



Interagency Aviation Standard Operating Procedures

2022 – Version 4.2



Recommended Distribution:

All members, and contract personnel of the following Agencies:

- NSW Rural Fire Service
- Fire and Rescue NSW
- Office of Environment and Heritage (National Parks and Wildlife Service)
- ACT Rural Fire Service
- NSW State Emergency Service
- Forestry Corporation of NSW
- NSW Department of Primary Industries
- Local Land Services

The input to the development, review and update of these SOPs by the following agencies is acknowledged:

NSW Rural Fire Service (NSW RFS), Fire and Rescue NSW (FRNSW), Office of Environment and Heritage (National Parks and Wildlife Service), ACT Rural Fire Service (ACT RFS), NSW State Emergency Service (NSW SES), Forestry Corporation of NSW (FCNSW), NSW Department of Primary Industries (DPI) and Local Land Services (LLS)

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Preface

These Interagency Aviation Standard Operating Procedures (SOPs) have been produced to assist all members of the NSW and ACT agencies (Agencies) in the safe, efficient, and effective management and use of aircraft for operational purposes.

It is essential that all personnel seek specialist advice and assistance when planning or conducting air operations. These procedures should be read in conjunction with specific Agency doctrine, the Australasian Interagency Incident Management System (AIIMS) and relevant contract documents which may contain more comprehensive information, specifications and overarching operational and incident management procedures.

Any feedback to assist with the continued improvement of these procedures should be provided to the NSW RFS for review by the Interagency Aviation Working Group (IAAWG).

Please email feedback or comments to airops@rfs.nsw.gov.au.



Section 1 Definitions

In the context of these Standard Operating Procedures, the use of the words:

- “must” and “shall” conveys mandatory compliance
- “should” means compliance is recommended except for justifiable reasons
- “may” and “can” indicates optional compliance

Name/Term	Abbreviation	Meaning
Accident		An occurrence involving an aircraft where: <ul style="list-style-type: none"> ➤ Any person suffers death or serious injury; ➤ The aircraft is destroyed, or is seriously damaged; ➤ Any property is destroyed or seriously damaged.
Aerial Incendiary	AI	Aerial Incendiary operations are used to conduct landscape scale burning in areas of difficult access.
Aerodrome Forecasts	TAF	Terminal Area Forecast.
Aeroplane Landing Area	ALA	Landing area approved by CASA.
Agencies	Agency	All government Agencies using these SOPs.
Air Attack Supervisor	AAS	Qualified airborne tactical command ensuring aviation operations are consistent with the IAP and ICs intent.
Airbase		Aircraft landing area suitable for fixed wing aircraft and helicopters.
Airbase Manager	ABM	Responsible for the supervising and coordination of activities of airbase personnel, and the layout and operation of an airbase.
Airbase Operator	ABO	Responsible for ground support to fixed wing and helicopter operations.
Aircraft		Includes both fixed wing aircraft and helicopters.
Aircraft Officer	AOF	Responsible for the coordination of ground operations and the overall provision of support, enabling a safe and efficient air operation to be conducted.
Aircraft Unit	AU	The unit controlling all aviation related matters attached to the Operations section of an IMT at an incident.
Aircrew		Co-pilot and personnel associated with the operation of an aircraft and aircraft equipment.
Air Observer	AOB	Qualified aviation specialist able to gather intelligence from an aircraft including mapping, images, fire



		behaviour, or other incident specific information / intelligence.
Air Operations Manager	AOM	Responsible for the coordination and management of aircraft at an incident.
Air Safety Incident Report	ASIR	The standard report form used by all sections of the aviation industry to report serious incidents and accidents.
Airservices Australia	ASA	A government owned organisation providing safe, secure, efficient and environmentally responsible services to the aviation industry including air traffic control, aviation rescue and firefighting and air navigation services.
Air Traffic Control	ATC	A service provided by ground-based air traffic controllers who direct aircraft on the ground and through controlled airspace, and can provide advisory services to aircraft in non-controlled airspace.
Air Traffic Services	ATS	Provided by Air Services Australia.
Approved Call When Needed Equipment	ACWNE	All equipment currently approved and subject to a current NSW / ACT Call When Needed Standing Offer Deed.
Approved Landing Area	ALA	Landing area approved by CASA.
Australian Defence Force	ADF	The Australian Defence Force (ADF) is constituted under the <i>Defence Act 1903</i> , its mission is to defend Australia and its national interests.
Australian Maritime Safety Authority	AMSA	The Federal Government agency based in Canberra which is responsible for the coordination of search and rescue operations.
Australian Transport Safety Bureau	ATSB	The ATSB is Australia's national transport safety investigator. Investigations seek to identify safety issues and encourage safety action to reduce the risk of future accidents and incidents.
AVGAS		Aviation gasoline used by piston engine aircraft.
Aviation Communications Systems		Equipment designed and approved to be used in aircraft and ground-to-air communications.
Aviation Radio Operator	ARO	Assists with communications to aircraft operating in support of fires or other emergency incidents and fulfills an essential role to help ensure the safety and efficiency of air operations.
Bird Dog	BD	Air Tanker lead plane.
Briefing Officer		The person responsible for briefing the pilot and aircrew in regards to the task to be carried out.



Bureau of Meteorology	BOM	The Australian Government Bureau of Meteorology (BOM) is the national meteorological authority for Australia. It provides weather forecasts, warnings and observations for all states and territories of Australia.
Certified		Agency personnel recorded as competent and current to carry out a task or role.
Civil Aviation Advisory Publications	CAAP	Advisory publications issued by CASA provide recommendations and guidance to illustrate a method or methods, but not necessarily the only method, by which legislative requirements may be met. They help illustrate the meaning of certain requirements by offering interpretive and explanatory guidance.
Civil Aviation Order	CAO	The Civil Aviation Regulations make provision for Civil Aviation Orders (CAO), which include information on technical standards and specifications.
Civil Aviation Regulation	CAR	Civil Aviation Regulations 1988.
Civil Aviation Safety Authority	CASA	The Civil Aviation Safety Authority is the Australian national aviation authority, the government statutory authority responsible for the regulation of civil aviation.
Civil Aviation Safety Regulations	CASR	Civil Aviation Safety Regulations 1998.
Country Airstrip Guide	ERSA	Contains operational information on all certified, registered and military aerodromes as well as some aeroplane landing areas (ALA).
Dangerous Goods	DG	Dangerous goods are substances that are corrosive, flammable, explosive, spontaneously combustible, toxic, oxidising or water-reactive.
Drum Stock		Drums of fuel available at an airbase.
Emergency Locator Transmitter	ELT	A type of distress beacon used in aircraft.
Emergency Service		As defined by the ACT Emergencies Act 2004.
Emergency Services Organisation		As defined by the State Emergency Rescue Management Act 1989 (NSW).
FAAST Shooter	FS	Feral Animal Aerial Shooting Team.
Fire Common Traffic Advisory Frequency	FCTAF	A frequency assigned by the hiring Agency to an area of aircraft operations.
Fire Detection Flights	FDF	An aerial reconnaissance flight arranged specifically to detect new fire ignitions.
First Light		The beginning of civil twilight.



Flight Following		A procedure whereby a responsible person keeps track of the progress of a flight through contact at regular pre-determined time intervals, and initiates Search and Rescue (SAR) procedures if contact is not maintained or there is some doubt as to the safety of the aircraft.
Flight Information Region	FIR	A specified region of airspace in which a flight information service and an alerting service are provided.
Forward Looking Infra-Red	FLIR	Infra-red cameras either aircraft mounted or handheld. Used to identify/map concealed hot spots.
Government Radio Network	GRN	The Government Radio Network (GRN) is the umbrella term used to refer to various systems in place across Australia that enable statewide trunked radio communication.
Graphical Area Forecast	GAF	Designed primarily to meet the needs of pilots flying in the airspace between the surface and 10,000 feet above mean sea level (AMSL). GAF provides information on weather, cloud, visibility, icing, turbulence and freezing level in a graphical layout with supporting text.
Ground Level	GL	The same level as the surface of the ground.
Hazard Reduction	HR	A controlled or prescribed burn.
Helibase		Aircraft landing area suitable for helicopters only.
Helicopter Landing Area	HLA	Suitable for rotary wing only.
Helicopter Landing Site	HLS	A place that may be used as an aerodrome for infrequent and/or short term basis for all types of operations.
Hot Refuelling		Refuelling of an aircraft whilst the engine(s) are still operating.
Hover Entry / Exit		Entry / exit of personnel from / to a helicopter whilst it is hovering close to the ground.
Incident		An incident is an emergency or non-emergency event being managed by an emergency service organisation.
Incident Action Plan	IAP	An Incident Action Plan is a tool used to define and communicate the incident objectives, strategies and resources, and other information relevant to the control of an incident.
Incident Controller	IC	The Incident Controller is the person responsible for all aspects of an emergency response, including quickly developing incident objectives, managing all incident operations, application of resources as well as



		responsibility for all persons involved.
Instrument Flight Rules	IFR	The main purpose of IFR is the safe operation of aircraft in instrument meteorological conditions (IMC).
Inter-Agency Aviation Working Group	IAAWG	Each Agency has a representative on the Inter-Agency Aviation Working Group (IAAWG), which is coordinated by NSW RFS.
Jet A1		Aviation turbine fuel used by turbine engine aircraft.
Large Air Tanker	LAT	Aircraft with minimum capacities of 3,000 US gallons (11,356 Litres).
Large/Very Large Air Tanker Coordinator	LATCO	A LATCO may be established on the State Air Desk and coordinates the tasking of LAT/VLAT resources on days of heightened fire danger/activity.
Last Light		The end of civil twilight.
Major Incident Coordination	MIC	Major Incident Coordination relates to the operational management and support structure at Region level. It is geographically assigned to North, South, East and West in NSW.
Mayday, Mayday, Mayday		The international distress message used to indicate that the aircraft or people on board the aircraft are exposed to a life threatening danger.
National Aviation Management System	ARENA	A national aviation resource management system for supporting the use of aircraft for fire and emergency response.
Nautical Mile	NM	A nautical mile is a unit of measurement.
Near Miss		A near miss is an unplanned event that has the potential to cause, but does not actually result in human injury, environmental or equipment damage, or an interruption to normal operation.
Night Vision Imaging Systems	NVIS	Relates to all systems that facilitate lighting, eg. night vision goggles.
Night Visual Flight Rules	NVFR	The rules under which a flight primarily by visual reference may be performed at night.
Notice to Airmen	NOTAM	An alert to aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of a flight.
NPWS Fire and Incident Management Branch	FIMB	Branch within NSW National Parks and Wildlife Service.
NSW Environment Protection Authority	EPA	The NSW Environment Protection Authority (EPA) is the primary environmental regulator for New South Wales.
Occurrence		An occurrence is defined as an accident or incident.



Officer in Charge	OIC	Office in charge is a person responsible for activities not relating to an incident.
Pan Pan, Pan Pan, Pan Pan		Message used to indicate that the aircraft or people onboard the aircraft may in the near future be faced with a life threatening danger.
Personal Protective Clothing	PPC	Refers to protective clothing, helmets, goggles, or other garments designed to protect the wearer's body from injury or infection.
Personal Protective Equipment	PPE	Refers to protective gear or equipment used to protect a person from injury or exposure.
Persons on Board	POB	Number of persons on board an aircraft.
Pilot in Command	PIC	The pilot in command of an aircraft is the person aboard the aircraft who is ultimately responsible for its operation and safety during flight.
Positive Flight Following		The knowledge of the aircraft's position, and its condition at all times.
Private Mobile Radio	PMR	PMR is widely used to provide communications outside the normal cellular or public networks.
Query Nautical Height	QNH	QNH is a Q code indicating the atmospheric pressure adjusted to mean sea level.
Remotely Piloted Aircraft System	RPAS	A remotely piloted aircraft, also referred to as Unmanned Aerial Vehicle (UAV), Remotely Piloted Aircraft (RPA), Drone.
Responsible Person		A person who has been trained to take responsibility for Flight Following and SAR arrangements.
Safety Data Sheet	SDS	A Safety Data Sheet is a document for a chemical compound. It explains the hazards of the chemical and gives an overview of the chemical's properties.
Search and Rescue	SAR	Search and rescue (SAR) is the search for and provision of aid to people who are in distress or imminent danger.
Standard Operating Procedure	SOP	A set of procedures compiled by an organisation to help members carry out complex routine operations.
State Air Desk	SAD	The state level multi agency team responsible for coordination of aircraft operations.
State Air Desk Duty Officer	SADDO	The officer on shift/on call responsible for the State Air Desk
Tactical Aircraft		Aircraft tasked in direct support of operations.
Task Specific Briefing		A briefing for personnel directly involved in the task.
Temporary Flight Restriction	TFR	A restriction on an area of airspace.



Urban Interface		The boundary between urban and rural / bushland landscapes.
Very Large Air Tanker	VLAT	A subset of the heavy air tanker category and refers to fixed wing aircraft with at least 8,000 US gallons (30,283 Litres) tanks.
Visual Flight Rules	VFR	Visual flight rules (VFR) are a set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going.
Visual Meteorological Conditions	VMC	An aviation flight category in which visual flight rules (VFR) flight is permitted that is, conditions in which pilots have sufficient visibility to fly the aircraft maintaining visual separation from terrain and other aircraft.
Workplace Health and Safety	WHS	A multidisciplinary field concerned with the safety, health, and welfare of people at work.

Section 2 Aviation Management

2.1 Aviation Management Overview

This SOP provides an overview of aviation specific legislative requirements used to identify the minimum safety standards set by the Regulator, Civil Aviation Safety Authority (CASA) and Agencies.

Procedure

All members of Agencies involved in aviation operations shall have access to and must become familiar with these SOPs, related procedures and standards.

Safety Responsibilities

The Federal Government, through CASA, sets standards for the Aviation Industry including licensing requirements and minimum standards for equipment.

The Australian Maritime Safety Authority (AMSA) is the Federal Government Authority responsible for the coordination of all aviation search and rescue operations in Australia. Crash, accident and incident occurrences and investigations are the responsibility of the Australian Transport Safety Bureau (ATSB).

- The Pilot in Command (PIC) of an aircraft is responsible for its safe operation and the safety of any passengers and aircrew who travel in the aircraft.
- The NSW and ACT Governments through Agencies as employers, users and contractors of aviation services, has the responsibility for development and fostering of safe work practices.
- Agencies are responsible for the training of members to support their own agencies aviation programs.
- Any Agency members, contractors or aircrew may decline to carry out any tasks for which they are unfamiliar, unprepared or consider unsafe.

2.2 Related Incident Management Procedures (IMPs), Standards and Operating Guidelines

The Aviation Standard Operating Procedures 2018 (SOPs) relate to the following NSW RFS Aviation Incident Management Procedures and Standards:

Incident Management Procedures



IMP 3.06	Air Operations Manager
IMP 3.06.01	Aircraft Officer
IMP 3.06.02	Air Attack Supervisor
IMP 3.06.03	Airbase Manager
IMP 3.06.04	Air Observer
IMP 3.06.05	Incendiary Operations Supervisor
IMP 8.04.01	Aircraft / Aviation Equipment Request
IMP 8.04.01.01	Aircraft / Aviation Equipment Request Form
IMP 8.04.02	Aircraft / Aviation Equipment Retain or Release
IMP 8.04.02.01	Aircraft / Aviation Equipment Retain or Release Form
IMP 8.04.03	Airbase Suppressant Management
IMP 8.04.03.01	Daily Aircraft Suppressant Usage Sheet
IMP 8.04.03.02	Airbase Suppressant Product and Storage
IMP 8.04.04	Flight Operations Returns
IMP 8.04.05	Daily Fuel Return
IMP 8.04.08	Passenger Manifest Form
IMP 8.04.09	Flight Following Log Form
IMP 8.04.12	Airbase Briefing Checklist Form
OMP	Aviation Dispatch/Tasking Rejection
Standards	
	Helicopter Winching Standards (2017)
	Helicopter Rescue Winching Standards (2017)
	Operating Guidelines for Air Tankers Operations 2022

Nothing in these SOPs relieves any member of their responsibilities under legislation and/or regulation.

2.3 Carriage and Safety of Passengers

This SOP details procedures for the carriage and safety of passengers including Agency members and authorised personnel on Agency tasked aircraft.

Procedure

Authority to Fly

- Only authorised passengers shall travel on Agency tasked aircraft.
- Agency members should not board any tactical aircraft during operations unless that aircraft is listed and approved by NSW on the National Aviation Management System - ARENA.
- The carriage of passengers must be approved by the Incident Controller (IC) or delegated officer, and this authority recorded in an Incident Action Plan (IAP) or other document approved by the IC or hiring Agency.



- The carriage of passengers not assigned to an incident must be approved by an authorised officer of the tasking Agency, and this authority recorded in a training instruction or other document approved by the Agency.
- Only persons essential to the task must be carried on the aircraft during any flight.

Manifest

- All passengers are to be listed on a manifest, a copy of which is to be left with a responsible person on the ground. Where this cannot be achieved, the manifest is to be communicated to a responsible person on departure.
- Notification by pilots or aircrew of Persons on Board (POB), on take-off, is to be undertaken for each mission.
- The PIC is ultimately responsible for maintaining a manifest of POB.

Safety and Emergency Briefings

- Passengers shall not travel on an aircraft unless they receive a daily safety emergency briefing prior to take off from the pilot, aircrew or other approved person as per the aircraft operators Operations Manual.
- At all times during flight operations the PIC has the ultimate authority and passengers must follow his / her instructions.

Passenger and Equipment Weight

- All personnel should be aware of their individual flight weight, including any equipment to be carried on flight, and provide this information to pilots or aircrew, for the purpose of required weight and balance checks.

2.4 Personnel Protective Equipment (PPE)

To assist in ensuring personnel are able to operate safely, this SOP details the minimum protective clothing and equipment to be worn by Agency personnel conducting approved aviation operations.

Procedure

Pilots, aircrew and airborne trained aviation specialists shall wear:

- Flame resistant flight suit coverall / two piece coverall
- Flight helmet - for all operations in helicopters and Single Engine Air Tankers (SEATS)

- Leather ankle length boots
- Gloves
- Flame resistant or natural fibre underclothing
- Personal GPS enabled PLB (carried on person)

Ground based aviation personnel shall wear:

- Leather ankle length boots
- Flame resistant or natural fibre underclothing
- Hearing protection relevant to the operating environment
- Chemical rated eye protection (removal of eye protection is permissible when not directly in contact with the aircraft or mixing equipment)
- Chemical gloves, as required
- Protective firefighting jacket / coveralls (removal of the outer jacket is permissible when not directly in contact with the aircraft or mixing equipment)

Firefighting personnel shall wear:

- Leather ankle length boots (fire rated)
- Flame resistant or natural fibre underclothing
- Hearing protection relevant to the operating environment
- Safety helmet with chinstrap (removal of the helmet is permissible when not directly in contact with the aircraft)

- Protective firefighting overalls / coveralls

Unless specifically exempted by the tasking Agency all other Agency personnel (not listed above) shall wear:

- Leather ankle length boots
- Flame resistant or natural fibre underclothing
- Hearing protection relevant to the operating environment
- Agency supplied protective clothing

2.5 Ability to Perform Duty

To ensure personnel are able to operate safely and effectively this SOP details procedures for ensuring Agency personnel, contractors and aircrew are capable of performing their duties, whilst assigned to Agency aviation operations.

Procedure

- Personnel shall not engage in any aviation related operation when their ability, alertness and/or coordination is in doubt, as judged by their supervisor or PIC.



- All personnel are responsible for conducting their own IMSAFE checklist:
 - Illness – do I have any symptoms?
 - Medication – have I been taking prescription or over the counter drugs?
 - Stress – am I under psychological pressure from the job?
 - Alcohol – have I been drinking within 8 hours? Within 24 hours?
 - Fatigue – am I tired and not adequately rested?
 - Eating – am I adequately nourished?
- Agency personnel reporting for duty with impaired ability shall be immediately stood down from operations, and the matter reported to the Officer in Charge (OIC) or Supervisor.
- In performing operational duties, aviation specialists must ensure they comply with any relevant Civil Aviation Regulations (CAR) and aircraft operators Operations Manual. The provisions of CARs 256.2, 256.3 and 256.4 apply to all Agency personnel authorised to perform the following roles during Agency aircraft operations:
 - Aerial Drip Torch Operator
 - Aerial Drip Torch Support Crew Member
 - Aerial Incendiary Operator
 - Air Attack Supervisor
 - Air Observer
 - FLIR Operator
 - Infrared Line Scan Operator
 - Helipad Marshall
 - Hot Refuelling (helicopter) aircrew member
 - Incendiary Operations Supervisor
 - Personnel involved in Winching Operations
 - Firebombing aircraft suppressant/retardant loading personnel
 - Aerial Shooting
 - Sling Load Operations
 - Night Vision Imagery Systems (NVIS)
 - Remotely Piloted Aircraft Systems (RPAS)
 - Any other assigned position working airside or airborne roles
- CAR 256.2 - A person acting as a member of the operating crew of an aircraft, or carried in the aircraft to act as a member of the operating crew, shall not, while so acting or carried, be in a state in which, by reason of his or her having consumed, used, or absorbed any alcoholic liquor, drug, pharmaceutical or medicinal preparation or other substance, his or her capacity so to act is impaired.
- CAR 256.3 - A person shall not act as, or perform any duties or functions preparatory to acting as, a member of the operating crew of an aircraft if the person has, during the period of 8 hours immediately preceding the departure of the aircraft consumed any alcoholic liquor.



- CAR 256.4 - A person who is on board an aircraft as a member of the operating crew, or as a person carried in the aircraft for the purpose of acting as a member of the operating crew, shall not consume any alcoholic liquor.

2.6 Dangerous Goods

To ensure the safe storage and transport of certain products this SOP outlines the carriage of items classed as Dangerous Goods on aircraft during Agency operations.

Procedure

- All aircraft operators contracted by Agencies must have regulatory approval for the carriage of Dangerous Goods where this is required for the service role they are undertaking.
- Members unsure whether an item(s) is classed as Dangerous Goods must have the item(s) brought to the attention of the PIC.
- Agency personnel are not to load or carry onto an aircraft any article or substance known or thought to be classed as Dangerous Goods without the specific approval of the PIC.
- Flammable liquids should be transported in approved containers only, and must be appropriately labelled.
- The PIC is ultimately responsible for all items carried onto an aircraft.

2.7 Accident, Incident, Occurrence and Near Miss Reporting

This SOP details Agency reporting requirements for aviation accidents, incidents, occurrences and near misses. The requirements in this SOP do not replace any relevant regulatory or contractual reporting requirements, which should occur in addition to the requirements of this SOP.

Procedure

- Any member involved in or becoming aware of an accident, incident, occurrence or near miss must notify the IC as soon as practicable.
- The IC must ensure the SAD is informed immediately and follow Agency reporting procedures.
- The pilot, aircraft owner or operator are responsible for ensuring the reporting of an accident, incident, occurrence or near miss to the ATSB. Agency personnel shall report to the SAD and dispatching Agency, for the reporting of an accident, incident, occurrence or near miss.



- Agency ICs/OICs and Aircraft Operators shall ensure a written report is submitted, in accordance with Agency requirements and contractual arrangements, to the tasking Agency who will inform the SAD. The minimum information required in the report includes:
 - Aircraft make, model and registration
 - Name of the aircraft operator
 - Full name of PIC
 - Date and time of accident / incident / near miss
 - Last point of departure, point of intended landing, and nature of the flight
 - Location of accident / incident / near miss
 - Number of POB and number of persons injured or deceased
 - Description of damage to the aircraft
 - Description of the terrain at the accident / incident site
 - Description of the weather at the accident / incident site
 - Confirmation of any regulatory reporting undertaken by the operator
 - Any other relevant information

Custody and Protection of the Aircraft

When an accident occurs, the aircraft must not be removed or interfered with except to:

- Remove survivors from the wreckage
- Protect the wreckage from destruction by fire or other cause
- Move the wreckage if it poses a significant threat to other persons after consultation with NSW Police

Custody and Protection of the Fuel

- When an accident, incident, occurrence or near miss occurs involving fuel supplied or contracted by the Agencies, the last known fuelling point must be quarantined in accordance with ATSB advice.
- Where fuel was sourced from a bowser or other source not specifically supplied or contracted by the Agency, notification must be given to the fuel supplier and all aircraft tasked that may also be using that fuel supply.

2.8 Accident, Incident and Near Miss Investigation

To provide a consistent approach to investigating accidents, incidents and near misses, this SOP covers Agency requirements for external and internal investigation of accidents, incidents and near misses.

Procedure

- All accidents, incidents and near misses will be reviewed and/or investigated by one or a combination of the following:
 - ATSB (may conduct a limited or a major investigation)
 - NSW Police Force (NSWPF) on behalf of the Coroner
 - Multi-agency review / investigation
 - Single agency review / investigation
- An Agency investigation will be conducted when one or more of the following have occurred:
 - Fatality / multiple fatality
 - Serious injury requiring hospitalisation
 - Third party property damage
 - Extensive aircraft damage

Level of Investigation

In the case of an accident, incident or near miss, or where the Agency deems an investigation is required, the hiring or tasking Agency in communication with the IAAWG representatives shall decide on the level of the investigation based on the following three categories.

Category 1

Occurrences that report a possible safety deficiency in the system.

- This level of investigation may not require a field investigation or compliance check and may be undertaken as a 'desktop' review and analysis by a competent person.
- The investigation will typically be undertaken by a single Agency, with the outcomes reported to the IAAWG.

Category 2

Incidents and near misses that report a reasonable concern for the safety of any one or a combination of Agency members, operators and/or members of the community. This includes occurrence reports that pose widespread implications for safety, and incidents with significant accident potential.

- This level of investigation shall be undertaken by a competent person (qualified in WHS reporting systems).
- The investigation should typically be undertaken by a multi-agency panel, with the outcomes reported to the IAAWG.

Category 3

Serious occurrences involving a fatality, serious injury, and/or extensive damage to aircraft equipment or third party property.

- This level of investigation should involve a multi-agency investigation, as determined by the lead Agency and may include independent specialists.
- The ATSB as prescribed by Commonwealth Legislation may also undertake a separate investigation.
- Fatalities shall require an investigation to be conducted by the NSWPF on behalf of the Coroner. NSWPF may also conduct investigations on non-fatal aviation related accidents and incidents as required.

2.9 Stand Down and Reinstatement

This SOP outlines the procedures regarding stand down and reinstatement of aviation resources, including but not restricted to company, aircraft, individuals and equipment.

Procedure

The IC/OIC or tasking Agency has the authority to stand down an aviation resource in the event of a safety incident / occurrence. An Operational or Company stand down should include but is not limited to:

- Essential equipment inoperable
- Mission critical equipment failure
- Unsatisfactory performance or failure to meet task objectives
- Safety violation
- Report of inability to perform duty due to the influence of drugs / alcohol
- False or misleading information

Operational Stand Down

An operational stand down applies to specific operations.

An operational stand down notification generated must be authorised by the IC/OIC or hiring Agency. The stand down notification may be verbal, however, it is to be followed up by a written stand down notification as soon as practical.

Where an aviation resource is stood down at the incident, the State Air Desk Duty Officer (SADDO) or State Air Operations Manager (SAOM) must be notified as soon as practical, and followed up in writing, stating the determining factors of the stand down.

The Manager Aviation, NSW RFS, or dispatching Agency shall notify the aviation resource supplier, in writing, of the stand down arrangements and any subsequent actions, which may result in a field compliance check, audit or investigation.

Company Stand Down

A company stand down refers to an aviation company being temporarily suspended from Agency dispatches.

An Agency requesting a company stand down must notify the Manager Operational Business Procurement, NSW RFS, in writing advising the rational and determining factors of the recommendation.

The Manager Operational Business Procurement, NSW RFS, shall review the recommendation and make the determination. The Manager Operational Business Procurement, NSW RFS, shall notify the company (Supplier) in writing of the stand down arrangements which may result in an audit or investigation.

Period of Stand Down

Upon receipt of a written stand down notice, the Aviation Company (Supplier) must use its best endeavours to promptly rectify the faults or omissions described in the notice.

Reinstatement

The NSW RFS or dispatching Agency will notify the Aviation Company (Supplier) once it is satisfied that the faults or omissions described within the stand down notice have been satisfactorily remedied by the Aviation Company (Supplier).

2.10 Aircraft Deployment

To ensure aircraft are dispatched in an effective manner which also provides value to the people of NSW this SOP contains information on requesting, retaining and releasing aircraft.

Procedure

Incident Management Teams (IMTs) and Agencies should:

- Seek appropriate advice from the SADDO or Agency representatives when considering the use of aircraft
- Consider the best fit for purpose aircraft to complete the task
- Consider logistical support for aircraft
- Consider safety issues and undertake a risk assessment where appropriate
- Monitor the cost effectiveness of resources to manage the incident



Requesting Aircraft

During Aviation Coordinated Periods all Agencies shall source aircraft through the SAD.

- All aircraft requests are to be submitted on IMP 8.04.01 Aircraft / Aviation Equipment Request form and must be approved by a person who holds the required authority in accordance with Agency procedures.
- ARENA should be used for all aircraft dispatches.
- The use of National Aerial Firefighting Centre (NAFC) contracted aircraft, by other Agencies, must have the SAOM or SADDO approval prior to deployment.
- The use of Type 1 Helicopter and/or Air Tanker resources must be approved by the SOC.

Request to Retain / Release Aircraft

- All aircraft / aviation equipment retain or release notifications are to be submitted on IMP 8.04.02 Aircraft / Aviation Equipment Retain or Release form.
- IMP 8.04.02.01 Aircraft / Aviation Equipment Retain or Release must be submitted as early as practical each day to allow the most appropriate resources to be dispatched or released.
- Released aircraft are required to be provided sufficient time to return to their nominated base prior to last light.
- Requests to retain aircraft must be supported with an appropriate strategy validating the ongoing use of aircraft.
- Requests to retain aircraft will be subject to a cost effective analysis.

2.10 Tasking Considerations

The following should be considered when dispatching an aircraft to an incident:

- Mission objective in accordance with Incident Strategy;
- Threats (life, property, assets and/or forests);
- Terrain and fuel types (forest/grassland/urban interface);
- Prevailing and/or forecast weather and flying conditions;
- Effectiveness of alternate capacity aircraft and/or ground units;
- Elapsed time for aircraft to arrive 'on site'; including turbulence;
- Time of day (last light); and
- Suppressant / Retardant quantity required (if applicable).



2.11 Dispatch/Tasking Rejection

Agency Dispatch & Tasking Rejection procedures should be read in conjunction with this SOP.

It is recognised that general aviation and aerial fire fighting operations are high-risk activities and it is not possible to have specific procedures for all situations. Aviation tasking decisions are to be made using an appropriate risk based commensurate to community risk.

All personnel (government and contractors) have an obligation to report health and safety issues that may impact them or others. Additionally, personnel also have the right to contribute to solutions to correct the issue.

When an individual contends that an aviation dispatch/tasking is unsuitable, they have an obligation to report this, identifying any issues and concerns, and if any safe alternatives exist to complete the dispatch/tasking.

An aviation dispatch/tasking rejection may occur where an individual or agency has determined they cannot safely undertake the activity.

The aviation dispatch/tasking rejection must be based on a risk assessment of approach and the inability of the individual or agency to control or mitigate such risks.

Individuals or operators may reject an aviation dispatch/tasking when:

- there is a violation of regulated safe aviation practices;
- weather and environmental conditions make the activity unsafe;
- there is insufficient information to safely plan or undertake the activity; or
- they lack the necessary qualifications or experience.

There is an obligation on individuals to ensure any concerns or decision to reject a dispatch/tasking are notified as soon as possible.

Equally, there is an obligation on an Incident Management Team and/or State Air Desk to ensure all aircraft and operators assigned to a particular incident are advised of any dispatch/tasking rejection as soon as possible.

Section 3 Incident Coordination

3.1 IMT Aviation Unit

To ensure there is effective, efficient and safe management of aircraft this section outlines the establishment and role of the air operations unit in an IMT.

Procedure

- An air operations unit must be established within an IMT whenever the criteria exists for management and support of aviation resources deployed at operations. The Triggers Matrix provides guidance to the level of aviation support required at an operation (Appendix 7.3).
- ICs should discuss the need for aviation support staff with their respective Agency or the Major Incident Coordination (MIC) team at the earliest opportunity.
- If the SAD or tasking Agency representative determine that an operation is not managing aircraft effectively then the IC should be advised and required to review the current management structure.

3.2 Aviation Personnel

This SOP provides details of aviation related operational and support roles.

Procedure

- Agencies should maintain a list of aviation trained personnel.
- Requests for aviation personnel should be sourced through internal Agency procedures.
- During multi-agency coordinated periods in support of multiple S44 incidents, aviation operational and support personnel requirements should be coordinated through the assigned MIC Desk.
- Agencies should monitor currency of their aviation personnel and provide adequate access to currency and recertification training.
- Agencies should align aviation training to National Units of Competency where appropriate.
- The following list identifies the current recognised aviation positions:
 - AAS Air Attack Supervisor



- ABM Airbase Manager
- ABO Airbase Operator
- AOB Air Observer
- AOF Aircraft Officer
- AOM Air Operations Manager
- ARO Aviation Radio Operator
- ASO Airborne Systems Operator
- FS FFAST Shooter
- IOS Incendiary Operations Supervisor

3.3 Aviation Briefings

This SOP provides guidance for operational briefings to personnel involved in aviation operations.

Procedure

Responsibility

- The IC/OIC is responsible for ensuring that appropriate briefings occur in a timely manner.
- When there is an ongoing operation, the IC/OIC must ensure that a briefing is conducted at the start of each day's aviation operations.
- All attendees at aviation briefings are to be recorded.
- All attending personnel should advise that they are satisfied to undertake the assigned tasking prior to commencement of operations.

Induction Briefings

- This briefing must be facilitated to all assigned aviation personnel prior to starting their first shift on an airbase. This briefing is to cover all applicable aspects of the aviation operation, including:
 - Situation and mission
 - Allocated roles
 - Safety and security
 - Airbase emergency and environmental plans
 - Welfare arrangements
 - Logistical arrangements
 - Daily briefings

Strategic Daily Briefings



- A strategic daily briefing should be provided to all members involved in aviation operations prior to commencement of operations, and as required to facilitate coordinated operations consistent with the ICs/OICs intent and objectives.
- All attendees at the briefing are to be recorded.
- All operational aviation personnel should be provided with a copy of the aviation section of the IAP and other relevant sections, as appropriate. This briefing should also include Aviation Dispatch/Tasking rejection procedures.

Tactical / Task Specific Briefings

- Tactical / task specific briefings should normally follow a strategic briefing or prior to a mission.
- Tactical / task specific briefings should normally be verbal but shall include specific information in written form, as required.
- The briefing should include details including (but not limited to):
 - Latitude and Longitude (preferably in Degrees, Decimal Minutes)
 - Geographic location (as referred to on a map or chart)
 - Incident AAS contact details
 - Communications Plan (ICC channel and FCTAF as a minimum)
 - Aircraft currently assigned or operating on the incident ground
 - Actual and forecast weather conditions
 - Fire/operational activity and threats
 - Load product (if applicable)
 - Any other information which may enhance safety
- Pilots are to be informed of any aviation dispatch/tasking rejections for the incident to which they have been tasked.

Individual Aircraft Briefings

- Aircraft briefings are the responsibility of the PIC and should be provided to all passengers as per the relevant CAO and aircraft operators Operations Manual.

Aviation Weather Briefings

- Pilots are ultimately responsible to obtain necessary weather information prior to flight.
- Where possible, the IMT should facilitate the availability of weather information at each of its airbases.



3.4 Notice to Airmen (NOTAM)

This SOP provides guidance in relation to NOTAMs, restricted and declared danger areas, and area or aerodrome information that could impact on aviation operations.

Procedure

- Pilots are ultimately responsible to obtain necessary NOTAM information prior to flight.
- Mission briefings should include the latest meteorological information and all current NOTAM information.
- NOTAM and restricted area information, where known in advance, should be incorporated into the aviation operations section of the IAP.
- Airservices Australia (ASA) provide a Temporary Flight Restriction (TFR) for bush fires on Area Forecasts specifying non fire traffic to remain clear at a five (5) nautical mile radius and not below 3,000 feet above ground level (AGL) of observed fires.
- ICs may require additional airspace restrictions or provide additional NOTAM advice to pilots during incident operations. This requirement may be due to complex incident operations, working environment, level of activity or interference from other traffic. The IC/OIC is required to contact the SAD or the hiring Agency to seek advice.



Section 4 Airbase Management

4.1 Airbase Selection and Management

This SOP assists Agencies with the selection and establishment of suitable airfields and landing areas for aircraft during aviation operations.

Procedure

- Airbases should be established where multiple aircraft are assigned in support of an incident.
- Consideration must be given for the deployment of a qualified ABM for all airbases. The Triggers Matrix provides guidance to the level of aviation support required at an operation (Appendix 7.3).
- IMTs must ensure that sufficient resources are available at airbases to support aviation operations.
- Pilot / aircrew fatigue should be considered to ensure adequate pilot / aircrew rest (food, water, toilet facilities, shade/rest area).
- Airbases should be established as close as practical to the incident.
- Wherever possible, licensed airfields or heliports should be used for all airbases.
- An Emergency Action Plan shall be developed for all airbases and be consistent with the Airport Emergency Plan, at licensed airports.
- If a licensed airfield or heliport is not available, an Approved Landing Area (ALA) should be used.
- When neither a licensed airfield nor an ALA is available, it may be necessary to use an unlicensed airfield or temporary helibase approved by the IC/OIC.
- CAAP 92-1(1) paragraph 8.4 states “a landing area **should not** be located:
 - a) *Within the area or in such close proximity as to create a hazard to aircraft conducting a published instrument approach, excluding the holding pattern; or*
 - b) *Within any area where the density of aircraft movements makes it undesirable; or*
 - c) *Where take-off or landing involving flight over a populated area creates an unnecessary hazard.”*

4.2 Airbase Layout



This SOP provides guidance to Agency personnel involved in establishing an airbase.

Procedure

The ABM is responsible for ensuring the layout of the airbase and should take into consideration the following factors:

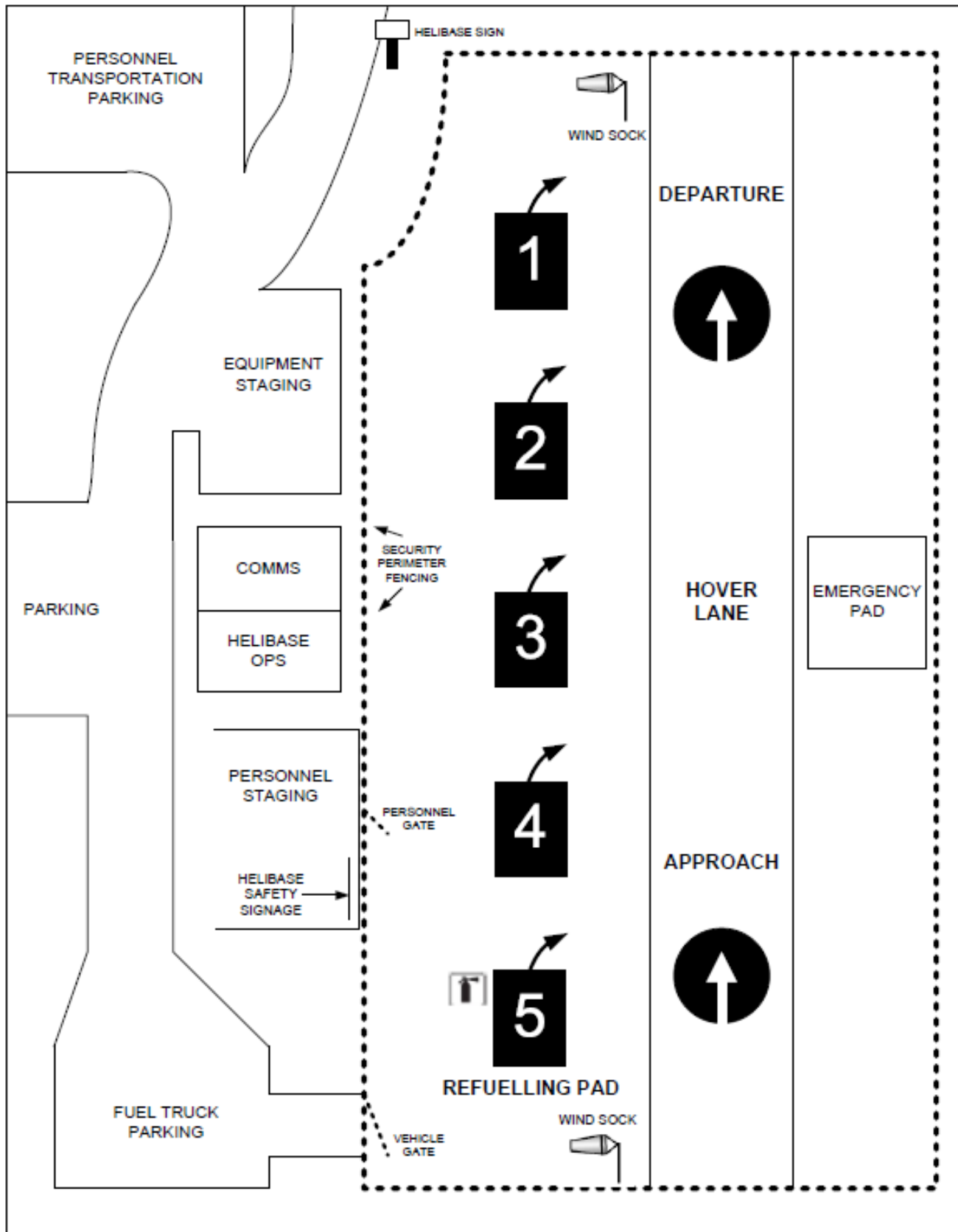
- Aircraft type / category (fixed wing or rotary or a combination of both)
- Likely expansion of the operation
- Security of aircraft, equipment and public safety
- Aircraft access to taxiways and runways for loading, refuelling, parking and maintenance
- Site access by road including the possible delivery of water, fuel, bulk stores and personnel
- Water sources if available
- Parking areas for ground transport
- Access to power, shelter and amenities
- Aircraft parking areas (should be clear of the Helicopter Landing Site (HLS) and not in the departure or approach paths)
- Design of an airbase should take into account emergency access and safe work practices

Types of Airbases

- Helibase – a temporary or intermittent base established for helicopter emergency operations or project needs.
- Helispot – a natural or improved take-off and landing area intended for temporary or occasional use.
- Helipad – a designated area, usually with a prepared or improved surface, for landing, take-off, and/or parking helicopters.
- Fixed Wing – a designated pre-approved runway aerodrome or airport that meets the specifications for the category of aircraft to operate from.



Example of an Airbase Layout for Helicopter Operations





4.3 Airbase Emergency Planning

This SOP details the emergency planning process for Agency personnel working on an airbase to facilitate the response to any emergency involving aircraft and persons on the airbase.

Procedure

- All airbases shall have an Emergency Response Plan, taking into account the possibility of accidents / incidents involving both personnel and or aircraft.
- The design of airbases should take into account emergency access to all areas of the airbase.
- In the event of an incident involving an aircraft at an airbase the ABM shall notify the IC/OIC who will inform the hiring Agency.
- Protection of airbases in the event of wildfire or flood should be taken into account in the initial decision making process as to the location of the airbase.
- Airbase Emergency Plans should include, as a minimum, the following:
 - A diagram of the airbase layout including main access points and any secondary access points
 - Medivac plan (including location and contact details for both local and regional medical facilities)
 - Communications plan with personnel assigned to the incident ground, working out of the airbase
 - Location and type of first aid equipment located at the airbase
 - Emergency muster evacuation point
 - Dangerous goods requirements and a spill response plan
 - Management of fire-fighting suppressants
 - Location of fire-fighting equipment
 - When established at an Airfield, a copy of Airfield Emergency Response Plan including Contact details.

4.4 Refuelling of Aircraft

To ensure the safety of personnel conducting aircraft refueling operations, this SOP outlines the procedures for the refuelling of aircraft when engaged by the Agencies.

Procedure

- Refuelling of aircraft must only be carried out by trained and accredited personnel at the direction of the PIC.



NSW State Wide Fuel Locations

- Agencies may maintain stocks of aviation fuel at strategic locations around the State.
- The refuelling of aircraft from existing refuelling infrastructure at aerodromes is preferred, when appropriate.
- Mobile fuel solutions should be deployed when existing refuelling infrastructure at aerodromes is not available or practical or where multiple aircraft are engaged and exceed the reasonable capacity of the existing refuelling infrastructure or where forward locations for fuelling need to be established.

Fuel Tankers

- Fuel tankers may be dispatched by the hiring Agency or SAD.
- The hired fuel provider is responsible for ensuring compliance of all relevant Federal and State regulations relating to fuel transport and fuel supply.
- Aircraft must shut down prior to refuelling with Agency engaged fuel solutions unless the Agency Incident Controller (IC) / Officer In Charge (OIC) approves hot refuelling.

Fuel Drum Management

- The PIC is responsible for ensuring that when refuelling from drums, the procedures comply with all Federal and State regulatory requirements.
- The PIC must be satisfied as to the quality of the fuel from drum stock. A “release note” for each batch number of fuel should be held with all drum stock. The release note is a statement of quality and provides essential information regarding time and place of refinement.

Fuel Drum Storage

- A manifest must be maintained for all drum storage locations.
- Storage of fuel drums are to be in accordance with the Agency’s standards and Standard Operating Procedures.

Fire Protection

- All airbases must have appropriate fire-fighting capability during refuelling operations.
- A risk assessment should be undertaken to determine the level of fire protection required, relevant to the size of the airbase. The risk assessment should consider but not be limited to:
 - Number and size of aircraft



- Refuelling source
- Number of aircraft movements

- As a minimum, two fire extinguishers of approved type and capacity positioned within 15 metres (50 feet) but not less than six metres (20 feet) from the aircraft.

Hot Refuelling

- Hot refuelling at Agency established airbases require the approval of the IC / OIC.
- The Agency IC/OIC may consider hot refuelling at Agency established airbases during emergency operations when:
 - Additional time taken for normal refueling may compromise an operation
 - Emergency extraction of Agency personnel or members of the public is required
- Hot refuelling must comply with CASA Civil Aviation Order 20.10 and the aircraft operators Operations Manual.
- The pilot remains responsible for refuelling and shall:
 - Ensure that the refuelling process of the aircraft is conducted appropriately by the fuel supplier
 - Remain at the controls of the aircraft at all times
 - Ensure that there are no agency personnel or passengers in the aircraft during hot refuelling
 - Satisfy themselves as to the quality of the fuel
 - Satisfy themselves that safety and fire protection equipment are suitable prior to commencing and during the operation
 - Satisfy themselves as to the competence of any fueling personnel before commencing and during the operation
- AVGAS powered aircraft are not to be hot refuelled at any time.



Section 5 Flight Safety

5.1 Flight Following

To ensure Agency flights are monitored throughout their duration and to provide a measure of protection for all personnel on board, this SOP provides guidance to ensure flight following and flight notification procedures are observed for aircraft engaged in Agency operations.

Procedure

- Flight following of all aircraft in support of Agency operations is mandatory.
- Automated flight following systems may be used to support, but not replace flight following communications procedures.

Person Actioning	Responsibilities and Information Required
Responsible Person	➔ Inform pilot of responsible person and location
	➔ Ensure a flight plan for non-tactical flights is completed by the PIC and provided to the responsible person
	➔ Ensure passenger manifest is completed and provided to the responsible person
	➔ Ensure receipt of flight plan for all non-tactical flights
	➔ Record aircraft call sign and type
	➔ Monitor flight following calls
	➔ Record time of call, location and intentions of pilot
	➔ Record expected time of next call
	➔ Record changes to passenger names
	➔ Record task changes
	➔ Monitor flight progress
	➔ Record arrival at final destination
	➔ Initiate Search and Rescue (SAR) action if required (refer to 5.4)
Pilot / Aircrew	➔ Complete flight plan and passenger manifest
	➔ Report departure and every hour and half hour thereafter to responsible person
	➔ Report passenger name changes
	➔ Report tasking changes
	➔ Report changes to area of operations
	➔ Report landings at intermediate points
	➔ Report departures from intermediate points
➔ Report arrival at destination	

Fire Detection and Positioning Flights

- Where possible fixed wing positioning and transport flights should be planned under Visual Flight Rules (VFR), lodged with Airservices Australia (ASA) who will also provide flight following.
- The SAD or hiring Agency should arrange flight following for fire detection and positioning flights. Communications are to be maintained directly with the appropriate allocated communications point.
- A normal interval of 30 minutes between flight following calls is to apply. The call period may be adjusted to suit specific operational conditions but the time interval must not exceed 30 minutes.

Tactical Operations

- It is the responsibility of the IC/OIC to ensure flight following is in place including:
 - Flight following is conducted by suitably competent personnel
 - A responsible person is appointed to supervise flight following
 - A flight following log is maintained
- The PIC is responsible to rectify any missed calls.

Company Flight Following

- A Company flight following system may be acceptable where the aircraft is not involved in tactical operations or during wide area flights. The company maintaining flight following is to ensure 30 minute intervals whenever working on Agency dispatches.

Training

- Whenever possible, personnel who have been trained in flight following procedures are to be used for flight following, however, the lack of trained personnel does not negate the need for this SOP to be strictly followed.

Flight Following Log

- The Flight Following Log is designed as a quick reference chart to indicate that the safety of the aircraft and aircrew is being maintained. It should be used in conjunction with the operations log as it does not provide specific information on the location and condition of the aircraft or details of messages passed.

5.2 Flight and Duty Time Limitations

To ensure Agency aviation personnel are capable of performing their duties this SOP outlines the requirements surrounding flight and duty time limitations for Agency personnel and aviation operators engaged in Agency operations.

Procedure

- The operator and the pilot of the aircraft are responsible for the maintenance of flight and duty times and shall ensure that they are within the legal limitations appropriate to the operation.
- Pilots and aviation companies must advise if they cannot comply with their legal limitations while complying with the Agency flight and duty time limitations.
- Agency officers must plan the use of aircraft and aircrew to comply with flight and duty time limitations.
- ICs/OICs are to monitor operators compliance with the Agencies flight and duty time requirements.
- Agency personnel performing airborne roles are required to record their flight duty times and comply with any Agency requirements associated with rostering / fatigue management.

Limitations

The flight and duty time limits established by the Agencies are as follows:

- An operator shall not roster, and a pilot shall not be on duty for more than 12 hours in any consecutive 24 hours. Duty time is calculated from the time the pilot arrives at the aircraft or briefing and ceases when they return to their accommodation.
- Flight time of a pilot / aircrew must not exceed 10 hours within a 24 hour period.
- Daylight flying operations may commence from the beginning of first light.
- Daylight flying operations are to cease 30 minutes prior to the end of last light.

Accommodation Requirements

- Pilots and aircrew are to be accommodated for sleep in a sole occupancy, quiet, temperature controlled accommodation that is suitable for sleeping in.

5.3 Mission Management

This SOP provides guidance for overall mission management of an operation.

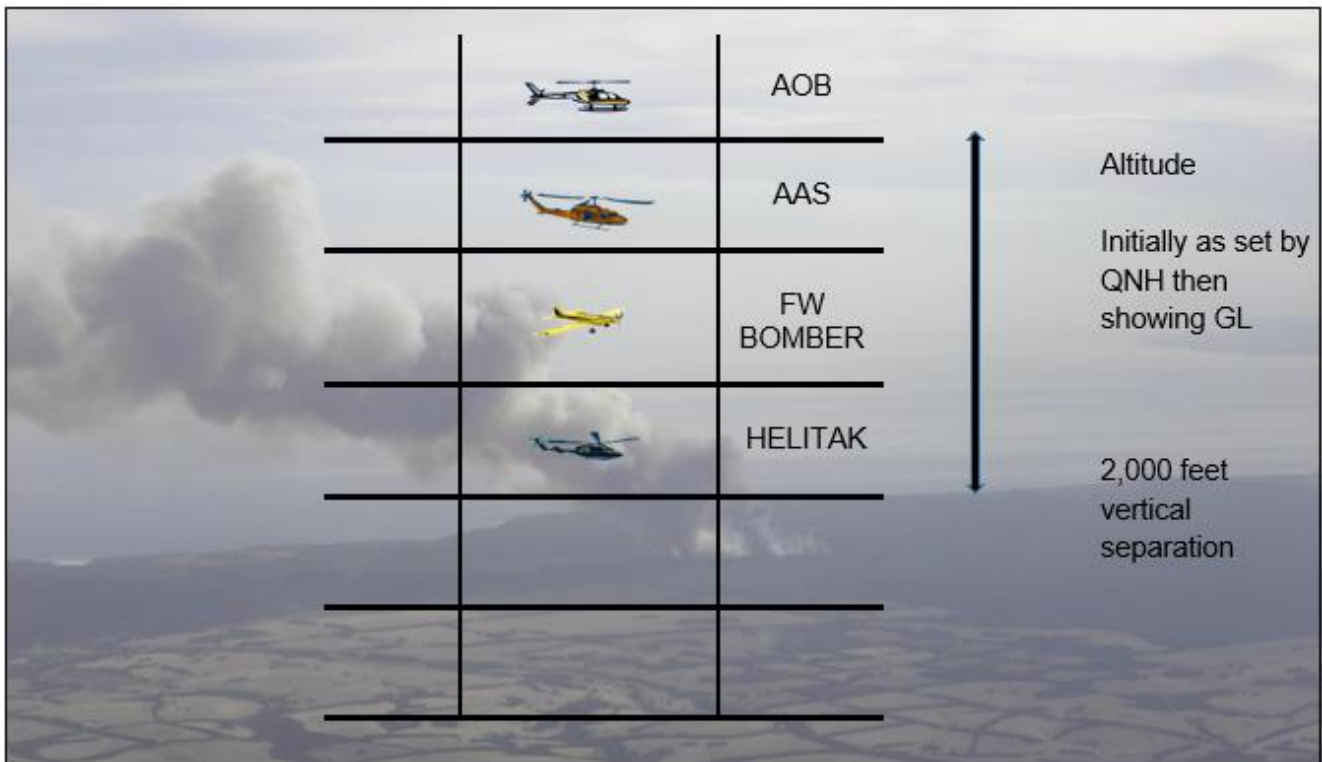
Procedure

- The control of the airspace remains through Airservices Australia and CASA regulations.
- Pilots are responsible for maintaining aircraft separation at all times.
- The IC/OIC is responsible for ensuring that appropriate mission management procedures are enacted for all operations under their control.
- The Agency and/or the SAD should ensure when dispatching aircraft to an incident that the pilot is aware of known aircraft allocated to the incident and Fire Common Traffic Advisory Frequency (FCTAF).
- Where more than one aircraft is deployed at an incident the pilots are to confer and establish flight procedures covering circuit patterns, altitude levels, approach and departure directions and separation to ensure a high level of safety is maintained.
- All aircraft transiting to or from an operation engaged by an Agency should do so under Visual Flight Rule (VFR) procedures (unless an exemption is approved, eg. LAT return under IFR).
- All aircraft needing to enter the area of an incident are required to give a 5 nautical mile (NM) inbound call on the FCTAF (Air Tanker operations require 10 NM) to establish contact with the Incident AAS and other aircraft to advise intentions and confirm the established flight procedures. If no contact can be established, the tasked aircraft is to remain outside the 5 NM radius.
- Where there is **not** an AAS established over the incident the first arriving aircraft should assume the role for advising all further aircraft wishing to enter past the 5 NM point.
- As a general rule, fire bombing helicopters operating within the 5 NM radius of an incident or area of tasking (5 NM zone) should generally operate not above 1,000 feet AGL.
- As a general rule fixed wing bombers operating within the 5 NM zone, should enter the zone at 2,000 feet AGL and descend to 1,500 feet AGL to join orbit over the proposed drop zone.



- Once drop instructions have been received, the fixed wing bomber should then descend in accordance with the drop instructions and ascend to agreed altitude when drop has been completed.
- As a general rule the AAS aircraft operating within the 5NM zone, should enter the zone at a minimum of 3,000 feet AGL and operate in the altitude range between 2,000 feet AGL and 2,500 feet AGL. The AAS may descend below this altitude for tactical purposes for short durations, and only in accordance with the established flight procedures for the incident.
- As a general rule all non fire bombing aircraft operating within the 5 NM zone, should enter the zone at a minimum of 3,000 feet AGL and maintain this altitude for the duration of operations within the zone. Non firefighting aircraft should coordinate with the AAS or other aircraft, prior to entering the area.
- The AAS is responsible for the development of all aviation strategies and to coordinate the effective use of aviation assets to combat the incident.
- When the AAS gives any form of direction to pilots, be it to hold or commence a run, this in no way absolves the PIC of their responsibility to maintain separation from all other aircraft operating in the vicinity of the fire ground.

Recommended Vertical Separation Stack





5.4 Aviation Incident Response

To assist in incident response this SOP details the SAR arrangements for an overdue aircraft whilst engaged on Agency operations.

Procedure

If an aircraft becomes overdue by more than five minutes, reactive steps are to be taken to locate the aircraft. After 15 minutes overdue (where there has been no positive information about the location of the aircraft and the safety of the occupants) a search and rescue operation should be commenced and Police should be notified.

Observed Accident

Any personnel that becomes aware of, or observes an accident involving an aircraft are to note both its position and time and report it immediately to the IC/OIC. The IC/OIC should ensure the incident is reported to Police and subsequently the SAD.

Overdue Aircraft



Uncertainty Phase

- An Uncertainty Phase is declared when an aircraft has failed to make a scheduled report and the flight following Agency takes measures to contact the aircraft.
- An Uncertainty Phase must be declared five (5) minutes after the aircraft fails to make a scheduled report. The IC/OIC should be advised if an uncertainty phase is declared.
- Attempt to contact the aircraft by all available means.
- Review tracking data to determine aircraft location and if aircraft is still flying.
- If an aircraft becomes overdue during any operation where there are other tasked aircraft in the area, the IC/OIC should use any of the locally tasked aircraft to search for the missing aircraft.





Alert Phase

- An Alert Phase is declared when attempts to contact the overdue aircraft have been unsuccessful.
- An Alert Phase must be commenced fifteen (15) minutes after the aircraft fails to make a scheduled report (10 minutes after declaration of Uncertainty Phase) and when no visual or radio contact with the aircraft has been made or when there is reason to believe the safe conduct of the flight is in jeopardy.

Distress Phase

- A Distress Phase must be declared when information is received or reasonable doubt exists about the continuing safety of the aircraft or its occupants.
- If at any time during flight watch or SAR response, information is received that indicates the aircraft or its occupants are in danger or imminent danger, a Distress Phase must be declared immediately.
- A Distress Phase should also be declared if the aircraft has not reported having landed and the fuel on board is considered to be exhausted or aircraft is likely to or is about to make or has made a forced landing or crashed. At this point SAR resources must be mobilised.

Aircraft Found

- If at any time the aircraft is found:
 - Confirm that it is the correct aircraft by speaking to the pilot or other responsible person, or confirming registration details on the airframe
 - Confirm the welfare of all persons on board
 - If persons are injured or unwell, or if welfare is not able to be determined, notify Ambulance immediately
 - Call all contacts that were assisting to locate the aircraft and inform them the aircraft has been found

The overdue aircraft checklist assembles information that (if not already assembled) is useful in providing guidance to SAR personnel and rescue crews to affect an expeditious rescue.

Overdue Aircraft Checklist	
1	Aircraft type and registration

2	Number and names of aircrew on board	
3	Number and names of passengers on board	
4	Any cargo on board	
5	Departure point	
6	Departure time	
7	Fuel endurance (if known)	
8	Last position report – where, when, next destination, ETA	
9	Total time overdue since last position report	
10	Possible landing alternates / nearest airport	
11	Landing alternates checked	
12	Weather – on route	
	→ at destination	
	→ at alternates	
13	Intended flight routes verified, primarily over land or water, type of terrain	
14	Obtain information from aircraft tracking data	
15	Any response from other flight following bases, Air Traffic Control (ATC) centres, aircraft operating in the area	
16	Any reports of ELT activation	
17	Any relevant information from the last person, aircraft or Agency that spoke to the aircraft	
18	Contact SAD and Police	
19	Obtain copy of flight planning form	

To assist SAR processes, consideration should be given to:

Local Information Checklist	
Search and other aircraft available in the area	
Other SAR resources available in the area	
Availability of rescue equipment	
Local medical facility including medivac capabilities	
Local contact numbers for ongoing communication / coordination	



Aircraft Overdue – Responsibilities

Activity	Responsibility	Delegated Responsibility
Uncertainty Phase		
a) Try to contact aircraft by any means available	Person to whom flight following was assigned	Radio Operator
→ On agreed channel		
→ Via ground personnel at last known location		
→ On other Agency channels		
→ Via telephone (mobile, satellite, etc.)		
→ Via other Agency tasked aircraft		
→ Continue to try at regular intervals		
→ Arrange for ASA to call the aircraft via the SAD		
→ Begin Overdue Aircraft Checklist		
b) At ETA +5 mins declare an Alert Phase Response	IC/OIC or person to whom aircraft was tasked to	Get any help available
c) Advise SAD 1300 677 723		
d) Review aircraft tracking data		
Alert Phase		
a) Dispatch any local aircraft to search for missing aircraft without creating a secondary incident	IC/OIC or person to whom aircraft was tasked to	AOM / AOF or other responsible person
b) Continue to try to contact the aircraft at intermediate landings points or any other places the aircraft may be located		
c) Task additional aircraft to area if appropriate	IC/OIC	No delegation
d) Contact Operating company	SAD	No delegation
Distress Phase		
a) Alert Police (who will advise AMSA where required) of missing aircraft to initiate large scale search	IC/OIC	Delegated as required
b) Task additional aircraft if available		
c) Collect available information and documents:		
→ Flight notification		

→	Flight following information		
→	Overdue Aircraft Checklist		
→	Weather information		
d)	Hand over to SAR combat agency / Police on their arrival		
e)	Monitor progress of the search and rescue		

5.5 Communications – Aviation

This SOP details the requirements that should be adhered to by aircrew and Agency personnel to safely coordinate and communicate during Agency operations.

Procedure

- CASA requires all Agency personnel operating VHF air band radios to be qualified in their operation.
- It is essential that incidents have a suitable communications plan in place to ensure effective mission tasking and flight following operations.
- The pilot of the aircraft shall at all times have first call on the communications systems within the aircraft. The pilot is in command of the aircraft, and the use of communications equipment within the aircraft should be with the approval of the pilot at all times.
- The use of the words "Mayday Mayday Mayday" or "Pan Pan, Pan Pan, Pan Pan" shall indicate to all other users that a life threatening emergency exists or is likely to develop. All other communication shall cease until the situation is managed and life is protected. Other users may be requested to provide communications to assist with the emergency. All other users shall maintain a listening watch only.

Communications with the Fire Ground

- The AAS should establish and maintain communications with appropriate ground crews for the duration of the operation.
- Communications from the fire ground should always be directed to the AAS unless bombing aircraft are allocated in direct support of ground operations.
- Communications between bombing aircraft and the incident ground may occur when an aircraft is tasked in direct support of ground crews and the AAS has handed control of that aircraft to the ground crews for the duration of that task.

Section 6 Fire Suppression and Management

6.1 Fire Detection / Intelligence Gathering Flights

This SOP details the procedures for aircraft and personnel during fire detection and intelligence gathering flights.

Procedure

During periods of very high or greater fire danger rating, fire detection flights (FDF) and intelligence gathering may be arranged to assist in the early detection, or intelligence gathering of fires.

Fire detection / intelligence gathering flights should be coordinated between Agencies. Fire detection / intelligence gathering may include multi-spectral line scanning, digital imaging, forward looking infra-red (FLIR) and real-time surveillance camera equipped aircraft.

Requesting and Tasking Fire Detection Flights

- Only qualified aviation specialists shall be deployed for FDFs.
- Outside of the Aviation coordination period, tasking of fire detection aircraft shall be by individual Agencies. Agencies should consult with adjoining Agencies wherever possible.
- During the coordinated period, the MIC desk should initiate and coordinate FDFs where fire danger or a fire situation warrants.

Briefing and Flight Planning

- Briefing and detailed flight planning including communications and flight following should be conducted co-operatively between the pilot, air observer and the hiring Agency.

Reporting Fires

- FDFs are conducted across all land tenures covered by the flight plan. All sightings of fire occurrences should be reported to the responsible person conducting flight following.



- The responsible person undertaking flight following should arrange for the dissemination of relevant fire occurrence information to be passed on to the respective jurisdictional fire service and the public land manager where appropriate.

6.2 Helicopter Insertion and Extraction

This SOP outlines aerial crew deployment operations including transit to and from an incident, hover entry and exit, flood operations, winch, rescue winch and aerial extraction operations.

Procedure

- This section covers all methods of inserting and extracting personnel using helicopters during operations, including the insertion and extraction of trained remote area personnel that involve:
 - Landing
 - Hover entry / exit
 - Winching
 - Rescue winching
- All insertions and extractions by aircraft involve risk.
- Insertion and extraction of crew should be undertaken via landing where possible, if landing is not possible hovering or winching is to be undertaken.
- Prior to hovering or winching a specific risk assessment is to be undertaken involving the pilot, aircrew and the crews to be inserted or extracted.
- All Agency personnel travelling in aircraft should receive a thorough briefing from the pilot or aircrew on aircraft safety and relevant embarkation and disembarkation procedures.
- The PIC has ultimate responsibility for all aircraft operations and has the final say for all insertions and extractions.
- Sharp or dangerous objects carried by personnel being inserted or extracted should be secured and covered to avoid injury and damage to aircraft.
- Appropriate personal protective equipment and clothing (PPE/C) must be worn when travelling in aircraft. This includes fire resistant clothing, hearing protection, helmet and eye protection.



- Agency personnel that are required to be inserted or extracted should have a pre-prepared communications plan in place prior to insertion.
- Aircraft should be configured in such a way as to easily and safely facilitate the entry and exit of personnel e.g. doors off/open.
- The pilot:
 - Must be approved by the Company Chief Pilot for the type of operation to be undertaken
 - Must ensure all personnel are trained and current to carry out the operation

Landing

- Landing is the safest option for crews to embark and disembark aircraft. Aircraft may shut down or remain running while passengers are loaded or unloaded. This decision shall be made by the pilot.
- In the instance of an aircraft shut down:
 - Passengers need to follow the directions of pilot or aircrew in regards to approach and departure from the aircraft
 - Passengers shall remain in their seats with seatbelts fastened until all rotors have stopped or as directed by the pilot or aircrew
 - Passengers approaching an aircraft while it is shut down require approval from the pilot or aircrew prior to approach
- In the instance of a running aircraft:
 - Passengers need to follow directions of pilot or aircrew in regards to approach and departure from the aircraft
 - Any approach towards or departure from a running aircraft must only occur upon the pilot or aircrew's approval
 - Personnel approaching or departing a running aircraft must adopt safe approach/departure practices as outlined in Agency training and operational documents
 - When departing a running aircraft, passengers shall only remove seatbelts and move from the seat on the direction of the pilot or aircrew

Hover Entry / Exit

- Helicopters may be unable to land in remote or rugged country. Hover entry / exit procedures may be undertaken to insert or extract trained personnel or equipment. In these circumstances, the aircraft maintains a low hover, allowing personnel to enter or exit the aircraft. This method is preferable to winching.
- A suitable extraction point needs to be identified and communicated or confirmed with the pilot.
- Approval to approach or enter a hovering helicopter needs to be given by the pilot or aircrew.

- Personnel entering a hovering helicopter should secure themselves in a seatbelt as soon as possible and assist in securing other personnel and equipment as required. In the absence of aircrew, the door will need to be closed and secured by personnel in the cabin.

Approvals, Training and Personnel

- Only trained, current and authorised Agency personnel should undertake hover entry / exit.
- Hover entry / exits may be undertaken in any single or twin engine aircraft with approval for Charter Operations.
- Hover entry / exits should be approved by the IC/OIC.

Hover Entry / Exit Briefing

- While specific procedures for hover entry / exit are not included in this document, standard daily briefings for winching helicopters should also include a hover entry / exit briefing. At the commencement of every shift, the pilot or aircrew person shall provide a briefing to all Agency personnel, covering at least:
 - Preference of hover over winch
 - Process for insertion
 - Management of equipment
 - Process for extraction
- An operational hover entry / exit brief should not take longer than 6 minutes. Briefings that take longer than this greatly disrupt the efficient deployment of personnel.

Winching

Agency Winching Standards should be read in conjunction with this SOP

- Winching of personnel has inherent risks and thus is an insertion method that needs careful consideration and should only be approved when other options are not possible or practical.

- Winching operations involve personnel or equipment being lowered or lifted by an aircraft mounted winch (hoist).
- Winching practices and standards may differ slightly between Agencies. It is important for those involved to be familiar with the documents relevant to their Agency and operation.

Approvals, Training and Personnel

- Only trained, current and authorised Agency personnel shall undertake helicopter winching operations.
- All helicopter winching operations should be approved by the IC/OIC.
- Appropriate planning should be undertaken to minimise the number of personnel to be inserted by winch. Consideration should be given to the early establishment of Helicopter Landing Sites (HLS) or hover entry / exit locations for the safe insertion of personnel.

Agency Procedures (NSW RFS)

- Training of NSW RFS personnel shall be limited to Remote Area Operators and other personnel specifically approved by the Manager, Remote Area Firefighting and Specialised Operations.
- NSW RFS Helicopter Insertion Techniques (HIT) qualification has a shelf life of fourteen (14) months. All NSW RFS personnel must have been formally recertified in HIT within fourteen (14) months in order to undertake any winching operation.
- Recertification for NSW RFS HIT personnel should only be undertaken at a formal training event.
- NSW RFS personnel must produce a valid NSW RFS Aviation ID Card (winch authorised) on request of the PIC or aircrew. Failure to produce a current NSW RFS Aviation ID Card when requested by the pilot or aircrew will result in the NSW RFS member not being permitted to undertake winching operations.

Agency Procedures (NPWS)

- Single and twin engine helicopters may be used for winch operations involving NPWS personnel in Class 1 and 2 fires, or land management activities under the control of a NPWS IC.
- For all other fires, winching shall only occur in twin engine helicopters except when life is endangered.
- NPWS personnel involved in winching operations must maintain currency in accordance with NPWS policy.

Winch Brief



- At the commencement of every shift, the aircrew shall provide a winch briefing to the winchees covering at least:
 - Cabin management
 - Seat transitions
 - The winching process
 - Contingencies and emergencies
 - Return of equipment strops
 - Mobile phones or other devices
 - Ground to air communications channel and procedures
- An operational winch brief should not take longer than 12 minutes. Briefings that take longer than this greatly disrupt the efficient deployment of personnel.

Confirm Insertion or Extraction Method

- A method of insertion shall be agreed upon. If options for landing nearby to the incident location are possible and practical, hovering or winching must not be attempted.

Winch Insertion

- Personnel inside the cabin should discuss the suitability of the proposed insertion site and undertake a dynamic risk assessment of the overall deployment. Crew resource management should occur throughout this process and shall involve the pilot and aircrew.
- Equipment, PPE/C and personnel should be ready for disembarkation as the aircraft is finalising approach to deployment site. This includes attachment of equipment strops to equipment bags and winching collars donned and fastened by the first two personnel to be inserted.
- **At all times** personnel must be attached to the aircraft by one secure point.
- Movement through the cabin and to the door will be on the direction of aircrew.
- A thorough series of safety checks are to be completed prior to committing to the winch by the aircrew and the winchee.
- Upon reaching the ground, winch personnel should minimise the time attached to the cable by removing themselves from the winch collar before removing equipment.
- At all times efforts should be made to minimise the time that an aircraft remains in the hover.

Return of Equipment Strops

- Unless under exceptional circumstances, the inserted winchee must return their equipment strops to the aircraft prior to the completion of the winch insertion.



- All equipment strops should be attached to the equipment ring and returned to the aircraft.

Winch Extraction

- A suitable extraction point needs to be identified, communicated and confirmed with the pilot.
- Communications through to the IMT should be made by personnel intending to be extracted by winch from an incident. This serves to request permission for the extraction and highlight that a high risk operation is about to commence. This may be coordinated through the AAS.
- Crews need to maximise efficiency by preparing all equipment and PPE/C to be winched as early as possible.
- Winch personnel should attach equipment prior to securing themselves in the winching collar.
- Winch personnel shall undertake thorough safety checks prior to winching.
- On entering the helicopter winch personnel must remain attached by at least one secure point at all times while moving to their seat and securing themselves with a seatbelt.
- At all times, efforts should be made to minimise the time that an aircraft remains in the hover.

Rescue Winching

Agency Rescue Winching Standards should be read in conjunction with this SOP.

- The SAD may task aircraft for search and rescue operations. Appropriate winch capable helicopters are crewed by a pilot, aircrew and rescue crew to undertake helicopter rescue winching operations. A rescue crew person may also be known as a Down the Wire (DTW) Technician.
- Helicopter rescues should not involve the aircraft chasing or following a moving target whilst the winch sequence is being undertaken.
- Only twin engine helicopters shall be endorsed for helicopter rescue operations.
- The safety of the pilot, aircrew and rescue crew is always paramount. All rescue winch operations require a sound risk assessment and consideration of alternative actions to minimise risk.
- As with other aircraft operations, landing then hovering should be considered as options for rescue prior to winching.

Approvals, Training and Personnel

- The pilot and aircrew must be endorsed by their companies for this type of operation.
- The rescue crew may be an authorised member of an Agency or contracted by the Aircraft Operator. If the rescue crew is from an Agency, they must hold a Certificate III in Aviation (Rescue Crewman) and endorsement from the aircraft operator.
- If the rescue crew is an employee or contractor of an Operator, they must be internally endorsed by the company they are working for.

- All helicopter rescue operations must be approved by the IC, Agency Rescue Coordinator, Rescue Coordinator (NSW Police), State Operations Controller or RART Coordinator (for Aerial Extraction operations).

Pre Rescue Procedures

- Prior to committing to an extraction operation, an assessment of the situation **must** occur to determine the necessity and course of any actions, as well as any actual and/or potential risks.
- The collective aircrew should be in agreement of the course of action prior to its execution.
- The PIC has final approval on the operation to be undertaken.
- A 'ground to air' communications plan should be confirmed and tested prior to deployment.
- Winch checks shall be required if winching is the determined option for insertion.
- The rescue crew should have PPE/C donned and shall have conducted thorough checks of their safety equipment. This may include PPE/C appropriate to a flood environment.

Rescue Crew Deployment

- Equipment, PPE/C and personnel shall be ready as the aircraft is finalising approach to the deployment site.
- A rescue crew should carry, as a minimum, a radio capable of communicating with the aircraft, a PLB and any other equipment required for the operation.
- A series of safety checks are to be completed prior to committing to the winch by the aircrew and the rescue crew.
- On reaching the ground the DTW technician may disconnect from the cable only if positive communications are in place. Communication should establish whether the aircraft will depart the area temporarily or whether it will remain overhead.

Extraction

- Rescuees should be briefed quickly before being winched or rescued to ensure they are calm, understand their role and avoid increasing risks to the aircrew and rescue crew.
- Rescuees should be given hearing and eye protection.
- The rescue crew must undertake thorough safety checks of the untrained person and themselves prior to winching.
- At all times the person being winched and the rescue crew must be attached to the aircraft by one secure point.

Priority of Use for Rescue Harness and Rescue Strop

- The priority order for use of the Rescue Harness and/or Rescue Strop is:
 - Rescue Harness
 - Rescue Strop with hypothermic strap with chest strap connected, then
 - Rescue Strop with chest strap connected

Rescue Strops (CASA AWB 25-025)

- A Rescue Strop (excluding the Hypothermic version) requires the occupant to be conscious and compliant, and requires active participation from the occupant to ensure safe use. The occupant must follow directions from a trained operator throughout the winch.
- A Rescue Strop requires active participation by an occupant who is not formally trained in its use and may likely be in a highly stressful situation, the following points should be considered prior to use of the strop:
 - Whether life is at imminent risk
 - The state of the person to be winched, particularly whether the rescuee remains conscious and coherent during the winch process
 - The potential for the person to remain compliant with winching brief
 - Alternate methods and devices to recover the person, and
 - Whether the risk of falling from the device would not result in further serious injury or death

Airborne Rappelling

- Airborne rappelling is currently not authorised for Agency personnel. Interstate rappelling teams may be deployed onto fires in NSW.
- NSW IMTs must consider that extraction procedures and capabilities for interstate rappelling crews will be different to winching and may require significantly different time and resource considerations.



- At any fire under the control of the NSW RFS all personnel shall comply with NSW RFS winching standards.

6.3 Aerial Incendiary Operations

This SOP ensures the safe and effective use of Aerial Incendiary (AI) operations conducted by Agencies.

Procedure

AI operations are an integral part of both fuel reduction programs and wildfire control (back burning operations).

- All aircraft and pilots involved in incendiary operations are required to be Agency approved and listed in ARENA, for such operations.
- All aircraft and pilots involved in Aerial Drip Torch operations are required to be approved and listed in ARENA, for such operations.
- All AI operations must be under the supervision of a current qualified Incendiary Operations Supervisor (IOS).
- All AI operations shall be in accordance with an approved, current IAP or prescribed burn plan.
- Incendiary operations shall be conducted in accordance with the aircraft operators Operations Manual. All crew need to be briefed on the standard terminology for:
 - Commence dropping including countdown and read back requirements
 - Cease dropping including countdown and read back requirements
 - Rate / speed requirements
 - AI machine blockage / stoppage / fault reporting and actions

6.4 Remote Piloted Aircraft System (RPAS)

This SOP details the procedures for Remote Pilot Aircraft operations.

Procedure

- RPAS operations shall be conducted in accordance with relevant legislation and Agency procedures.
- RPAS operations must not be conducted over an area where a fire, police or other public safety or emergency operation is being conducted without the approval of the IC/OIC.
- RPAS operations on an Agency task shall remain under the control of the Agency IC/OIC.
- The IC/OIC may deny the use of an RPAS to conduct Agency operations if they believe a safety issue exists.
- If Agency personnel are approached by a member of the public, a company or unapproved Agency member to operate an RPAS over an Agency operation, only the IC/OIC may grant consent.
- The presence of any unauthorised RPAS operating over an incident shall result in the SAD or IC/OIC immediately suspending aerial operations.
- Agencies conducting RPAS operations are not to invade the privacy of individuals. Access to images and footage shall be restricted to personnel with a specific requirement to view the imagery for incident duties.
- Agencies conducting RPAS operations shall seek land owner approval to operate on their land before conducting the mission, this includes launch and recovery sites.
- Any photographic or video footage taken during Agency operations remains the intellectual property of the hiring Agency.

6.5 Air Tanker Operations

This SOP details the procedures for all Air Tanker operations. Whilst this SOP provides an Inter-Agency overview of the use of Air Tanker capability, further detail is provided in the Air Tanker Operating Guidelines.

Operating Guidelines for Air Tankers should be read in conjunction with this SOP.

Procedure

Air Tankers are capable of providing large volumes of suppressant, however careful planning and supervision is needed to ensure this strategic capability is used effectively.

- ICs should consider the following prior to requesting an Air Tanker:

- Incident objectives
 - Threats (life / property, assets, forests)
 - Proposed strategy (direct, indirect)
 - Prevailing and/or forecast weather conditions
 - Likely period of deployment or loads required
 - Terrain and fuel types (forest, grass, urban)
 - Possible risks and safety issues
 - Time of day (last light)
 - Mission alternatives
- Generally, Air Tanker suppression operations, training flights and evaluation flights should not be undertaken without the supervision of an authorised AAS. The AAS provides tactical aircraft coordination with the Incident AAS and/or IMT and directs the firebombing aircraft to critical areas of a fire for suppressant or retardant drops.
 - The only exception to the above may be in the event that an Air Tanker has an 'initial attack' certified crew on board who understand the mission requirements, Agency Air Tanker Procedures and there are operational advantages to the LAT commencing operations prior to an AAS arriving.
 - An IC may request a Bird Dog (BD) recce to activate the Air Tanker AAS to an incident to provide advice to the IC on strategies, tactics and effectiveness of an Air Tanker prior to a request.

Air Tanker / Bird Dog Aircraft Dispatch Arrangements

- The IC or the Incident AOM should make contact with the SAOM / SADDO to advise of the intent to consider the Air Tanker and seek guidance on availability and suitability.
- The SAOM / SADDO should brief the State Operations Controller (SOC) on the request and provide advice on availability, competing priorities, strategies and load requirements for mission success.
- The SOC should make determination on mission approval.
- The SADDO (or LATCO if established) shall advise the Air Tanker ABM of dispatch approvals and mission objectives.

6.6 Type 1 Helicopter (High Volume) Operations

This SOP details the procedures for Type 1 Helicopter (High Volume) operations. Type 1 Helicopters are effective aircraft in providing large volumes of retardant suppressant when utilised effectively particularly in the urban interface or when adequate water sources provide effective turnaround times.



Procedure

- ICs should consider the following prior to requesting a Type 1 Helicopter (High Volume):
 - Incident objectives
 - Threats (life / property, assets, forests)
 - Proposed strategy (direct, indirect)
 - Prevailing and/or forecast weather conditions
 - Likely period of deployment
 - Incident objectives
 - Terrain and fuel types (forest, grass, urban)
 - Possible risks and safety issues
 - Time of day (last light)
 - Mission alternatives
- Type 1 Helicopters (High Volume) should be supervised by an AAS.
- Type 1 Helicopters (High Volume) should be integrated into the overall aviation strategy and may be integrated with other aircraft types where appropriate, to achieve the mission objectives.

Type 1 Helicopter (High Volume) Dispatch Arrangements

- The IC through the requesting Agency is required to complete an Aircraft Request Form.
- The SAOM / SADD0 should brief the SOC on the request and provide advice on availability, competing priorities, strategies and load requirements for mission success.
- The SOC should make determination on mission approval.

6.7 Night Operations

This SOP outlines the safe and effective procedural guidelines for the deployment of aircraft for night operations.

Aviation night operations include:

- Aerial incendiary
- Aerial reconnaissance
- Winching
- Fire bombing

Procedure



Whilst this SOP provides an overview of night operations, further detail is provided in the Night Operations procedures.

- Agencies shall not conduct night aviation operations outside of the approved operations listed above.
- When Agency flight crew members are performing NVIS operations, they shall conform to the fatigue management requirements of the aircraft operators Operations Manual.
- Operations over open water shall not be conducted whilst utilising NVIS.
- Helicopter pilot flight time utilising NVIS shall be determined by CASA requirements and the aircraft operators Operations Manual.
- A risk assessment incorporating all mission parameters shall be prepared prior to the planning of any operation requiring the use of NVIS. This risk assessment should be undertaken by suitable aviation management personnel, the IC for the area of operations and approved by the hiring Agency. The PIC must also confirm the aircraft and flight crew are capable and currently certified to undertake the operation.
- The IMT personnel responsible for conducting the planning process for night operations shall ensure the Operational Risk Assessment and Operational GO/NO GO checklist is completed and the operation is approved by the IC. Where an IMT is not established (eg. RART or search operation) these checklists should be completed by the NSW RFS State Duty Operations Officer or nominated Agency representative.
- Hot refuelling is not permitted during night air operations.
- An Agency approved NVIS flight should only commence if:
 - Pre-flight planning determines that the pilot will be able to operate in appropriate visual and meteorological conditions for the duration of the flight; and
 - The NVIS pilot is familiar with or has conducted a reconnaissance of the flight area; and
 - All items on the GO/NO GO checklist are completed and checked.
- An Agency NVIS flight should be aborted if:
 - NVIS PIC indicates that Visual Meteorological Conditions (VMC) conditions cannot be achieved during flight; or
 - The Night Visions Goggles (NVG) of either flight crew member fails or ceases to operate pre or in flight and is not able to be immediately rectified; or
 - A single tube failure occurs to the NVG of either flight crew member and is not able to be

immediately rectified; or

- Aircraft internal lighting ceases to operate for NVIS operations.

6.8 Rapid Aerial Response Team (RART) Operations

This SOP outlines the procedures for RART operations. The main objective of RART is to provide an initial attack capability to new fire ignitions.

On nominated days, a Helicopter and Remote Area Firefighting Team (RAFT) will be placed on standby at a nominated location to allow for a streamlined response in the case of any new reported fires.

Procedure

- NSW RFS and NPWS have similar activation triggers for RART.
- All RART activations are made at a state level, based on state level priorities.
- When deployed to an incident where RART is committed for firefighting activities, the tactical command of the RART falls upon the hosting NSW RFS District, NPWS Area or local IMT for the incident.
- Command of RART by a local authority will only be temporary and subject to state level priorities.
- Strategic command of RART is maintained at all times by the RART Coordinator for each Agency.
- At all times when operating around other aircraft at incidents, RART helicopters should maintain communications on the relevant incident communications channel provided by the IMT.

6.9 Equipment Deployment

This SOP outlines the requirements for the safe and efficient movement of equipment by means of external slings. Equipment transported to and from remote helipads and landing spots requires logistical and operational mission planning. It is critical that such operations are carried out safely and efficiently using experienced aircrews and ground personnel.

Procedure

- Sling operations shall be carried out in accordance with relevant CASA regulations and ensure:

- The aircraft operator is endorsed to carry out sling operations
- The pilot must hold an endorsement and be approved by the Chief Pilot to carry out sling operations
- The sling loading operation shall be conducted in accordance with the aircraft operators Operations Manual
- A sling load task sheet including total weight should be completed, particularly if the operation is a new tasking for an aircraft not already at the incident. This will ensure that:
 - The required equipment and logistics support is available for the operation
 - The appropriate aircraft is requested to carry out the operation (ie. the load to be carried is within the safe operating limits of the aircraft)
 - The operator and the pilot are aware of the requirements of the operation prior to deployment to the task
- Ground crew involved in sling operations should be:
 - Trained and current in the preparation and connection of sling loads
 - Current in “Work Safe Around Aircraft” (PUAFIR209A) or equivalent
 - Familiar with recognised air to ground signals including aircraft marshalling procedures
- The pilot shall brief the ground crew at the lift site and ensure that the crew at the set-down site are briefed in relation to the operation including:
 - Requirements they may have for the preparation of the load
 - Hand signals to be used
 - Any relevant safety matters regarding the sling equipment to be used
 - Emergency procedures to be followed in the event of engine failure during lift and set-down operations
- The ABM should designate an area for sling load operations. Approach and departure to loading areas should avoid overpass of other aircraft and facilities where airbase personnel are operating.



Section 7 Appendix

7.1 Accommodation Arrangements for Aviation Contractors

Information for IMTs

Aviation contractors are some of the many personnel that IMTs need to consider when coordinating meals and accommodation. Aviation contractors include pilots, aircrew, refuellers and on occasion, engineers (with restricted category aircraft).

There are some specific requirements for these Aviation contractors that IMTs (particularly Logistics teams) should understand in relation to accommodation standards and payment arrangements. Aviation assets are engaged under contract through either the State based Call When Needed (CWN) Standing Offer, or the National Aerial Firefighting Centre (NAFC) arrangements.

It is important to note that regardless of which contractual arrangements the aviation asset is engaged through, the requirements relating to meals and accommodation are essentially the same.

Accommodation standards

Pilots and aircrew are to be accommodated for sleep in a sole occupancy, quiet, temperature controlled accommodation that is suitable for sleeping in.

Whilst engineers and refuellers are not specifically covered by “aircrew” it is preferable that the requirements for aircrew listed above also apply to these aviation roles where this is achievable considering supply and demand for accommodation in the area of the incident.

Where the IMT has exhausted all avenues to achieve the sole occupancy requirement for refuellers and/or engineers, it is preferable that the IMT (through the aviation chain of command) contact the relevant aviation operator to advise of the accommodation limitations and afford the opportunity for the operator to make their own arrangements if they are not satisfied with what the IMT can arrange.

Payment for meals and accommodation

Payment for meals and accommodation is outlined in Clause 6.2 (d) of the CWN Standing Offer Services Deed which states:

- (i) *the Supplier must meet the meal and accommodation costs incurred by its personnel initially and later seek reimbursement from the NSW RFS;*
- (ii) *the costs claimed by the Supplier must be reasonable;*
- (iii) *for meals, the Supplier may claim the costs of breakfast, lunch or dinner only;*



- (iv) *the amount that can be claimed for the cost of breakfast, lunch or dinner must not exceed the amounts set in the NSW Public Service Travel Allowances for breakfast, lunch or dinner (as appropriate)*

The same requirement applies under clause 9.2 c. of the NAFC contract arrangements which state:

Sub Section 1.1 *The member (RFS) will:*

Sub Section 1.2 *Supply or reimburse the reasonable costs (according to the member's policies) of meals and accommodation for the flight crew and crewpersons and/or refuelling operator when the aircraft and/or refueller is required to remain away overnight from its NOB in order to carry out services required by NAFC.*

The RFS policy in regard to this clause is as outlined in the CWN arrangements outlined above.

Whilst IMTs may assist with booking accommodation for aviation contractors (preferably under the name of the contractor) in accordance with the requirements outlined above, **all expenses relating to meals and accommodation must be paid up front by the contractor** and claimed back through the contract invoicing arrangements.

This also includes all evening and breakfast meals that may be included or coordinated on a 'charge back' arrangement in conjunction with overnight accommodation. Lunch, snacks and water during the day should be provided by the IMT through the usual catering arrangements on the incident ground.

7.2 Claiming Reimbursements for Meals and Accommodation

Where a supplier is engaged to provide Services which require its personnel to be away from the Nominated Operating Base (NOB) overnight, the NSW RFS will meet some of the meal and accommodation costs incurred by the Supplier's Personnel subject to the following:

- The supplier must meet the meal and accommodation costs incurred by its personnel initially and later seek reimbursement from the NSW RFS;
- The costs claimed by the supplier must be reasonable;
- For meals, the supplier may claim the costs of breakfast, lunch or dinner only;
- The amount that can be claimed must not exceed the amounts set in the NSW Public Service Travel Allowances for breakfast, lunch or dinner (as appropriate);



- The NSW RFS will not reimburse the supplier for the costs of the supplier’s personnel having purchased items including:
 - Alcohol
 - Mini-bar items of any sort, including bottled water
 - Telecommunication services including internet or phone
 - Laundry services
 - Grocery items
 - Multiple snack items, drinks or other sundries
 - Snacks, morning tea or afternoon tea
 - Meals if it would have been reasonable for the supplier’s personnel to obtain that meal at the NOB or supplier initiated forward location point before or after dispatch
- The estimated value of a standard meal or accommodation cannot be claimed to use for other purposes;
- Tax receipt(s) acceptable to NSW RFS must be produced with any claim for reimbursement of reasonable food and/or accommodation costs. EFTPOS receipts are not sufficient for this purpose;
- Claims for reimbursement of meals and accommodation must be clearly documented and tabled into a day by day breakdown of all costs claimed;
- Where accommodation and meals are supplied by NSW RFS and/or hiring Agency, the supplier may not seek reimbursement for other food or accommodation costs.

7.3 Triggers Matrix for Air Operations Units

Guidelines to Assist in the Establishment of Air Operations Units

Position	1 Aircraft	2 to 3 Aircraft	4 Aircraft	5+ Aircraft
ARO	Consider	Yes	Yes	Yes
ABO <i>(if operating from airbase)</i>	Consider	Consider	Yes	Yes
ABM <i>(1 per airbase)</i>	Consider	2 - Consider 3 - Yes	Yes	Yes
AOF	N/A	Consider	Yes	Yes
AOM	N/A	N/A	Consider	Yes
AAS	Type 1 Helicopter or Air Tanker only	2 - Consider 3 - Yes	Yes	Yes
AOB / ASO	As required			
IOS	As required			

Note: Consideration of positions required should also take into account the complexity of the



operations, ie. winching, line retardant building, flood and rescue operations.

7.4 Tactical Aircraft Call Signs

Aircraft regularly involved in firefighting and emergency support should be assigned individual call signs, principally for use in radio communications but may also be used in other documentation and systems to identify particular aircraft.

In NSW, only aircraft currently approved on ARENA and performing tactical operational roles are allocated tactical call signs.

The following table summarises aircraft call signs and descriptions.

Call Sign	Airframe Type	Description
Bird Dog	Fixed-wing	Light fixed-wing aircraft used primarily for air attack supervision. Normally applied only to multi-engine aircraft but may be used for single-engine aircraft used primarily for air attack supervision.
Bomber	Fixed-wing	Type 1, 2, 3, 4 or 5 fixed-wing aircraft used for firebombing. Note: replaces previous "Firebomber".
Fireair	Rotary-wing	Agency owned light and medium helicopters used primarily for aerial intelligence, RAFT, RART and crew transport.
Firebird	Rotary-wing	Light helicopters used for general fire support work, including air attack supervision, intelligence gathering, incendiary dropping and firebombing. Normally only applied to Type 3 helicopters, but may be applied to larger helicopters if used exclusively for general support tasks (and not for firebombing or tactical fire crew insertion).
Firescan	Fixed-wing	Fixed-wing aircraft equipped with specialised intelligence gathering and mapping equipment. Normally only applied to aircraft that regularly survey incidents from heights above the general fire traffic areas and whose tasking may require flying fixed patterns as well as regular transition between visual and instrument meteorological conditions.
Firespotter	Fixed-wing	Light fixed-wing aircraft used primarily for fire intelligence gathering. Normally applied only to single-engine aircraft but may be used for multi-engine aircraft used primarily for fire intelligence



		gathering.
Helitak	Rotary-wing	Medium or heavy helicopters used primarily for firebombing or tactical crew insertion. Normally applied only to Type 1 High Volume and Type 2 helicopters.
Parkair	Fixed-wing	Light fixed-wing aircraft used primarily for fire intelligence gathering. Normally applied only to single-engine aircraft but may be used for multi-engine aircraft used primarily for fire intelligence gathering.
	Rotary-wing	Light helicopters used for general fire support work, including air attack supervision, intelligence gathering, incendiary dropping and incidental firebombing.
Polair	Rotary-wing	NSW Police Agency owned aircraft made up of light and medium helicopters used for Police operations.
Rescue	Rotary-wing	Medium helicopters used primarily for aeromedical retrievals and search and rescue missions.

All call signs have a numeric suffix. The first numeral typically represents the State, Territory or National Agency allocating the call sign:

- 0 National
- 1 National
- 2 NSW and ACT
- 3 Victoria
- 4 Queensland
- 5 South Australia
- 6 Western Australia
- 7 Tasmania
- 8 Northern Territory
- 9 National (Defence)