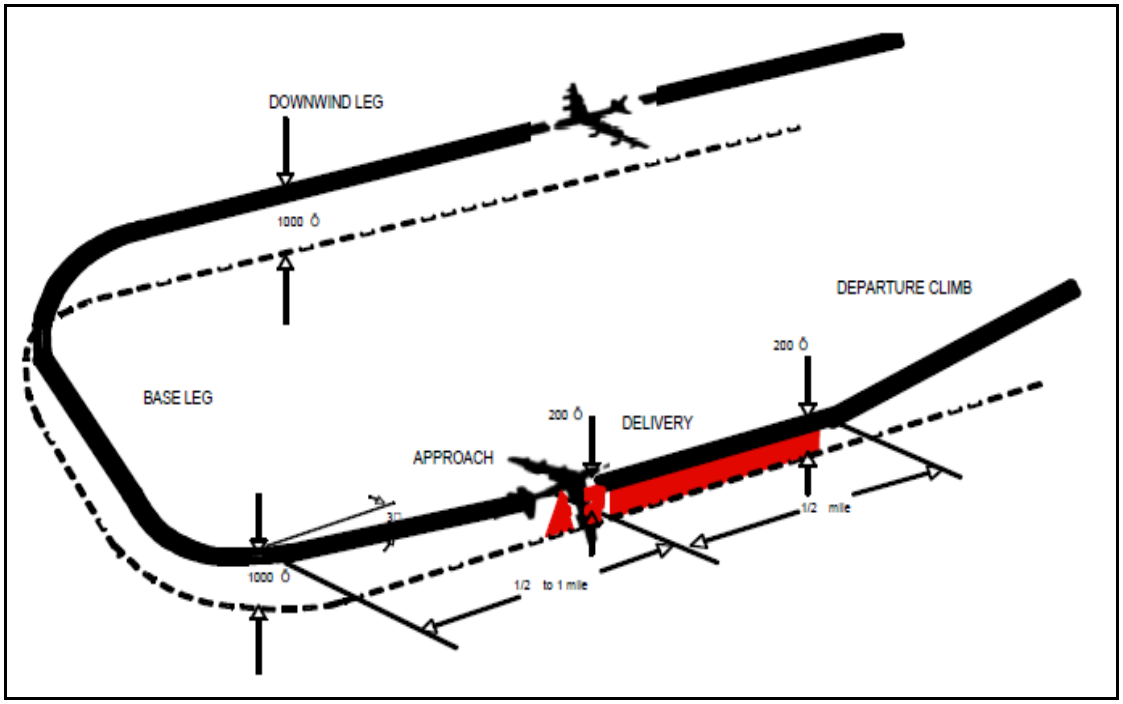
It is recommended to wait 5 minutes, but no less than 3 minutes, after the VLAT has dropped to resume conventional aerial resource operations. BDG 393 should remain on scene to perform high and low recconnssiance of the general fire area. This should be done after the recommended wait time for wake turbulence. BDG 393 will then convey air conditions over the fire F-CTAF area.

Non-essential aerial resources should be moved to an area to avoid any turbulence created by BOM 391. It is recommended that these same resources do not return until the 5-minute wait period.

Drop area procedures and separation

Airspeed: BOM 391 – 150 KIAS.
Pattern Altitudes: Above Drop Altitude
BDG 393 – 800 Feet
. BOM 391 – 1000 Feet

Pattern legs



Source USFS

Pattern Legs - Wings level with a bank of no greater than 30° between legs.

The final to the drop point:

At least a one-half (½) mile with wings level.

Maintain constant descent on final.

No pushover maneuvers are permitted.

BOM 391 drop altitude:

Normally be 300 feet AGL and no lower than 200 feet AGL, and 200 feet above any hazard.

Crossing altitudes prior to drop point.

200 feet above any hazard or 300 feet AGL, which ever is greatest.

Departure

BOM 391 will maintain a consistent and typical flight pattern and maintain assigned altitude and air speed- maintaining 150 knots. for exit. The exit process is similar to entry procedures.

Further instructions

Returns shut down, return reload return, return and hold and released.

WATCHOUTS flight operations

The influence and dominance of prevailing winds will determine the success of flight operations, especially under mountain flying conditions.

Similarly the potential of turbulence associated with the wildfire conditions including downdrafts will require extra vigilance.

Emphasis is to be maintained in conditions were low visibility- smoke, cloud, remaining daylight, valley shadowing, sun glare may be present and including impending weather conditions which may include precipitation and lightning.

The presence of obstructions- powerlines, cables, tall trees, snags, towers or proximity to built up areas will restrict the potential for low level work.

The lead plane will determine the orientation of the drop based on prominent topographic/geographic or man made features.

The terrain type will be a limiting factor to run direction and safe exits, the lead plane will have identified hazards, escape routes and flight paths.

Prior to the intended drop reaffirm the objective and attack plan with the Incident Air Attack Supervisor.

If hazards pose too great a risk, the drop will be aborted and all resources will be advised.

The lead plane will determine the circuit pattern for the intended drop. In determining run directions in other than flat terrain, the team will ensure that all exits are downhill or straight out/ turning/breaking away from hazards.

Sterile Fire-CTAF

Consistent with SAUPs and current standard operating requirements a stronger emphasis is placed on maintaining a sterile Fire CTAF for the drop process.

This is to allow for the immediate advice alerting of inadvertent hazards or realignment of the flight line for the drop.

All aircrews should and attempt to maintain a "sterile Fire-CTAF" during the drop process.

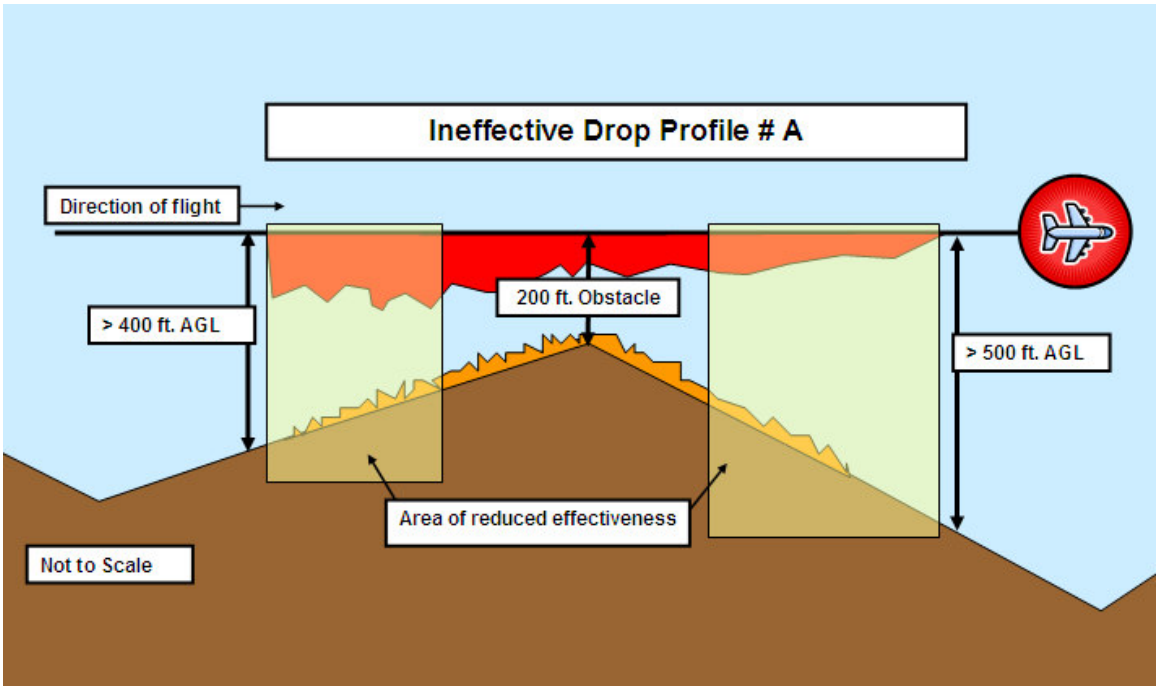
Tactical efficiencies

Thought has to be given to the efficient use of BOM 391 and any other larger capacity airtanker. The length of line to be provided in one drop is much greater than current resources. The projected length of a full drop at coverage level 8 may exceed 700 metres in length.

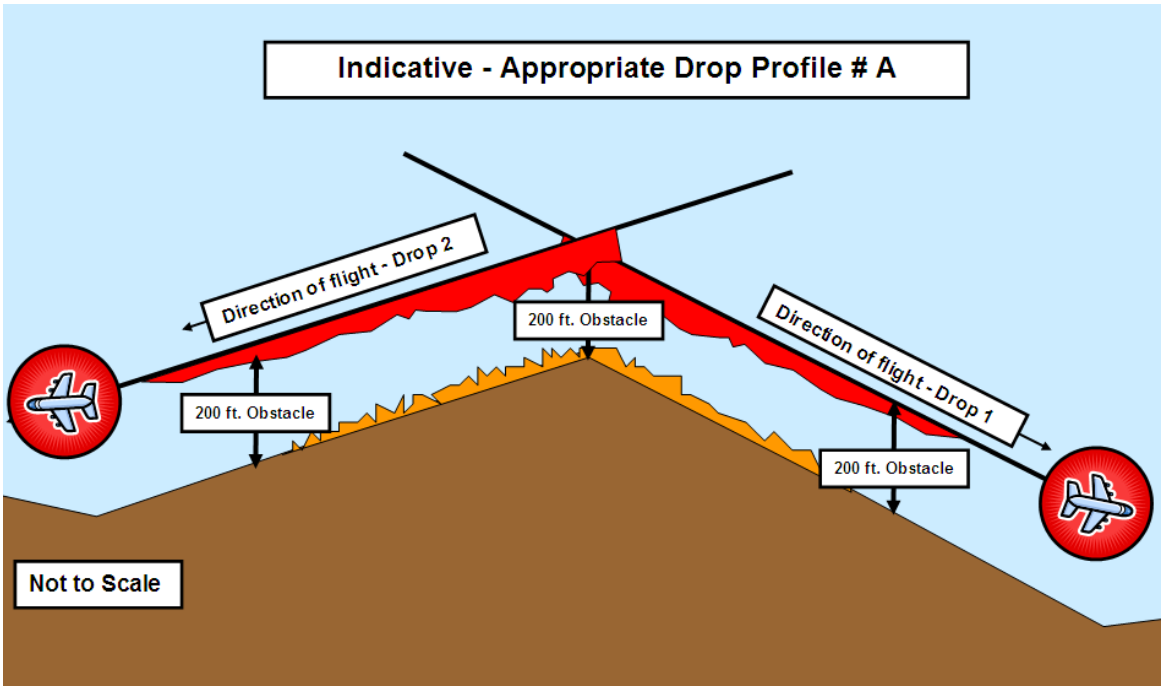
The application of one drop in undulating terrain with a fixed crossing point of the highest point or obstacle will result in ineffective coverage in the depressions, see Ineffective Drop Profile A and B.

Indicative solutions have been supplied to accommodate potential drop applications in undulating terrain. The solutions are a guide only and may not reflect an actual wildfire scenario.

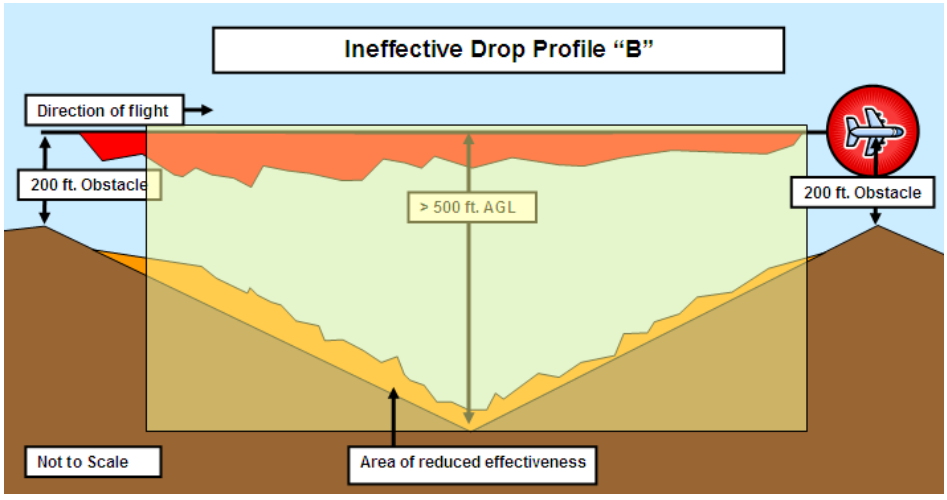
Ineffective drop Profile A



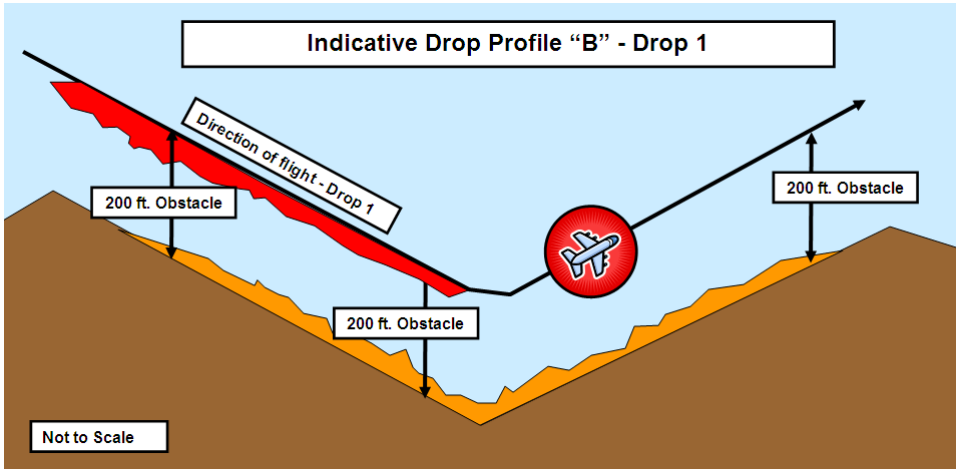
Indicative solution Profile A

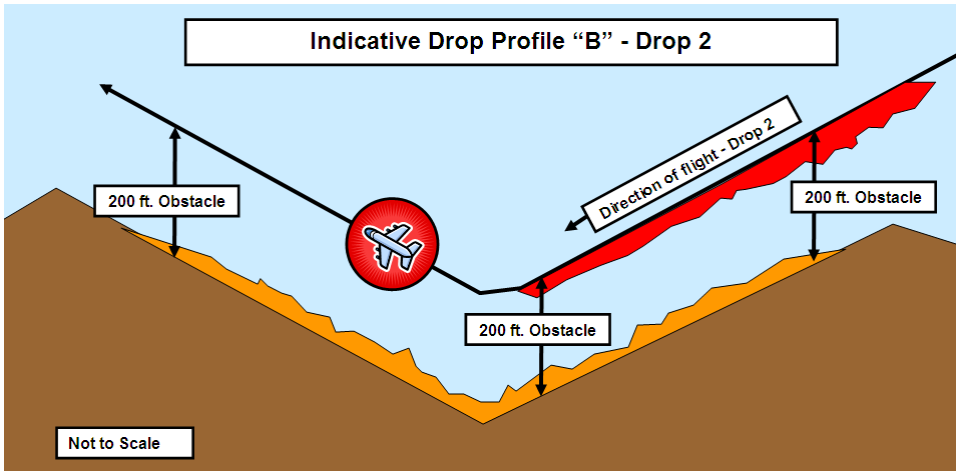


Ineffective drop Profile B



Indicative solution Profile B





Further information

State Aircraft Unit Victoria 03 9412 4888 (Hayden Biggs).