A publication of the National Wildfire Coordinating Group



# NWCG Incident Position Standards for Unmanned Aircraft Systems, Module Leader

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The *NWCG Incident Position Standards for Unmanned Aircraft Systems, Module Leader* establishes national interagency standards for operating as an Unmanned Aircraft Systems, Module Leader (UASL) on wildland fires. These standards are meant to ensure safe, efficient, and effective operations in support of interagency goals and objectives and should serve as a guide to promote effective and consistent on-incident training. By definition, NWCG standards encompass guidelines, procedures, processes, best practices, specifications, techniques, and methods.

The Unmanned Aircraft Systems, Module Leader Position Page,

<u>https://www.nwcg.gov/positions/unmanned-aircraft-system-module-leader</u>, in the NWCG position catalog, includes the Incident Position Description (IPD) and Position Qualification Requirements, as well as links to standards and references needed to perform the duties of an Unmanned Aircraft Systems, Module Leader.

Tasks that are identified by a (\*) are those tasks included for evaluation in the Position Task Book (PTB). Tasks not identified for evaluation in the PTB still represent standards for successful performance in the position and should be included in a comprehensive training assignment.

Where references are identified by a (\*\*), refer to your home unit, agency, or organization for specific guidance and policy documentation. For example:

\*\*Interagency Standards for Fire and Fire Aviation Operations (Red Book)

The National Wildfire Coordinating Group (NWCG) provides national leadership to enable interoperable wildland fire operations among federal, state, Tribal, territorial, and local partners. NWCG operations standards are interagency by design; they are developed with the intent of universal adoption by the member agencies. However, the decision to adopt and utilize them is made independently by the individual member agencies and communicated through their respective directives systems.

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# **General References**

- *10 Standard Firefighting Orders*, PMS 110, <u>https://www.nwcg.gov/publications/pms110/10-standard-firefighting-orders-pms-110</u>
- *18 Watch Out Situations*, PMS 118, <u>https://www.nwcg.gov/publications/pms118/18-watch-out-situations-pms-118</u>
- Incident Response Pocket Guide (IRPG), PMS 461, https://www.nwcg.gov/publications/461
- NWCG Standards for Aerial Ignition, PMS 501, <u>https://www.nwcg.gov/publications/501</u>
- NWCG Aviation Mishap Response Guide and Checklist, PMS 503, https://www.nwcg.gov/publications/503
- *NWCG Standards for Aerial Supervision*, PMS 505, <u>https://www.nwcg.gov/publications/505</u>
- *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515, <u>https://www.nwcg.gov/publications/515</u>
- *NWCG Standards for Airspace Coordination*, PMS 520, <u>https://www.nwcg.gov/publications/520</u>
- NWCG Hazard Relief Participant Request Form, PMS 520-1, https://www.nwcg.gov/publications/pms520-1
- NWCG Standards for Aviation Risk Management, PMS 530, https://www.nwcg.gov/publications/530
- *NWCG Aviation Risk Management Workbook*, PMS 530-1, <u>https://www.nwcg.gov/publications/530-1</u>
- NWCG Standards for Wildland Fire First Aid, PMS 560, <u>https://www.nwcg.gov/publications/560</u>
- NWCG Standards for Interagency Incident Business Management, PMS 902, https://www.nwcg.gov/publications/902
- Incident Command System (ICS) Forms, <u>https://www.nwcg.gov/ics-forms</u>
  - Medical Plan and Medical Incident Report (ICS 206 WF)
  - General Message (ICS 213)
  - Activity Log (ICS 214)
  - Demobilization Check-Out (ICS 221)
  - Incident Personnel Performance Rating (ICS 225 or ICS 225 WF)
- Standard (SF) and Optional (OF) Forms, <u>https://www.nwcg.gov/publications/pms902</u>
  - Crew Time Report (CTR), SF 261
  - Incident Time Report, OF 288
- Job Aids, <u>https://www.nwcg.gov/training/job-aids</u>
  - Packing List for Wildland Fire Support Staff, J-102
- 14 CFR Part 89 Remote Identification of Unmanned Aircraft, https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-89
- 14 CFR Part 91 General Operating and Flight Rules, <u>https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-91</u>
- 14 CFR Part 107 Small Unmanned Aircraft Systems, <u>https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-107</u>
- Area Planning, Military Training Routes, North and South America (AP/1B), https://www.daip.jcs.mil/pdf/ap1b.pdf
- Area Planning, Special Use Airspace, North and South America (AP/1A), https://www.daip.jcs.mil/pdf/ap1a.pdf
- Federal Aviation Administration, Pilot Handbook of Aeronautical Knowledge, <u>https://www.faa.gov/regulations\_policies/handbooks\_manuals/aviation/phak</u>

- Flight Service, <u>https://www.1800wxbrief.com</u>
- Interagency Resource Ordering Capability (IROC), <u>https://www.wildfire.gov/application/iroc</u>
- Mission Aviation Safety Plan (MASP), <u>https://gacc.nifc.gov/swcc/dc/azpdc/operations/documents/aircraft/forms/Mission%20Aviation%</u> <u>20Safety%20Plan.docx</u>
- Project Aviation Safety Plan (PASP), <u>https://www.nps.gov/subjects/aviation/upload/RM60\_Appendix-3\_Project-Aviation-Safety-Plan-508.pdf</u>
- SAFECOM, <u>https://www.safecom.gov/</u>
- SAFENET, https://safenet.nifc.gov/
- Special Governmental Interest (SGI) Waiver, https://www.faa.gov/uas/advanced\_operations/emergency\_situations
- U.S. Transportation Security Administration (TSA) Prohibited Items, <u>https://www.tsa.gov/travel/security-screening/whatcanibring/all</u>
- Unmanned Aircraft Systems Facility Maps (UASFM),
  <u>https://www.faa.gov/uas/commercial\_operators/uas\_facility\_maps</u>
- U.S. General Services Administration (GSA) Per Diem Rates, <u>https://www.gsa.gov/travel/plan-book/per-diem-rates</u>

# **Agency-Specific References**

- \*\*Department of the Interior (DOI) Use of Unmanned Aircraft Systems (UAS), OPM 11, https://www.doi.gov/sites/default/files/documents/2025-01/opm-11\_0.pdf
- \*\*Forest Service Standards for UAS Operations, https://www.fs.usda.gov/sites/default/files/2024-04/Standards-for-UAS-Operations.pdf
- \*\*Interagency Standards for Fire and Fire Aviation Operations (Red Book), https://www.nifc.gov/standards/guides/red-book
- \*\*Interagency Unmanned Aircraft System (UAS) Program, UAS Support, https://uas.nifc.gov/
- \*\*National Interagency Standards for Resource Mobilization, https://www.nifc.gov/nicc/logistics/reference-documents

# \*Leadership Level 2, New Leader (Convey Intent)

A new leader begins transitioning from a follower to a leader of small groups to achieve a common goal. They begin to implement team cohesion, accept responsibility for self and team, and apply effective communications. For additional information, review the Level 2 description, expected behaviors and knowledge, suggested development goals, and self-study opportunities <a href="https://www.nwcg.gov/committee/leadership-committee/leadership-levels">https://www.nwcg.gov/committee/leadership-committee/leadership-levels</a>.

# Description

- Proficient at leadership values and principles.
- Understand transition challenges for new leaders, situational leadership, team cohesion factors, ethical decision-making, and debriefing techniques.
- Lead by example.
- Lead small groups to achieve common goals, objectives, and tasks.

# **Behaviors**

- Demonstrates accountability for personal and team performance to build trust and establish positive team environment.
- Applies knowledge of leadership traits to lead small teams.
- Promote team cohesion for new and existing team members and create an environment for effective communication.
- Solicits questions, both up and down chain of command, in order to learn from others.
- Applies a risk management process to ensure safety of self and team members.

# Knowledge

- Utilize leadership traits to identify developmental needs in self and others.
- Describe situational leadership to understand application of appropriate leadership styles.
- Understand how wildland fire leadership values, principles, and traits inform ethical decisionmaking.
- Understand how task, purpose, and end state are used to deliver leader's intent.
- Apply self-assessment tools to identify improvement gaps.
- Practice self-care and team-care.
- Knowledge of basic format to conduct a post-incident debriefing.
- Knowledge of the components of an operational briefing to deliver a simple assignment briefing.
- Knowledge of human factors and environmental barriers to communication.
- Knowledge of organizational structures (ICS and agency).
- Identify the sources of power which enable leadership influence.

# **Prepare and Mobilize**

# \*Ensure individual readiness.

# When to start task: Prior to assignment.

**Resources to complete task:** *IRPG*; *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Airspace Coordination*, PMS 520; *NWCG Standards for Interagency Incident Business Management*, PMS 902; *Packing List for Wildland Fire Support Staff*, J-102; resource ordering applications (e.g., IROC); flight organizer; flight service; Low Altitude Authorization and Notification Capability (LAANC); Notice to Airmen (NOTAMs); SGI waiver, Federal Aviation Administration's System Operations Support Center; UASFM; \*\*DOI Use of Unmanned Aircraft Systems (UAS), OPM 11; \*\*Forest Service Standards for UAS Operations; \*\*Interagency Unmanned Aircraft System (UAS) Program, UAS Support; \*\*Interagency Standards for Fire and Fire Aviation Operations (Red Book).

- Verify your data/status is current in resource ordering applications (e.g., IROC).
- Build a UASL kit, including the following:
  - Location or incident-specific information
  - Fire Traffic Area (FTA) Protocol Card
  - Flight organizer
    - Flight log
    - Flight risk assessment tools (FRAT)
    - Certificates of Authorizations (COAs)
    - Checklists (briefing and aircraft)
    - Scripts
    - Visual observer (VO) best practices
    - UAS mishap response checklist
  - o FAA Pilot Card
  - Agency-specific Pilot Card
  - Incident Qualifications Card (Red Card)
  - Applicable manuals
    - Aircraft
    - Payload
  - o NWCG Unmanned Aircraft System, Module Leader Position Task Book, PMS 311-128
  - o NWCG Incident Response Pocket Guide (IRPG), PMS 461
  - o NWCG Standards for Aerial Ignition, PMS 501
  - NWCG Aviation Mishap Response Guide and Checklist, PMS 503
  - o NWCG Standards for Aerial Supervision, PMS 505
  - o NWCG Standards for Fire Unmanned Aircraft Systems Operations, PMS 515
  - o NWCG Standards for Airspace Coordination, PMS 520
  - o NWCG Standards for Interagency Incident Business Management, PMS 902
  - \*\*Interagency Standards for Fire and Fire Aviation Operations (Red Book)
  - o Applicable agency-specific operations guide
  - $\circ$  Documentation
    - Crew Time Report (CTR), SF 261
    - Incident Time Report, OF 288

- SGI waiver
- NOTAM
- LAANC
- General Message (ICS 213)
- Agency-specific forms (e.g., Injury and Workers' Compensation, accident forms)
- Required items
  - Fireline hand tool (if unavailable, obtain at incident)
  - Handheld FM and AM radios (if unavailable, obtain at incident)
  - Standard fireline personal protective equipment (PPE)
  - Credit card with a sufficient credit limit
  - Cellular/satellite phones with chargers
  - Assorted chargers for all electronic equipment
  - Laptop or tablet
  - Phone list
- Suggested items
  - Electronic flight bag
    - ✤ Airspace and weather information resources
  - Global positioning system (GPS) unit
  - Starlink access
  - Pocket calendar
  - Pocket notepad
  - Directional tools (e.g., compass, signal mirror, strobe, panel)
  - Assorted pens, pencils, highlighters
  - Maps and/or atlas
  - Flagging
  - Electrical tape
  - Fiber tape
  - Calculator
  - Headlamp/flashlight with extra batteries
  - Watch

# \*Gather critical information pertinent to the assignment.

When to start task: Upon receipt of resource order.

**Resources to complete task:** *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; FTP (Incident Action Plan [IAP], maps); resource order; applicable manuals (aircraft, payload); Applicable Visual Flight Rules (VFR) Sectional; *\*\*Interagency Standards for Fire and Fire Aviation Operations* (Red Book); *\*\*National Interagency Standards for Resource Mobilization*; *\*\*Interagency Unmanned Aircraft System* (UAS) Program, UAS Support.

- Access and review the resource order.
  - Incident/project name
  - Incident/project order number
  - Financial codes
  - o Descriptive location
  - Legal location (e.g., section, township, range)
  - Incident radio frequency (if available)

- Incident base/phone number
- Request number
- Reporting date/time and location
- Special instructions (e.g., authorized equipment, laptop, cell phone)
- Special needs (e.g., UAS hardware, software)
- Participate in an initial briefing call to clarify incident objectives with incident supervision.
  - Clarify mission objectives of the UAS operation and address the following:
    - Surveillance
    - Mapping
    - Search and rescue
    - Fire progression
    - Payload, sensors, and data (PSD)
    - Other
  - Gather situational awareness.
    - Determine number of UAS modules ordered, en route, or assigned.
    - Determine type and capabilities of UAS ordered, en route, or assigned.
    - Obtain the IAP, if available.
    - Collect maps, frequencies, and assigned aerial resources if available.
    - Determine airspace designation (e.g., class, Temporary Flight Restrictions [TFR], special use).
    - Verify directions to the incident reporting location.
    - Verify planned operational timeframes.
    - Gather weather information.
  - Review the incoming briefing packet, base operations plan, or IAP for the following information:
    - Organizational chart and contact information/numbers
    - Local resources and hazards
    - Maps and coordinates
    - Frequencies
  - Ensure understanding of leader's intent and expectations.
    - Obtain incident objectives.
    - Identify roles and responsibilities.
    - Confirm specific assignments.
- Coordinate with dispatch to verify the following travel details:
  - Mode of travel
    - Ensure your rental, National Emergency Rental Vehicle (NERV), or personal vehicle is on the resource order, if applicable.
  - Estimated time of departure (ETD) and location of departure
  - o Estimated time of arrival (ETA) and location of destination
- Determine location for rest overnight (RON) if you are unable to make end destination within operational shift.

# Travel to and check in at assignment.

When to start task: Upon receipt of resource order.

**Resources to complete task:** *NWCG Standards for Interagency Incident Business Management*, PMS 902; resource order; Incident Qualifications Card (Red Card); FTP (IAP, maps); GSA per diem rates; *\*\*National Interagency Standards for Resource Mobilization*.

# How to accomplish task:

- Follow agency-specific air and ground travel guidelines.
  - Air travel considerations
    - Comply with weight limitations.
      - ◆ If your baggage exceeds airline limitations, additional fees may apply.
    - Check bags for hazardous materials.
  - Ground travel considerations
    - Follow time limitations/driver duty day limitations.
    - Consider logistical needs (e.g., restrooms, restaurants).
    - Ensure secure transportation of government equipment.
    - Reference GSA website for per diem and lodging rates.
      - Check with your supervisor, Fire Management Officer (FMO), or Fire Business Office for guidance on providing justification when rates exceed per diem allowances.
- Manage travel logistics, including the following:
  - Driving standards
  - Lodging
  - o Fuel
  - Bathroom breaks
  - Roadside emergency
  - Traffic
  - Weather
- Model professionalism and a professional attitude.
  - Wear attire that reflects positively on the agency you represent.
  - Consider a normal daily working uniform.
- Ensure check-in procedures are complete.
  - Upon incident arrival, complete the check-in process as described in the IAP or as provided by the Status/Check-In Recorder (SCKN), or person designated on the resource order. Be prepared with the resource order, Incident Qualifications Card (Red Card), and agency-specific agreement sheet.
  - Clone your radio.

# \*Check in with incident supervisor and/or dispatch when arriving at the incident.

When to start task: Upon arrival at the incident.

**Resources to complete task:** *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; SGI waiver; SAFECOM; FTP (IAP, maps); \*\**DOI Use of Unmanned Aircraft Systems (UAS)*, OPM 11; \*\*Interagency Unmanned Aircraft System (UAS) Program, UAS Support.

- Contact the incident supervisor.
  - Air Operations Branch Director (AOBD)
  - Operations Section Chief (OSC)
  - Incident Commander (IC)
- Contact outgoing UASL, if assigned.

- Call the national coordinator.
  - Confirm status of SGI waiver(s).
  - Confirm status of outstanding support equipment.
- Call geographic UAS coordinator/UAS aviation point of contact.
  - Review regional and national aviation mishap response plan.
  - $\circ$   $\:$  Identify SAFECOM process with geographic UAS coordinator.
  - Obtain status update/future of UAS on assignment.
- Call local dispatch, if applicable.
  - o Discuss operational considerations.

# **Build the Team**

# \*Identify UAS resources and modules assigned or unassigned and establish accountability.

When to start task: Upon assignment and throughout the incident

Resources to complete task: Hazard Relief Participant Request Form, PMS 520-1; FTP (IAP, maps).

# How to accomplish task:

- Confirm the IAP has all assigned UAS resources listed.
- Communicate with the following to determine SGIs approved or pending against the TFR:
  - Incident supervisor
  - National UAS coordinator
  - FAA Special Operations Support Center (SOSC)
- Gather contact information for UAS resources and other unassigned UAS resources.

# \*Validate readiness of UAS modules and other assigned UAS resources.

When to start task: Upon arrival at the incident, upon arrival of resources, and throughout the assignment.

**Resources to complete task:** *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; applicable manuals (aircraft, payload); agency-specific airworthiness and pilot standard resources; FTP (IAP, maps); \*\**Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

# How to accomplish task:

- Verify aircraft and payload capabilities are appropriate for the assignment.
  - Ensure proper carding/registration of the UAS.
  - Ensure remote pilot(s) are current and carded for expected mission.
  - Verify aircraft airworthiness and maintenance standards.
  - Determine remote pilot flight and duty limitations as stated in agency policy.
- Verify the following required support equipment, if applicable:
  - o Fireline hand tool
  - Handheld radios
  - Standard fireline personal protective equipment (PPE)
  - Cellular/satellite phones with chargers
- Support logistical needs for UAS module and use established ordering procedures.

# \*Establish a common operating picture.

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; *NWCG Standards for Aerial Supervision*, PMS 505; *NWCG Standards for Helicopter Operations*, PMS 510; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; flight organizer; FTP (IAP, maps); FTA protocol.

### How to accomplish task:

- Participate in relevant briefings with the following personnel:
  - OSC, AOBD, and Air Support Group Supervisor (ASGS), Prescribed Fire Burn Boss (RXB), and Firing Boss (FIRB)
    - Review the IAP.
      - ♦ Validate accuracy of the Air Operations Summary (ICS 220).
    - Review incident objectives.
    - Receive tasking from incident supervisor and establish the chain of command.
    - Determine required meeting/briefing attendance.
    - Establish hours of operation for each shift (e.g., day shift, night shift, swing shift).
    - Confirm communication protocols/procedures.
  - Aerial supervision (Air Tactical Group Supervisor [ATGS], Helicopter Coordinator [HLCO], Aerial Supervision Module [ASM])
    - Confirm communication protocols/procedures.
    - Discuss planned taskings and requested missions.
  - Helibase Manager (HEBM)
    - Confirm communication protocols/procedures.
    - Discuss planned taskings and requested missions.
  - o Dispatch

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- Confirm communication protocols/procedures.
- Situation Unit Leader (SITL)
  - Determine data objectives (e.g., deliverables, timeline).

# \*Brief all participating UAS resources.

When to start task: After initial briefing, arrival of resources, and throughout the incident.

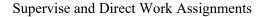
**Resources to complete task:** *IRPG*; *NWCG Standards for Aerial Ignition*, PMS 501; *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *NWCG Standards for Aerial Supervision*, PMS 505; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Airspace Coordination*, PMS 520; FAR; resource order; FTP (IAP, maps); Enterprise Geospatial Portal (EGP); incident-specific intelligence; incident awareness and assessment (IAA) products; agencyspecific pilot standards (e.g., FS/DOI pilot standards); agency-specific Pilot Cards (e.g., FS/DOI Remote Pilot Cards); *\*\*Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

- Utilize Crew Resource Management (CRM) principles to maximize the collective skill set of UAS resources.
- Contact and brief UAS resources and other unassigned UAS resources.
  - Conduct introductions.
  - Establish chain of command.
  - Ensure pilots understand incident logistics.
  - Ensure modules have appropriate aircraft and payloads for the expected mission.
  - Conduct initial incident briefing, addressing the following:
    - General scope of the mission (data requirements)
    - Incident descriptive location
    - Aerial resources assigned
    - Aerial resources unassigned
    - Radio frequencies



- Airspace considerations
  - ✤ Controlled
  - Uncontrolled
  - Special use
  - ✤ Other

- Communication protocols/procedures
- Emergency procedures
- Ensure all assigned resources receive daily operational briefing.
  - Confirm communication protocols and procedures.
  - Discuss planned taskings and requested missions.





# **Supervise and Direct Work Assignments**

# \*Supervise and manage assigned and unassigned UAS resources.

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Airspace Coordination*, PMS 520; flight risk assessment tool (FRAT); FTP (IAP, maps); COAs; SGIs; *\*\*Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

#### How to accomplish task:

- Establish and communicate objectives, priorities, work assignments, and performance expectations.
- Adjust assignments based on changing information and evolving situational awareness.
- Develop and implement contingency plans.
- Communicate changing conditions to all resources.
- Establish and maintain relationships.
- Coordinate assigned module schedules, including the following:
  - Pilot duty day
  - Work to rest ratio
  - Hours of operation
- Coordinate the following for unassigned UAS resources:
  - Scope of work
  - Hours of operation
  - Area of operation

# Model leadership values and principles.

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; FTP (IAP, maps); \*\**Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

- Take charge of assigned resources.
  - Provide leader's intent.
  - Establish a chain of command and ensure subordinates understand who is in charge.
- Ensure coordination of unassigned UAS resources.
  - Facilitate access to emergency response areas.
  - Promote open communication.
- Assess the situation by gaining incident intelligence.
  - Conduct a thorough sizeup of the situation before engaging in operations.
  - Motivate UAS resources with a "can do safely" attitude.
    - Follow and enforce safety guidelines.
    - Share information.
    - Make it clear to your crew, "If you see something, say something!"
- Demonstrate initiative by taking action in the absence of orders.
  - Build a plan with contingency actions and trigger points to mitigate safety concerns.



- Manage personnel issues as they occur.
  - Ensure issues requiring corrective action are reported via the chain of command.
    - Ensure adequate documentation is completed.
  - Provide support to all module crew members.
  - Provide leadership and guidance for a professional workplace.
  - Answer questions.
  - Assist with problem solving.
  - Provide team-building opportunities.
- Provide developmental opportunities for trainees and record them in the PTB.
- Monitor well-being.
  - Monitor for signs and symptoms of stress, fatigue, illness, or injury. Mitigate appropriately.

# Perform Unmanned Aircraft Systems, Module Leader-Specific Duties

# \*Coordinate assigned UAS resources based on operational and data objectives.

When to start task: Upon receipt of a new flight request and throughout the assignment.

**Resources to complete task:** *NWCG Standards for Aerial Ignition*, PMS 501; *NWCG Standards for Aerial Supervision*, PMS 505; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; applicable manuals (aircraft, payload); FTP (IAP, maps); applicable VFR sectional; \*\**Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

### How to accomplish task:

- Receive and/or attend briefings with the supervisor on UAS missions.
- Brief subordinates on the UAS mission.
- Determine appropriate UAS module for the mission, considering the following:
  - Aircraft
  - Payload
  - Support equipment
  - Logistics
- Support logistical needs for UAS resources and use established ordering procedures.
- Coordinate flight operations to include extended operations, swing shifts, and early shifts as needed.
  - Discuss future operations (e.g., 24 hours out, 48 hours out, 72 hours out, 96 hours out).

# \*Engage with unassigned UAS resources based on requested missions.

When to start task: Upon receipt of a new request and throughout the assignment.

**Resources to complete task:** *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Airspace Coordination*, PMS 520; FTP (IAP, maps); SGI; COA.

### How to accomplish task:

- Educate unassigned UAS resources on proper documentation, such as the following:
  - *NWCG Standards for Airspace Coordination*, PMS 520
  - o SGI
- Verify the following information for unassigned UAS resources:
  - o Scope of work
  - $\circ$  Hours of operation
  - Area of operation
- Establish communication protocols/procedures.

# \*Ensure appropriate airspace authorizations are in place.

When to start task: Upon receipt of a new flight request and throughout the assignment.



**Resources to complete task:** *NWCG Standards for Airspace Coordination*, PMS 520; *Hazard Relief Participant Request Form*, PMS 520-1; MASP; PASP; 14 CFR Part 89 — Remote Identification of Unmanned Aircraft; 14 CFR Part 91 — General Operating and Flight Rules; 14 CFR Part 107 — Small Unmanned Aircraft Systems; applicable VFR sectional; agency-specific COA; LAANC; SGI.

# How to accomplish task:

- Ensure adherence to all policy and regulations applicable to UAS usage.
  - o FAA
  - o DOI
    - PASP
  - United States Forest Service (USFS)
    - MASP
  - State and local
- Verify airspace authorizations and provisions.
  - o 14 CFR Part 107
  - o 14 CFR Part 107 with waiver
  - Agency-specific COA
  - SGI waiver
    - Validate SGIs and associated COAs.
      - ✤ Aircraft
      - ✤ Pilot
      - Timeframe and duration
  - TFR as required.
    - Validate timeframe and dimensions.
    - Request adjustment as required via Incident Management Team (IMT), AOBD, or designee.
  - o Coordinate with Air Operations/Aerial Supervision.

# Verify safe travel to and from the area of operations for UAS resources.

When to start task: Upon new flight assignments and throughout the assignment.

**Resources to complete task:** *IRPG*; FTP (IAP, maps); travel directions to fireline from supervisor or other resources on the incident.

# How to accomplish task:

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- Ensure transportation needs are met.
  - Consider travel times and routes, including the following:
    - o Identification of ingress and egress routes
    - Bridge and road limits
    - Equipment weight and length
    - Weather effects
    - $\circ$  Turnouts/turnarounds
    - Parking areas
    - Safety zones
- Consider communication and accountability procedures, including the following:
  - Check-in and check-out
  - Line overhead notifications



# Confirm Launch and Recovery Zone (LRZ), if applicable.

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Interagency Incident Business Management*, PMS 902; FTP (IAP, maps); EGP.

#### How to accomplish task:

- Ensure LRZ location is depicted on incident aviation maps.
- Assist with proper documentation and procedure for Land Use Agreements.

# \*Provide oversight of assigned and unassigned UAS resources.

### When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *NWCG Standards for Aerial Supervision*, PMS 505; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Airspace Coordination*, PMS 520; *NWCG Standards for Interagency Incident Business Management*, PMS 902; applicable manuals (aircraft, payload); FTA protocol; FTP (IAP, maps); flight organizer; SGI waiver (FAA's System Operations Support Center); flight service; LAANC; NOTAMs; UASFM; agency-specific standards for UAS operations (e.g., \*\*DOI Use of Unmanned Aircraft Systems (UAS), OPM 11; \*\*Forest Service Standards for UAS Operations).

- Ensure safety of UAS operations.
  - Verify mission profile aligns with mission objectives and airspace authorizations.
  - Adhere to FTA protocol.
  - Monitor UAS work area, including the following:
    - Proximity to virtual fences
    - Appropriate altitude
    - Proximity to other participating aircraft
  - Monitor flight profile, including the following:
    - Flight maneuvers
    - Efficiency of flight
    - Aircraft telemetry
    - Weather considerations
    - Aircraft capabilities
- Ensure adherence to appropriate communication, coordination, and deconfliction protocols, including the following:
  - Aerial supervision
  - On-scene aircraft
  - o Helibase
  - o Dispatch
  - Operations personnel
- Monitor performance and provide immediate and regular feedback to assigned and unassigned UAS resources.

#### 

# \*Engage with the Incident Management Team (IMT).

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; *NWCG Standards for Aerial Supervision*, PMS 505; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Airspace Coordination*, PMS 520; applicable manuals (aircraft, payload); FTA protocol; FTP (IAP, maps); \*\*Interagency Unmanned Aircraft System (UAS) Program, UAS Support.

- Attend daily aviation, operations, and planning meetings/briefings.
- Identify and discuss the following with the IMT:
  - Operational priorities
  - Mission requests
  - Questions
  - o Concerns
  - Challenges
- Engage with the following, if applicable:
  - o Air Operations
    - AOBD
    - ASGS
    - Helibase Manager
  - Operations
    - OSC
    - Division/Group Supervisor (DIVS)
  - Planning
    - Planning Section Chief (PSC)
    - Situation Unit Leader (SITL)
    - Resources Unit Leader (RESL)
  - Aerial supervisor
  - Local unit aviation manager
  - Local dispatch center as needed

# **Communicate and Coordinate**

# \*Communicate using plain language and Incident Command System (ICS) terminology.

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; FTP (IAP, maps); radio programming guides; \*\**Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

## How to accomplish task:

- Obtain and verify frequencies being utilized for incident/project.
  - Review the Communications Plan.
  - Receive clone for radio and program frequencies into appropriate channels, ensuring numbers/alphanumeric are correct.
- Utilize radios to communicate with your own and adjoining/assigned resources.
  - Contact UAS resources using portable or handheld radios on appropriate frequencies, using proper radio etiquette.
  - Communicate with other resources using clear text. Be brief.
  - In the event of an emergency, always clear the appropriate channel for emergency traffic to report an incident within an incident.

# \*Ensure clear understanding of expectations and timely communication within the chain of command.

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; FTP (IAP, maps).

### How to accomplish task:

- Communicate standards of performance, behavior, and position responsibilities to your subordinates clearly.
- Ensure module debriefings are conducted on a regular basis.
- Provide timely updates on UAS resources' progress throughout the operational period.

# \*Conduct and/or participate in After Action Reviews (AARs).

When to start task: Upon the completion of an assignment, shift, or special circumstances.

**Resources to complete task:** *IRPG*; Activity Log (ICS 214); Incident Performance Rating Form (ICS 225 or ICS 225 WF).

- Conduct AARs with the UAS resources and applicable incident personnel.
- Conduct AARs with unassigned UAS resources.
- Provide UAS flight summary and other related data to support the IMT debrief.
- Conduct performance evaluation on any Unmanned Aircraft System, Manager (UASM), if applicable.
- Provide lessons learned to assist with program and individual development.

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# Manage Risk

# \*Apply the Risk Management Process and Safety Management System (SMS).

When to start task: Throughout the assignment.

**Resources to complete task:** *IRPG*; *NWCG Standards for Aviation Risk Management*, PMS 530; *NWCG Aviation Risk Management Workbook*, PMS 530-1; Medical Plan and Medical Incident Report (ICS 206 WF); SAFECOM; agency-specific risk management tools; *\*\*Interagency Standards for Fire and Fire Aviation Operations* (Red Book).

# How to accomplish task:

- Implement the Risk Management Process in the *IRPG*.
  O Refer to the Aviation User Checklist.
- Implement the NWCG Standards for Aviation Risk Management, PMS 530.
  Refer to the NWCG Aviation Risk Management Workbook, PMS 530-1.
- Account for location, health, safety, and welfare of assigned personnel.
- Monitor personnel for signs and symptoms of fatigue, illness, or injury. Mitigate appropriately.

# \*Plan for and respond to aviation mishaps.

# When to start task: Throughout the assignment.

**Resources to complete task:** *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; SAFECOM; FTP (IAP, maps); MASP; PASP; agency-specific standards for UAS operations (e.g., \*\**DOI Use of Unmanned Aircraft Systems (UAS)*, OPM 11; \*\**Forest Service Standards for UAS Operations*).

- Ensure proper notification procedures are followed, as identified in the *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503.
  - o UAS fly-away
    - Pilot-in-Command (PIC) or designee will clear the affected airspace and suspend air operations in the area.
    - UASM or Unmanned Aircraft Systems Pilot (UASP) will notify and relay pertinent information (i.e., location, altitude, direction, battery life) to aerial supervision, aircraft in the area, and ground personnel, if applicable.
    - If UAS will enter controlled airspace, PIC or designee will notify the controlling agency.
    - PIC or designee will notify flight following contact, AOBD, IC, and/or dispatch as required.
  - UAS mishap/accident
    - PIC or designee will follow *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503.
      - Protect people.
      - Protect property.
      - Preserve evidence.
      - ✤ Notify and investigate.



✤ Recovery operations.

- If applicable, PIC or designee will notify aerial supervision, aircraft in the area, and ground personnel.
- PIC or designee will notify flight following contact, AOBD, IC, and/or dispatch as required.
- Follow additional local mishap reporting procedure.
- Follow additional agency-specific mishap reporting procedure.

#### 

# Document

# \*Complete, authorize, ensure timeliness of, and route required forms and documents.

When to start task: Throughout the assignment.

**Resources to complete task:** *NWCG Standards for Interagency Incident Business Management*, PMS 902; resource orders; Crew Time Report (CTR), SF 261; Incident Time Report, OF 288; Incident Personnel Performance Rating (ICS 225 or ICS 225 WF); General Message (ICS 213); Activity Log (ICS 214); SAFECOM; SAFENET; other documents as assigned; agency/mission-specific forms.

- Ensure proper documentation is completed, including the following:
  - Flight use reporting
  - Incident replacement
  - Incident Personnel Performance Rating (ICS 225 or ICS 225 WF)
  - General Message (ICS 213)
  - Crew Time Report (CTR), SF-261
  - Activity Log (ICS 214)
  - Aviation mishap forms
  - o SAFECOM
  - SAFENET

# Demobilize

# \*Assist in the development and implementation of the demobilization plan for assigned UAS resources.

When to start task: Upon notification of demobilization from the incident.

**Resources to complete task:** *IRPG*; *NWCG Standards for Interagency Incident Business Management*, PMS 902; FTP (IAP, maps); local standard operating procedures (SOPs); Demobilization Check-Out (ICS 221); Incident Personnel Performance Rating Form (ICS 225 or ICS 225 WF); agency-specific policies; agency-specific SOPs; \*\*National Interagency Standards for Resource Mobilization.

### How to accomplish task:

- Communicate with national and geographic UAS coordinators on future needs.
- Brief assigned resources on demobilization procedures and responsibilities.
- Complete Incident Personnel Performance Rating (ICS 225 of ICS 225 WF) for assigned resources.
- Debrief with applicable air and ground resources.
- Ensure completion of demobilization check-out process before being released from the incident.
  O Ensure resources' post assignment tasks are completed.
  - Ensure resources post assignment tasks are completed.
    - Ensure incident and agency demobilization procedures and work/rest driving standards are followed.

# \*Prepare for and implement demobilization.

When to start task: Upon notification of demobilization from the incident.

**Resources to complete task:** *IRPG*; *NWCG Standards for Interagency Incident Business Management*, PMS 902; Demobilization Check-Out (ICS 221); Incident Personnel Performance Rating Form (ICS 225 or ICS 225 WF); resource ordering applications (e.g., IROC); FTP (IAP, maps); local SOPs; *agency-specific SOPs*; *agency-specific policies*; \*\**National Interagency Standards for Resource Mobilization*.

- Communicate with national and geographic UAS coordinators on future needs.
- Brief assigned resources on pending demobilization.
- Obtain Incident Personnel Performance Rating (ICS 225 or ICS 225 WF) from the incident supervisor.
- Arrange and document travel to your home unit or reassignment.
- Assist in transfer of command.
  - Ensure continuity of operations.
  - Exchange critical safety information.
  - Communicate transfer of authority through established chain of command.
- Complete agency finance and time records for approval.
  - Refer to NWCG Standards for Interagency Incident Business Management, PMS 902.
- Complete incident replacement requests in a timely manner and route them appropriately.
- Communicate and coordinate with home unit on travel times and rest and recuperation (R&R).
- Ensure you are released or reassigned from the incident in resource ordering applications (e.g., IROC).

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