



Standard Operating Guideline

Unmanned Aircraft System



Scope: Sacramento Regional Fire Departments

Policy Contact: Sacramento Regional Operations Group

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References

- FIREScope. 420-I Field Operations Guide. 2022
- 14 CFR Part 91 — General Operating and Flight Rules
- 14 CFR Part 107 — Small Unmanned Aircraft Systems
- FAA Certificate of Waiver or Authorization (COA)
- Incident Response Sacramento Regional SOG

01. Guideline

Establish regional guidelines for requesting, deploying, communicating with, and deconflicting Unmanned Aircraft System (UAS) resources at emergency incidents. UAS operations shall support the Incident Commander, enhance aerial reconnaissance and situational awareness, maintain airspace deconfliction, and comply with applicable FAA requirements, the Department COA, and incident direction.

This guideline applies to on-duty UAS pilots, Visual Observers, UAS Coordinators, Incident Commanders, dispatch personnel, and all personnel operating at incidents where a UAS is requested or deployed.

02. Definition

2.1 Aircraft Conflict: Any actual or potential conflict between a Department UAS and another aircraft or UAS that requires the PIC to maneuver, descend, land, hold, terminate the mission, notify ATC, or otherwise act to maintain separation.

2.2 Airspace Deconfliction: The process used to prevent UAS operations from interfering with manned or unmanned aircraft by coordinating mission airspace, altitude, communications, emergency procedures, and airspace restrictions before and during flight.

2.3 Mission Airspace: The lateral and vertical operating area approved for a UAS mission, including planned maximum altitude, emergency return route, launch/recovery zone, and any no-fly or stand-off areas identified by the PIC or Incident Commander.

2.4 Pilot in Command (PIC): The primary operator of the UAS, responsible for safe flight operations, regulatory compliance, mission deconfliction, and use of the UAS Program Emergency Procedures Checklist.

2.5 UAS Coordinator: The member who establishes and manages the UAS airspace coordination function at the incident. Reports to the Air Operations Branch Director, Air Tactical Group Supervisor, or Operations Section Chief when an air operations organization is established, and to the Incident Commander when none is in place.

2.6 Visual Observer (VO): A person assigned to assist the PIC by maintaining visual contact with the UAS, scanning the airspace for aircraft and hazards, and immediately communicating safety concerns to the PIC.

2.7 UAS: Unmanned Aircraft System, including the aircraft, control station, and associated equipment operated by the Department.

03. Resources

3.1 UAS Asset Assignment

- Every UAS assigned to an emergency incident shall have a callsign consistent with UAS naming convention. UAS designators will be based on the departments' geographical station number and/or two digit jurisdictional designator (e.g., UAS61, UAS20, UAS2290, UAS2493).
- Prior to launch, all UAS assigned to the incident shall be placed on scene in CAD.
- UAS resources from outside agencies should be added to the incident when possible.

3.2 Potential Incident Types for UAS

- Water Rescue (WR1, WR2, or WR3)
- Grass Fires
- Multi-alarm Commercial Fire
- Haz Mat Level 2 and above
- Technical Rescue

The Incident Commander may request a UAS for any other incident and may release the UAS if it is not needed.

04. Procedure

Incident Commanders may request UAS resources when aerial reconnaissance or situational awareness would support safe and effective operations. UAS pilots and assigned personnel coordinate deployment through the Incident Commander and the UAS Coordinator before launch.

The UAS Coordinator coordinates the launch on behalf of the Incident Commander; the Pilot in Command retains final authority over the safe operation of the aircraft. These roles are complementary — coordination does not override the PIC's safety authority, and the PIC's authority does not relieve the UAS Coordinator of the coordination function.

Department UAS operations shall comply with 14 CFR Part 91, 14 CFR Part 107, any applicable FAA COA, LAANC/FAA airspace authorization, NOTAMs, and Temporary Flight Restrictions (TFRs). Nothing in this guideline authorizes flight outside applicable FAA regulations or department policy. Manned air operations (e.g., air ambulance, law enforcement, news, and fire aircraft) shall be given deference at all incidents.

4.1 Requesting and Deploying UAS

1. A UAS may be utilized on incident types where aerial reconnaissance or situational awareness is likely to benefit operations.
2. When responding to incidents, the UAS pilot adds themselves to the incident and attaches both the UAS asset and their assigned apparatus.
3. Upon arrival and prior to deployment, a member of the responding company establishes and assumes the UAS Coordinator role, contacts the Incident Commander, and coordinates airspace deconfliction before launch.

4.2 Communications

1. IC or UAS Coordinator shall inform dispatch when UAS is launched.
2. The primary air-to-air and air-to-ground channel will be A5 and B5. On expanding incidents the IC will designate an assigned air-to-ground channel when airspace deconfliction occurs. The IC will designate either TAC Channel (i.e. A6 and B6) or Command Channel (A4 or B4) for UAS operations, used between the Incident Commander and the UAS Coordinator.
3. Air-to-air asset monitoring is conducted on VHF 132.125 as required for airspace deconfliction.
4. The UAS Coordinator provides concise updates to the Incident Commander regarding observed conditions, access issues, hazards, fire spread, victim location, exposure concerns, or other requested information.
5. Pre-launch gate: the UAS Coordinator establishes contact with the Incident Commander and confirms the communications plan before flight when able.

4.3 Roles and Responsibilities

- Incident Commander
- Air Tactics Group Supervisor
- UAS Coordinator
- Air Operations Branch Director
- Pilot in Command (PIC)
- Visual Observer (VO)
- Helicopter Manager
- Dispatch / Communication

4.3.1 Incident Commander

Is the designated leader responsible for managing all aspects of an emergency response or critical incident. They assume command upon arrival, establish incident objectives, manage operations, and deploy resources to restore safety and normal operations.

- Establishes Air Operations Branch and identifies air operations objectives
- Determine whether a UAS mission supports incident objectives and whether aerial resources are operating, requested, or anticipated
- Be available to the UAS Coordinator to confirm the operational objective, known aircraft operations, and the communications plan
- Notify the UAS Coordinator or PIC of known aircraft operations, medevac requests, law enforcement aviation, news helicopters, water-dropping aircraft, or other aircraft expected in or near the incident area
- Suspend or limit UAS operations when directed by ATC, a TFR coordinator, an Air Operations Branch Director, an aircraft pilot, or when airspace conflict cannot be resolved

4.3.2 Air Tactics Group Supervisor

Coordinates incident airspace, manages incident air traffic, and is the link between ground personnel and incident aircraft.

- Manages assigned manned and unmanned resources to support the incident objectives. Reports to Air Operation Branch or IC.

4.3.3 UAS Coordinator

Reports to the Air Operations Branch Director, Air Tactical Group Supervisor, or Operations Section Chief when an air operations organization is established, and to the Incident Commander when none is in place.

- Manages UAS operations under the guidance of the Air Tactics Group Supervisor and in support of incident Air Operations Objectives. Report to Air Tactic Group Supervisor or IC.

- Upon arrival, make face-to-face or radio contact with the Incident Commander to obtain the operational objective, area of interest, known hazards, manned-aircraft activity, and communications plan before launch
- Maintain situational awareness of all aircraft operating on or near the incident and ensure airspace deconfliction per Appendix A
- Serve as the single UAS coordination point when more than one UAS operates at the incident, and coordinate with the incident's air operations organization
- Advise the Incident Commander when UAS operations are being restricted, lowered, landed, or terminated

4.3.4 Air Operations Branch Director

Responsible for supervising all aviation resources during emergency responses

- They coordinate strategy, safety, and logistical support for all helicopters, fixed-wing aircraft, and unmanned aerial systems (UAS) operating over an incident.

4.3.5 Pilot in Command

Individual who holds the ultimate authority and responsibility for safe operation of an unmanned aircraft (UAS).

- Has the final authority and direct responsibility for operation, safety, and regulatory compliance of the UAS flight.
- Operates their assigned UAS to support Air Operations Objectives. Reports to UAS Coordinator or IC.
- Maintain accountability for the assigned UAS asset during the assignment period
- Confirm the UAS is operationally ready at the start of shift; report concerns through the chain of command
- Conduct preflight deconfliction in coordination with the UAS Coordinator and determine the UAS is safe and authorized to fly
- Establish mission airspace, maximum altitude, emergency return route, landing zone, and communication method before launch
- Remain prepared to immediately maneuver, descend, land, or terminate the mission to avoid aircraft conflict
- Terminate or suspend operations when conditions become unsafe, deconfliction cannot be maintained, or when directed by the Incident Commander
- Document flight activity, deconfliction actions, airspace notifications, emergency deviations, crashes, or aircraft conflicts

4.3.5 Visual Observer

Is a trained crew member who assists a UAS pilot, or pilot in Command (PIC), by maintaining constant visual contact with the UAS and scanning the airspace for hazards. It is advised to have a Visual Observer assigned, but is not a FAA requirement.

- Maintains airspace awareness and visual tracking of UAS in their assigned area. May be assigned to an individual resource or responsible for a geographic area.
- Maintain visual contact with the UAS and continuously scan for aircraft, UAS, birds, wires, towers, terrain, smoke, weather changes, and other hazards
- Immediately notify the PIC of any aircraft or hazard using clear language including direction, estimated altitude, trajectory, and urgency when known
- Maintain effective communication with the PIC and avoid non-mission duties while assigned as VO

Appendix A

UAS Airspace Deconfliction

This appendix establishes the airspace deconfliction procedures supporting the guideline above and shall be read together with it. UAS operations shall prioritize safety, support incident objectives, maintain airspace awareness, and comply with applicable FAA requirements, the Department COA, and department direction.

A.1 Policy

1. All UAS operations shall be conducted for official Department purposes in a manner that prioritizes safety, incident objectives, airspace awareness, and regulatory compliance.
2. Department UAS shall yield right-of-way to all manned aircraft and shall not be operated so close to another aircraft as to create a collision hazard. When an aircraft conflict exists or is reasonably anticipated, the PIC shall take immediate action to remain well clear, which may include descending, landing, holding, returning to the launch site, moving laterally, or terminating the mission.
3. The PIC retains final authority over the safe operation of the UAS. The Incident Commander may establish the mission objective; the PIC may decline, modify, pause, or terminate any operation that cannot be safely or lawfully completed.
4. When deconfliction cannot be maintained, operations are suspended until the conflict is resolved and the PIC determines safe flight may resume.

A.2 Pre-Deployment Airspace Deconfliction

Before launching a UAS, the PIC, in coordination with the UAS Coordinator, completes a preflight deconfliction assessment appropriate for the mission, location, airspace, and incident complexity. At a minimum, the PIC should:

- Confirm the mission is approved by the UAS chain of command, Incident Commander, or other authorized authority
- Review weather, visibility, wind, ceiling, and smoke conditions affecting visual line of sight or aircraft avoidance
- Check airspace classification, NOTAMs, TFRs, prohibited/restricted areas, nearby airports, heliports, hospitals, helipads, and local aviation hazards
- Obtain required FAA/ATC authorization before operating in controlled airspace or as otherwise required by COA, waiver, or procedure
- Determine whether manned aircraft are operating, have been requested, or are reasonably expected at the incident
- Establish a launch/recovery zone and emergency landing area that avoids personnel, apparatus, overhead hazards, utility lines, and public access when practical
- Set a planned operating ceiling and lateral boundary no larger than necessary to meet the mission objective

- Brief the flight crew on mission objective, perimeter, maximum altitude, return-to-home altitude, lost-link actions, emergency landing actions, aircraft conflict procedures, and communication plan

A.3 Radio and Communications Procedure

1. Before launch, the PIC or designee announces the UAS deployment over the assigned air-to-air and air-to-ground channel (A5, B5, C5, or D5) or other channel designated by the Incident Commander, including incident identifier, launch location, mission area, operating ceiling, and PIC contact method when practical.
2. Air-to-air asset monitoring is conducted on VHF 132.125 as required.
3. While airborne, the PIC and VO maintain effective communication at all times; the PIC remains reachable for incident safety messages.
4. When a manned aircraft is heard, observed, requested, or expected in or near the mission airspace, the PIC or VO announces the conflict and, when necessary, advises the Incident Commander that operations are being restricted, lowered, landed, or terminated.
5. Upon flight termination, the PIC or designee broadcasts that the flight has terminated; dispatch records the termination time when notified.

A.4 Mission Airspace Management

1. The PIC defines the mission airspace before launch and keeps the UAS within that area unless a change is approved by the PIC and communicated to the flight crew and Incident Commander when practical.
2. Mission airspace includes a planned operating ceiling, lateral boundaries, launch/recovery zone, emergency landing area, and any no-fly areas necessary to protect personnel, apparatus, the public, aircraft, critical infrastructure, or privacy.
3. The UAS is operated at the lowest altitude that safely accomplishes the mission and supports reliable visual observation, obstacle clearance, and aircraft avoidance.
4. The PIC continuously evaluates whether the mission airspace remains appropriate as the incident changes, aircraft arrive, visibility changes, or additional hazards are identified.

A.5 Deconfliction with Manned/Unmanned Aircraft

The default response to the assignment, arrival, or anticipated arrival of a manned aircraft is for the UAS to immediately descend and recover. Continued UAS operations may occur only after positive coordination has been established with the manned aircraft, and both the manned aircraft and the UAS PIC determines the operation can be conducted safely. Deconfliction with manned aircraft shall occur in all instances when aircraft will be crossing into each other's operational areas. Prior to the start of all operations, aircraft involved will identify and understand vertical and horizontal separation.

1. Manned aircraft, aircraft in distress, aircraft on final approach or landing, public safety aircraft, medical aircraft, law enforcement aircraft, and disaster relief aircraft are treated as priority traffic.
2. When manned aviation assets are operating at an incident, Department UAS operations are not conducted unless authorized under unified command. UAS operations give deference to manned air operations.
3. Upon observation, notification, or reasonable anticipation of a conflict, the VO announces the aircraft location, estimated altitude, direction of travel, and trajectory; the PIC immediately evaluates whether to hold, descend, land, return to launch, or maneuver to remain well clear.
4. If another aircraft enters or is expected to enter the mission airspace, the preferred action is to maneuver toward the landing zone and decrease altitude as low and as quickly as safety allows, then land or hold at a safe low altitude until resolved.
5. If a low-flying aircraft creates an immediate collision risk where descending would increase danger, the PIC may use the safest evasive maneuver. Any emergency deviation is documented and reported.
6. If the conflict cannot be resolved or safe separation cannot be maintained, the PIC terminates the mission and shall land immediately.

A.6 Multi-Agency and Mutual-Aid Operations

1. When operating with other agencies, the UAS Coordinator and PIC coordinate with the Incident Commander, Air Operations Branch Director, Air Tactical Group Supervisor, law enforcement aviation coordinator, or other designated aviation contact.
2. When more than one public agency UAS operates at the same incident, the UAS Coordinator serves as the Department's coordination point and coordinates with the incident's air operations organization to avoid overlapping mission areas, conflicting altitudes, duplicate launch sites, and conflicting radio traffic.
3. If a mutual-aid aircraft or outside UAS arrives without prior coordination, operations are paused, lowered, or landed until deconfliction is completed.
4. UAS operations shall be suspended when Cal Fire air resources are assigned.
5. In the event of joint response with law enforcement, the resource needs to be added to the incident for awareness for all air resources.

A.7 Temporary Flight Restrictions and Controlled Airspace

1. The Incident Commander, in coordination with the UAS chain of command and aviation partners, should consider requesting a TFR or other airspace management assistance when incident conditions create a significant aviation hazard, disaster relief aircraft are operating, or uncontrolled aircraft congestion is likely.

2. When operating within a TFR, the PIC confirms the operation is authorized, participating in the incident response, and coordinated through the responsible on-scene official or other designated airspace coordinator.
3. When operating in Class B, C, D, or surface Class E controlled airspace, the PIC ensures FAA/ATC authorization is obtained before launch unless otherwise authorized under a COA or emergency authorization.
4. The PIC complies with ATC clearances and instructions when applicable. If an emergency requires deviation, ATC is notified as soon as possible and the deviation documented.

A.8 Non-Department or Unauthorized UAS Intrusion

1. When a non-Department or unauthorized UAS is observed in or near the mission airspace, the VO notifies the PIC and Incident Commander with the UAS location, altitude if known, direction of travel, and apparent threat.
2. The PIC avoids the non-Department UAS and may land, hold, relocate, or terminate the mission until the conflict is resolved.
3. If the intruding UAS creates a hazard, the Incident Commander may request law enforcement assistance, public messaging, FAA notification, or other lawful mitigation through established channels.
4. Department personnel shall not attempt to seize, disable, jam, capture, or interfere with another UAS except as expressly authorized by law and Department policy.

A.9 Emergency Procedures

1. The UAS Program Emergency Procedures Checklist is used for lost link, ground control station failure, loss of GPS signal, autopilot/software error, loss of visual contact, aircraft intrusion, crash, loss of power, or any other UAS emergency.
2. When an emergency creates a risk that the UAS may depart the mission area, conflict with aircraft, or endanger life or property, the PIC or designee notifies the flight crew, Incident Commander, and ATC as appropriate and as soon as practical.
3. If a crash occurs, the flight crew maintains scene safety, assesses injuries, requests emergency assistance when needed, documents the crash scene before recovery when safe, notifies the UAS chain of command, completes required reports, and coordinates FAA, NTSB, or insurance reporting as required.
4. Emergency deviations from FAA rules are limited to actions necessary to resolve the emergency. The PIC is prepared to submit a written statement when requested by the FAA or Department chain of command.

Signatures

The undersigned Fire Chiefs approve the contents of this document



Tilden Billiter (Jul 25, 2026 08:04:11 PDT)

Tilden Billiter, D/C of Operations
City of Sacramento Fire Department



Tyler Wagaman (Jul 28, 2026 17:33:04 PDT)

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Unmanned Aircraft SOG

Final Audit Report

2026-07-29

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 Signer mmcgee@folsom.ca.us entered name at signing as Matthew McGee

2026-07-29 - 4:23:23 AM GMT

 Document e-signed by Matthew McGee (mmcgee@folsom.ca.us)

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 Agreement completed.

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