

EMERGENCY MANAGEMENT

Managing aviation for DPI emergency responses

Department of Primary Industries and Local Land Services

May 2022



Published by Regional NSW

Title: Managing aviation for DPI emergency responses

Subtitle: Department of Primary Industries and Local Land Services

First published: May 2022

Department reference number: INT22/65039

Cover image: Chris Lane, NSW Department of Primary Industries, Emergency Management Unit

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Introduction

The NSW Department of Primary Industries (DPI), Local Land Services (LLS), the NSW Rural Fire Service Aviation Section (NSW RFS Aviation Section) and the NSW Rural Fire Service State Air Desk (NSW RFS SAD) along with landholders, land managers, contractors/operators and other relevant authorities all have important roles to play in response activities involving aviation.

All are required to manage and operate aircraft in a safe, efficient, and cost-effective manner and in accordance with applicable legislation, emergency arrangements, standing offers/contracts policies and procedures.

The aviation operations conducted by and on behalf of DPI include:

- aerial mustering
- aerial shooting
- aerial spotting in support of locust spraying
- aerial spraying in support of locust control
- aerial surveillance
- aerial transport
- sling loading by helicopter
- aerial surveillance – operation of Unmanned Aerial Vehicles (UAV).

Each of these operations has an approved task profile and associated risk assessment. The Local Air Operations Manager (LAOM) at a Local Control Centre (LCC) must ensure that all flights are conducted in accordance with the relevant task profile and this guide.

The State Aviation Manager (SAM) at the State Coordination Centre (SCC) will task an approved aviation asset through the NSW RFS SAD.

Operators tasked through the NSW RFS SAD must operate in accordance with the relevant aviation regulations and DPI requirements. The following takes precedence over this guide relating to the management and use of aircraft and the provision of related services:

- statutory requirements or other requirements under the laws of Australia (including, without limitation, Civil Aviation and Work Health and Safety (WHS) legislation)
- Codes of Practice or related industry standards or guidelines
- guidelines or policies issued by Government or regulatory authorities
- operators' Operations Manuals
- manufacturer's recommendations.

This guide provides information and support tools for DPI and LLS personnel carrying out aviation activities in emergency responses and should be read in conjunction with the [Use of aviation policy](#) and referenced supporting [aviation documents](#).

Health, safety, wellbeing and risk

Everyone has a responsibility to maintain workforce health and safety. Hazards need to be identified, risks assessed, and decisions made on appropriate controls required. Some of these tasks need to be assessed on a case-by-case basis, some on an ongoing basis and others as they emerge during operations and/or following a response.

DPI and LLS are responsible for providing and maintaining, as far as reasonably practicable, a work environment that is safe and without risks to the health of response personnel, including support agency personnel and operators/contractors. This includes the mental health and wellbeing of personnel in business-as-usual activities, and during and after a response.

DPI supports staff and their families by providing the [Benestar – My Coach Program](#) – a holistic program with access to confidential counselling/coaching, manager support, assessments and referrals, dietary advice, legal advice, financial counselling with qualified professionals as well as health and wellbeing resources and in-house clinical support. The Benestar Contact Centre can be accessed 24 hours a day by calling 1300 360 364.

Further health, wellbeing and safety information can be accessed via the [Regional NSW](#) intranet.

[Appendix 1](#) outlines the current suite of measures and tools everyone must consider and factor in as part of their role in aviation during an emergency response. These resources are integrated throughout this guide. [Appendix 7](#) outlines additional information on flight duty limits and fatigue management.

Legislation

There are a number of legal requirements set out in Acts, Regulations, Codes of Practice and contracts that have an impact on emergency management aviation activities in NSW. They place responsibilities on aviation operators and Government organisations that use aviation in emergency responses, enforce work health and safety requirements during operations, provide a framework for chemical management if used by aircraft, and ensure the protection of sensitive species and impact to the environment.

All aviation operations must be undertaken in accordance with:

- relevant legislation listed in [Appendix 2](#)
- any directions and practices set out in any DPI or LLS policy and supporting documents, such as task profiles
- operator references and Operations Manuals
- NSW and ACT Interagency Aviation Standard Operating Procedures that are managed by the NSW RFS Aviation Section.

Response tasks

NSW DPI may use aviation assets in combination with on ground field activities in both the role as Agriculture and Animal Services Functional Area (AASFA) in natural disasters and combat agency for Biosecurity emergencies. Aviation use will only be considered when all other options are exhausted. Aviation tasks may include:

1. Aerial surveillance:
 - identifying and/or validating impact to animals and agriculture
 - identifying/assessing animal welfare issues (e.g. water/feed access, safe location, injury, assessment of animals in floodwater – see [Appendix 9](#))
 - assisting with locating and reconnecting owners/managers with missing animals
 - making animal welfare recommendations during natural disasters (see [Appendix 10](#))
 - collecting data to enable future planning of response and recovery activities.

2. Aerial transport:
 - fodder drops to isolated animals in nets by remote release sling load
 - relocating animals in stock crates (e.g. sheep) by sling load, or in the body of the aircraft (e.g. pets and working dogs)
 - moving equipment (e.g. quad/ATV, portable yards) by sling loading to assist in mustering, animal relocation or undertaking essential animal husbandry tasks (e.g. fly treatment in sheep)
 - transporting people to muster stock and cut fences/open gates to create access paths
 - Note: Combat agency (e.g. NSW State Emergency Service (NSW SES)) may deliver supplies on behalf of AASFA. In these cases, they will be operating using their procedures. AASFA responsibility is limited to the supply of the items to the combat agency for distribution.
3. Aerial mustering:
 - mustering of animals to a safe area where ground access is restricted or inaccessible.
4. Aerial destruction:
 - Humane shooting of animals on animal welfare grounds or to assist in disease control.
5. Aerial spraying:
 - Spraying of locust bans and swarms.
6. Aerial spotting:
 - Aerial spotting of spray aircraft in support of aerial spraying activities for locust control.

Roles of personnel

The roles required and response structure will depend on the size and complexity of the emergency. Refer to the Operations section of the [DPI emergency response roles](#).

Personnel participating in aerial tasks must be appropriately trained and skilled to perform the assigned task, for example:

- Surveillance task – assessment is conducted by a person able to assess animal welfare (e.g. Veterinarian, RSPCA inspector, experienced Biosecurity Officer, accredited shooter e.g. Feral Animal Aerial Shooting Team (FAAST) shooter)
- Transport task - on ground mustering, loading, and unloading stock crates, cutting fences, opening gates can be conducted by the landholder or workers (passenger), but they must have animal handling experience. Survivability evaluation of livestock prior to consideration of rescue of aircraft is required. Animals unlikely to survive must not be moved and destruction on animal welfare grounds must be undertaken at the earliest and safest opportunity
- Transport task – sling loads require qualified crew i.e. dogman (from the air operator) to load the net and connect the sling to the aircraft
- Shooting task – destruction team consists of a qualified pilot and shooter (e.g. FAAST), and air crew (animal welfare). Air crew (animal welfare) is usually a veterinarian but does not have to be if written permission to destroy the animals has been provided by the owner/manager

No personnel are to be on board an aircraft during sling loading and mustering activities under any circumstances.

Contracted aviation operators including crew supplied by the aviation company (e.g. sling load operators to attach/detach loads) are required to be sourced through NSW RFS SAD.

Responsibilities

NSW RFS Aviation Section

The NSW RFS Aviation Section on a regular basis seeks an Expression of Interest (EOI) for a Call When Needed (CWN) services for:

1. helicopters and fixed wing aircraft to support emergency and other operations
2. fuel trucks to support aviation refuelling during emergency and other operations.

Successful aviation operators enter into a 'Standing Offer' for services and are added to the Approved Operators List (AOL).

The NSW RFS Aviation Section engage contractors to conduct aviation audits on approved operators on behalf of government agencies, maintain all audit records, and coordinate investigations into incidents and accidents.

NSW Rural Fire Service State Air Desk (NSW RFS SAD)

The NSW RFS SAD is responsible for:

- deploying aviation assets from the approved operators list, on request from DPI and/or the SCC
- advise the SCC of the allocated assets
- stand down assets as required
- receive and maintain aviation records from the operator associated with the task
- directly or indirectly invoice DPI for tasks.

Inter-Agency Aviation Working Group (IAAWG)

IAAWG consists of representatives from Government agencies using aviation in emergency operations and is chaired by NSW RFS Aviation Section. The group:

- reviews and provides advice on aviation operational requirements, training standards and capabilities
- contribute to the development of the EOI for CWN
- reviews the outcomes of aviation asset audits for aviation operators and provides feedback to the NSW RFS Aviation Section where/if required.
- DPI and LLS are members of IAAWG.

Department of Primary Industries (DPI)

The DPI Emergency Management Unit undertake preparedness activities for potential aviation use in emergencies, including:

- maintaining operational documents including Use of Aviation policy, guides, task profiles and risk assessments, forms and other documentation
- conducting an annual management review of aviation use and resourcing
- monitoring of emergency aviation use in all responses
- liaising and consulting with the IAAWG, NSW RFS Aviation Section/SAD, LLS and aviation experts on aviation use in emergencies, auditing of Operators, and potential future aviation asset requirements
- provision of technical advice and support on emergency aviation management to IAAWG and LLS
- provision of training and exercise opportunities for staff identified to undertake key aviation roles in emergencies

- maintaining a store of aviation PPE and other resources at the SCC and within regions, including recording the movement and use of resources in DPI's Resource Management System (RMS).

Local Land Services (LLS)

LLS undertake the preparedness activities associated with potential aviation use in emergencies within their regions, including:

- understanding requirements in the emergency Use of Aviation policy, guides, task profiles and risk assessments, forms and other documentation
- liaising, consulting with and providing technical advice and support on emergency aviation management to IAAWG and DPI
- identifying and providing staff to be trained in key aviation roles
- maintaining aviation PPE and resources within regions and records in RMS.

Aviation Operators

Aviation operators (from the AOL) are tasked by the NSW RFS SAD and their responsibilities include:

- operating in accordance with the relevant aviation regulations and NSW RFS Standing Offer and DPI requirements
- ensuring the carriage of dangerous goods on aircraft, including additional fuel supplies, is in accordance with Civil Aviation Regulations and Orders
- undertake flight following as required
- complying with relevant SafeWork NSW requirements relating to load, fuel and chemical handling and operations (see [Appendix 8](#))
- maintaining flight and duty limits in accordance with CASA regulations (see [Appendix 7](#))
- managing refuelling and loading activities (see [Appendix 8](#))
- notifying DPI immediately if any inconsistency/s arise between this guide and any legislative and Operator requirements.

Pilots

Pilots are employed by the aviation operator to fly the aircraft tasked by NSW RFS SAD and their responsibilities include:

- operating the aircraft safely
- complying with pilots' responsibilities for each task as outlined in the [task profile](#)
- pre, in flight and post flight briefings (associated with the aircraft)
- provide a copy of the passenger manifest to the response
- safety of aircraft and crew/passengers ensuring that all people on the aircraft are essential for the task, appropriately qualified (where applicable) and correctly attired
- hazard identification and maintaining hazard clearance
- navigation of aircraft
- communication with crew/passenger, flight following requirements, other pilots in the air operating space and airfields/airports/landing areas
- maintaining flight and duty times in accordance with CASA regulations and ensuring these flight and duty limits are not exceeded (see [Appendix 7](#)).

Local Air Operations Manager (LAOM)

The LAOM is activated during an emergency response where the LCC may require aviation support to undertake tasks. The LAOM is part of the Operations function and reports to the Local Operations Officer. Tasks include:

- assess the need for aviation use at a local/regional level
- provision of safety and technical aviation advice to the Local Incident Management Team
- liaises with State Air Manager (SAM) to acquire aviation assets for a local area
- ensure all staff fully understand the safety requirements when working during aerial operations including use of appropriately qualified, competent and approved personnel
- brief and debrief SAM, air crew, staff and contractors
- manage air operations, e.g., air bases
- save all response aviation documentation in the response drive.

The LAOM role description can be found in [Appendix 3](#).

State Aviation Manager (SAM)

The SAM is activated during an emergency response where aviation support to undertake tasks is required. The SAM is part of the Operations function and reports to the State Operations Officer. Tasks include:

- liaise with NSW RFS SAD on current response situation and expected aviation needs, followed by requesting aviation asset for deployment to local areas, and the release aviation assets
- provision of safety and technical aviation advice to State Incident Management Team
- manage requests and allocations of aviation resources at a state level for deployment to local operations
- ensure LCC aviation asset request is in accordance with DPI aviation documents
- undertake strategic oversight of aircraft taskings across affected regions
- ensure aviation records are available and complete in the response drive
- review and audit financial records for completed aviation tasks.

Aviation Mentor (AM)

The AM is activated during an emergency response where aviation tasks is required. The AM is part of the Control function and reports to the State Coordinator and is a supporting role for both the LAOM, SAM and Safety Officer. The AM can:

- provide mentoring and advice and support to LAOM and SAM roles on aviation tasks, procedural requirements and policy issues
- undertake audits of aircraft use, policy and procedure compliance and safety (both of records and on ground observations), including engaging aviation experts where required
- approve requests for aviation assets to NSW RFS SAD
- adjudicate on any issues where agreement or decisions cannot be made individually or collectively by LAOM or SAM roles on aviation use matters
- lead any internal non compliances investigations (not related to aviation reportable incident)
- assist with NSW RFS Aviation Section with incident and non-compliance investigations.

Emergency response arrangements

In NSW, DPI is the combat agency for the management of biosecurity and food safety emergencies, and a support agency for natural disasters and other emergencies that impact agriculture and animals as the Agriculture and Animal Services Functional Area (AASFA). LLS is a key partner in preparing for emergencies and participating in emergency responses and recovery activities.

Emergency responses will be managed in accordance with the:

- [Emergency Response and Recovery Manual](#) – outlines governance arrangements and the actions of a hazard owner in formally standing up/activating an emergency response
- [DPI emergency response roles](#)
- Australasian Inter-Service Incident Management System (AIIMS) structures
- [Emergency management – Response and recovery policy](#)
- [Use of aviation policy](#)
- [supporting information](#) such as procedures, guides, risk assessments, forms and safety instructions depending on the hazard/response involved.

State Coordination Centre

The SCC manages the response's aviation resources at a strategic level which includes:

- appointing a LAOM, SAM and AM as required
- approval of aviation resource requests from LCCs
- requesting, retaining and returning aviation assets through the NSW RFS SAD by the State Coordinator or AM
- reassigning aviation assets, in consultation with the NSW RFS SAD and the LCC
- adopting the role LCC when a LCC is not activated
- maintaining status boards including dashboards to provide the Incident Management Team (IMT) with an instantaneous 'picture' of the allocation and use of aviation assets.
- maintaining workforce health and safety
- considering if existing assets already in the area of operation being used by other agencies (e.g., NSW RFS, NSW SES) can also be made available to DPI or AASFA.

Local Control Centre

The LCC manages the use of aviation assets in their area of responsibility to meet objectives in the incident action plan (IAP) by:

- identifying potential aviation tasks and discussing this with the SCC
- host LAOM (appointed by SCC), who manages aviation resources at a tactical/operational level i.e. the day-to-day allocation and use of aviation assets
- managing aviation assets on behalf of any dependent Forward Command Posts (FCPs)
- liaising with the SAM to discuss potential aviation requirements and other needs
- considering if existing assets already in the area of operation being used by other agencies (e.g., NSW RFS, NSW SES) can be made available to DPI or AASFA
- setting up aviation systems needs including computers, fixed, mobile, and satellite telephones, GRN's contact lists, airports, fuel suppliers and other support
- establishing a map of the operating area, set up status boards and access dashboards
- ensure staff are trained, briefed, debriefed, and supplied with appropriate equipment, including PPE.

Forward Command Post

FCP personnel may be required to support the LAOM in aviation operations by ensuring landholder permission has been gained (where required) for aviation operations planned on the landholder property, and to provide any aviation documentation required for uploading into the response drive.

Planning

Effective and efficient aviation resource planning at a strategic level will support a safer and more cost-effective working environment as the correct resources will be allocated to aviation tasks. In support of this, effective planning of aviation resources at the operational level requires timely and accurate local, regional, and state information, including information on suppliers, facilities, equipment, and personnel. Resources need to appropriately support the response objectives (outlined in the responses IAP). Communication between SCC, LCC and FCP is of paramount importance.

A variety of tools or processes can be used during the strategic planning process and may include, but are not limited to:

- appreciation (factor/options analysis and risk assessments)
- technical advisers (e.g., another agency air controller, experienced pilot, meteorologist)
- information management
- resource tracking system.

State Coordination Centre

SCC planning for aviation resources in emergency responses encompasses the collation and interpretation of information enabling the contribution to an IAP that provides direction, addresses risks and outlines response objectives.

SCC requires access to relevant information that can be used to inform the strategic planning process for aviation resources. Information sources include, but are not limited to:

- communication with LCCs
- resource availability and aviation operator information including pilots from the NSW RFS SAD
- AOL information including past task data from NSW RFS SAD
- national/state plans, legislation and legal advice
- cost sharing and/or financial arrangements
- access and contact with other agencies (e.g. weather, mapping data)
- characteristics and spread predictions for the hazard (e.g. pest, disease, flood, fire)
- analysis of the current response situation
- independent aviation experts/auditors
- risk assessments of proposed response actions
- politics
- pre-existing plans, policies and procedures
- health and safety of response personnel and community
- expectations of the Incident Management Team, Agency Executive, Consultative Committees etc
- stakeholders including the community and industry groups
- access to information and assistance from the broader Department of Regional NSW expertise where required.

Local Control Centre

Planning for aviation resources at the local/regional level should consider the following:

- consider all response options prior to considering DPI managed aviation
- evaluate support from other agencies e.g. use of boats by SES
- use other agency aviation assets where available
- review situation, including weather forecast for proposed tasks
- aviation resource/s required, location, availability, timing, amount, tracking etc
- health, safety and well being, including incident/occurrence reports and investigations
- recording of aviation activities, particularly the LAOM [air control log](#), [aviation task checklist](#), [task description](#), [risk assessment and aircraft operations plan](#) and the LCC SITREPs, becomes a summary that and LCC provides the SCC either in real time or as determined by the SCC.

Debriefing is a way of systematically collecting information related to the efficiency and effectiveness of the aviation management system based on task completion. It can occur daily or periodically during a response.

An after action review (AAR) or response debrief must be conducted following a response to elicit key observations, areas requiring improvement or modification and confirm best practice.

Acquiring aviation assets

Requests from the LCC

If Planning determines the need for aviation assets, the LAOM:

1. reviews the published [task profile and risk assessment](#) for the task required, and ensures they meet the task
2. develops a local [task description, risk assessment and aircraft operations plan](#) for one or more flights, which includes the proposed area of operation, the local hazards (such as terrain, wires, trees, structures, animals and sensitive areas) and considerations and proposed risk mitigation
3. initiates an [aviation task checklist](#) and a task request (TR) in WebEOC – all forms/templates are located in LCC Operations Aviation folder in the response drive
4. briefs the local IMT, ensuring IC supports aviation use and intent
5. determines the type of aviation assets required and completes the [NSW RFS aircraft request form](#) and signs it as the local approver
6. requests Local Operations Officer to sign the [NSW RFS aircraft request form](#) (as the regional approver)
7. uploads all completed documents in the relevant TR folder in the LCC Operations Aviation section of the response drive and requests the endorsement of the SAM
8. makes revisions on completed documents if requested by the SAM and/or AM.

Approval by the SCC

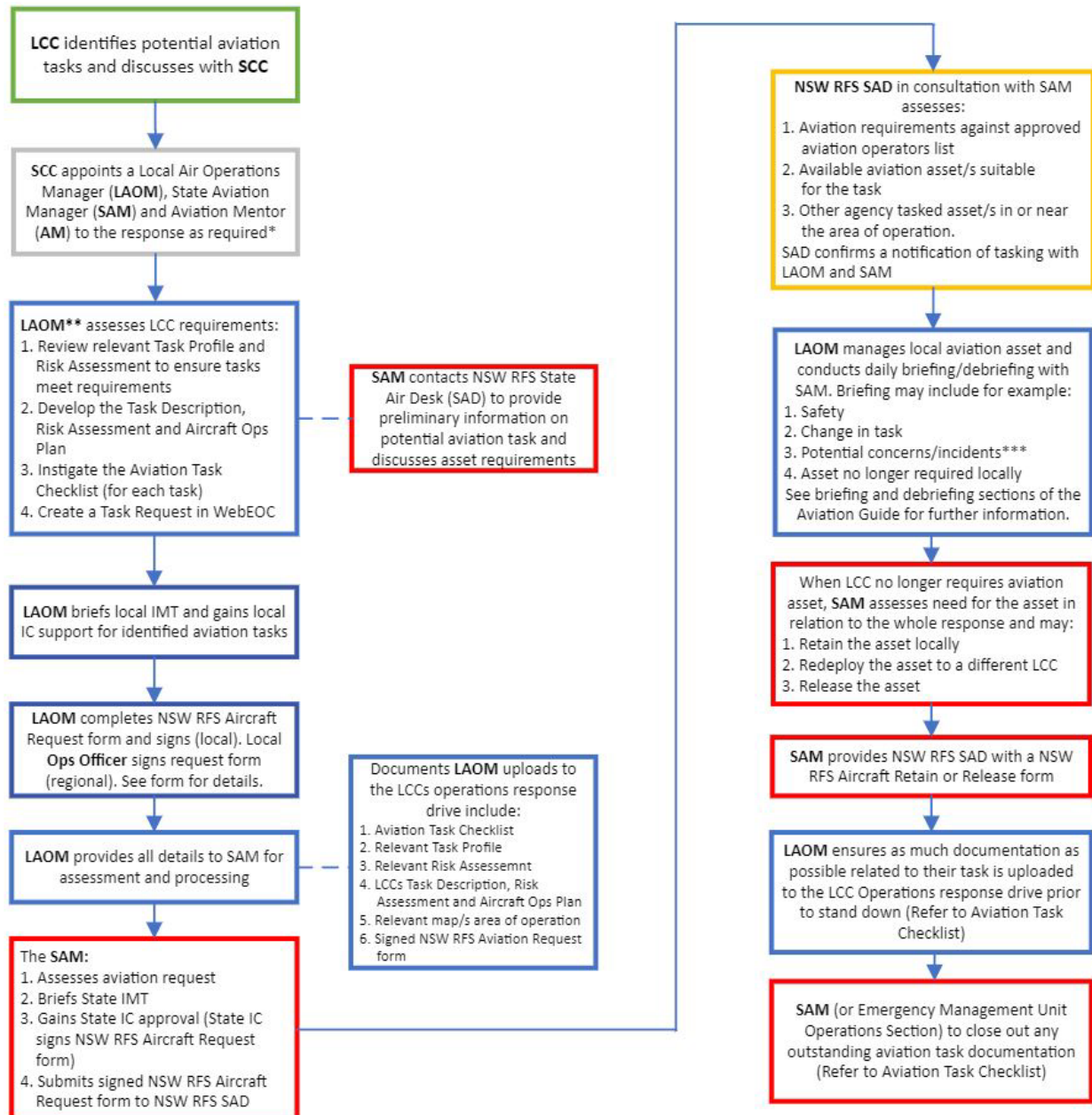
1. On receipt of a [task description, risk assessment and aircraft operations plan](#), relevant [task profile](#), relevant [risk assessment](#), relevant map on the area of operation and a signed [NSW RFS aircraft request form](#) from an LAOM, the SAM reviews the request to ascertain priority and allocation of the resource
2. When the request meets requirements, the SAM will brief the State IMT. TR is approved by State IMT role (with appropriate financial delegation) and the [NSW RFS aircraft request form](#) is approved by the approved NSW RFS list of State Coordinators or AM's
3. The SAM submits the [NSW RFS aircraft request form](#) to the NSW RFS SAD

4. NSW RFS SAD, in consultation with the SAM, will task the aviation operator, and email the tasked information directly to the LCC and SCC
5. Chemical supply (if required) is coordinated for aerial operations, according to a separate TR
6. When the aircraft is no longer required or the approved period on the TR has expired, the aircraft is returned by the SAM (after consultation with the LAOM) by completing and submitting an [NSW RFS aircraft retain or release form](#) to NSW RFS SAD.

Figure 1 on the next page summarises the process above.

The SCC is not directly involved in the operational management of resource at a local level, however ongoing communication with the LCC is essential to ensuring proper and efficient use of the aviation asset/s. Either the NSW RFS SAD or the SCC can reallocate aircraft in consultation with the LCC, if/where state-wide priorities change.

Figure 1: Summary of acquiring, tasking and releasing of aviation assets



* Appendix 3 outlines the responsibilities of each role

** The LAOM has a direct line of communication with SAM and AM throughout the life of the aviation task

*** LAOM MUST immediately inform the LCC and SAM of any aviation incident, potential incident or safety concern/s

Aerial operations

Aerial operations is the process that occurs once the aviation request is 'tasked' by the NSW RFS SAD. This commences when the LAOM receives an 'Notification of Booking' email from NSW RFS SAD/ARENA with an accompanying Dispatch Number.

Planning for each flight has already been developed by the LAOM in the approved [task description, risk assessment and aircraft operations plan](#). If there is a change to task type (requiring different aviation assets) or the time period requires extension, a new plan and TR is required.

The LAOM is responsible for determining and establishing, in consultation with the aviation operator, what facilities and support will be required in order to conduct the task, and then liaising with the appropriate agencies, organisations and individuals to have the facilities available. This support includes but not limited to:

- airfield access (which may be organised by aviation operator - refer to [Appendix 5](#) for more details)
- fuel availability and access (which may be organised by aviation operator - refer [Appendix 5](#) for more detail)
- assigning Air Surveillance Officers (ASO) (i.e. DPI, LLS, NSW RFS, or other agency aircrew)
- chemical availability, location and transport
- ensuring the appropriate permissions (to spray) have been obtained (where required)
- accommodation
- ground transport
- dangerous goods movement, storage and handling
- communications
- using an [airbase briefing checklist](#) if an airbase is established.

Task briefing

The briefing of a task is the responsibility of the LAOM. It may be conducted face to face, by phone, radio or MS Teams and should involve pilot, crew, other aviation staff involved in the response (Field personnel) and aviation operator if available (Refer to [Appendix 6](#) for further details).

Briefs are normally provided at least one hour before scheduled take-off time, so it is important that the LAOM prepares the brief early. The [task description, risk assessment and aircraft operations plan](#) will provide much of the required information. Multiple tasks may be briefed in a briefing session. Any minor updates should be briefed in breaks between tasks or in flight.

Briefing pilots while the aircraft is running (e.g. hot refuel or chemical loading) should be avoided. The pilot's focus will likely be on the task at hand rather than absorbing the information being provided during the brief.

It is at the briefing that the passenger manifest is finalised and checked for accuracy. The task profile will detail who may be carried on particular flights. A copy of the manifest is to be kept by the pilot and the LAOM. An accurate manifest must be kept for all flights undertaken.

The pilot is responsible for providing a pre-flight briefing to any passengers and/or aircrew for each flight undertaken regarding safety and the aviation asset. The [safety briefing checklist](#) is used by staff to ensure the pilot provides adequate safety briefing for the aircraft being used.

Personnel permitted on aircraft include the pilot, Air Surveillance Officers, land owners/managers and passengers as outlined in the relevant [task profile](#). **Non-authorized passengers are NOT permitted to travel in tasked aircraft.**

Flight following

Flight following is conducted to ensure a quick and reasonably accurate response to an accident or incident. It is a procedure where a competent person keeps track of the progress of a flight through radio, phone contact or satellite-based screen tracking. Search and Rescue (SAR) action is initiated if contact is not maintained or if there is some doubt as to the safety of the aircraft.

A 'competent person' is someone who is trained and assessed as competent to take responsibility for [flight following](#) and SAR arrangements. The LAOM may assign the aviation operator this task provided the aviation operator agrees to it and can demonstrate that it can perform the task competently. The LAOM must regularly check to ensure that the aviation operator is performing the role as required and those checks are recorded in the [event log](#). An aviation operator may only conduct flight following on its own aircraft. Internet or app based programs, such as TracPlus, may also be used to support flight following.

Where flight following cannot be conducted by the Operator, an agreement is needed to who is to perform flight following. Where this is not available, the LAOM can use the [flight following form](#).

Before and during flights, the pilot is responsible for:

- making a departure call to the flight-follower
- reporting location every 30 minutes thereafter (only exception to this is for spray aircraft where a spotter is conducting flight following calls on their behalf)
- ensuring an accurate crew/passenger manifest is maintained and reported
- reporting changes to tasking
- reporting changes to time of tanks dry (endurance).

Resources

Suggested resources that may be required for aviation personnel. Resource requirements will vary with task, location and impact of the emergency.

Item	Description
Aviation equipment	<ul style="list-style-type: none"> • aviation standard helmet with built in communications and tinted and clear visors (note - it is advisable to remove earrings before donning helmet) • Nomex or equivalent flight suit • aviation gloves (when required) • aviation standard harness for aerial shooter as per FAAST requirements (supplied by operator)
Clothing for aviation personnel	<ul style="list-style-type: none"> • Flammable resistant (e.g. cotton) clothing including underwear beneath flight suit • Leather, ankle high, lace up boots
Communication/safety devices	Suitable for the area, e.g. mobile phones, radios (on GRN), satellite phones, personal locating beacon (PLB) or tracking device/App for remote/isolated work
Water and food	Food (required for survival kit) and water (dehydration is common, take at least 1.5L) for personnel to assist in managing fatigue
PPE	Suitable for the task and conditions, e.g. sun/wind protection (hat, sunscreen, lip balm), wet weather gear, insect repellent (refer to the safety risk assessment /safe work method statement)

Item	Description
First aid kit	Suitable for location/conditions, may include additions (e.g. snake bite kit)
Medication	<ul style="list-style-type: none"> • Travel sickness medication (recommended) • Eye drops (optional)
Camera	Camera (where possible and zoom lens preferable) – to photograph animals at risk and proximity to landmarks. This may assist landholders in locating stock on the ground. Phone/tablet camera maybe used where suitable.
Data collection	<ul style="list-style-type: none"> • iPad with GPS capability or access to waypoint data from aircraft - to record the location of animals at risk, landmarks and evacuation points • clip board/knee board, note pad spare paper and pen/s • chargers and/or battery pack for GPS/mobile device
Information	<p>Hazard information (eg powerlines, towers etc), likely location of animals, local area maps (maybe available on recording devices)</p> <p>Safe location for rescued animals</p>
Contact details	Contact details to provide information, in case of accident and report in when landed e.g. property owners, FCP/LCC, supervisor, flight following contact, emergency services, other teams
Data collection forms	<ul style="list-style-type: none"> • event log • air observation report – locusts • air observation report – natural disasters
Destruction gear	Firearms and ammunition suitable for species, number

Aircraft overdue procedures

If an aircraft becomes overdue that a LAOM is flight following, they must:

1. attempt to contact the aircraft
 - on agreed channel
 - aircraft/pilot phone
 - via ground personnel at last known location
 - via other tasked aircraft
 - via the operator at the nominated contact number
2. continue to try at regular intervals
3. arrange for Air Services Australia (ASA) to call the aircraft - Contact ASA on 1800 805 150 (information as recorded on the flight following form will be required)
4. consider if aircraft has diverted and not advised
5. notify the Local IC and SAM of the possible overdue aircraft. SAM to contact NSW RFS SAD and State Coordinator.

If there is still no contact with the aircraft after 30 minutes:

- notify Air Services Australia on 1800 805 150
- mobilise available resources that may be available
- consider the use of locally tasked aircraft to conduct a preliminary search

- contact Australian Search and Rescue (AusSAR) on 1800 815 257
- notify local police and other emergency services
- notify SAM of actions.

Flight conduct

The aviation operator and pilot in cooperation with the LAOM are responsible and accountable for the safe and efficient conduct of all flights. All tasks are to be conducted in accordance with an approved [task profile](#), [task description](#), [risk assessment and aircraft operations plan](#), [safety briefing](#) and [airbase briefing](#) where applicable.

The pilot records accurate and appropriate information to ensure the completion of the flight operations return (FOR). This may include satellite location logs. An incomplete or incorrect FOR may result in the non-payment of an invoice. The Air Surveillance Officer (ASO) shall complete an Air Observation Report for [locust surveillance](#) or [natural disaster surveillance](#).

The LAOM shall monitor the flight/task to ensure that its conduct is likely to achieve the intended objectives safely and efficiently. Any incidents must be reported using the [CAMMS incident report form](#) and where appropriate the [ATSB aviation accident or incident notification form](#). Refer to [Appendix 4](#) for more details.

Debrief

Debriefing a flight is important in establishing what happened, what was achieved and for continual improvement of operations. The LAOM should debrief the pilot and other aircrew following the flight and complete the [air operations task debrief form](#). Ideally, the pilot, aviation operator and LCC/FCP personnel involved in the aviation task should also be involved.

Records and reporting

Records

There are numerous records that reflect the progression of a task from concept to completion and payment. Record keeping (collection, saving/filing, storage, review and analysis) is also an essential aspect to the continual improvement of DPI aviation operations. It also assists to ensure that the conduct of the task matches the costs anticipated and agreed to. All records are saved on the response drive.

A list of all forms/templates potentially used in aviation operations and their details are listed in the table below.

Form/Template	Details
Aviation task checklist	Filled out and maintained by the LAOM - provides an aide-memoire to ensure that all required records are collected for each flight
Event log	Filled out by all staff associated with aviation operations – SAM, AM, LAOM, FCP personnel
Task description, risk assessment and aircraft operations plan	Completed by LAOM for LCC/FCP and submitted to the SAM with WebEOC TR number. Used to brief pilot/crew.
Task Request (WebEOC guide)	Raised by LAOM in WebEOC once aviation asset need identified
Aircraft request (NSW RFS form)	Filled out by LAOM and submitted to SAM. SAM submits to NSW RFS SAD once task is approved

Form/Template	Details
Notification of booking	Issued by NSW RFS SAD (Through ARENA) LCC and SCC – details asset deployment
Airbase briefing checklist (NSW RFS form)	Filled out by the LAOM or appointed Air Base Manager if airbase is established
Passenger manifest (NSW RFS form)	Filled out by pilot and checked by LAOM and final copies held by LCC and pilot/operator
Safety briefing checklist	A checklist filled out and checked by DPI/LLS crew/passenger to ensure pilot covers appropriate briefing. Uploaded to response drive
Aerial control log	Filled in by LAOM to capture each aviation task and saved daily in the response drive.
Flight Operations Return	Filled out by pilot and copy provided to LAOM. Used by the Finance Function to match task request, task description , risk assessment and aircraft operations plan and invoice for aviation operator.
Flight following	Conducted by aviation operator (as per task description , risk assessment and aircraft operations plan). LAOM may also conduct where/if required
Air operations task debrief	Filled in by LAOM for each task
CAMMS incident report form (DRNSW)	Pilot, Operator, any aircrew, FCP/LCC personnel - submitted as required to LAOM
ATSB aviation accident or incident notification form	Pilot, operator, any aircrew - submitted as required to ATSB or CASA or other agency (Police etc), copy to LCC and SCC
Air observation report – locusts Air observation report – natural disasters	Air Surveillance Officer to LAOM
Aerial spray record	Physical record, including flight logs and spray coverage run/maps must be completed by the aerial operator and submitted to the LAOM within a week of the spray task completion. The operator shall also provide a copy of the spray record to the owner/occupier of the land sprayed.
Flight log	Supplied by the aviation operator as part of flight following, spray or surveillance tasks
Post control check	Completed by LCC/FCP personnel

Reporting

The LCC shall provide a situation report (SITREP) to the SCC as determined by the response to provide an overall picture of the reporting period activities. The aviation component of the SITREP should include:

- an overall summary of the day's activities

- a use/status of aviation assets
- what was planned versus what was achieved
- summary of tasks conducted and hours flown
- any occurrences (accidents or incidents)
- any activities that may be subject to public or media comment
- other information as determined by the SCC.

Effectiveness of spray tasks is conducted by the FCP inspecting sites at appropriate intervals after spray tasks are completed (post control checks). These inspections are recorded on [post control check form](#). Checks are conducted to investigate spray efficacy, and to check on any complaints and any off-target impacts (non-target species or out-of-bounds area). Samples may need to be collected for residue testing. Where issues are identified, the LCC must record it on a [CAMMS Incident Report form](#), notify the SCC, and initiate an investigation. Spraying activities may need to be halted until the issue is resolved.

Any incidents or accidents that occur during aviation operations must be reported immediately to the LAOM, local Ops Officer, local IC and SAM, and recorded and reported in [CAMMS](#) within 24 hours. An [ATSB aviation accident or incident notification form](#) will also need to be filled out and submitted (See [Appendix 4](#) for this process).

The LAOM is responsible for the completion of each task and the correct compilation and saving of all records in the response drive.

Training

DPI will coordinate and provide training to staff in aviation roles. List of trained personnel are available in EMTrain. Refer to [Appendix 11](#).

Course	Frequency	Course duration	Who	Course covers
Work Safely Around Aircraft and Crew Resource Management	3 years	2 days ('refresher' courses for previously trained staff may be shorter)	All staff operating in and around aircraft	<ul style="list-style-type: none"> • manage human factors in aviation operations • apply aircraft safety procedures • work safely around aircraft and familiarization in specialized training subjects • crew resource management • low level flying hazards • obstacle avoidance
Locust air surveillance	5 years	2 days	Staff filling air surveillance role	<ul style="list-style-type: none"> • planning safety considerations for the aerial operations • planning a flight • identifying bands of locusts from the air • assessing bands as ground or aerial spray targets, including making pre spray assessments of aviation and environmental hazards • recording and reporting aerial observations and flight data
LAOM, SAM and AM aviation training	5 years	1-2 days	Staff filling AM, SAM & LAOM roles	DPI emergency management aviation processes

Course	Frequency	Course duration	Who	Course covers
Helicopter Underwater Escape Training (HUET)	3 years	1-2 days	Staff filling air surveillance role – limited based on risk	Preparing for aircraft ditching, undertaking evacuation from an aircraft, conducting rescue recovery process, and controlling survival hazards

Logistics and Finance

Refer to the [Logistics and finance in emergency response guide](#).

Abbreviations and definitions

Term	Description
AAR	After Action Review
AIIMS	Australasian Inter-Service Incident Management System
ALA	Aircraft Landing Area
AM	Aviation Mentor
AOL	Approved Operators List (responsibility of NSW RFS Aviation Section)
ARENA	ARENA is a system for supporting the use of aircraft for fire and emergency response managed by the National Aerial Firefighting Centre (NAFC) on behalf of its Members across the States and Territories of Australia and New Zealand.
ASA	Air Services Australia
ASO	Air Surveillance Officer
ASRT	Air Surveillance Response Team
Assets	Aviation resources (e.g. fuel, aircraft, personnel, etc.)
ATSB	Australian Transport Safety Bureau
AusSAR	Australian Search and Rescue
CAMMS	Department of Regional NSW incident reporting system
CASA	Civil Aviation Safety Authority Australia
CWN	Call When Needed
DPI	NSW Department of Primary Industries
DRNSW	Department of Regional NSW
EOI	Expression of interest
FCP	Forward Command Post

Term	Description
FOR	Flight operations return
GPS	Global positioning system
HLS	Helicopter landing site
IAP	Incident Action Plan
IC	Incident Controller
IMT	Incident Management Team
LAOM	Local Air Operations Manager
LCC	Local Control Centre
LJR	Low jet route
LLS	Local Land Services
NOTAMS	Notice(s) to airmen
NSW EPA	NSW Environment Protection Authority
NSW RFS Aviation Section	NSW Rural Fire Service Aviation Section - coordinates interagency aviation requirements, IAAWG, audits, investigations and EOI (Standing Offer/Contract)
NSW RFS SAD	NSW Rural Fire Service State Air Desk - coordinates aviation asset deployment and stand down
NSW SES	NSW State Emergency Service
Operator	Air/Aviation operator
PPE	Personal protective equipment
Response drive	Location of emergency response documents for each response, e.g. Microsoft
RMS	Resource Management System
SAR	Search and Rescue
SAM	State Aviation Manager
SCC	State Coordination Centre
SITREP	Situation Report
Status board	Visual display that shows information regarding aviation assets, hard copy displays (i.e. whiteboards) or electronic, includes response dashboards
TR	Task request

Term	Description
UAV	Unmanned Aerial Vehicle (Drone)
VFR	Visual flight rating
WHS	Work Health and Safety

References

Agencies

- [Australian Marine Safety Authority](#)
- [Australian Transport Safety Bureau](#)
- [Civil Aviation Safety Authority Australia](#)
- [Local Land Services](#)
- [NSW Department of Primary Industries – Emergency Management](#)
- [NSW Environment Protection Authority](#)
- [NSW Rural Fire Service](#)
- [NSW State Emergency Service](#)
- [Royal Society for the Prevention of Cruelty to Animals \(NSW\)](#)
- [SafeWork NSW](#)

Forms

- [Aerial control log](#)
- [Aerial observation report – locusts](#)
- [Aerial observation report – natural disasters](#)
- [Aerial spray record](#)
- [Airbase briefing checklist \(NSW RFS form\)](#)
- [Aircraft request \(NSW RFS form\)](#)
- [Air operations task debrief](#)
- [ATSB aviation accident or incident notification form](#)
- [Aviation task checklist](#)
- [Event log](#)
- [Flight following](#)
- [Safety briefing checklist](#)
- [Post control check](#)
- [Task description, risk assessment and aircraft operations plan](#)

Task Profiles

- [Aerial mustering](#)
- [Aerial shooting](#)
- [Aerial spotting in support of locust spraying](#)
- [Aerial spraying in support of locust control](#)
- [Aerial surveillance](#)
- [Aerial transport](#)
- [Aerial sling loading by helicopter](#)
- [Aerial surveillance - operation of Unmanned Aerial Vehicles \(UAV\)](#)

Task Risk Assessments

- [Task risk assessment – aviation tasks](#)
- [Aerial surveillance - operation of Unmanned Aerial Vehicles \(UAV\)](#)

Role descriptions

- [Aviation role descriptions](#)

Safety and well-being

- [Benestar My Coach](#) (formerly the Employee Assistance Program) – 1300 360 364 (department employees access only)
- Local Land Services – Work, Health and Safety – intranet (department employees access only)
- Regional NSW – [Health, Safety & Wellbeing](#) – intranet (department employees access only)
- Regional NSW factsheet – [Health monitoring and vaccination](#) (department employees access only)
- [Appendix 1 - Risks in aviation operations with control references](#)

Appendices

Appendix 1 - Risks in aviation operations with control references

Risk	Control reference
Aerial operations	Use of aviation policy Aerial surveillance task profile Aerial transport task profile Aerial spraying task profile Aerial spotting task profile Aerial mustering task profile Aerial shooting task profile Aerial sling loading task profile Task risk assessment – aviation tasks Aerial surveillance – operations of unmanned aerial vehicles task profile and risk assessment
Aggressive stakeholders	Dealing with aggressive stakeholders
Biosecurity	Maintaining biosecurity entering and exiting properties
Chemical	Health monitoring (department factsheet on intranet) Insecticide application for locust control Safety Data Sheets, labels and permits Hazardous chemicals (department procedure on intranet)
COVID-19	Department safety information (on intranet)
Driving vehicles and towing	Driving vehicles Off-road vehicle operation – quad/motor bikes, ATV Towing a trailer
Fatigue	Fatigue management plan
First aid and medical response	Current response medical plan Emergency procedures for EOCs and field sites
Large machinery	Working around plant and equipment
Locating response personnel (including remote/isolated work)	Monitoring location of field personnel Remote and isolated work (department factsheet on intranet)
Locusts	Collection and examination of locusts
Manual handling	Manual handling
PPE	Use of personal protective equipment (PPE)
Risk Assessment	Guide and template

Risk	Control reference
Visiting properties	Property visits including working on properties impacted by locusts
Well-being Mental health	Critical incident stress Benestar MyCoach (Formerly the Employee Assistance Program) - call 1300 360 364
Work Health and Safety	WHS incident notification (department factsheet on intranet)
Working around water	Working on or around water

Appendix 2 - Commonwealth and state legislation

Category	Title
General including safety	Biosecurity Act 2015
	Local Land Services Act 2013
	Biosecurity Regulation 2017
	Work Health and Safety Act 2011
	Work Health and Safety Regulation 2017
Aviation	Air Navigation Act 1920
	Civil Aviation Act 1988
	Civil Aviation Advisory Publication (CAAP) 92-(91)
	Civil Aviation Safety Regulations 1998
	Transport Safety Investigation Regulations 2021
Chemicals and transport	Australian Code for the Transport of Dangerous Goods by Road and Rail, 2018 – National Transport Commission
	Dangerous Goods (Road and Rail Transport) Act 2008
	Dangerous Goods (Road and Rail Transport) Regulation 2014
	Labelling of workplace hazardous chemicals, August 2019 - SafeWork NSW, Code of Practice
	Managing risks of hazardous chemicals in the workplace, August 2019 - SafeWork NSW, Code of Practice
	Pesticides Act 1999
	Pesticides Regulation 2017
	Safe use and storage of chemicals (including pesticides and herbicides) in Agriculture, 2006 - SafeWork NSW, Code of Practice
Environment	National Parks and Wildlife Act 1974
	Protection of the Environment Operations Act 1997
	Biodiversity Conservation Act 2016
Finance	Government Sector and Finance Act 2018 – Instrument of delegation

Appendix 3 - DPI Aviation role descriptions

State Aviation Manager

The SAM is responsible for acquiring aviation assets through the NSW RFS SAD and deploying them to LAOMs for taskings along with providing expert technical advice on aviation governance and approval requirements. This role reports to the State Operations Officer.

Responsibilities

- Provision of safety and technical aviation advice to State Incident Management Team
- Manages requests and allocations of aviation resources at a state level for deployment to local operations
- Liaises with NSW RFS SAD to request, deploy to local areas, and return aviation assets
- Ensures Local Air Operations Managers request and allocate aviation assets in accordance with DPI aviation documents
- Undertake strategic oversight of aircraft taskings within a local area
- Review and audit financial records for completed aviation tasks

Outputs

- Review, assess, and action requests for aviation resources at a state level in line with DPI aviation documents
- Maintain aviation records and report on activity
- Communicate information on resource requests, resource status, significant changes, emerging risks
- Investigate near misses, injuries, or reports of miss use or non-compliance of aviation tasks with aviation operational plans or risk assessments

Position criteria

1. Knowledge and demonstrated aviation experience including working with DPI's aviation policies, procedures, guides, task profiles and forms
2. Experience in providing briefings to personnel and contractors
3. Ability to provide leadership in aviation use at a state level
4. Experience in training delivery, preferably in aviation use

Local Air Operations Manager

The LAOM is responsible for managing aviation assets allocated by the SAM and to oversee all aspects of the use of aviation assets at a local level as well as providing expert technical advice on aviation use and governance requirements. This role reports to the Local Operations Officer.

Responsibilities

- Assesses the need for aviation use at a local level
- Provision of safety and technical aviation advice to Local Incident Management Team
- Liaises with SAM to acquire aviation assets for a local area
- Ensure all staff fully understand the safety requirements when working during aerial Operations including use of appropriately qualified, competent and approved personnel
- Brief and debrief SAM, air crew, staff and contractors
- Manage air operations

Outputs

- Review, assess and action requests for aviation resources at a local level in line with DPI aviation documents
- Manage aviation records and report on activity
- Communicate information on resource requests, resource status, significant changes, emerging risks
- Investigate near misses, injuries or reports of miss use or non-compliance of aviation tasks with aviation operational plans or risk assessments

Position criteria

1. Knowledge and demonstrated aviation experience including aviation tasks and experience working with DPI's aviation policies, procedures, guides, task profiles and form
2. Experience in providing field briefings to personnel and contractors
3. Ability to provide leadership in aviation use at a local level

Aviation Mentor

The AM role is responsible for mentoring and supporting the SAM and LAOM roles when aviation assets are being considered or deployed during emergencies. This role reports to the State Coordinator.

Responsibilities

- Provide mentoring support and advice to LAOM and SAM roles on all aspects of aviation use, tasks, procedural requirements and policy issues
- Undertake audits of aircraft use, policy and procedure compliance and safety (both of records and on ground observations), including engaging aviation experts where required
- Approve requests for aviation assets to NSW RFS SAD
- Adjudicate on any issues where agreement or decisions cannot be made individually or collectively by LAOM or SAM roles on aviation use matters
- Lead any internal non compliances investigations (not related to aviation reportable incident)
- Assist with NSW RFS Aviation Section with incident and non-compliance investigations

Outputs

- Review, assess and action requests for aviation resources at a local and state level in line with DPI aviation documents
- Audit aviation records and report on findings
- Mentor LAOM and SAM on communicating information on resource requests, resource status, significant changes, emerging risks
- Conduct and report on field safety and operational audits
- Investigate and report on near misses, incidents and accidents, injuries or reports of miss use or non-compliance of aviation tasks with aviation operational plans or risk assessments

Position Criteria

1. Significant knowledge and demonstrated experience in aviation tasks and experience working with DPI's aviation policies, procedures, guides, task profiles and form
2. Mentoring/coaching experience
3. Experience or understanding in conducting audits and investigations

Appendix 4 - Hazard, incident and accident reporting

Any personnel (flight crew, the aircraft owner, the operator, the hirer, aircraft crew and the ground crew) involved in or becoming aware of a hazard, accident or incident shall notify the LAOM immediately and complete reports to the ATSB (as below). The LAOM shall immediately notify the SAM and SCC. The SCC will keep the DPI Health and Wellbeing Unit and the NSW RFS SAD informed including copies of reports of major incidents and all injury report forms according to the DPI workplace incident management procedure.

Any immediately reportable or routine reportable matters as defined by the Transport Safety Investigation Regulations 2021 must be reported to the ATSB:

- using the accident/serious incident hotline, 1800 011 034
- followed by a written report within 72 hours using the online notification form or the [ATSB aviation accident or incident notification form](#) (found at www.atsb.gov.au)

A copy of the ATSB report must be forwarded from the LAOM/LCC to SAM/SCC. Hazards and potential risks in aerial control must be reported as soon as they are identified and communicated to the whole operation.

When an accident occurs, the aircraft and anything in the aircraft is deemed to come into the custody of the Director of ATSB and it must not be removed or interfered with. The removal of persons, animals or mail is permissible (Air Navigation Act 1920 - Part 2A (Division 7)).

Rescuers are permitted to take such action as is necessary to protect the wreckage from further damage and to prevent danger to aircraft, to other transport and to the public.

Goods and baggage may only be removed from the wreckage under the supervision of the police or another authorised officer.

Notify NSW EPA about incidents involving transport of dangerous goods and SafeWork NSW regarding other incidents with dangerous goods.

Appendix 5 - Airfields and other considerations

Although it is unlikely that DPI and LLS personnel will be called upon to manage an airbase, the following information is provided as guidance.

The management of airbases and the coordination of aircraft operations play a pivotal role in the safe and efficient use of aircraft. The following needs to be considered:

- the LAOM needs to have experience in aircraft operations and tasking – refer to [Appendix 3](#) aviation role descriptions
- the LAOM may work from either the LCC or FCP or a forward airbase, depending on the nature of operations. LAOM's are ground based and are not to fly
- airbase selection and establishment are important factors in maintaining safety and operational efficiency, considering issues such as:
 - infrastructure including road access
 - proximity of accommodation and food supplies
 - fuel availability and resupply
 - airfield accommodation and ablutions
 - water supply, chemical storage and loading
 - aircraft hazards including wires, structures and wildlife
 - availability of emergency services and emergency items such as fire extinguishers
 - wind indicators
 - communications
 - security
 - aircraft maintenance facilities.

- the LAOM in consultation with the pilot or operator should undertake hazard identification and risk assessment for any potential airbase location. Airbases and flight paths need to be located well clear of any power lines and other hazards.

Selection of Landing Sites

Selection of landing sites is specified in the task profiles and the relevant Civil Aviation Advisory Publication.

Minimum standards are required in the selection of Aircraft Landing Areas (ALAs) and Helicopter Landing Sites (HLSs) to enhance safety. These procedures are **not** exhaustive.

- Use established landing grounds or known safe areas. ALAs and HLSs are to meet, as a minimum, the requirements documented in Civil Aviation Advisory Publication (CAAP) 92. Additional restrictions may be placed from time to time by LAOMs or other stakeholders.
- CAAP 92 defines a basic ALA and HLS as a place that may be used as an aerodrome for infrequent opportunity and on a short-term basis for all operations by day and under visual flight rating (VFR). The use of the CAAP guidance, especially in relation to a basic ALA and HLS is, however, subject to the acceptance by the pilot of the requirement to exercise sound airmanship. Further, it is inappropriate to use the minimum basic criteria at operating bases from which operations are intended to be conducted on a repetitive basis for more than a day.
- In circumstances where the basic criteria could be applied in accordance with CAAP 92, Pilots-in-Command shall allow appropriate safety margins in addition to the criteria for non-emergency situations.

Task Management

Multiple aircraft operations need to be closely monitored to ensure safety is maintained:

- pilots will be responsible for maintaining separation between aircraft
- a common radio frequency should be allocated to aircraft working in close proximity to ensure communications are maintained
- aircraft involved in spraying operations may be supported by a spotter helicopter to assist in hazard identification and the effective conduct of the task
- all spotter aircraft flights will have appropriately trained and competent observers on board that have been approved by the LCC
- height separation may be needed between aircraft on different tasks that may be occurring in close proximity to each other.

Appendix 6 - Aviation briefings

Comprehensive briefings involving all aviation operational personnel are a vital component to the conduct of safe and efficient aviation operations, given the complexity and risks associated with these operations. The pilot is ultimately responsible for the safe operation of the aircraft.

- Daily general briefings should involve pilots and operational personnel. Task-specific briefings ([Airbase briefing checklist](#)) should also be undertaken, either following general briefings or prior to tasks.
- Briefings should be based on the [task description, risk assessment and aircraft operations plan](#) and include:
 - daily objectives
 - control activity
 - weather including expected cloud, wind, temperature and relative humidity/precipitation
 - aircraft and tasking
 - refuelling and loading
 - communications and flight following

- low-level operations
 - Notice to Airmen (NOTAMS) including a Low Jet Route (LJR) activity that may impinge on operations
 - risk and safety issues including incidents, trends and specific safety hazards relevant to the period and area of operations
 - administration, including flight and duty times and maintenance issues, and time to next maintenance release.
- Weather information should be made available by the LAOM however, pilots are responsible for ensuring that they possess appropriate weather information. Crews need to be aware that extended areas of operation may involve significant local weather influences
- Similarly, pilots are responsible for ensuring that they possess the latest NOTAMS, LJR and other required information to ensure the flight is conducted safely and within aviation regulations
- Briefings need to specifically emphasise the risks associated with low level flying operations and the importance of hazard identification and assessment, cockpit communication and discipline
- A sterile cockpit environment involves the elimination of non-essential communication or movement within the aircraft when conducting operations and in accordance with operator's instructions. This requires the application of rigorous crew resource management techniques including, but not limited to:
 - the elimination of extraneous communication
 - the elimination of distractions
 - the verbalisation and read-back of hazards
 - the verbalisation of intentions
 - the questioning of actions that are not consistent with safety or with previously verbalised intentions
- All personnel are to receive a safety/emergency briefing from the pilot prior to any flight, specific to the type of aircraft in which they will be flying. The briefing should include points as detailed in the [safety briefing checklist](#) as a minimum. The pilot must complete/confirm the passenger manifest prior to departure and provide to LAOM prior to departure.

Appendix 7 - Flight duty limits and fatigue management

Aviation operators and pilots of contracted aircraft are responsible for the maintenance of flight and duty times in accordance with CASA regulations and must ensure that these flight and duty times are not exceeded.

Pilots or aviation operators must advise the LAOM when limitations are likely to affect control operations. Normally, the operator should manage crewing issues however should the operator be unable to provide alternate crew, LAOM shall liaise with the SAM regarding replacement aircraft and other management alternatives. SAM will then liaise with the NSW RFS SAD. Flight and duty times and fatigue management is in accordance with Interagency Aviation SOPs.

Aviation operators should also provide feedback to DPI to ensure arrangements including location and accommodation facilitate fatigue management.

DPI, LLS and other agency personnel involved in aviation operations are not to occupy a crew position when fatigued. Refer to the [emergency management - fatigue management plan](#).

Appendix 8 - Refuelling and loading

Mixing/loading and refuelling crews shall wear appropriate PPE as specified by the Civil Aviation Safety Authority Australia (CASA) and/or SafeWork NSW, including, as a minimum, long trousers and long-sleeve shirts in a non-synthetic material, boots or fully enclosed footwear, ear protection (muffs, plugs), hats, eye protection (e.g., goggles, tinted safety glasses), chemical gloves and safety vests.

Aviation operators shall ensure that proper hazard controls are in place. This shall include management of electronic devices in hydrocarbon environments, chemical and fuel storage, firefighting and spill containment.

In larger and/or remote operations, the NSW RFS SAD may coordinate bulk fuel operators for the provision of fuel through the NSW RFS CWN Fuel Suppliers List.

Aviation operators are responsible for:

- ensuring fuel quality and testing, provision of refuelling personnel, and associated PPE
- mixing crews and loaders, equipment and associated PPE
- all safety and fire precautions detailed in the operator's Air Operations Manual, including fire-fighting equipment, and bunding for fuel, chemicals and earthing procedures for the aircraft
- safety of personnel around aircraft – all authorised passengers (observers) and uninvolved aircrew are to move a minimum 25 metres clear of aircraft during refuelling and loading operations
- hot refuelling of turbine-powered helicopters with Jet A1 - permitted in accordance with approved flight and operations manuals
- hot refuelling of AVGAS-powered aircraft **is not permitted**
- safe handling of pesticide in accordance with relevant NSW EPA and SafeWork NSW requirements.

Appendix 9 - Aerial assessment of animals in floodwater

During the assessment of animal data collected may include:

- number and type of animals affected
- health of the animals (see Table 1 for clinical signs mainly in sheep)
- estimated time the animals have been/will be affected by floodwater
- evidence of floodwater rising or falling, flow rate and water depth
- availability of high ground and forage material and possible movement routes
- suitability of sites for potential fodder drops
- take photographs with a camera (with zoom lens) or phone to avoid descending lower than necessary, and to illustrate animal's situation and surrounding landmarks.
 - a. photos with landmarks will assist landholders and ASSFA field teams finding animals

Table 1: Factors to consider when assessing the health of animals in floodwater

Health Indicators	Considerations
Length of time standing in water	It is probable that sheep standing in water for longer than 5 days are at risk of their integument being compromised. This may lead to severe skin and hoof lesions, infections and septicaemia.
Demeanour	Animals that are bright and alert that look up at the aircraft have a better prognosis.
Avoidance behaviour	Animals making attempts to avoid low flying aircraft have a better prognosis than those who don't.
Mobility	Recumbent animals that don't respond to stimuli have a poor prognosis. Prognosis is good for animals that are mobile. Bugged animals are easily exhausted and have a poor prognosis.
Wool length and fleece quality	Sheep in full wool become water-logged easily and succumb to exhaustion more quickly than those with little wool. Fleeces with a green tinge indicate wetting for longer than 7 days. Evidence of flystrike is a poor prognostic indicator.
Neurological signs	Neurological signs often indicate metabolic disease. Animals showing neurological signs (e.g. paddling) have a poor prognosis.
Mob behaviour	Sheep have strong mob instincts. If they are scattered, it indicates a poor prognosis.
Dead animals in the vicinity	Poor prognostic indicator.
Injuries	Animals with injuries often have a poor prognosis.

Appendix 10 - Animal welfare recommendations during natural disasters

Recommendations to resolve the animal welfare situation must consider the safety of people involved and the ongoing welfare of the animals.

In all cases, the owner of the animals will be determined from the GPS co-ordinates and notified. Options for resolution of the situation are detailed in Table 2.

Table 2: Recommendations for resolving animal welfare situations

Recommendation	Details
Creation of access paths	Cutting a fence or opening gates may alleviate some situations.
Retrieval/mustering to higher ground with adequate feed	<p>Access paths for retrieval/mustering should be determined during the aerial surveillance. Retrieval of stock can occur via vehicle (quad/4WD/tractor) or via boat. Helicopters can be used to fly stock handlers and quad bikes into the area where appropriate.</p> <p>Mustering options include via quad bike, horse or by foot. For cattle, mustering via helicopter can be considered. Be sure to consider the current health condition of the livestock and the terrain before recommending this option. Debilitated stock may be unable to move even short distances through mud or water to higher ground.</p> <p>Photographs of access paths and other landmarks can be particularly useful for landholders when undertaking this option.</p>
Fodder drops	<p>Where retrieval is not possible and stock are standing on an island that will not be inundated, a fodder drop can be considered. The likely time period for which the animals are likely to be isolated should be considered. Maintenance levels of fodder should be provided only. Fodder may be provided via vehicle, boat or the air. With sheep, aerial lifting to a more suitable area might be more cost effective than continued aerial fodder drops, depending on animal numbers and distances involved.</p> <p>Refer to Guide - Field operations in natural disasters.</p>
Aerial lifting	<p>Aerial lifting of sheep from solid, dry ground in cages beneath helicopters can be considered if the sheep are assessed as healthy and likely to survive. Aerial lifting will not be conducted for animals standing in water or from muddy ground.</p> <p>Where an aerial lift is recommended, the GPS co-ordinates of the destination area must also be identified and recorded as a Waypoint.</p> <p>The destination should:</p> <ul style="list-style-type: none"> • be in a location unaffected by further floodwater rises. • have access to feed and water (without the need for fodder drops). • be accessible for ground monitoring of stock health. • aerial lifting tasks require approval by AASFA Operations Officer.
No action with monitoring	In some cases a solution may not be apparent. The course of action might depend on uncertain floodwater levels, livestock are identified that will only be at risk if floodwater rises further or safety concerns might prevent action in the immediate time period.

Recommendation	Details
	<p>In these cases the owner must be notified and the situation scheduled for monitoring. The time period between monitoring might be anything from 12 hours to a period of about 3 days. Notes should include the recommended time period between monitoring events.</p>
Euthanasia	<p>The decision to destroy distressed and injured animals is made as a last resort. It is only considered on animal welfare grounds and where other options are not available. Euthanasia may be considered if the animals display the following poor prognostic indicators:</p> <ul style="list-style-type: none"> • standing (or anticipated to stand) in floodwater for 5 days or more • severe injuries • exhaustion/debilitation • severe bogging • systemic illness such as neurological disease, septicaemia • prolonged recumbency • full wool, especially with evidence of fleece waterlogging or a green discolouration • flystrike • poor avoidance behaviour in response to low flying aircraft • scattering rather than mob behaviour • where practical and safe, euthanasia should be conducted from the ground. Aerial destruction is only considered if this is not possible or safe.

Appendix 11 - Air surveillance response team

The Air Surveillance Response Team (ASRT) will be a small group of DPI and LLS personnel strategically located across the state, trained in Helicopter Underwater Escape Training (HUET), and be willing to be deployed at short notice in support of AASFA and biosecurity emergency surveillance tasks involving aircraft, particularly where flights are required over water.

Training requirements

ASRT members will need to complete and maintain the training pathway for the role of Air Surveillance - Animal Welfare which is available in EMtrain, and must include HUET training.

Veterinarians (with the ability to assess livestock from the air on animal welfare grounds) and FFAST shooters may be part of ASRT to support aerial destruction of livestock during flood and biosecurity responses.

ASRT membership

Around 20 personnel will be selected for the ASRT. It is expected that successful applicants will commit to the program for a period of 4 years, at which time an expression of interest (EOI) process will determine the team for the following term. If during the four-year term, team numbers fall below 15, an EOI will call for new team members to maintain numbers between 15-20.

Selection criteria

Requirements of the LLS and DPI Supervisors

1. be willing to support and release staff to undergo and maintain training for the role, approximately 2-3 days per year
2. be willing to release staff for deployment across the state during emergencies
3. provide access to appropriately fitting aviation PPE including:
 - a. NOMEX flight suit
 - b. aviation helmet
 - c. aviation standard gloves (recommended)
 - d. sturdy leather footwear

Requirements of the staff member

1. commit to the program for four years
2. be fit and healthy and be willing to undertake a medical assessment if required to ensure suitability of undertaking aviation roles (training and response activities)
3. be willing and proactive in undertaking and maintaining required aviation training, e.g.
 - a. HUET training every two years
 - b. aviation training (e.g. crew resource management and work safely around aircraft) every three years
4. be willing to make yourself available, where possible, to be deployed for aerial surveillance roles and/or aerial livestock assessment and destruction during emergencies.
5. maintain specialist equipment issued by DPI to each person in the ASRT including:
 - a. approved life jacket
 - b. Personal Locator Beacon
 - c. survival kit

At the completion of a 4-year term or if members no longer can commit to the team, any equipment issued to ASRT members will need to be returned to DPI.

Costs

The approved costs for training, equipment and travel will be paid for by DPI for successful applicants.