OCTOBER 2026, VERSION 1.2

RDPO STANDARDS FOR UAS OPERATIONS



PURPOSE

The Regional Disaster Preparedness Organization (RDPO) Standards for UAS Operations establish the regional standards for planning, coordinating, conducting, and reporting uncrewed aircraft system (UAS) operations by agencies participating in the RDPO UAS program. They apply to public aircraft operations under 14 CFR Part 91 and an agency Certificate of Waiver or Authorization (CoW/A) or Certificate of Authorization (COA), and to civil operations under 14 CFR Part 107.

This document is a regional template. Scappoose Fire District (SRFD) currently serves as the lead agency for RDPO UAS program development; this designation is subject to change. A participating agency may adopt these standards as written or with agency-specific additions that are equal to or more restrictive.

This document is a companion to the RDPO Certification Standards for Remote Pilot Operations (Pilot Standards). The Pilot Standards set how remote pilots are trained, evaluated, and carded. This document sets how the program is organized and how missions are requested, planned, flown, reported, and managed.

REGIONAL STANDARDS CONCEPT

The goal of these standards is to give every participating agency the same baseline for safe, lawful UAS operations, so that a remote pilot, aircraft, or data product from one agency can be used by another during mutual aid without re-qualification.

The two documents are written to agree. Pilot qualification requirements (the Tier 1 and Tier 2 pathway, evaluation plans, task sheets, and pilot cards) are in the Pilot Standards. Operational requirements (authority, airspace, request and deployment, mission specialties, reporting, aircraft, privacy, and data) are in this document. Each document cross-references the other by chapter.

When a requirement in this document conflicts with a federal or state regulation, an FAA authorization, or a participating agency's policy, the more restrictive requirement applies.

RDPO

Regional Disaster Preparedness Organization

SCAPPOOSE FIRE AVIATION

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Chapter 1: Introduction

Revisions and Amendments

Users are encouraged to recommend changes to the RDPO Standards for UAS Operations through the RDPO UAS Program Manager. Recommended changes will be reviewed at least every two years, consistent with the review cycle in Scappoose Fire District (SRFD) Policy 534, and sooner when a federal or state regulation, an operating authority, or the regional lead agency changes. Approved revisions are recorded in Appendix H.

Version 1.1 (October 2026): Added parachute recovery systems (SafeAir M30 Pro and the Skydio Parachute System for X10), with manufacturer training and phase-of-flight checklist items; revised operations over people and moving vehicles; added operations above 400 feet AGL in Class G airspace (up to 1,200 feet AGL, pending FAA waiver); added payload delivery with aircraft payload limits and the approved payload list; expanded the temporary flight restriction procedure to cover 14 CFR § 91.137(a)(1), (a)(2), and (a)(3) TFRs, Red Flag Warning TFRs, and subsequent or amended TFRs, with the Appendix G form required; added the matching A-454 add-on endorsements (Chapter 3); and aligned with the Pilot Standards, Version 1.3.

Version 1.2 (October 2026): Added Cold Weather and Icing Operations (Chapter 4), with the lessons from SAFECOMs 23-0164 and 23-0202, supporting research, aircraft cold-weather limits, the definition of icing conditions, checklist items, the icing response procedure, and training and reporting; added glossary terms (Appendix A).

Version 1.0 (October 2026): Initial RDPO edition. Adapted from the national-program template for a regional, multi-agency public safety UAS program. All agency-specific federal land-management policy, staff positions, forms, and processes were removed. Added the regional organization and lead agency structure; aligned operating authority with the SRFD 14 CFR § 91.113(b) Certificate of Waiver or Authorization (CoW/A); aligned training with the two-tier Remote Pilot Qualification Pathway in the Certification Standards for Remote Pilot Operations, Version 1.2; added the Hazardous Materials, Drone as a First Responder (placeholder), and Fire Investigation / Crime Scene Documentation mission specialties; replaced the training pathway (Figure 1) with the RDPO pathway, with the Hazardous Materials Pilot path in place of the natural resource pilot path; added regional request, deployment, and Incident Commander integration procedures (Appendix B); added Oregon public body requirements under ORS Chapter 837; and added the Oregon law enforcement decision tree (Appendix F); added wildland fire qualifications and operations (Chapter 6), interagency wildland fire mishap reporting with SAFECOM and the NASA ASRS UAS Report (Chapter 4), A-454 aircraft and GCS qualification and the Tier 1 and Tier 2 pilot card formats (Chapter 3), and the Wildfire TFR Flight Documentation Form (Appendix G); added the UAS Module (U-MOD) as the recommended response configuration (Chapter 2); clarified that a NASA ASRS UAS Report is filed for every accident, mishap, and near miss for national tracking, in addition to NTSB, FAA, and SAFECOM reports (Chapter 4); and added Part 107 operations to the Scope and Chapter 4 for agencies that do not hold public aircraft operator status.

Purpose

This document sets the regional standards for planning, coordinating, conducting, and reporting uncrewed aircraft system (UAS) operations by agencies participating in the Regional Disaster Preparedness Organization (RDPO) UAS program. It is written as a regional template. A participating agency may adopt it as written or adopt it with agency-specific additions, provided those additions are equal to or more restrictive than these standards.

Pilot training, evaluation, and carding are not repeated here. They are governed by the RDPO Certification Standards for Remote Pilot Operations (referred to in this document as the Pilot Standards). Where this document refers to a task, evaluation plan, or form by number, that number is the one used in the Pilot Standards.

Program Mission

Provide safe, efficient, and lawful UAS support to the public safety agencies of the RDPO region for emergency response, disaster preparedness, recovery, and training, with safety as the first consideration in every operation.

The RDPO Region

The RDPO is a partnership of government agencies, non-governmental organizations, and private-sector stakeholders in the Portland Metropolitan Region. The region spans Clackamas, Columbia, Multnomah, and Washington counties in Oregon and Clark County in Washington. The RDPO is governed by its Policy, Steering, and Program Committees, and discipline-specific work groups report to the Program Committee.

The RDPO UAS program is a regional capability. Each participating agency keeps operational control of its own aircraft and crews. The program provides common standards so that a remote pilot, aircraft, or data product from one participating agency can be used by another without re-qualification.

Regional Lead Agency

Scappoose Fire District (SRFD) currently serves as the lead agency for RDPO UAS program development. This designation is subject to change. When the RDPO designates a different lead agency, every reference in this document to the lead agency transfers to the newly designated agency on the effective date of that designation, and the change is recorded in Appendix H. A change of lead agency does not by itself change any FAA authorization. Each FAA waiver, authorization, or COA remains with the agency to which the FAA issued it (see Chapter 4).

Scope

These standards apply to all UAS operations conducted by, or on behalf of, a participating agency under the RDPO UAS program, including:

- Public aircraft operations under 49 U.S.C. §§ 40102(a)(41) and 40125, conducted under 14 CFR Part 91 and an agency CoW/A or Certificate of Authorization (COA).
- Operations conducted under 14 CFR Part 107, including emergency response missions flown by agencies that operate under Part 107.
- Mutual aid, automatic aid, and interagency incident assignments.
- Training, evaluation, demonstration, and community outreach flights.

Not every participating agency will hold, or be able to obtain, public aircraft operator status and an FAA CoW/A or COA. A participating agency may fly all of its missions under Part 107, and an agency that holds a CoW/A or COA, including SRFD, may still fly some missions under Part 107. These standards apply under either authority. Qualification tiers, pilot cards, endorsements, the U-MOD, risk management, and reporting are the same for both. Where a provision depends on the operating authority, the text says so. For example, shielded BVLOS under the SRFD 91.113(b) CoW/A applies only to public aircraft operations flown under that CoW/A. Part 107 operations follow Part 107 and any Part 107 waiver the agency holds (Chapter 4, Part 107 Operations).

Recreational flying under 49 U.S.C. § 44809 is not an agency operation and shall not be used to conduct agency business. On interagency wildland fire incidents, the National Wildfire Coordinating Group (NWCG) Standards for Fire Unmanned Aircraft Systems Operations (PMS 515) and the direction of the incident aviation organization also apply.

Authority

UAS operations under this document are conducted under the following authorities. When two requirements conflict, the more restrictive requirement applies.

- 49 U.S.C. §§ 40102(a)(41) and 40125 (public aircraft operations).

- 14 CFR Part 91, including the SRFD Certificate of Waiver or Authorization to 14 CFR § 91.113(b) for shielded operations.
- 14 CFR Part 107, Small Unmanned Aircraft Systems, and 14 CFR Part 89, Remote Identification of Unmanned Aircraft.
- 14 CFR Part 48 (FAA aircraft registration).
- ORS 837.300 through 837.390 and OAR Chapter 738, Division 80 (Oregon public body UAS registration, reporting, and use restrictions).
- Applicable Washington State law for Clark County participating agencies.
- The RDPO intergovernmental agreement and any UAS-specific mutual aid or memorandum of understanding between participating agencies.
- Each participating agency's UAS policy (for example, SRFD Policy 534, Unmanned Aerial Systems) and the SRFD UAS Program Guide.

The FAA Remote Pilot Certificate

The FAA issues a remote pilot certificate with a small UAS rating under 14 CFR Part 107, Subpart C. It is a certificate, not a certification. The FAA may suspend or revoke it (14 CFR §§ 107.57 and 107.59; 49 U.S.C. § 44709). Every remote pilot in command (RPIC) flying under this program shall hold a current remote pilot certificate, regardless of whether the flight is a public aircraft operation or a Part 107 operation.

Related Documents

This document is one part of a set. Users shall be familiar with each document that applies to their role.

Document	What it covers
RDPO Certification Standards for Remote Pilot Operations, Version 1.3 (Pilot Standards)	Pilot qualification pathway (Tier 1 and Tier 2), designations, evaluation plans (Chapter 4), task sheets BR 01 through BR 85 and BV 01 through BV 35 (Appendix A), evaluation forms (Appendix B), and the pilot record and pilot card (Appendix C).
Agency UAS policy (for example, SRFD Policy 534)	Agency authority, program roles, privacy, data retention, and the agency qualification tiers (SRFD Policy 534.17).
SRFD UAS Program Guide	Day and night certification levels (ORPIC Level 1 and Level 2), deployment procedures, and checklists.
SRFD 91.113(b) Shielded BVLOS CONOPS	Concept of operations supporting the SRFD CoW/A and the ATO COA for Class E3 and E4 airspace.
NWCG Standards for Fire Unmanned Aircraft Systems Operations (PMS 515)	Interagency standards for UAS on wildland fire incidents.
NWCG Standards for Aerial Supervision (PMS 505), NWCG Standards for Airspace Coordination (PMS 520), and NWCG Aviation Mishap Response Guide and Checklist (PMS 503)	Fire Traffic Area, aerial supervision, airspace coordination, and interagency aviation mishap response (Chapter 4 and Chapter 6, Wildland Fire).
UAS Operations in a 14 CFR § 91.137(a)(2) Wildfire TFR Flight Documentation Form	Record of UAS operations in a TFR under the direction of the official in charge. Required for every § 91.137 TFR, including Red Flag Warning TFRs (Chapter 4 and Appendix G).
Agency deployment references (for SRFD: Duty Officer UAS Reference, UAS On-Scene Deployment Guideline, UAS Integration Reference for Incident Commanders, and UAS Deployment Checklist)	Agency-level implementation of the request, go/no-go, on-scene integration, and call sign procedures in Chapters 4, 5, and 7 and Appendix B.

Chapter 2: Organizational Structure and UAS Designations

Introduction

The RDPO UAS program is organized at two levels. The regional level sets common standards, keeps the regional roster, and coordinates training. The agency level holds FAA authorizations, owns aircraft, and keeps operational control of its flights.

Regional Roles

RDPO UAS Program Manager

The RDPO UAS Program Manager is designated by the lead agency, in coordination with the RDPO, and is the program's point of contact for standards, training, and regional coordination. Responsibilities include:

1. Maintain this document and the Pilot Standards, and process recommended changes.
2. Maintain the regional roster of carded remote pilots, designated evaluators, and approved aircraft.
3. Approve UAS Pilot Evaluator and UAS Final Evaluator designations (Pilot Standards, Chapter 2).
4. Approve interim equivalents for the All-Hazards UAS Incident Operations course until that course is released (Chapter 3).
5. Approve new mission types, payloads, and non-standard operating procedures before use (Chapter 4).
6. Coordinate regional training, standardization workshops, and exercises.
7. Track regional mishap and near-miss trends and share lessons learned.
8. Report program status to the RDPO through the appropriate work group.

RDPO UAS Work Group

The RDPO UAS Work Group (or the RDPO body assigned the UAS program) is made up of representatives from participating agencies. It reviews proposed changes to this document and the Pilot Standards, recommends regional priorities, and supports interagency coordination. Until a standing UAS work group is formed, this function is carried out by the RDPO UAS Program Manager in consultation with participating agency UAS Program Coordinators.

Regional Aviation Safety Officer

The lead agency may designate a Regional Aviation Safety Officer to support the Safety Management System (SMS) described in Chapter 11, review mishap and near-miss reports, and track corrective actions. The RDPO UAS Program Manager may fill this role until it is designated.

Agency Roles

Agency UAS Program Coordinator

Each participating agency shall appoint a UAS Program Coordinator. At SRFD this is the Aviation/UAS Coordinator appointed by the Fire Chief under Policy 534.5. The Agency UAS Program Coordinator:

1. Holds and maintains the agency's FAA authorizations (CoW/A, COA) and ensures each operation stays within them.
2. Keeps the agency roster of current crew members and aircraft, and reports changes to the RDPO UAS Program Manager.
3. Registers agency aircraft with the FAA and, for Oregon agencies, with the Oregon Department of Aviation (Chapter 8).
4. Submits all required FAA, NTSB, and NASA Aviation Safety Reporting System (ASRS) reports for the agency (Chapter 4).

5. Keeps digital pilot training and qualification records (Chapter 3).
6. Ensures the agency's data, privacy, and records practices meet Chapters 8 and 9.

Agency Duty Officer

Each agency that deploys UAS on emergency requests shall assign a Duty Officer, or equivalent, to receive requests, make the go/no-go decision (Chapter 4), and coordinate the response with dispatch. Agency procedures may assign this function to a chief officer or the Agency UAS Program Coordinator.

Remote Pilot in Command (RPIC)

The RPIC has final authority and responsibility for the operation and safety of the flight. RPIC qualifications, responsibilities, and currency are listed in the Pilot Standards, Chapter 2 (Flight Crew).

Visual Observer (VO)

VO duties are listed in the Pilot Standards, Chapter 2 (Visual Observer). Under the SRFD 91.113(b) CoW/A, a VO is not required for shielded operations; however, a VO is required for all night operations.

Aircrew Member and Payload Operator

Aircrew members, including payload or sensor operators, support the RPIC but do not manipulate the flight controls. Their duties are listed in the Pilot Standards, Chapter 2 (Aircrew Member).

UAS Module (U-MOD)

The recommended response configuration is a UAS Module (U-MOD). A U-MOD is a three-person team that responds, checks in, and works as one resource:

Position	Role	Minimum qualification
U-MOD Supervisor	Leads the module. Is the single point of contact with the IC, the Operations Section, or Air Operations; receives the assignment and briefing; manages the risk assessment, airspace coordination, communications, crew duty limits, and product delivery. Does not fly the aircraft while supervising.	Current RDPO pilot card at the tier the incident requires, and designated by the Agency UAS Program Coordinator. Added supervisor training is to be determined by the RDPO UAS Program Manager.
UAS Pilot (RPIC)	Flies the aircraft and has final authority for the safety of the flight (Remote Pilot in Command, above).	Current RDPO pilot card at the tier the incident requires, with the endorsements and A-454 aircraft endorsement the mission needs (Chapter 3).
Visual Observer or Second Pilot	Keeps watch for aircraft and hazards, monitors air-to-air and tactical frequencies, and assists the RPIC. A second pilot can also exchange roles with the RPIC to manage fatigue and duty limits on long assignments.	VO: Pilot Standards, Chapter 2 (Visual Observer). Second pilot: same as the UAS Pilot.

The U-MOD is best practice, not the minimum. The minimum operational response is a qualified pilot and a second person (Chapter 4, Request Intake and Go/No-Go Decision). When a full U-MOD cannot be staffed, the RPIC takes on the U-MOD Supervisor duties and does not fly and supervise other aircraft at the same time. When more than one aircraft is assigned, each aircraft needs its own RPIC and VO or second pilot, and one U-MOD Supervisor may oversee the module. On interagency wildland fire incidents, the NWCG positions in the next section govern how UAS personnel are ordered and qualified.

UAS Designations

The following designations are issued under the Pilot Standards. This document does not change their requirements.

Designation	Issued by	Requirements
Carded Remote Pilot (Tier 1 or Tier 2)	UAS Final Evaluator	Pilot Standards, Chapter 2 (Remote Pilot Qualification Pathway) and Chapter 4 (Evaluation Plans)
Lead Instructor	RDPO UAS Program Manager	Pilot Standards, Chapter 2 (Lead Instructor)
UAS Pilot Evaluator	RDPO UAS Program Manager	Pilot Standards, Chapter 2 (UAS Pilot Evaluator)
UAS Final Evaluator	RDPO UAS Program Manager	Pilot Standards, Chapter 2 (UAS Final Evaluator)
Mission specialty endorsement	UAS Final Evaluator	Chapter 6 of this document and the matching evaluation plan in the Pilot Standards, Chapter 4

NWCG Incident Positions

On interagency wildland fire incidents, the NWCG positions of UAS Pilot (UASP), UAS Manager (UASM), UAS Module Leader (UASL), and UAS Data Specialist (UASD) may be ordered. Qualification for those positions follows the NWCG position standards and PMS 515. An RDPO Tier 2 card with the Wildfire endorsement is required before any RDPO remote pilot flies on a wildland fire incident, but it does not by itself grant an NWCG position qualification.

Chapter 3: UAS Training and Qualifications

Introduction

Remote pilots qualify through the two-tier Remote Pilot Qualification Pathway in the Pilot Standards, Chapter 2. The tiers set the incident types a pilot may support. They are separate from the day and night certification levels (ORPIC Level 1 and Level 2) in the SRFD UAS Program Guide, and separate from the mission specialty endorsements in Chapter 6.

Remote Pilot Qualification Pathway

Tier	Incidents a pilot may support	Requirements
Tier 1, All-Hazards Remote Pilot	All incidents except wildland fire	Current FAA remote pilot certificate (14 CFR Part 107); A-450, Small Unmanned Aircraft System (sUAS) Basic Remote Pilot Course; NIST Level 3; All-Hazards UAS Incident Operations course; current RDPO pilot card for the aircraft type, issued after a check ride
Tier 2, Wildland Fire Remote Pilot	All incidents, including wildland fire	All Tier 1 requirements; S-373, Unmanned Aircraft Systems (UAS) Incident Operations; any added qualification required by the ordering or host agency on interagency wildland fire incidents (for example, the NWCG UAS Pilot position under PMS 515)

The All-Hazards UAS Incident Operations course is in development, with release expected in February or March 2027. Until it is released, the RDPO UAS Program Manager may approve an interim equivalent and document it in the pilot's training record. Tier 2 is shown by the Wildfire endorsement on the pilot qualification card. A pilot without the Wildfire endorsement shall not fly on a wildland fire incident.

Pilot Card Format

Tier 1 and Tier 2 pilot cards are printed differently so that an Incident Commander, UAS Manager, or Agency Duty Officer can tell a pilot's tier at a glance. Tier 1 (All-Hazards) cards use green lettering. Tier 2 (Wildland Fire) cards use red lettering and show the Wildfire endorsement. Examples of both cards are in the Pilot Standards, Appendix C. A card that does not match the pilot's current tier shall be reissued.

Mission Specialty Endorsements

Some missions need training beyond Tier 1 or Tier 2. These are issued as endorsements on the pilot card after the pilot meets the requirements in Chapter 6 and passes the matching evaluation plan in the Pilot Standards, Chapter 4.

Endorsement	Minimum tier	Added requirements	Status
Wildfire	Tier 2	S-373	Active
ELOS / BVLOS (Shielded)	Tier 1	Pilot Standards evaluation plan, Extended Line of Sight / Beyond Visual Line of Sight (Shielded), tasks BV 01 through BV 35; BR 65 for night BVLOS	Active
Night	Tier 1	BR 65 (Perform Flight at Night) and documented night training	Active
Hazardous Materials	Tier 1	NIST Level 5 and additional training to be determined (Chapter 6)	Requirements in development

Endorsement	Minimum tier	Added requirements	Status
Fire Investigation / Crime Scene Documentation	Tier 1	Training to be determined (Chapter 6)	Requirements in development
Drone as a First Responder (DFR)	To be determined	Placeholder. Training standards have not been developed (Chapter 6)	Placeholder
Aerial Ignitions	Tier 2	Pilot Standards evaluation plan, Aerial Ignitions (under development); PMS 515	Under development
Operations Over People and Moving Vehicles (OOP/OOMV)	Tier 1	A-454 add-on (Chapter 4, Operations Over People and Moving Vehicles), plus the parachute recovery system add-on for the aircraft flown	Active
Above 400 Feet AGL	Tier 1	A-454 add-on (Chapter 4, Operations Above 400 Feet AGL)	Pending FAA waiver
Payload Delivery	Tier 1	A-454 add-on for each aircraft and release device, and manufacturer training for the release device (Chapter 4, Payload Delivery)	Active

Aircraft and GCS Qualification (A-454 Add-On)

A remote pilot card is issued for specific aircraft and ground control station (GCS) software, not for UAS in general. A-454, Small UAS Add-on Course, is the course used to add a new or different aircraft platform, or a specialized GCS software application, to a current pilot card. The add-on is recorded as an aircraft or GCS endorsement under "Authorized Aircraft / GCS" on the pilot card.

Requirements

1. Have completed A-450 and hold a current RDPO pilot card (Tier 1 or Tier 2) on at least one aircraft.
2. Be approved for the add-on by the Agency UAS Program Coordinator.
3. Complete A-454 for the specific aircraft or GCS application, taught by an instructor who is current and qualified to teach that A-454 course and is carded on that aircraft or application. Instruction covers the manufacturer's flight manual, limitations, normal and emergency procedures, payloads, firmware and software versions, battery and charging procedures, lost-link and return-to-home settings, and data handling.
4. Complete the minimum flight time for the aircraft type: 10 hours total time on a Type 4 aircraft or 15 hours total time on a Type 3 aircraft, as shown on the pilot record (Pilot Standards, Appendix C). For Type 1 and Type 2 aircraft, the RDPO UAS Program Manager sets the minimum.
5. Pass a check ride on that aircraft or GCS application with a UAS Pilot Evaluator, using the Pilot Standards, Chapter 4 evaluation plan (Type 3 and Type 4 Aircraft) and the add-on topics for that aircraft.
6. The UAS Final Evaluator signs the endorsement, and the card is reissued with the aircraft or GCS listed.

Aircraft and GCS Endorsements

Platform or GCS	Card entry
Freefly Astro	Astro
Freefly Alta X	Alta X
Parrot Anafi USA	Anafi USA
DJI Matrice 30T	M30T
Skydio X10	X10
DJI Matrice 4T	M4T

Platform or GCS	Card entry
Edge 130	Edge 130
Other aircraft	Make and model, after the RDPO UAS Program Manager adds it to the regional approved aircraft list (Chapter 8)
Specialized GCS software	Application name and version family (for example, third-party flight control, mapping, autonomy, or dock and remote-operations software)

Safety Device and Operational Add-Ons

A-454 is also used to add safety devices and operations to a pilot card. Each add-on below is trained and evaluated on the specific aircraft, follows the Requirements above (except the minimum flight time in step 4, which applies only to a new aircraft), and is recorded on the pilot card.

Add-on	Card entry	Training
ParaZero SafeAir M30 Pro (M30 and M30T)	PRS-M30	Manufacturer-required training for the SafeAir M30 Pro, and the A-454 parachute topics in Chapter 4
Skydio Parachute System for X10	PRS-X10	Manufacturer-required training for the Skydio Parachute System, and the A-454 parachute topics in Chapter 4
Operations over people and moving vehicles	OOP/OOMV	A-454 OOP/OOMV topics (Chapter 4). Requires the PRS add-on for the aircraft flown
Operations above 400 feet AGL (Class G)	400+	A-454 high-altitude topics (Chapter 4). Pending FAA waiver
Payload delivery	PAYLOAD (aircraft and release device)	Manufacturer training for the release device, and the A-454 payload delivery topics (Chapter 4)

The aircraft type (Type 1 through Type 4) on the card is assigned under Chapter 7. Currency on each carded aircraft follows Exhibit 1 (2 hours per carded aircraft in the previous 12 months). A pilot who loses currency on one aircraft keeps the card for the others and regains currency on that aircraft as Exhibit 1 describes.

Figure 1: RDPO UAS Training Pathways

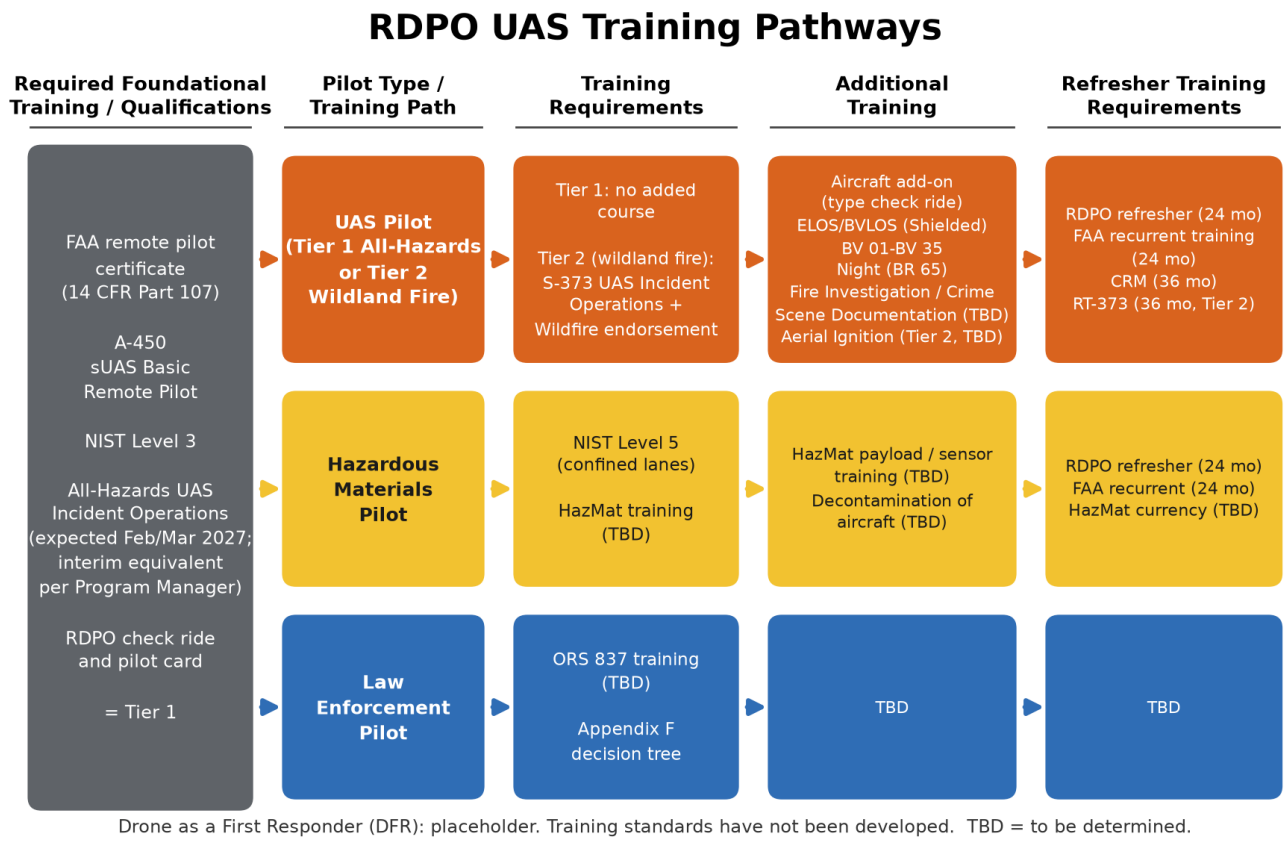


Figure 1 shows the three pilot training paths. Every path starts with the Tier 1 foundational requirements. The Hazardous Materials Pilot and Law Enforcement Pilot paths are being developed; items marked TBD will be set by the RDPO UAS Program Manager and added to this document and the Pilot Standards. Until the Law Enforcement Pilot path is defined, any flight for or with law enforcement follows Chapter 5 (Law Enforcement Support) and the decision tree in Appendix F.

Overview of UAS Training Courses

Course	Title	Use in this program
A-450	Small Unmanned Aircraft System (sUAS) Basic Remote Pilot Course	Required for Tier 1
NIST Level 3	NIST Standard Test Methods for Small UAS, Level 3 (open test lanes)	Required for Tier 1 (Pilot Standards BR 60, item 6)
NIST Level 5	NIST Standard Test Methods for Small UAS, Level 5 (confined test lanes)	Required for the Hazardous Materials endorsement
All-Hazards UAS Incident Operations	All-Hazards UAS Incident Operations (placeholder title; in development)	Required for Tier 1 when released
S-373	Unmanned Aircraft Systems (UAS) Incident Operations	Required for Tier 2
A-454	Small UAS Add-on Course	Required to add each new or different aircraft platform or specialized GCS software to a pilot card (Aircraft and GCS Qualification)
RT-373	UAS Incident Operations Refresher	Recommended refresher for Tier 2 pilots
ELOS/BVLOS	RDPO ELOS/BVLOS (Shielded) training	Required for the ELOS / BVLOS endorsement

Initial UAS Remote Pilot Training

Initial training follows the evaluation plans and task sheets in the Pilot Standards. A pilot is carded only after a satisfactory check ride (Pilot Standards, PE 190, Administer Final Evaluation) administered by a UAS Final Evaluator.

UAS Refresher Training

Carded remote pilots shall complete RDPO refresher training every 24 months. Refresher training may be completed up to 30 days before the due date. A pilot more than 30 days past the due date shall complete refresher training and a flight evaluation by a UAS Pilot Evaluator before flying an operational mission. The FAA recurrent training required to keep the remote pilot certificate current (14 CFR § 107.65) is separate and shall also be kept current.

Required Refresher Elements

1. Program, policy, and regulatory updates.
2. Flight exercise.
3. Mishaps, near misses, ASRS and SAFECOM trends.
4. Airspace authorization, including LAANC, the agency CoW/A, COA, TFRs, and SGI.
5. Risk management and crew resource management review.
6. Lessons learned.
7. Aircraft, sensor, and software updates.
8. Identified special emphasis items.

Recommended Refresher Elements

1. Industry trends and emerging technology.
2. Hardware, software, and applications.
3. Case studies.
4. Training and curriculum updates.

Remote Pilot Currency and Proficiency

Flight Currency

Before flying a mission, a remote pilot shall have completed three takeoffs and landings (three full battery cycles) in the preceding 90 days with an agency aircraft they are carded to fly. Day and night currency each require three takeoffs and landings. Night takeoffs and landings also satisfy the day requirement.

A pilot who is not current shall regain currency by completing three takeoffs and landings and reviewing the emergency procedures for that make and model, or shall fly the mission under the observation of a current remote pilot.

Remote pilots shall fly a total of 12 hours in a 12-month period. A pilot carded on more than one aircraft shall fly at least 2 hours on each carded aircraft in that period. Those hours count toward the 12-hour total. A pilot who does not meet this requirement shall fly under the supervision of a current, carded pilot for that aircraft until currency is regained.

Flight Proficiency

Currency and proficiency are not the same. The currency minimums help support proficiency, but the RPIC is responsible for being proficient in the aircraft, its emergency procedures, and each mission to be flown. A pilot can be current without being proficient.

Exhibit 1: UAS Pilot Flight Time and Training Requirements

Requirement	Standard
Minimum annual requirements	
Flight time (1)	12 hours within a 12-month period
Preceding 90-day minimum requirements (2)	
Day currency	3 takeoffs and landings (3 full battery cycles)
Night currency	3 takeoffs and landings (3 full battery cycles)
Mission requirements	
Aerial ignitions (3)	3 hours within the preceding 12 months (when the endorsement is active)
Hazardous Materials	Currency standard to be determined
Fire Investigation / Crime Scene Documentation	Currency standard to be determined
Drone as a First Responder	Currency standard to be determined
Other requirements	
Each carded aircraft (4)	2 hours as RPIC in the preceding 12 months
RDPO refresher training	Every 24 calendar months
FAA recurrent training (14 CFR § 107.65)	Every 24 calendar months
Crew Resource Management (CRM)	Every 36 calendar months
RT-373, UAS Incident Operations Refresher (Tier 2)	Every 36 calendar months

Notes: (1) A pilot who cannot meet the flight time requirement may request an alternative method of compliance (AMOC) from the RDPO UAS Program Manager. An AMOC is for extenuating circumstances only and is not a way to reduce training hours. Flight time may be accrued as RPIC or as a UAS Pilot Evaluator. (2) A pilot who has not met the 90-day requirement shall not fly an operational mission without first performing the basic flight maneuvers and emergency procedures for that make and model during a currency flight, or shall fly under the observation of a current remote pilot. (3) Evaluators may log up to 2 hours of evaluation time toward aerial ignition currency. (4) A pilot who has not flown 2 hours on an aircraft shall fly under the supervision of a current, carded pilot for that aircraft until currency is regained.

Pilot Training and Qualification Records

All flight and training records are kept digitally in the agency's approved records system. Each pilot's record shall use the structure of the Pilot Standards, Appendix C (UAS Pilot Current Year Designations and Training), and shall include:

1. Current and previous year designations, training requirements, and pilot cards.
2. FAA remote pilot certificate, recurrent training record, and any other FAA certificates.
3. Course completion records (A-450, NIST levels, All-Hazards UAS Incident Operations or approved interim equivalent, S-373, and endorsement training).
4. Flight time records: total flight time, time per aircraft, and time per mission type.
5. Records of flight evaluations, final evaluations, and mission endorsement evaluations.
6. Instructor and evaluator designation letters.
7. AMOC requests and other program correspondence.

Records shall cover at least the two most recent years; older records may be archived under the agency's retention schedule. Records shall be protected against unauthorized access. Each pilot is responsible for keeping their own record current. The RDPO UAS Program Manager may review agency records for quality assurance.

Chapter 4: Operational Planning, Coordination, and Procedures

Introduction

Operational control means the authority to initiate, conduct, or terminate a flight. For RDPO operations, operational control stays with the agency that owns the aircraft and assigns the crew, unless an incident aviation organization assumes tactical direction under an incident assignment (Chapter 5).

New mission types, payloads, and non-standard operating procedures shall not be used until they are approved by the RDPO UAS Program Manager and the Agency UAS Program Coordinator.

Operating Authority

Each flight shall be conducted under one, and only one, operating authority, and the RPIC shall know which one before launch.

Authority	Use	Holder
Agency 14 CFR § 91.113(b) CoW/A (shielded operations)	Public aircraft operations, including shielded BVLOS, in the airspace and at the altitudes the CoW/A allows	Issuing agency (currently SRFD)
ATO Certificate of Authorization (COA), FAA Form 7711-1	Public aircraft operations in Class E3 and E4 airspace, as specified in the COA	Issuing agency
14 CFR Part 107, with LAANC or FAA DroneZone authorization in controlled airspace, and any Part 107 waiver the agency holds	All missions, including emergency response, for agencies without public aircraft operator status; and any mission an agency with a CoW/A or COA chooses to fly under Part 107	Each remote pilot and agency
Special Governmental Interest (SGI) authorization from the FAA System Operations Support Center (SOSC)	Genuine emergencies that exceed the CoW/A, COA, or Part 107 and the agency's Part 107 waivers, and non-incident TFRs whose NOTAM requires it	Requesting agency

An FAA authorization belongs to the agency to which it was issued. A participating agency may fly under another agency's CoW/A or COA only when that authorization, the FAA, and a written agreement between the agencies allow it. Otherwise, each agency operates under its own authority.

Part 107 Operations

Agencies that do not hold public aircraft operator status, and agencies that choose Part 107 for a mission, fly under Part 107. When a flight is conducted under Part 107:

- The RPIC holds a current remote pilot certificate and meets the Part 107 recurrent training requirement (14 CFR § 107.65), in addition to the RDPO currency requirements in Chapter 3.
- The aircraft is registered with the FAA (14 CFR Part 48) and meets Remote ID (14 CFR Part 89).
- The flight stays within visual line of sight (§ 107.31), at or below 400 feet AGL (§ 107.51), and within the Part 107 weather, night, and operations over people and moving vehicles rules (§§ 107.29, 107.39, 107.51, and Subpart D), unless the agency holds a Part 107 waiver that allows otherwise.
- The SRFD 91.113(b) CoW/A, its 200-foot shielded BVLOS provisions, and its 1-statute-mile smoke visibility exception do not apply. A Part 107 agency may apply for its own shielded-operations waiver to §§ 107.31, 107.39, and 107.145 using the FAA Public Safety Organization 200 ft AGL Shielded Operations checklist. Any waived operation in controlled airspace also needs a separate airspace authorization (SGI or an ATO COA).
- In Class B, C, D, or E surface area airspace, the RPIC holds LAANC or FAA DroneZone authorization (§ 107.41).
- For an emergency that cannot be flown within Part 107 or the agency's waivers and authorizations,

the agency may request a Special Governmental Interest (SGI) authorization from the FAA SOSC (202-267-8276). If the SGI is denied, the flight stays within Part 107.

- Inside a TFR, the agency follows Temporary Flight Restrictions below, the TFR NOTAM, and the direction of the official in charge.
- Reporting: a § 107.9 report to the FAA within 10 days when it applies, plus the NTSB, NASA ASRS UAS Report, and SAFECOM requirements in Chapter 4.
- On interagency wildland fire incidents, the host agency and the incident aviation organization decide whether a Part 107 operator may be used (PMS 515).

Mission Aviation Safety Plan (MASP)

A MASP is required for every planned, non-emergency mission that is not covered by an approved agency plan or an NWCG publication. The MASP template and checklists are in the SRFD UAS Program Guide. Pilot Standards task BR 01 (Complete a Mission Aviation Safety Plan) sets the performance standard. Recurring missions may be covered by a blanket MASP reviewed at least annually by the Agency UAS Program Coordinator.

Flight by Notification

Flight by notification streamlines recurring, low-risk missions. It is used with a blanket MASP and records day-of-flight details: mission, location, operating authority, airspace, crew, aircraft, time window, communications, and hazards. The RPIC completes the notification and sends it to the Agency UAS Program Coordinator before the flight.

Request Intake and Go/No-Go Decision

When a UAS request is received, the Agency Duty Officer confirms the requesting agency, callback number, on-scene point of contact, incident location (in or out of county), incident type, urgency, and the product or support actually needed, rather than a general request to send a drone. The request is then evaluated in this order:

1. Is a qualified, current pilot available whose tier and endorsements match the mission?
2. Is a second person available to serve as visual observer or crewmember? A minimum operational response is a qualified pilot and a second person. The recommended response is a full U-MOD: a U-MOD Supervisor, a UAS Pilot, and a Visual Observer or second pilot (Chapter 2).
3. Can the agency respond without dropping below its own minimum staffing?
4. Does the mission fit the pilot's qualifications, the aircraft and payload, the weather, the distance, and the current operational tempo?
5. For law enforcement requests: does the mission fit an ORS 837 pathway (Appendix F), and is the pilot confident it can be flown within legal and operational limits?

If the answer to any of the first three questions is no, the agency declines the assignment and records the declined request for tracking. A pilot may decline a law enforcement-related mission that they are not confident can be flown lawfully and safely. When the assignment is accepted, the crew advises dispatch which vehicle is responding, that the agency UAS is responding, the names of the U-MOD Supervisor (if staffed), pilot, and second crewmember, and the request type (mutual aid, automatic aid, single resource request, cooperative agreement, or direct agency request).

Pre-Flight Coordination

Before every flight, the RPIC shall:

1. Confirm the operating authority, airspace class, and altitude limits for the flight.
2. Check NOTAMs and TFRs, and obtain any required LAANC, COA, incident, or SGI authorization.
3. Call the regional air ambulance dispatch center in Boise, Idaho, to deconflict with air medical traffic, as SRFD policy requires before every SRFD flight. Other participating agencies shall follow their

own air medical deconfliction procedure.

4. Contact the incident aviation organization, dispatch, or on-scene command, as applicable.
5. Complete the air and ground hazard assessment (Pilot Standards BV 05 for BVLOS) and brief the crew.
6. Confirm weather: flight visibility from the control station of at least 3 statute miles, except no less than 1 statute mile on wildland fire operations where smoke reduces visibility; and the aircraft at least 500 feet below and 2,000 feet horizontally from clouds. The more restrictive standard applies when an authorization differs.

Shielded Operations

Shielded BVLOS operations under the SRFD CoW/A stay at or below 200 feet above ground level (AGL), or within 100 feet above an obstruction within 100 feet laterally of the aircraft, and never above 400 feet AGL. Smoke and smoke columns are never used as shielding, and aircraft shall not be flown into or through smoke columns. Remote pilots conducting shielded BVLOS operations shall hold the ELOS / BVLOS endorsement. Details are in the SRFD 91.113(b) Shielded BVLOS CONOPS and the Pilot Standards, tasks BV 01 through BV 35.

Parachute Recovery Systems

A parachute recovery system (PRS) lowers the aircraft under canopy after a failure, which reduces the energy of a ground impact. The PAO-PSO operations over people provisions accept a PRS that meets ASTM F3322-18 or a newer version. The RDPO approves the two systems below. Other systems need RDPO UAS Program Manager approval and the manufacturer's ASTM F3322 documentation.

System	Aircraft	Standard	Key limits
ParaZero SafeAir M30 Pro	DJI Matrice 30 / 30T	ASTM F3322-18. The agency keeps the manufacturer's compliance documentation on file	Deploy only at or above the manufacturer's minimum safe altitude (25 m / 82 ft AGL on manufacturer-published specifications). Repack only by ParaZero or a ParaZero-designated entity to keep compliance. The system weighs about 195 to 215 g, and that weight counts against the M30T payload (Payload Delivery)
Skydio Parachute System for X10	Skydio X10	ASTM F3322-22. FAA Declaration of Compliance accepted for Part 107 Category 2 and Category 3 operations over people. Verify each unit by serial number at uasdoc.faa.gov	Minimum deployment altitude 100 ft (30.5 m) AGL. Over-people wind limits at sea level: 8.9 mph (4 m/s) sustained and 13.4 mph (6 m/s) transient, reduced at higher density altitude. Rated to 15,000 ft. Counts against the X10 attachment limit

Requirements:

- The RPIC holds the PRS add-on for the system (Chapter 3), which includes the manufacturer-required training.
- The PRS operator manual is available to the crew during flight (a digital copy is acceptable).
- The PRS is installed, armed, and serviceable for any operation that depends on it. If it is not, the operation that needs it is not flown.
- Firmware, battery, repack, and service intervals follow the manufacturer. They are logged in the aircraft record (Chapter 8).
- Every deployment, intended or not, is reported as a mishap (UAS Mishap Response, below). The system is not flown again until the manufacturer, or its designee, repacks or services it.

PRS Checklist Items

The agency inserts these items into the aircraft checklist for each phase of flight. Manufacturer

instructions take precedence where they differ.

Phase	Items
Pre-flight	PRS installed and secured to the manufacturer's mounting method (SafeAir: four mounting screws in the 3,998 g configuration). Cable connected to the correct port. Rotors turn freely. Canopy housing and lid undamaged. Repack date and service interval current. PRS battery charged. Self-test passed (SafeAir: motor-cut / FTS test when RC-equipped). Firmware matches the approved version. Aircraft weight with the PRS within the manufacturer's MTOW. Minimum deployment altitude and wind limits briefed.
Takeoff	PRS armed per the manufacturer, and armed status confirmed on the indicator or GCS. Manual trigger (where equipped) assigned and within range. Climb to at least the minimum deployment altitude before any flight over people. Altitude reading on the PRS display checked when armed.
Before landing	Leave the area over people before descending below the minimum deployment altitude. Fly a smooth, stable descent with no aggressive maneuvers near the ground, which can cause an unintended deployment. Land in a clear area away from people.
After landing	Turn off or disarm the PRS before touching, lifting, or moving the aircraft (never lift the aircraft by the PRS). Inspect the mount and housing. Log the flight on the PRS record. Report any deployment or fault.

Operations Over People and Moving Vehicles

Operations over people or moving vehicles (OOP/OOMV) need the OOP/OOMV add-on and the PRS add-on for the aircraft (Chapter 3), and shall meet the requirements of the operating authority and agency policy:

- Public aircraft operations under the CoW/A or a PAO-PSO waiver: follow the waiver's over-people provisions. The aircraft is flown over people only with a PRS that meets ASTM F3322-18 or newer, installed and armed, and at or above the PRS minimum deployment altitude. Both approved systems meet this requirement.
- Part 107 operations: follow 14 CFR Part 107, Subpart D. The Skydio X10 with its parachute is eligible for Category 2 and Category 3 under its accepted Declaration of Compliance. Any other configuration needs a Part 107 waiver.
- Flight over moving vehicles is limited to transit or sustained flight that the operating authority allows. Briefing covers who is under the flight path, the minimum deployment altitude, and wind limits.
- If the PRS is not available and the mission requires flight over people, the mission is not flown over people.

Operations Above 400 Feet AGL

Status: pending. SRFD is requesting an FAA waiver for flights up to 1,200 feet AGL in Class G airspace. Until the waiver is issued, all operations stay at or below 400 feet AGL (or the lower altitude in the operating authority). When it is issued, its terms govern, and these minimums apply:

- Class G airspace only. The aircraft stays below the floor of the overlying Class E airspace, which is 700 feet AGL in many areas near airports and 1,200 feet AGL elsewhere. Confirm the floor on the current sectional chart before each flight.
- The RPIC holds the 400+ add-on (Chapter 3), and the crew includes a VO or second pilot (U-MOD).
- File a NOTAM when the waiver requires one. Call Boise air ambulance dispatch before the flight, as for every flight, and include the planned altitude. Monitor the CTAF and ADS-B In where available. Crewed aircraft always have the right of way (14 CFR § 91.113). Descend immediately for any crewed aircraft.
- Check winds aloft, battery reserve for the climb and descent, and the return-to-home altitude so that it stays within the waiver and below the Class E floor.

- Anti-collision lighting visible for 3 statute miles is on for night and low-visibility flights.
- Inside a TFR, fly only within the altitude block assigned by the official in charge or the incident aviation organization.
- Part 107 agencies need their own waiver of 14 CFR § 107.51(b).

Payload Delivery

Payload delivery is the release of an approved item from the aircraft by a drop or release device, for example a flotation device or radio to a person in the water or a stranded party. The RDPO uses two aircraft for payload delivery: the Freefly Alta X (medium lift) and the DJI M30T with a drop device.

Aircraft Payload Limits

The weight of everything added to the aircraft counts against its limit: the payload, the drop device and mount, a PRS, lights, and accessories. The aircraft as configured shall not exceed the manufacturer's MTOW.

Aircraft	Manufacturer limit	RDPO limit
Freefly Alta X	Maximum payload 15.06 kg (33.2 lb). MTOW 34.86 kg (76.85 lb). Empty weight 10.86 kg (Freefly Alta X specifications)	20 lb (9.07 kg) including the release device
DJI M30T	Weight with two TB30 batteries 3,770 g. MTOW 4,069 g (Matrice 30 Series User Manual v2.x). The original v1.0 manual and the EU C2 configuration list an MTOW of 3,998 g (228 g payload). The DJI Payload SDK lists the maximum payload as 299 g (± 10 g)	All added items combined no more than 299 g, and no more than 228 g when flown in the 3,998 g configuration. The aircraft is weighed as configured

The newer M30 Series manuals list the MTOW but not an allowable payload. The allowable payload is the MTOW minus the aircraft weight, which is about 299 g. With the SafeAir M30 Pro installed (about 195 to 215 g), about 84 to 104 g remains. Each approved payload below weighs more than 200 g before the drop device is added, so on the M30T a payload is flown only in a configuration the RDPO UAS Program Manager has weighed and approved within the MTOW, and not together with the PRS unless that weight is also within the MTOW. Restube and radio deliveries are normally flown on the Alta X.

Approved Payloads

Payload	Weight	Notes
Restube AUTOMATIC (inflatable rescue buoy)	245 g (Restube AUTOMATIC 75)	Inflates on contact with water. The manufacturer recommends a drone with at least 900 g of payload capacity
Motorola Talkabout floating FRS radio (model to be confirmed; listed in the program as "T60")	222 g with battery (Talkabout T600 H2O)	Set the channel and privacy code before flight. Floats only with the supplied NiMH battery

Any other payload needs written approval from the RDPO UAS Program Manager. The approval lists the payload, its weight, the aircraft and release device, and test-drop results, and the payload is added to the approved payload list.

Payload Delivery Procedures

- The RPIC holds the PAYLOAD add-on for the aircraft and release device (Chapter 3).
- Weigh the aircraft as configured before the first flight of the day and after any configuration change. Record the weight.
- Pre-flight: release device secured, payload attached and balanced, release tested on the ground, and the drop zone, approach path, and release height briefed.

- Do not release a payload over people (other than the intended recipient's immediate area), over vehicles, or where it could create a hazard to persons or property (14 CFR § 91.15 for Part 91; § 107.23(b) for Part 107). Release as low as practical, upwind of the recipient.
- Hazardous materials are not carried (14 CFR § 107.36 for Part 107).
- The release is made only on the RPIC's command, with the VO or second pilot watching the drop zone.
- Log every delivery, including the payload, weight, drop location, and result.

Cold Weather and Icing Operations

RDPO aircraft have no ice protection. Propeller icing can begin above freezing, can form without visible moisture, and can remove most of a propeller's thrust within a minute. Cold also reduces battery capacity and voltage. This section applies to every flight when the outside air temperature (OAT) at the surface or at flight altitude is 41 °F (5 °C) or lower.

Lessons from SAFECOMs 23-0164 and 23-0202

Two California UAS mishaps in March 2023 led to a review of UAS operations in cold weather, which was provided to the leadership of the CAL FIRE UAS program and published with SAFECOM 23-0164.

- **SAFECOM 23-0202 (March 6, 2023, CAL FIRE Butte Unit):** During a search for two CAL FIRE swiftwater rescue swimmers over Lake Oroville, at 29 °F and 94 percent humidity, a Mavic 2 Duo battery dropped from 50 percent to zero after about 1.5 minutes. The aircraft went into automatic landing over water, return to home did not respond, and the pilot steered it to impact on land. The corrective actions note that propeller ice creates a high demand on the motors and draws down battery voltage.
- **SAFECOM 23-0164 (March 13, 2023, Echo Lake):** During cornice reconnaissance at 33 °F with 14 mph ridge winds, a Mavic 2 Enterprise Advanced lost link about 5,200 feet out, did not return to home automatically, and was presumed to have crashed into terrain. Winds in the work area were stronger and more erratic than at the launch site.

The review found:

- Manufacturer operating envelopes do not consider blade icing. A temperature rating such as −4 °F (−20 °C) applies to the components and is not an icing approval.
- Ice can form on blades several degrees above freezing, because the high rotation speed cools the blade.
- Visible moisture is not required. In freezing conditions, high relative humidity or a temperature-dew point spread of less than 3 °C (about 5 °F) can produce ice.
- Once icing starts, the torque needed to hold lift can rise to 150 percent of normal (National Research Council Canada, Benmeddour, 2019). Battery use rises and range falls. Some aircraft departed controlled flight shortly after icing began, likely from uneven ice shedding and asymmetric lift.
- Recommendations: add this information to A-450 training, use the recovered flight data as a case study, set an emergency procedure to land immediately without automated landing, and plan alternate landing sites close to the work area.

Supporting Research and Manufacturer Guidance

- **Icing wind tunnel testing** of a 21-inch UAV propeller (Müller, Villeneuve, and Hann, Drones, 2026): after one minute of icing at 14 °F (−10 °C), thrust fell 28 percent with small droplets and 100 percent with medium droplets. With large droplets, the propeller produced drag instead of thrust. Power required rose 40 to 65 percent. Degradation was worst at 23 °F (−5 °C), the temperature closest to freezing in the test.
- **National Research Council Canada,** working for Transport Canada (Phase 1, 2019; Phase 2, 2020), found that icing data for small, high-RPM UAS propellers were almost non-existent and began characterizing them to support regulation.

- **Freefly (Alta X):** propeller ice forms on the tips and undersides of the blades, unbalances the propellers, increases drag, and reduces lift. Flying with iced blades is not advised.
- **Skydio (Dock for X10):** below 32 °F (0 °C), the dock heater requires a 200 to 240 V supply. Without it, ice accumulation can cause degraded performance, crashes, or loss of the aircraft.

Aircraft Cold-Weather Limits

Aircraft or device	Operating temperature	Cold-weather notes
DJI M30T	−4 to 122 °F (−20 to 50 °C); IP55	The aircraft will not take off with a TB30 battery below 50 °F (10 °C). Warm the batteries to at least 64 °F (18 °C) before flight with self-heating or the battery station. Capacity drops below 50 °F
Skydio X10	−4 to 113 °F (−20 to 45 °C); IP55	Below 32 °F, the Dock for X10 needs the 200 to 240 V supply for the dock heater
Freefly Alta X	−4 to 122 °F (−20 to 50 °C)	Battery cells below 50 °F (10 °C) can trigger the low-battery failsafes (RTL or Land), which climb or descend suddenly. Start each flight with cells at 50 °F or warmer
ParaZero SafeAir M30 Pro	14 to 122 °F (−10 to 50 °C) on manufacturer-published specifications	Narrower than the M30T. Operations that depend on the PRS (OOP/OOMV) are not flown below 14 °F

None of these ratings, including IP55, approves flight in icing conditions.

Icing Conditions

Icing conditions exist when the OAT at the surface or at flight altitude is 41 °F (5 °C) or lower and any of the following is present:

- Visible moisture: fog, mist, low cloud, drizzle, rain, freezing rain, sleet, wet snow, or spray from water, surf, or hose streams.
- A temperature-dew point spread of 5 °F (3 °C) or less.
- Frost or ice forming on the aircraft, vehicles, or nearby surfaces.

RDPO aircraft do not fly into known or forecast icing conditions. The exception is an imminent threat to life. In that case, the U-MOD Supervisor (or the RPIC when no supervisor is assigned) accepts the risk, the flight is short and close to the launch point, alternate landing sites are identified, the aircraft is not flown over people, and the decision is recorded in the flight log.

Cold Weather Checklist Items

Phase	Items
Pre-flight	Get the temperature, dew point, humidity, wind, and freezing level for the launch site and the work area. Temperature normally falls about 3.5 °F per 1,000 feet, but valley inversions and fog layers are common. Observe the weather at the launch site and in all areas of the mission. Store batteries warm and insulated, fully charged, and at the manufacturer's minimum temperature. Remove all frost, snow, and ice from the propellers, arms, sensors, and lenses. Carry spare propellers. Set the return-to-home altitude below any cloud or fog layer. Raise the low-battery warning and return-to-home thresholds, plan shorter flights, and identify alternate landing sites near the work area.
Takeoff	Hover at low altitude near the launch point for 30 to 60 seconds. Check motor sound, vibration, battery temperature, and voltage before departing. Do not climb into fog, cloud, or precipitation.
In flight	Watch for the warning signs below. Monitor battery percentage and voltage closely, and treat any sudden drop as an emergency.
After landing	Inspect the propeller leading edges and tips for ice. Ice after landing means the aircraft was in icing conditions. Let the aircraft and batteries warm and dry before the next flight to avoid condensation. Record the temperature, dew point, and any icing in the flight log.

Icing Warning Signs and Response

Warning signs (SAFECOM 23-0164):

- The aircraft struggles to climb, hold altitude, or maneuver.
- Uncommanded yaw, especially during takeoff or landing.
- The gimbal stops responding or shows a warning.
- Uneven response to control inputs, for example slower in one direction than another.
- Rapid battery discharge or a battery heat warning. Batteries drain faster on cold days, but an overheating battery on a cold day usually means icing.
- New vibration or a change in motor sound.

If any sign appears:

1. Leave visible moisture and stop climbing. Descend toward warmer air if it is known to be warmer lower down.
2. Land immediately at the nearest safe site. Do not try to fly the ice off.
3. Fly the landing manually. Do not rely on return to home or automated landing, which may climb into the icing layer, fly a long route, or land in water.
4. Announce the emergency to the crew and, on an incident, to air operations or aerial supervision.
5. After landing, inspect the aircraft, do not fly again until conditions improve, and report the event.

Training and Reporting

- Cold weather and icing, with SAFECOMs 23-0164 and 23-0202 as case studies, are part of RDPO initial training (A-450) and recurrent training.
- Report every icing encounter, cold-related battery failure, and cold-weather loss of an aircraft under UAS Mishap Response and the reporting requirements in this chapter. File a SAFECOM on interagency incidents and an ASRS report for every accident, mishap, and near miss.

Sources

- SAFECOM 23-0164: https://www.safecom.gov/safecom/23-0164
- SAFECOM 23-0202: https://www.safecom.gov/safecom/23-0202
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- DJI Matrice 30 Series User Manual v2.2: https://dl.djicdn.com/downloads/matrice-30-series/20240814UM/Matrice30_Series_User_Manual_v2.2_EN.pdf
- Skydio X10 technical specifications: https://www.skydio.com/x10/technical-specs
- Skydio Dock for X10 Site Readiness Manual: https://support.skydio.com/hc/article_attachments/50099725285275
- Freefly Alta X Gen2, Pro-tips and Limitations: https://docs.freeflysystems.com/alta-x-gen2/pilots-operating-handbook/pro-tips-and-limitations
- ParaZero SafeAir M30 Pro specifications (Volatus): https://volatusdrones.ca/products/safeair-m30-pro-drone-parachute-for-dji-m30-m30t

Temporary Flight Restrictions

Before every flight, and at the start of every operational period, the RPIC checks for TFRs at tfr.faa.gov and in the NOTAM system. The Wildfire TFR Flight Documentation Form (Appendix G) shall be used for every operation inside a TFR issued under 14 CFR § 91.137. Record the NOTAM number in Section A and the TFR type (for example, § 91.137(a)(1), (a)(2), (a)(3), or Red Flag Warning) in

Section E.

TFR Types and Who May Fly

TFR	Purpose	Who may operate (14 CFR § 91.137)	RDPO procedure
§ 91.137(a)(1)	Protect persons and property from a hazard associated with an incident on the surface (for example, a hazardous materials release, toxic gas, or volcanic activity)	Only aircraft participating in the hazard relief activities and operated under the direction of the official in charge of on-scene emergency response (§ 91.137(b))	Approval from the official in charge before entry. HazMat endorsement for a hazardous materials incident. No other exceptions apply
§ 91.137(a)(2)	Provide a safe environment for disaster relief aircraft (most wildfire TFRs)	Aircraft participating in relief activities under the direction of the official in charge, plus the limited exceptions in § 91.137(c)	Approval from the official in charge or that official's aviation designee (for example, the AOBD, ATGS, or Air Tactical Group). Follow the Fire Traffic Area and Chapter 6, Wildland Fire
§ 91.137(a)(3)	Prevent unsafe congestion of sightseeing and other aircraft above an incident or event of high public interest	Only the exceptions in § 91.137(d), including aircraft carrying incident or event personnel	Coordinate with the official in charge and the NOTAM point of contact before entry. If the NOTAM gives no path for the operation, contact the FAA SOSC

Per guidance from the FAA SOSC, SGI is not used for operations inside these incident TFRs. The exception is the Red Flag Warning TFR below.

Red Flag Warning TFR

A National Weather Service Red Flag Warning does not create a TFR. For pre-ignition monitoring or reconnaissance in a Red Flag Warning area that cannot be flown within the agency's authority, the agency may request an SGI waiver from the FAA SOSC (202-267-8276; 9-ATOR-HQ-SOSC@faa.gov) under Wildfire Suppression and Red Flag Warning Area Monitoring. The FAA may issue a TFR to support BVLOS under the SGI.

1. Confirm the Red Flag Warning is in effect and define the monitoring area and times.
2. Request the SGI from the SOSC, with the aircraft, crew, area, altitudes, and times. Name the agency point of contact for the NOTAM.
3. Fly only within the SGI terms and the TFR NOTAM. Complete the Appendix G form. Record "Red Flag Warning TFR" and the SGI number in Section E, and the agency point of contact in Section B.
4. If a fire starts and a § 91.137 TFR is issued, stop and get approval from the official in charge before continuing. The incident TFR procedure then applies.

Subsequent and Amended TFRs

As an incident grows or changes, the FAA may amend a TFR, replace it with a new NOTAM number, or issue additional TFRs nearby. When any of these happen:

1. Stop new entries until the crew has read the new or amended NOTAM (area, altitudes, times, and point of contact).
2. Reconfirm approval with the official in charge. Approval under the old NOTAM does not carry over automatically.
3. Complete a new Appendix G form for each new or amended NOTAM, as well as for each operational period.
4. Re-brief the crew and update maps, the MASP, geofences, and return-to-home settings.

5. Each TFR needs its own approval. Move between adjacent TFRs only with approval for both.

Other TFRs

TFRs issued under 14 CFR §§ 91.141 (VIP movement), 91.143 (space operations), 91.145 (aviation events), or 99.7 (special security instructions) are not entered until the requirement in the NOTAM is met. Where the NOTAM allows, the agency requests an SGI from the FAA SOSC.

Using the TFR Form

1. Before entry, complete Sections A and B of the Appendix G form: incident, NOTAM number, TFR type, and the name, position, contact method, and time of approval from the official in charge.
2. Complete the remaining items before the first flight. A "No" on any item marked DO NOT FLY stops the operation until it is resolved.
3. Keep the form with the crew during the operational period and record changes in approval or airspace.
4. Retain the form in the UAS or air operations file and the agency's digital records (Chapter 6, Wildland Fire).

Flight and Duty Limitations

Remote pilots are limited to 8 hours of flight time during any duty day. For non-incident operations, a duty day should not exceed 12 hours, except in emergencies or when extenuating circumstances warrant it, with supervisory approval. Incident operations follow the incident's work/rest guidance (on wildland fire, NWCG PMS 515 and the NWCG Standards for Wildland Fire Aviation Operations). The RPIC shall stop flying when fatigue affects safe operation, regardless of time remaining.

Notice to Air Missions (NOTAM)

When the operating authority requires a NOTAM, the RPIC or Agency UAS Program Coordinator shall file it within the required time and confirm it is active before flight.

Flight Records and Reporting

Each flight shall be logged in the agency's digital records system, including date, location, operating authority, aircraft, RPIC, crew, flight time, mission type, and any incident or anomaly. Oregon agencies use these records to complete the annual report to the Oregon Department of Aviation (Chapter 9). The incident report in the National Emergency Response Information System (NERIS) shall show both the vehicle used to respond and the CAD identifier of the UAS actually flown, with a short narrative of the mission, the products delivered, and whether the request came from another agency.

UAS Mishap Response

Definitions

- **UAS mishap:** An accident or incident involving a UAS, including an unplanned loss of control, fly-away, collision, injury, or property damage.
- **Near miss:** An event in which a collision or mishap was narrowly avoided, including a proximity event with a manned aircraft.
- **Loss of link:** Loss of command and control between the aircraft and the GCS, after which the aircraft performs its programmed lost-link behavior (for example, return to home with GPS assistance). A lost link that behaves as programmed is not by itself a fly-away.
- **Fly-away:** Loss of link combined with loss of GPS or other navigation, or any other loss of positive control, so that the aircraft follows an unintended flight path and may leave the operating area or enter controlled airspace. The RPIC does not have control of the aircraft, and the event is an emergency.

Immediate Actions

1. Ensure the safety of people on the ground and in the air.
2. Notify any affected air traffic control facility, the incident aviation organization, and dispatch of any fly-away immediately, with last known position, altitude, heading, and battery state.
3. Secure the aircraft, controller, and logs. Do not alter or download data until the Agency UAS Program Coordinator directs it, except to protect life.
4. Notify the Agency UAS Program Coordinator, who notifies the RDPO UAS Program Manager.
5. Complete the checklist in Appendix D. For any mishap that needs repairs beyond those in the aircraft operating manual or beyond field repair, also complete the Aircraft Accident Checklist in the NWCG Aviation Mishap Response Guide and Checklist (PMS 503).
6. On an interagency wildland fire incident, also notify the UAS Manager or Air Operations Branch Director and follow the incident's aviation mishap response plan.

Required Reports

Report	When	Who submits
NASA ASRS UAS Report (asrs.arc.nasa.gov/uassafety.html)	Every accident, mishap, and near miss, on any type of operation	RPIC, with the Agency UAS Program Coordinator
FAA report under 14 CFR § 107.9	Part 107 operations: within 10 days of an operation that results in serious injury, loss of consciousness, or damage to property other than the UAS of more than $500	Agency UAS Program Coordinator
NTSB notification under 49 CFR Part 830	Immediately for any accident or serious incident that meets the 49 CFR 830.2 and 830.5 criteria	Agency UAS Program Coordinator
SAFECOM (www.safecom.gov)	Required for every mishap, near miss, hazard, or unsafe condition on an interagency wildland fire assignment; also used on other interagency incidents where the host agency uses SAFECOM	RPIC, with the Agency UAS Program Coordinator
Notice to the FAA under the CoW/A or COA	As the special provisions of the authorization require	Holder of the authorization
Agency report	All mishaps, near misses, and damage events	RPIC

A NASA ASRS UAS Report is required for every accident, mishap, and near miss. It is filed in addition to the NTSB and FAA reports above, and in addition to the SAFECOM on interagency wildland fire assignments. ASRS gives public safety national-level tracking of what causes UAS events, such as manufacturer defects, battery failures, bird strikes, loss of link, fly-aways, and close calls with crewed aircraft. SAFECOM also tracks battery and manufacturer defects, but only within the interagency aviation community; ASRS collects them across all UAS operators nationwide. Reporting to both is important for public safety. An ASRS report is not required for a minor event that is neither a mishap nor a near miss. NASA's UAS form states that it is not the place to report an accident itself; the accident is reported to the NTSB and FAA, and the ASRS UAS Report describes the safety factors behind it (equipment, battery, wildlife, environment, and human factors). Criminal activity is never reported through ASRS.

Interagency Wildland Fire Reporting

On every interagency wildland fire assignment, the RPIC shall submit both a SAFECOM and a NASA ASRS UAS Report for each mishap or near miss. One report does not replace the other.

- **SAFECOM:** The interagency Aviation Safety Communiqué reports any condition, observation, act, maintenance problem, or circumstance that has the potential to cause an aviation-related mishap. It

is not intended for punitive action, and it does not replace on-the-spot correction of a safety concern. It is used to identify, document, track, and correct safety issues. Unauthorized UAS (drone) incursions seen on a wildland fire incident are also reported through SAFECOM, with the color, size, altitude, and flight pattern of the drone if known.

- **NASA ASRS UAS Report:** Filed through the NASA ASRS UAS reporting page for every accident, mishap, and near miss. It is confidential and is used to identify national safety trends across the UAS community, including manufacturer defects, battery failures, and bird strikes.
- **Incident notification:** The UAS Manager or Air Operations Branch Director is notified before the end of the operational period, and the incident aviation mishap response plan and PMS 503 are followed.
- **Copies:** A copy or confirmation of each report is attached to the agency's digital record of the flight, and the Agency UAS Program Coordinator sends a summary to the RDPO UAS Program Manager.

FAA and NTSB Reporting Criteria

The FAA and NTSB use different criteria, so an event may be reportable to one and not the other. The Agency UAS Program Coordinator shall be notified before a report is made to either, to make sure the criteria and documentation are correct.

- **FAA (14 CFR § 107.9, Part 107 operations):** Report within 10 days any operation that results in serious injury or loss of consciousness, or damage to property other than the UAS unless the cost of repair (including labor and materials) does not exceed $500 or the fair market value of the property does not exceed $500 in the event of a total loss.
- **NTSB (49 CFR Part 830, public and civil operations):** Notify the nearest NTSB office immediately when, between the time the UAS is activated with the intention of flight and the end of the mission, an event in 49 CFR §§ 830.2 or 830.5 occurs. Examples include serious injury or death; substantial damage to an aircraft that meets the 49 CFR § 830.2 criteria; a flight control system malfunction or failure (a true fly-away qualifies, but a lost link that behaves as programmed does not); an in-flight fire (usually associated with batteries); an in-flight collision; and more than $25,000 in damage to objects other than the UAS.

Information Collected After a Mishap

Flight logs, telemetry files, and flight records may be requested. The RPIC shall work with the Agency UAS Program Coordinator to document the following:

- Incident name and number; date and time.
- RPIC, VO, and pilot agency; agency with operational control; land ownership or jurisdiction.
- Number of injuries.
- Aircraft make and model, FAA registration number, and owner; payload.
- Damage to the aircraft and to property.
- General description of the mishap; photographs and flight logs if available.

Pilot Stand-Down and Return to Flight

After a mishap, near miss, or fly-away, the RPIC shall stand down from flight duty until the Agency UAS Program Coordinator reviews the event. The Coordinator may return the pilot to flight, or require additional training or an evaluation by a UAS Pilot Evaluator. The aircraft shall not fly until it is inspected and found airworthy (Chapter 8).

Removal or Suspension of a UAS Designation

The Agency UAS Program Coordinator or the RDPO UAS Program Manager may suspend a pilot card, endorsement, or designation for unsafe acts, failure to meet currency, violation of policy, or loss of the FAA remote pilot certificate. Reinstatement follows the Pilot Standards. If the FAA suspends or revokes a pilot's remote pilot certificate, the pilot card is suspended at the same time.

Chapter 5: Mission Types and Operational Control

Introduction

This chapter describes the general mission types flown under the program. Mission specialties that need added training are in Chapter 6.

On-Scene Integration

UAS operate as an aviation resource within the Incident Command System. On arrival, the UAS team shall:

1. Stage in a safe location outside the immediate hazard area, unless directed otherwise.
2. Check in with the Incident Commander (IC) or designee and complete accountability procedures. When a U-MOD responds, the U-MOD Supervisor checks in for the module and is the IC's single point of contact.
3. Receive a specific assignment and briefing using the IC briefing format in Appendix B: mission, location, hazards, communications, airspace, and end state.
4. Confirm whether the mission is tactical, planning, investigation, search, hazardous materials, rescue, or aviation support, so the aircraft, payload, crew, and data products match the assignment.

The crew shall not launch until the briefing is complete, radio communications are established, airspace coordination needs are confirmed, and a suitable launch and recovery area is set. If the mission changes, the crew re-briefs and adjusts the mission plan before continuing.

Pre-Launch Minimums

- Mission objective confirmed with the IC or assigned supervisor.
- Airspace authorization and deconfliction confirmed, including TFR, FTA, ATC, COA, CoW/A, or SGI considerations.
- Flight risk assessment completed and understood by the crew.
- Launch and recovery area established and controlled.
- Radios programmed and tested, with a backup communication method identified.
- Crew briefing completed, including hazards, emergency procedures, lost-link actions, and duty assignments.
- Preflight, before-takeoff, and equipment checks completed with the applicable checklist.

Airspace Coordination Role

When assigned by the IC, the most senior qualified member of the UAS team may serve as the incident point of contact for airspace coordination on hazardous materials incidents, wildfires, or other incidents with aviation needs. In that role, the team member coordinates with Air Operations, aerial supervision, dispatch, ATC, and cooperating agencies to deconflict manned and unmanned aircraft. This role does not replace formal air operations positions. It provides incident-level coordination until a larger aviation organization is in place.

Manned Aircraft Arrival

UAS give way to all manned aircraft. When helicopters or fixed-wing aircraft are inbound, the UAS crew shall hold, reposition, descend, or land as directed, and resume only after deconfliction is complete and communications are re-established.

Post-Flight Actions

After landing, the crew completes the after-landing checklist, inspects the aircraft and control systems, documents discrepancies, and logs the flight. The team briefs the IC or supervisor on results, hazards, outstanding aviation issues, and pending products, and confirms whether more UAS support is needed for the next operational period. A short after action review (Pilot Standards BR 85) is held when

practical.

Operational Capabilities and Products

Depending on the aircraft, payload, pilot qualifications, and assignment, participating agencies may provide:

Need	Example request	Typical output
Real-time situational awareness	"Give Command a live view of the roof and Charlie side."	Live video, verbal updates
Structure fire intelligence	"Check for extension, roof compromise, and collapse indicators."	Visual and thermal observations, imagery
Wildland support (Tier 2)	"Map the perimeter and identify hotspots on Division Alpha."	Geo-referenced maps, hotspot intelligence
Fire investigation	"Document the structure and build a scene model after knockdown."	Scene imagery, mapped documentation, 3D model
Hazardous materials or USAR reconnaissance	"Assess interior conditions before sending crews."	Remote reconnaissance video, hazard observations
Public safety support	"Deliver a radio or PFD, use the speaker, or light the scene."	Payload delivery, speaker, spotlight

Live video and verbal observations are usually available right away. Maps, orthomosaics, and 3D models need post-flight processing time, and the IC should be told the expected delivery time.

Non-Emergency Missions

Non-emergency missions include training, pre-incident planning, facility and hazard surveys, mapping, public education, and demonstrations. They require a MASP or flight by notification and shall not be flown under SGI.

Wildland Fire Missions

Only Tier 2 pilots with the Wildfire endorsement may fly on wildland fire incidents. On interagency incidents, UAS operations follow NWCG PMS 515 and the direction of the incident aviation organization (Air Operations Branch Director, Air Tactical Group Supervisor, or UAS Manager). Call signs, frequencies, and FTA procedures follow PMS 515. In Oregon conflagration or state mobilization, the RPIC shall also follow the direction of the incident management team. Wildland fire qualifications, ordering, TFR procedures, in-flight procedures, and reporting are in Chapter 6 (Wildland Fire).

Prescribed Fire Missions

Prescribed fire support requires an approved burn plan that includes the UAS operation, a MASP, and coordination with the burn boss. Aerial ignition requires the Aerial Ignitions endorsement when it is activated (Appendix E).

All-Hazards and Structure Fire Missions

Tier 1 and Tier 2 pilots may support structure fire, technical rescue, water rescue, mass casualty, severe weather, flood, earthquake, and other all-hazards incidents. The RPIC works under the direction of incident command and coordinates with any air resources on scene.

Search and Rescue

Search and rescue support is coordinated with the agency having search and rescue authority (in Oregon, the county sheriff). Search areas, frequencies, and data sharing are set by the search manager. Oregon law enforcement-related restrictions are addressed in Chapter 9.

Emergency Management and Disaster Support

UAS may support damage assessment, situational awareness, and recovery at the request of a county or city emergency management agency. Requests through RDPO regional coordination follow Appendix B.

Mutual Aid and Interagency Assignments

A participating agency may provide UAS resources to another agency under a mutual aid agreement or incident order. The sending agency keeps operational control of its aircraft and crew, and its pilots fly within their own card, endorsements, and operating authority. The receiving agency provides the incident briefing, communications plan, and point of contact.

Law Enforcement Support

Fire service UAS support to law enforcement shall comply with ORS 837.300 through 837.390 and agency policy. When law enforcement requests, directs, or will receive a flight or its data, the fire agency is treated as acting as an agent of law enforcement, and the flight is treated as a law enforcement agency flight under ORS 837.310. Before launch, the RPIC shall work through the decision tree in Appendix F with the requesting officer, confirm the lawful basis (for example, a warrant, signed consent, search and rescue, an emergency with a 48-hour sworn statement, a Governor-declared emergency, or crime, arson, or crash scene documentation), and record it in the mission log. If no pathway fits, the flight is not flown. Agencies should have counsel and the District Attorney review their procedures. See also Chapter 6 (Fire Investigation / Crime Scene Documentation) and Chapter 9.

Operations Not Under Agency Operational Control

Flights by hobbyists, contractors, universities, news media, or other public agencies are not agency operations. Incident command may ask such operators to land when they create a hazard, and shall report incursions to the incident aviation organization, law enforcement, and, when appropriate, the FAA. Contracted UAS services used by a participating agency shall be covered by a written agreement that requires the contractor to meet the operating, safety, and data standards in this document (Appendix C).

Chapter 6: Mission Specialties

Introduction

Mission specialties are missions that need training, equipment, or procedures beyond Tier 1 or Tier 2. Each specialty is issued as an endorsement on the pilot card (Pilot Standards, Appendix C). Each specialty has a matching evaluation plan in the Pilot Standards, Chapter 4. Where requirements are still in development, this chapter holds the place for them, and a pilot shall not fly that specialty except under the interim rules stated below.

Wildland Fire

Purpose

UAS support on wildland fire incidents includes reconnaissance, infrared (IR) detection of heat and spot fires, perimeter and progression mapping, situational awareness for fireline supervisors, damage assessment, and aerial ignition when activated (Appendix E). Wildland fire is the most complex airspace in which RDPO pilots operate, because UAS share low-altitude airspace with helicopters, air tankers, and aerial supervision aircraft inside a TFR.

Minimum Qualifications

1. Tier 2 qualification with the Wildfire endorsement on the pilot card (Chapter 3): all Tier 1 requirements plus S-373, Unmanned Aircraft Systems (UAS) Incident Operations.
2. Familiarity with and training on NWCG Standards for Aerial Supervision (PMS 505), NWCG Standards for Fire Unmanned Aircraft Systems Operations (PMS 515), and NWCG Standards for Airspace Coordination (PMS 520). This applies to remote pilots and visual observers.
3. Qualification to fly in the Fire Traffic Area (FTA), including FTA entry and communication procedures under PMS 505. This applies to remote pilots and visual observers.
4. The wildland fire safety training, annual fireline safety refresher, and personal protective equipment that the host agency or NWCG position standards require for fireline access.
5. An aircraft endorsement (A-454) for each aircraft flown (Chapter 3), and an aircraft that meets the host agency's aircraft approval requirements under PMS 515 on interagency incidents.
6. For an NWCG position (UASP, UASM, UASL, or UASD), the qualification required by the NWCG position standards (Chapter 2). RT-373 is recommended to keep Tier 2 knowledge current.

Ordering and Mobilization

1. **Local response:** Within an agency's own jurisdiction, UAS are requested and assigned through the agency's dispatch and request process (Chapter 4 and Appendix B).
2. **Interagency and extended attack incidents:** UAS resources are ordered through the dispatch system on a resource order (RO). No pilot or aircraft self-dispatches to an interagency incident. On arrival, the UAS team checks in with the incident and reports to the UAS Manager or the Air Operations Branch Director (AOBD).
3. **Oregon conflagration and state mobilization:** Follow the incident management team's ordering and check-in process.
4. **Carry and present on request:** RDPO pilot card, FAA remote pilot certificate, FAA aircraft registration, Oregon Department of Aviation registration (Oregon agencies), the operating authority, and the MASP or risk assessment.

Pre-Flight and TFR Procedures

1. Confirm the TFR NOTAM (number, center point, radius, floor and ceiling, effective and expiration times) and the closest airport.
2. Inside a TFR issued under 14 CFR § 91.137, operate only with the approval of, and under the direction of, the official in charge of on-scene emergency response (14 CFR § 91.137(c)(1)).

Record the coordinating official, position, phone number, and time of authorization on the Wildfire TFR Flight Documentation Form (Appendix G). Complete one form per operational period per UAS team. Per guidance from the FAA SOSC, SGI is not used for these TFRs (Chapter 4).

3. Brief with the AOBD or aerial supervision and with the other air resources before launch. If the briefing cannot be completed, do not fly.
4. Obtain the altimeter setting and its source, and confirm the planned operating altitude in both AGL and MSL.
5. Confirm the air-to-air (Victor), air-to-ground, dispatch or air operations, and flight-following frequencies. The RPIC or VO shall monitor air-to-air while the aircraft is airborne.
6. **BVLOS near controlled airspace:** When a UAS mission occurs within a TFR that is immediately adjacent to, or within the envelope of, Class B, C, D, or E (E2, E3, or E4) airspace, coordinate with the FAA SOSC and the controlling ATC facility before conducting BVLOS operations, and record the contact on the form (Appendix G, Section C). BVLOS under the SRFD CoW/A is conducted only within the terms of that authorization.
7. **Smoke and visibility:** In wildfire smoke, the weather minimum is 1 statute mile visibility. Otherwise, the more restrictive of the operating authority and agency policy applies.

In-Flight Procedures

1. UAS operate in the area and altitude block assigned by the UAS Manager, AOBD, or aerial supervision, and maintain positive communication with them.
2. When manned aircraft enter or approach the UAS work area, the UAS shall land or hold clear as directed, unless aerial supervision has separated the operations by altitude or area. Deconfliction is confirmed on air-to-air before the UAS resumes.
3. Call signs follow PMS 515 and the incident's communications plan (Chapter 7).
4. Flight and duty limits follow the incident's work and rest guidance (Chapter 4).
5. Unauthorized drones seen on the incident are reported to the AOBD or dispatch at once and documented through SAFECOM (Chapter 4).

Data and Products

Products are delivered as the incident directs (for example, to the Situation Unit, the GIS Specialist, or the UAS Data Specialist). Each flight record includes the incident name and the incident or IRWIN number. Data handling follows Chapter 10 and the incident's data management direction.

Reporting

1. Complete the Wildfire TFR Flight Documentation Form daily summary (Appendix G, Section E) at the end of each operational period.
2. For every mishap or near miss on an interagency wildland fire assignment, submit both a SAFECOM and a NASA ASRS UAS Report (Chapter 4, Interagency Wildland Fire Reporting).
3. Log every flight in the agency's digital records and in NERIS as required for the agency's own incidents (Chapter 4).

Hazardous Materials

Purpose

UAS support for hazardous materials incidents provides stand-off reconnaissance, plume and container assessment, labeling and placard identification, thermal imaging, and scene documentation, which reduces entry-team exposure.

Minimum Requirements

1. Tier 1 qualification (Chapter 3).
2. NIST Level 5 (NIST Standard Test Methods for Small UAS, confined test lanes).

3. Additional training to be determined by the RDPO UAS Program Manager in coordination with regional hazardous materials teams (for example, hazardous materials awareness or operations level training, sensor and gas-detection payload training, and decontamination of aircraft and equipment).
4. Satisfactory completion of the Pilot Standards evaluation plan, Hazardous Materials (under development).

Operating Standards

1. Flights are conducted under the direction of the Incident Commander and the Hazardous Materials Group Supervisor.
2. Launch and recovery areas are in the cold zone and upwind; the RPIC and crew shall not enter the warm or hot zone.
3. Any aircraft or payload that enters a contaminated area shall be treated as contaminated until decontaminated under the hazardous materials team's direction.
4. Sensor data and images that may identify the product or source shall be handled as incident records (Chapter 10).

Interim Rule

Until the added training is defined, a Tier 1 pilot who has completed NIST Level 5 may support a hazardous materials incident for stand-off reconnaissance only, at the request of incident command, with approval of the Agency UAS Program Coordinator.

Drone as a First Responder (DFR)

Status

This section is a placeholder. Training standards for Drone as a First Responder operations have not been developed. DFR operations shall not be conducted under this program until the RDPO adopts DFR standards and the matching evaluation plan is added to the Pilot Standards.

Items to Be Developed

1. Definition and scope of DFR operations (for example, remotely launched, dispatch-initiated response flights).
2. Required operating authority, including BVLOS, operations over people, and docked or remote-launch systems.
3. Pilot qualification, endorsement, and currency standards.
4. Dispatch and computer-aided dispatch (CAD) integration and communications.
5. Aircraft, dock, and detect-and-avoid equipment standards.
6. Privacy, data retention, and public notification requirements under ORS Chapter 837 and agency policy.

Fire Investigation / Crime Scene Documentation

Purpose

UAS support for fire investigation and crime scene documentation provides overhead imagery, orthomosaic and 3D models, and scaled scene measurements to support origin and cause determination and the documentation of evidence.

Minimum Requirements

1. Tier 1 qualification (Chapter 3).
2. Training to be determined by the RDPO UAS Program Manager in coordination with fire investigators and law enforcement partners (for example, mapping and photogrammetry, evidence

photography standards, and chain-of-custody procedures).

3. Satisfactory completion of the Pilot Standards evaluation plan, Fire Investigation / Crime Scene Documentation (under development).

Operating Standards

1. Flights are conducted at the request of, and in coordination with, the lead fire investigator or the law enforcement agency with jurisdiction.
2. Before flight, the RPIC shall confirm the lawful basis for the flight under ORS Chapter 837 when the flight is for, or its data will go to, a law enforcement agency (Chapter 5 and Appendix F). Crime, arson, or crash scene reconstruction under ORS 837.340 is limited to scene documentation tied to a specific investigation (no tracking of people), requires the law enforcement case number, and may not exceed five days.
3. Imagery collected as possible evidence shall be handled under a documented chain of custody from collection to transfer: original files are kept unaltered, working copies are made for processing, and each transfer is logged with date, time, and the names of the persons releasing and receiving the data.
4. Evidence data shall be stored, released, and retained under the agency's data retention policy (for SRFD, Policy 534) and Chapter 10.

Interim Rule

Until the added training is defined, a Tier 1 pilot may support fire investigation or crime scene documentation with approval of the Agency UAS Program Coordinator and the requesting investigator, provided the chain-of-custody steps in this section are followed.

Aerial Ignitions

Aerial ignition requires a Tier 2 pilot, the Aerial Ignitions endorsement, and compliance with PMS 515. The evaluation plan is under development in the Pilot Standards. Appendix E holds the regional standards.

Chapter 7: UAS Typing and Call Signs

Introduction

The RDPO program uses NWCG UAS typing and call signs for emergency response. UAS come in many configurations, and capabilities differ widely, so the right make, model, and payload shall be matched to the mission.

UAS Call Signs

Incident Operations

On incidents, UAS crews follow the incident communications plan. On wildland fire incidents, call signs and procedures follow current NWCG PMS 515, as taught in S-373 and RT-373.

Regional All-Hazards Call Sign Practice

1. **En route and check-in:** The responding resource identifies by agency name or jurisdictional designator, for example "Scappoose UAS" or "Clackamas UAS."
2. **On scene:** Once assigned, each aircraft takes a short incident call sign in order of assignment: U41 for the first aircraft, U42 for the second, and U43 for the third and so on. This is a shortened form of the PMS 515 format (for example, "Unmanned R41" for a rotorcraft Type 4 aircraft assigned as aircraft number 1). It is used only when briefed to incident personnel and when it does not conflict with other identifiers.
3. **Tail numbers:** The full CAD or tail number stays in CAD and records but is not used for routine radio traffic.
4. **Aircraft change:** If an aircraft is swapped during an assignment, keep the assigned call sign when practical and coordinate any change with command or aerial supervision.

Example: "Scappoose Command, U41, at UAS launch site on the Bravo-Charlie corner, ready for launch, operating up to 200 feet AGL over Division Alpha, monitoring Command and Tac 2."

Non-Incident Operations

Call signs are agreed to before the mission and follow local communication procedures. The PMS 515 call sign format is the recommended practice.

Table 1: UAS Types (Source: NWCG PMS 515)

Type	Configuration	Endurance	Data collection altitude (ft AGL)	Max. range (miles)	Typical sensors
1	Fixed-wing	6 to 14 hours	3,500 to 8,000	50	EO, mid-wave IR, high-quality IR
2	Fixed-wing	1 to 6 hours	3,500 to 6,000	25	EO, long-wave IR, moderate-quality IR
3	Fixed-wing or rotorcraft	20 to 60 minutes	2,500 and below (fixed-wing); 2,000 and below (rotorcraft)	5	EO/IR video and stills, moderate-quality IR
4	Fixed-wing or rotorcraft	Up to 30 minutes (fixed-wing); up to 20 minutes (rotorcraft)	1,200 and below	Less than 2	EO/IR video and stills, moderate-quality IR

Notes: Sensor payloads vary but typically include electro-optical (EO), infrared (IR), thermal, or mapping cameras. Some aircraft are specialized and will not fit this table. Within the RDPO program, altitude limits are always set by the operating authority, not by the type. Most RDPO aircraft are Type 3 or Type 4.

Operational Characteristics

Type 1 and Type 2

These aircraft are generally operated by contractors or federal partners and provide strategic situational awareness, mapping, and intelligence for incident planning. They typically operate above other incident aircraft, carry transponders, and communicate on assigned air-to-air or air-to-ground frequencies.

Type 3 and Type 4

These aircraft are generally agency operated and perform tactical situational awareness, mapping, and documentation on or near the incident. Most do not carry transponders. Crews communicate on assigned FM frequencies.

Chapter 8: Aircraft

Introduction

This chapter sets regional minimums for acquiring, registering, maintaining, and disposing of UAS. Agency procurement and property rules also apply.

Acquisition

1. Before buying a new make or model, the agency shall confirm it can be flown under the agency's operating authority, meets the mission need, and meets the data security standards in Chapter 10.
2. A new make or model shall not fly operationally until the RDPO UAS Program Manager has added it to the regional list of approved aircraft and an evaluation plan or aircraft add-on check ride exists in the Pilot Standards. Each pilot who will fly it shall first complete the A-454 add-on for that aircraft (Chapter 3, Aircraft and GCS Qualification).
3. Agencies should consult the RDPO UAS Program Manager before buying so regional aircraft, batteries, and payloads stay as compatible as practical for mutual aid.

Registration and Remote Identification

1. Each aircraft shall be registered with the FAA under 14 CFR Part 48 and shall meet the Remote Identification requirements of 14 CFR Part 89.
2. Oregon agencies shall register each aircraft with the Oregon Department of Aviation before operating it (ORS 837.360; Chapter 9).
3. The registration number shall be displayed on the aircraft as the FAA requires, and each aircraft shall be listed in CAD with its agency identifier.

Airworthiness

The RPIC shall confirm the aircraft is in a condition for safe operation before every flight (14 CFR § 107.15 for Part 107 operations; the same standard applies to public aircraft operations under this program). Agencies should use manufacturers whose aircraft meet a recognized consensus standard such as ASTM F3298, Standard Specification for Design, Construction, and Verification of Lightweight Unmanned Aircraft Systems, where available.

Maintenance

1. Maintenance and inspections follow the manufacturer's instructions.
2. All maintenance, repairs, part replacements, firmware updates, and battery cycles are logged in the agency's digital records system.
3. Batteries are inspected before each flight and retired when damaged, swollen, or past the manufacturer's cycle or age limit.

Annual Inspection

Each aircraft receives a documented annual inspection by the Agency UAS Program Coordinator or a designee, covering airframe, propulsion, control station, data links, batteries, payloads, and records.

Repairs and Return to Service

An aircraft that is damaged, involved in a mishap, or repaired beyond routine part replacement shall not fly operationally until a test flight and inspection show it is airworthy, and the return to service is logged.

Payloads

Only payloads approved for the aircraft by the manufacturer or by the RDPO UAS Program Manager shall be flown. Drop, delivery, spotlight, speaker, ignition, and gas-detection payloads require training

in their use and shall be covered in the MASP or the incident briefing. Payload delivery limits and the approved payload list are in Chapter 4, Payload Delivery. Parachute recovery systems required for operations over people shall be installed and serviceable, and their weight counts against the aircraft payload (Chapter 4, Parachute Recovery Systems).

Property Management and Security

Aircraft, controllers, and batteries are accountable property. Agencies shall store them securely, track them in agency inventory, and report loss or theft to law enforcement, the FAA, and, for Oregon agencies, the Oregon Department of Aviation as required.

Disposal

Before transfer or disposal, all agency data shall be removed from the aircraft, controllers, and memory cards; FAA registration shall be cancelled or transferred; and Oregon Department of Aviation registration shall be updated.

Chapter 9: Privacy, Civil Rights, and Civil Liberties

Introduction

Participating agencies shall operate UAS in a manner that protects privacy, civil rights, and civil liberties, and complies with the U.S. Constitution, state law, and agency policy.

Oregon Requirements

Oregon participating agencies are public bodies under ORS Chapter 837 and shall:

1. Register each UAS with the Oregon Department of Aviation before operating it (ORS 837.360; OAR 738-080-0045). Each UAS shall first be registered with the FAA.
2. Submit an annual report to the Oregon Department of Aviation by January 31 for the preceding calendar year, summarizing frequency and purposes of use and how the public can access the agency's data policies (ORS 837.360(7); OAR 738-080-0050).
3. Establish policies and procedures for the use, storage, accessing, sharing, and retention of data resulting from UAS operations (ORS 837.362).
4. Follow the restrictions on UAS use by or for law enforcement in ORS 837.310 through 837.340 (see Chapter 5, Law Enforcement Support).

Evidence obtained by a public body through a UAS that was not registered under ORS 837.360 is not admissible in any judicial or administrative proceeding.

Washington Requirements

Clark County participating agencies shall follow applicable Washington State law and their own agency policy for privacy, records, and law enforcement support.

Privacy Protections

1. Collect only the data needed for the mission. Avoid incidental imagery of people and private property not related to the mission.
2. Do not use UAS for surveillance of persons or groups based on protected characteristics or the exercise of First Amendment rights.
3. Do not equip agency UAS with weapons.
4. Release imagery to the public only under the agency's public records and media policies.

Accountability and Transparency

Each agency shall make its UAS policy available to the public, review complaints about UAS use, and report UAS use as state law requires. The RDPO UAS Program Manager may publish a regional summary of UAS use.

Chapter 10: Data and Information Technology Management

Introduction

UAS data includes images, video, sensor data, flight logs, telemetry, and derived products such as maps and models. Data is an agency record and shall be managed under the agency's records and data retention policy (for SRFD, Policy 534) and, for Oregon public bodies, the Oregon public records law (ORS Chapter 192) and the applicable records retention schedule.

Data Storage

1. Store data on agency-approved systems with access control and backup.
2. Do not store agency data on personal devices or personal cloud accounts.
3. Remove data from aircraft and controllers after each mission, according to agency procedure.
4. Keep data that may be evidence under the chain-of-custody steps in Chapter 6.

Software and Applications

Only agency-approved flight control, mapping, and data management software shall be used. Software and firmware updates are tested and approved by the Agency UAS Program Coordinator before operational use. Agencies shall consider data security, including where data is transmitted and stored, when approving aircraft and software.

Data Sharing

Data may be shared with incident command, cooperating agencies, and RDPO partners for incident and preparedness purposes, consistent with agency policy and ORS 837.362. Data given to law enforcement is subject to Chapter 5 and Chapter 9.

Pilot Responsibility

The RPIC is responsible for the security of data from collection until it is transferred to the agency records system or the requesting incident position.

Chapter 11: Safety and Operational Risk Management

Introduction

Safety is the first consideration in every operation. Each participating agency shall manage risk through an aviation Safety Management System (SMS) appropriate to its size.

Personal Protective Equipment

Crews shall wear the PPE required by the incident and the environment (for example, wildland fire PPE on the fireline, high-visibility vests at roadways, and eye protection during launch and recovery).

Safety Management System

The SMS is built on four components:

1. **Safety policy:** This document, agency policy, and leadership commitment to safe operations.
2. **Safety risk management:** Hazard identification and risk assessment before every mission, using the MASP, flight by notification, and the pre-flight briefing.
3. **Safety assurance:** Mishap and near-miss reporting, ASRS reports, SAFECOMs on interagency incidents, after action reviews (Pilot Standards BR 85), and quality assurance of records.
4. **Safety promotion:** Training, refresher training, standardization workshops, and sharing of lessons learned across the region.

Operational Risk Management

Before each mission, the RPIC shall identify hazards, assess their risk, put controls in place, and decide whether the remaining risk is acceptable. Any crew member may stop a flight for a safety concern. Risk that cannot be reduced to an acceptable level shall be raised to the Agency UAS Program Coordinator or incident command before flight.

Safety Awareness

Crews shall stay alert to manned aircraft, especially air medical and firefighting aircraft, and shall give way to all manned aircraft. Crews shall not fly into or through smoke columns.

Appendix A: Glossary and Acronyms

Term	Definition
AGL	Above ground level.
AOBD	Air Operations Branch Director.
AMOC	Alternative method of compliance.
ASRS	NASA Aviation Safety Reporting System.
ATO	FAA Air Traffic Organization.
BVLOS	Beyond visual line of sight.
COA	Certificate of Authorization (FAA Form 7711-1), issued by the FAA Air Traffic Organization.
CoW/A	Certificate of Waiver or Authorization.
DFR	Drone as a First Responder.
DOC	FAA Declaration of Compliance for operations over people under 14 CFR Part 107, Subpart D.
Dew point spread	The difference between the air temperature and the dew point. A small spread means the air is close to saturation.
ELOS	Extended line of sight.
FAA	Federal Aviation Administration.
FTA	Fire Traffic Area.
GCS	Ground control station: the hardware and software used to control the aircraft.
Icing conditions	OAT of 41 °F (5 °C) or lower with visible moisture, a temperature-dew point spread of 5 °F (3 °C) or less, or frost or ice forming (Chapter 4, Cold Weather and Icing Operations).
IRWIN	Integrated Reporting of Wildland-Fire Information; the incident identifier system used on wildland fire incidents.
LAANC	Low Altitude Authorization and Notification Capability.
Lead agency	The agency designated by the RDPO to lead UAS program development. Currently Scappoose Fire District; subject to change.
MASP	Mission Aviation Safety Plan.
MTOW	Maximum takeoff weight.
NIST	National Institute of Standards and Technology. NIST Standard Test Methods for Small UAS measure pilot proficiency at increasing levels of difficulty (Levels 1 through 3 use open lanes, Level 4 obstructed lanes, and Level 5 confined lanes).
NWCG	National Wildfire Coordinating Group.
OAT	Outside air temperature.
OOP/OOMV	Operations over people and operations over moving vehicles.
Participating agency	A public safety agency in the RDPO region that has adopted these standards.
Pilot Standards	RDPO Certification Standards for Remote Pilot Operations.
PRS	Parachute recovery system.
Red Flag Warning	A National Weather Service warning of critical fire weather. It does not create a TFR.
Remote pilot certificate	The FAA certificate with a small UAS rating issued under 14 CFR Part 107, Subpart C. It is a certificate, not a certification, and may be suspended or revoked.
RDPO	Regional Disaster Preparedness Organization.
RPIC	Remote pilot in command.
SAFECOM	Aviation Safety Communiqué; the interagency aviation safety reporting system.
SGI	Special Governmental Interest authorization, issued by the FAA SOSC.
SMS	Safety Management System.
SOSC	FAA System Operations Support Center.
SRFD	Scappoose Fire District.

Term	Definition
TFR	Temporary flight restriction.
U-MOD	UAS Module: the recommended three-person response configuration of a U-MOD Supervisor, a UAS Pilot (RPIC), and a Visual Observer or second pilot (Chapter 2).
UAS	Uncrewed (unmanned) aircraft system, which includes the aircraft, control station, and data links.
VO	Visual observer.

Appendix B: UAS Request, Deployment, and IC Integration

This appendix is a field summary of Chapters 4, 5, and 7 for Incident Commanders, Duty Officers, and dispatch. Participating agencies may issue their own quick references based on it.

Ordering a UAS Resource

1. The IC or requesting agency contacts its dispatch center and asks for a UAS resource, stating the product needed.
2. Dispatch or the Agency Duty Officer contacts the nearest participating agency with a UAS resource, by direct request, automatic aid, mutual aid, or a single resource request.
3. If no participating agency in the county can fill the request, it is passed to other participating agencies or through RDPO regional coordination.
4. On interagency wildland fire incidents, UAS resources are ordered through the established dispatch ordering system, and only Tier 2 pilots with the Wildfire endorsement are sent.
5. The responding agency confirms that the pilot's tier and endorsements match the mission and completes the go/no-go decision in Chapter 4. Agencies should send a full U-MOD (U-MOD Supervisor, UAS Pilot, and Visual Observer or second pilot) when staffing allows, and tell the requesting agency what configuration is responding.

Information Needed for a Request

- Requesting agency, callback number, and on-scene point of contact.
- Incident name, number, and location; in or out of county.
- Incident type and urgency (time-critical, planned, investigatory, or extended operations).
- The product needed: live video, reconnaissance, mapping, search, investigation documentation, hazardous materials reconnaissance, airspace coordination, or law enforcement support.
- Known hazards, aircraft on scene or expected, and TFR status.
- Data delivery method and recipient.

IC Checklist: Before the UAS Launches

- Give the UAS team one clear mission objective.
- If a U-MOD responds, work through the U-MOD Supervisor; that person is your point of contact for the module.
- Assign the UAS team within ICS (Command, Operations, Planning, Investigation, or Air Operations) and name who it reports to.
- Brief known hazards: wires, towers, smoke, collapse zones, aircraft activity, hazardous materials, night conditions, and access.
- Give the radio plan: command, tactical, and air-to-ground frequencies.
- Confirm whether manned aircraft, medevac, law enforcement aircraft, or other UAS are operating or expected.
- The UAS team confirms whether the mission has evidentiary, investigative, or privacy concerns that affect how imagery is collected and handled.

IC Briefing Format

1. **Mission:** The problem to solve and the product or information needed.
2. **Location:** Division, branch, side of structure, search area, perimeter segment, or map boundary.
3. **Hazards:** Aircraft, wires, smoke, obstructions, collapse potential, weather, or hostile environment.
4. **Communications:** Assigned channels, who to contact, and who approves launch, changes, and landing priorities.

5. **Airspace:** Current or expected helicopters and fixed-wing aircraft, TFR, FTA, ATC, or special coordination needs.
6. **End state:** What mission complete looks like, such as a verbal report, live video, perimeter map, still imagery, or 3D model.

IC Checklist: While the UAS Is Operating

- Keep the assignment clear; re-brief before adding competing objectives.
- Keep the UAS team informed of changing hazards, tactics, exclusion zones, and incoming aircraft.
- If manned aircraft arrive, deconflict immediately and expect the UAS to yield, reposition, or land.
- Ask for short updates: location, altitude block, what the crew sees, and immediate hazards.
- Use the UAS team for airspace coordination when no air operations organization is in place and aviation complexity is increasing.
- If the mission changes to mapping, investigation, ignition, or interior or confined-space work, have the team re-brief and confirm capability first.

If Manned Aircraft Are Coming

1. Notify the UAS team of inbound or expected aircraft.
2. Confirm whether the UAS should hold, reposition, descend, or land.
3. Assign or confirm one point of contact for airspace coordination.
4. Resume UAS operations only after deconfliction is complete and communications are re-established.

IC Checklist: After Landing

- Receive a short debrief on what was flown, what was seen, and any hazards or limits.
- Confirm whether more flights are needed this operational period.
- Confirm which maps, imagery, models, or investigation products will follow after processing.
- Carry aviation coordination issues forward to the next operational period or to Air Operations.
- Pass lessons learned, communications issues, and safety concerns to command staff.

Five Things to Remember

- Give the UAS team one clear mission.
- Brief hazards, aircraft activity, and communications before launch.
- Use short on-scene call signs such as U41, U42, and U43.
- Expect the UAS to give way to manned aircraft and pause when the airspace is not clear.
- Ask for the product needed: live video, reconnaissance, mapping, investigation support, or airspace coordination.

Appendix C: Agreement Language for External UAS Services

When a participating agency contracts for UAS services, or accepts UAS support from a non-participating entity, the written agreement shall require the provider to:

1. Hold the FAA certificates, waivers, and authorizations needed for the work, and provide copies on request.
2. Use remote pilots who hold a current FAA remote pilot certificate and meet the qualifications the agency specifies.
3. Maintain aircraft in an airworthy condition and register them with the FAA and, in Oregon, with the Oregon Department of Aviation where required.
4. Follow the operating, safety, privacy, and reporting standards in this document, including mishap and near-miss reporting to the agency.
5. Deliver all mission data to the agency, keep no copies except as the agreement allows, and follow the agency's data retention policy.
6. Carry insurance as the agency's risk manager requires.

Appendix D: UAS Mishap Response Checklist

Step	Action	Done
1	Ensure the safety of people. Provide first aid and call 9-1-1 if needed.	
2	For a fly-away, notify ATC (if in controlled airspace), the incident aviation organization, and dispatch immediately with last known position, altitude, heading, and battery state.	
3	Secure the scene, aircraft, batteries (watch for thermal runaway), controller, and logs.	
4	Photograph the scene and the aircraft before moving it, unless it must be moved for safety.	
5	Notify the Agency UAS Program Coordinator.	
6	Agency UAS Program Coordinator notifies the RDPO UAS Program Manager.	
7	Determine if the event meets NTSB 49 CFR 830 criteria; if so, notify the NTSB immediately.	
8	For Part 107 operations, determine if a 14 CFR § 107.9 report is required (within 10 days).	
9	Make any notice the CoW/A or COA special provisions require.	
10	Submit a NASA ASRS UAS Report for every accident, mishap, and near miss (for example, manufacturer defect, battery failure, or bird strike), in addition to the NTSB and FAA reports.	
11	On every interagency wildland fire assignment, submit a SAFECOM in addition to the NASA ASRS UAS Report, notify the UAS Manager or Air Operations Branch Director, and complete the PMS 503 Aircraft Accident Checklist when repairs exceed field repair. On other interagency incidents, submit a SAFECOM when the host agency uses SAFECOM.	
12	Complete the agency report and preserve all flight data.	
13	RPIC stands down until the event is reviewed (Chapter 4).	
14	Ground the aircraft until it is inspected and found airworthy.	
15	Conduct an after action review and share lessons learned.	

Appendix E: UAS Aerial Ignitions

Status

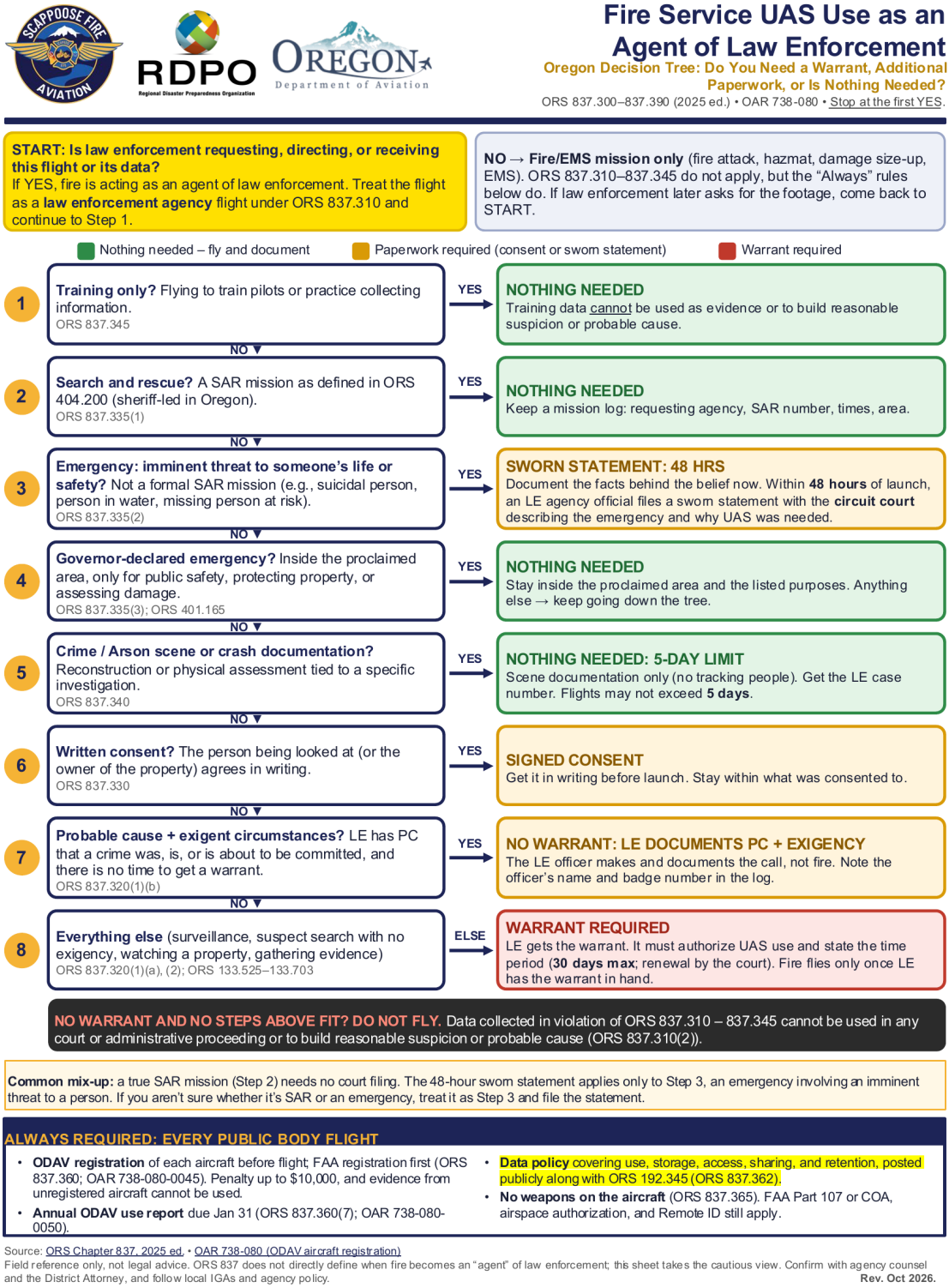
Aerial ignition standards are under development. Until regional standards and the Pilot Standards evaluation plan are adopted, aerial ignition by an RDPO pilot is limited to operations on wildland fire or prescribed fire incidents where the operation is conducted under NWCG PMS 515 and the direction of the incident or burn organization, by a Tier 2 pilot qualified for aerial ignition under PMS 515.

Items to Be Developed

1. Endorsement training and evaluation plan (Pilot Standards, Aerial Ignitions).
2. Approved aircraft and ignition payloads.
3. Currency (Exhibit 1).
4. Burn plan and MASP content for UAS ignition.
5. Fire suppression and emergency procedures for ignition payload malfunctions.

Appendix F: Oregon Law Enforcement Decision Tree

The decision tree below, Fire Service UAS Use as an Agent of Law Enforcement (Oregon Decision Tree, Rev. Oct 2026), applies to Oregon participating agencies whenever law enforcement requests, directs, or receives a flight or its data (Chapter 5, Law Enforcement Support). Start at the top and stop at the first YES. It is a field reference, not legal advice. Confirm with agency counsel and the District Attorney, and follow local intergovernmental agreements and agency policy. Clark County agencies shall use a Washington equivalent reviewed by their counsel.



Appendix G: Wildfire TFR Flight Documentation Form

The UAS Operations in a 14 CFR § 91.137(a)(2) Wildfire TFR Flight Documentation Form records that a UAS team operated inside a wildfire TFR under the direction of the official in charge, as described in 14 CFR § 91.137(c)(1). Complete one form per operational period per UAS team, and a new form for each new or amended NOTAM. The form is used for every § 91.137 TFR, including (a)(1), (a)(3), and Red Flag Warning TFRs, with the TFR type recorded in Section E (Chapter 4, Temporary Flight Restrictions). Retain it in the UAS or air operations file and in the agency's digital records (Chapter 6, Wildland Fire). The form is not required by the FAA, and completing it does not grant approval, authorization, or permission to enter the TFR. A "No" answer on any item marked "DO NOT FLY" stops the operation until the item is resolved.

UAS OPERATIONS IN A 14 CFR § 91.137(a)(2) WILDFIRE TFR

Flight Documentation Form — Voluntary Record of Compliant Operations

Complete one form per operational period per UAS team. Retain in the UAS/Air Operations file. Reference: Wildfire TFR Guidance for First Responders memo, 14 CFR § 91.137.

A INCIDENT & TFR INFORMATION

Incident Name		**Incident / IRWIN #**	
Date		**Operational Period**	
TFR NOTAM Number		**TFR Effective → Expires (date/time)**	
TFR Center Point (Lat/Long)		**TFR Radius (NM)**	
TFR Floor – Ceiling (altitude)		**Closest Airport (ID / Name)**	
Altimeter Setting @ Time of Flight		**Altimeter Source**	
MSL Altitude		**AGL Altitude**	
Air-to-Air (Victor) Frequency		**Air-to-Ground Frequency**	
Dispatch / Air Ops / CTAF Freq		**Flight-Following Frequency**	

B AUTHORIZATION — OFFICIAL IN CHARGE (14 CFR § 91.137(c)(1)

Coordinating Official (Name)		**Agency / Position / Title**	
Phone Number		**Date/Time Authorization Obtained**	
AOBD / Air Ops Contact (if briefed)		**Time of AOBD/Air Resources Briefing**	

☐ Operating under direction of Official in Charge? ☐ **No** — if No, **DO NOT FLY**

☐ Incident/IMT operational requirements briefed & followed? ☐ **No** (explain in Section E)

☐ Briefing conducted with other air resources & AOBD (Air Operations Branch Director)? ☐ **No** — if No, **DO NOT FLY**

☐ BVLOS operation conducted? **Yes — complete Section C** ☐ **No**

☐ Pilots and Visual Observers are familiar with and trained on PMS 505,515 and 520? ☐ **No** — if No, **DO NOT FLY**

☐ Pilots and Visual Observers are qualified to fly in the Fire Traffic Area (FTA)? ☐ **No** — if No, **DO NOT FLY**

Not required by the FAA — retained by the agency to document that UAS operations were conducted under the direction of the official in charge, per 14 CFR § 91.137(c)(1). Completing this form does not grant approval, authorization, or permission to enter the TFR, nor does it imply that the Incident Commander has operational control, direction, or authority over the participating aircraft. All aircraft operators remain fully responsible for obtaining required FAA approvals and maintaining compliance with all applicable regulations. Page 1 of 2

UAS OPERATIONS IN A 14 CFR § 91.137(a)(2) WILDFIRE TFR

Flight Documentation Form — Voluntary Record of Compliant Operations

C BVLOS NEAR CONTROLLED AIRSPACE — SOSC COORDINATION

☐ When a UAS mission occurs within a TFR that is immediately adjacent to, or within the envelope of, controlled airspace (B, C, D and E (E2,E3 or E4 airspace), coordination with the SOSC and ATC is required. Steps 1–3 in the "How to Obtain Authorization to Participate" section above shall be completed and documented before contacting the SOSC for authorization to conduct BVLOS missions. You must contact the SOSC.

SOSC Contacted (Name)		**Time Contacted**	

☐ UAS missions are not being conducted immediately adjacent to, or within the envelope of, controlled airspace (B, C, D and E2, E3 or E4 airspace). If this box is checked, you **do not need to contact** the SOSC.

D UAS TEAM & AIRCRAFT

UAS Team Name / Number		**Pilot in Command (PIC)**	
Visual Observer(s) / Crew		**Aircraft Make/Model & Reg./Serial #**	
Assigned Task / Mission		**Location on Fire (Div./Branch/Coord.)**	
Operating Altitude (AGL / MSL)		**Launch/Recovery Point**	

E DAILY SUMMARY / DEBRIEF

Total UAS Flight Time (day)		**Total Number of Flights**	

Deviations, deconfliction issues, or safety notes:

Form Completed By (Name/Signature)		**Date / Time**	

Not required by the FAA — retained by the agency to document that UAS operations were conducted under the direction of the official in charge, per 14 CFR § 91.137(c)(1). Completing this form does not grant approval, authorization, or permission to enter the TFR, nor does it imply that the Incident Commander has operational control, direction, or authority over the participating aircraft. All aircraft operators remain fully responsible for obtaining required FAA approvals and maintaining compliance with all applicable regulations.

Appendix H: Revisions and Amendments

Version	Date	Section	Change
1.0	October 2026	All	Initial RDPO edition. Adapted from the national-program template; agency-specific federal policy removed; regional and lead agency structure added; mission specialties added (Hazardous Materials, Drone as a First Responder placeholder, Fire Investigation / Crime Scene Documentation); Figure 1 training pathways (Hazardous Materials Pilot replaces natural resource pilot); request, deployment, and IC integration procedures (Appendix B); Oregon law enforcement decision tree (Appendix F); wildland fire qualifications and operations (Chapter 6); interagency wildland fire mishap reporting (Chapter 4); A-454 aircraft and GCS qualification and pilot card formats (Chapter 3); Wildfire TFR Flight Documentation Form (Appendix G); UAS Module (U-MOD) response configuration (Chapter 2); aligned with the Pilot Standards, Version 1.2, and SRFD Policy 534.
1.1	October 2026	Chapters 1, 3, 4, and 8; Appendices A, G, and H	Parachute recovery systems and checklist items; operations over people and moving vehicles; operations above 400 feet AGL in Class G (pending waiver); payload delivery, payload limits, and approved payloads; TFR procedure for § 91.137(a)(1), (a)(2), and (a)(3), Red Flag Warning, and subsequent TFRs; A-454 safety device and operational add-ons; aligned with the Pilot Standards, Version 1.3.
1.2	October 2026	Chapters 1 and 4; Appendices A and H	Cold Weather and Icing Operations: SAFECOMs 23-0164 and 23-0202, supporting research, aircraft cold-weather limits, icing conditions, checklist items, icing response, and training and reporting; glossary terms added.