

Aviation Task Profile - Aerial Surveillance

This task profile outlines the identified hazards associated with Aerial Surveillance operations by helicopter and fixed wing aircraft. Failure to utilise the practical controls to those hazards identified in this plan will unnecessarily raise the risk profile of the task.

This task profile can be used to develop standards and/or to provide a reference for auditing and assessment by identifying the controls that are in place, assessing the risk and then determining what extra (if any) controls should be utilised.

Compliance with aviation and state WHS regulations, as well as any other applicable regulations, are implied and are to be considered and complied with in addition to the controls identified in this profile.

Task Profile Name	Aerial Surveillance – Helicopter/Fixed Wing
Objectives of Task	To identify and record areas of interest (includes animal support tasks, pest insect targeting, and infrastructure damage assessment) in support of emergency management operations for NSW DPI.
Description of task	The task involves planned and short notice callout to conduct aerial surveillance at risk areas as part of emergency management. Heights flown need to be commensurate with the type of target and conditions. Landings may be required. Some tasks may require the carriage of non-Government/Contractor personnel. Personnel carried shall only be those required to achieve the task objectives.
CASA permit/approval	CASR Part 138 Aerial Operating Certificate suitably endorsed and Air Operating Certificate (AOC). Pilots with appropriate experience and low-level flying permissions. Operations conducted within the parameters permitted by the Civil Aviation Regulations, associated orders and relevant advisory publications.
Aircraft Type	Both fixed wing and helicopters may be utilised. Fixed wing aircraft may have either piston or turbine engine(s). Helicopters shall be turbine powered. The fixed wing aircraft shall be high-winged and must be capable of operating normally straight and level and manoeuvring safely straight and level at speeds down to 55 knots (kts).
Number of engines	single or multi-engine

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<p>Task profile (sequence)</p>	<ul style="list-style-type: none"> • Callout • Planning including map reconnaissance for hazards • Determine whether extra persons on the flight are aerial work passengers or aerial work task specialists. People who have a role in the aircraft and perform any functions within the aircraft are considered task specialists and therefore must meet the requirements detailed in the contractor's documentation. • Briefing including update of hazards as shown on appropriate map, flight following procedures, weather, task objectives, target/surveillance area, communications, aerial risk assessment. Contact landowner/manager if being picked up (include briefing on appropriate clothing) • Fuelling when required • Conduct Crew Brief • Start/Taxi/Takeoff • Transit to area of operation not below 500 feet (ft) Above Obstacles (AO). • Conduct route and area of operations identification, aerial hazard survey and pre-descent brief prior to descent below 500ft AO. • Conduct area surveillance initially not below 500ft AO. Further descent requires prior authorisation, risk assessment, hazard identification, upper-level reconnaissance as required to achieve the task. • Descend to low-level operations commensurate with task objectives, authorisations, and conduct further hazard/target identification if required. • Communicate with LCC or Contractor (as approved) for flight following and task update. • Land at appropriate area approximately every two hours to minimise fatigue. • Transit to additional operational area at a safe transit height (> 500ft). • Conduct further hazard reconnaissance and route identification prior to descent to conduct low level operations as above. • Transit to operating base/fuelling area. Conduct pre-landing brief. • Land / Shut Down. • Debrief and report.

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Task conditions or technical aspects	<p>Information from aerial surveillance may, where practicable, be augmented by information obtained from ground-based teams.</p> <p>The inspection is conducted in day visual conditions only in low to medium turbulence at a speed commensurate with safe operations in the environmental conditions being experienced.</p> <p>Pilots should ensure helicopters operate with a minimum 5% power margin based on Out of Ground Effect power requirements (nil wind). Consideration shall also be made of extreme environmental heat and cold on the safety of aircraft operations.</p> <p>The task is normally conducted when an agricultural incident occurs and it is determined that an aerial perspective to identify targets, and/or the extent and location of damage would be helpful to assess appropriate treatment and/or recovery strategies.</p> <p>Maps may be provided to assist aerial inspection crews, but these should not be relied on for the identification of hazards and therefore the reconnaissance of operating areas before descent is essential.</p> <p>Grid search techniques may be employed involving locating targets using GPS or locating and recording a target location using GPS.</p> <p>Although 500ft has been nominated as the safe level of operations, it should be noted that wires may be strung between hills at higher levels and therefore constant vigilance by pilots and crew is required.</p> <p>Descent below 500ft may be conducted if approved in the Aircraft Operations Plan, required for the task and the pre-descent reconnaissance has been completed. The entire area that the aircraft operates below 500ft shall have been fully inspected in the pre-descent reconnaissance. The area should be continually assessed during the descent and operations below 500ft.</p> <p>Landings by fixed wing aircraft and helicopters should be made to pre-inspected Aircraft Landing Areas and Helicopter Landing Sites respectively. Such landings require prior arrangement with, and area description from the landowner/manager.</p> <p>In all cases, a complete pre-landing survey is required to ensure that no obstacles may impinge on the safe operation of the fixed wing aircraft or helicopter.</p> <p>Aircraft are not to be operated with any part of the aircraft extending into vegetation (e.g. long grass which may be hiding fences, ant hills or posts).</p>
Time of Year	Operations are year-round
Terrain description	<p>The areas of operations will encompass all types of terrain including paddocks, hills, and urban areas.</p> <p>The high terrain areas can experience low air density which can adversely affect aircraft performance. Also, the terrain can experience severe downdraughts and turbulence as a result of the strong winds. Cloud can roll in quickly.</p> <p>The lower areas can experience extensive areas of fog, mist or smog, which can limit visibility.</p> <p>The areas can be extensively wooded and/or populated with domestic structures in close proximity to power lines. Fences may be hidden in long vegetation.</p> <p>If surveillance is being conducted over water, need to operate above 500ft and personal need to be appropriately trained and wear appropriate PPE. A specific risk assessment maybe required. Task specialist training and PPE will be required when flying over water.</p>

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Limitations	<p>The inspection is conducted in day visual conditions only in low to medium turbulence at a speed commensurate with safe operations in the environmental conditions being experienced.</p> <p>Descent below a safe height (clear of all known and potential obstacles - generally 500 ft AO) is not to be conducted until the pilot confirms a low level of risk factoring in the route and area of operations, aircraft performance, aerial hazard and obstacle survey, environmental conditions and has conducted a low level flying pre-descent brief. This must be conducted for each descent below a safe height.</p> <p>Personnel working for or on behalf of NSW DPI are considered to be aerial work task specialists. Aerial work passengers should not normally be not carried on this task, however where their carriage is considered essential to achieve specific task objectives, landowners/managers may be carried after having received a thorough safety briefing and that their carriage meets the requirements noted in Section 2 “Context” to this RA. All persons on board aircraft operating on behalf of NSW DPI must have a designated essential role in the performance of the aircraft task.</p> <p>Doors would normally be fitted to the aircraft unless a specific reason is identified for their removal and the removal is identified as essential to conduct the task and considered in the risk assessment process. Doors should be on when carrying aerial work passengers.</p> <p>Landing to liaise with landowners/managers holders should be conducted to low risk (CAAP 92-2) Helicopter Landing Site (HLS), Air Landing Ground (ALG) or aerodromes.</p> <p>Traversing near ground level is to be only done in helicopters. It is considered a high risk undertaking and should normally be limited to animal welfare surveys and roosting Spur Throated Locust swarm identification and is conducted only when essential and no other technique is available. Traversing near ground is not permitted for Australian Plague Locust swarm identification, but descent to inspect is permitted at a height commensurate to the task (generally not below 200 feet). Low level operations also incur the risk of reduced visibility due insect impact on screen as well as impacts on pitot tubes and other areas on the aircraft (e.g., engine intakes). If this forms part of the task at hand, then this information must be clearly documented in the Task Description Risk Assessment and Aircraft Operations plan and approved.</p> <p>Landings at appropriate areas should be planned approximately every two hours to minimise fatigue.</p> <p>Sterile Cockpit Procedures shall be implemented when the aircraft is operating below 500ft AO.</p> <p>Pilots should be aware of the chances of blockages in aircraft intakes due to flying through insect swarms.</p>
Height restrictions	As a general rule, flights are to be conducted at the highest altitudes commensurate with the task objectives. It is recommended that general surveillance including locust band identification be conducted at heights in excess of 500ft AO. More detailed inspections such as animal welfare and plague locust swarm inspections may require the flight to be conducted below 500ft AO. Any operations below 500ft AO shall be identified in the approved Aircraft Operations Plan.
Minimum height above obstacles	500ft is generally accepted as the minimum operating height unless otherwise authorised. This operating height may need to be raised commensurate with the terrain and potential obstacles such as power lines.
Operating times	Nominally 2 hours per session with a maximum of four sessions in any one day and consistent with the Contractors’ fatigue management plan or CASA industry exemptions (whichever represents the greater restriction). Restricted to daylight hours and due consideration to visibility.

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Aviation Contractor Requirements	<p>Contractor must be tasked through the RFS SAD and meet all requirements of the Standing Offer such as having:</p> <ul style="list-style-type: none"> - an AOC and CASA authorisations suitable to the task - a demonstrably functioning Safety Management System - fatigue management, or CASA approved flight and duty time, system - been audited and assessed as being suitable and capable of conducting NSW DPI Emergency Management air surveillance operations - detailed and documented training system - a minimum 5-year history general operations with no accidents indicating a trend in poor oversight or safety management - proper and detailed maintenance records of the helicopter to be used
Crew composition	2 to 3 - person crew; Pilot, aviation aware air surveillance officer(s). Any person carried acting who may influence the safe operation of the aircraft (e.g., providing the pilot with clearances or guidance) is to be regarded as a task specialist and should be trained to the contractor's satisfaction to conduct the task. Otherwise, other people carried may be considered aerial work passengers provided they meet the criteria noted in 'context' of Section 2 of this risk assessment.
Qualification / Training of each crew member	<p>Pilot – CASA licenced, medically current, appropriate approvals and experience (see Standing Offer)</p> <p>Air Surveillance Officer – Crew Resource Management, GPS and map reading skills, Work Safety Around Aircraft, Fly the Wire (optional), HUET (required when flying over significant water bodies)</p>
Role of each crew member	<p>Pilot – Identify hazards and maintain hazard clearance, operate aircraft, navigation, communication, responsible for safety of the aircraft and crew/passenger, pre-flight and in-flight briefings.</p> <p>Air Surveillance Officer (Task Specialist) – Trained in aviation role as well as having specialist skills to undertake specific role in the aircraft. Essential for all surveillance tasks. Assist the pilot in hazard identification and avoidance and communication. Provides local knowledge aspects and environmentally sensitive areas. Animal control responsibilities, loading, unloading and securing loads prior to being attached to and lifted by the aircraft (at direction of crewman if present). Responsible for recording, and mapping activities. Responsible for identifying, recording, and mapping of targets and areas of interest. Advises where to start inspection and where to end.</p> <p>Crewman (if carried) – Assist the pilot in hazard identification and avoidance, map reading, aircraft operation, sling load operations and communication. Passenger and animal control.</p> <p>Landowner/manager (Aerial work passenger) – May be untrained. Provides local knowledge aspects, hazard identification and environmentally sensitive areas. Not essential for all surveillance flights.</p>
Landing zone details	Landings should be conducted to low risk (CAAP 92-2) Helicopter Landing Site (HLS), Aircraft Landing Areas (ALAs) (CAAP 92-1) or aerodromes. It should be noted that CAR 92(1) puts the responsibility on the pilot to ensure that the place is suitable for use as an aerodrome; and having regard to all conditions of the proposed landing or takeoff (including prevailing weather conditions), that the aircraft can land at, or takeoff from, the place safely. Where ALA information is provided by a person other than the pilot, it is still the pilot's responsibility to ensure that the facility is suitable for the intended aircraft operations.

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Communication requirements	<p>The communications requirements for flight following purposes shall be detailed during the pre-flight briefing. It should be noted that the communications management may reside with the Contractor but the LCC shall be responsible for ensuring that the flight following is being conducted.</p> <p>Communications need to be maintained at all times between the pilot, the air surveillance officer(s), crewman and the passenger in relation to hazard and targets identification. Passenger(s) should have headsets when embarked in helicopters.</p> <p>Communications should also be established and maintained between the aircraft and the ground crew element as appropriate in order to facilitate the communication of operational and hazard related information. Communications as required with flight services.</p> <p>Communications are to be established and maintained with other low flying aircraft in the immediate vicinity.</p>
SAR requirements	<p>Flight-following should be conducted by the aviation contractor using satellite-based tracking systems showing real time information with at a minimum location and height reports not exceeding 5 minutes. The Local Air Operations Manager should have access to the satellite tracking system where possible to monitor task progress and aircraft location. In circumstances where it is not possible or practical, the Local Air Operations Manager may decide to use an air base manager to coordinate flight following.</p>
PPE	<ul style="list-style-type: none"> • Appropriate flying helmet (equipped with visor) worn by each helicopter crew member • Flammable resistant clothing worn by each crew member and passenger • Enclosed leather footwear (hardened toe and supported heel preferred) • Cotton or wool underclothing, socks • Aviation standard gloves (recommended) • Aviation approved life jacket if flying over large bodies of water