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NWCG Incident Position Standards for Unmanned Aircraft Systems, Data Specialist

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The *NWCG Incident Position Standards for Unmanned Aircraft Systems, Data Specialist* establishes national interagency standards for operating as an Unmanned Aircraft Systems, Data Specialist (UASD) 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, Data Specialist Position Page, <https://www.nwcg.gov/positions/unmanned-aircraft-system-data-specialist>, 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 a Unmanned Aircraft Systems, Data Specialist.

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.

Table of Contents

General References	1
Agency-Specific References	2
*Leadership Level 1, Follower (Provide Action)	3
Description	3
Behaviors	3
Knowledge.....	3
Prepare and Mobilize	4
*Ensure individual readiness.....	4
*Gather critical information pertinent to the assignment.	5
*Obtain and assemble incident materials needed for assignment.	5
*Travel to and check in at the assignment.....	6
*Obtain briefing from incident supervisor.	7
Build the Team	8
*Establish a common operating picture.	8
Perform Unmanned Aircraft Systems, Data Specialist-Specific Duties	9
*Determine final data product(s), delivery location, and delivery time/method.....	9
*Coordinate travel to and from the fireline.	9
*Locate the Launch and Recovery Zone (LRZ).....	10
*Establish work area.....	10
*Assist with UAS pre-mission-related activities.....	11
*Assist with UAS pre-flight preparation as needed.	11
*Acquire, store, and manage data, and maintain metadata necessary to facilitate incident UAS operations.	11
*Create intelligence deliverable(s).	12
*Disseminate intelligence products, data, and imagery to incident personnel per established protocols or as necessary for the situation.	12
Communicate and Coordinate.....	14
*Communicate effectively using multichannel radios.	14
*Participate in After Action Reviews (AARs).	14
*Establish communications and exchange necessary briefings/information with relevant team members.	14
Manage Risk.....	16
*Apply the Risk Management Process as stated in the <i>NWCG Incident Response Pocket Guide</i> (<i>IRPG</i>), PMS 461: identify hazards, assess hazards, develop controls and make risk decisions, implement controls, and supervise and evaluate.	16
*Ensure Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are in place.....	16
*Use Look Up, Down, and Around in the <i>NWCG Incident Response Pocket Guide (IRPG)</i> , PMS 461 to help maintain situational awareness and adjust actions accordingly.	16
*Plan for medical emergencies.....	16
*Identify and appropriately act on hazardous situations.	17
*Participate in and respond to mishaps as directed.	17

Document	18
*Manage and provide intelligence deliverables for incident documentation history.....	18
Complete all administrative tasks and documentation in an accurate and timely manner.	18
Demobilize	19
Plan for demobilization, brief assigned resources on demobilization procedures and responsibilities, and ensure incident and agency demobilization procedures and work/rest driving standards are followed.	19
Return equipment and supplies to the appropriate unit.	19
Complete demobilization checkout process before being released from the incident.	19
Upon demobilization, report status to home unit including reassignment or estimated time of arrival (ETA) to home unit.	20
Anticipate demobilization, identify excess resources, coordinate and prepare demobilization schedules, and communicate with the supervisor.	20
*During transfer of command, ensure continuity of operations, exchange critical safety information, and communicate transfer of authority through established chain of command.....	20

General References

- *NWCG Incident Response Pocket Guide (IRPG)*, PMS 461, <https://www.nwcg.gov/publications/pms461>
- *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503, <https://www.nwcg.gov/publications/pms503>
- *NWCG Interagency Helicopter Operations Guide*, PMS 510, <https://www.nwcg.gov/publications/pms510>
- *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515, <https://www.nwcg.gov/publications/pms515>
- *NWCG Standards for Aviation Risk Management*, PMS 530, <https://www.nwcg.gov/publications/pms530>
- *A Preparedness Guide for Wildland Firefighters and Their Families*, PMS 600, <https://www.nwcg.gov/publications/pms600>
- *NWCG Standards for Interagency Incident Business Management*, PMS 902, <https://www.nwcg.gov/publications/pms902>
- *NWCG Standards for Geospatial Operations (GeoOps)*, PMS 936, <https://www.nwcg.gov/publications/pms936>
- *NWCG Geographic Information System Specialist (GISS) Workflow*, PMS 936-1, <https://www.nwcg.gov/publications/pms936-1>
- *NWCG Data Management Strategy*, PMS 940, <https://www.nwcg.gov/publications/pms940>
- Incident Command System (ICS) Forms, <https://www.nwcg.gov/ics-forms>
 - 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, <https://www.nwcg.gov/publications/pms902>
 - Crew Time Report (CTR), SF 261
- Job Aids, <https://www.nwcg.gov/training/job-aids>
 - *PSM-001, How to Correctly Fill Out the Crew Time Report (CTR), SF 261*, J-001
 - *Packing List for Wildland Fireline Personnel*, J-101
 - *Packing List for Wildland Fire Support Staff*, J-102
- Becoming a GISS website, <https://www.nwcg.gov/committee/geospatial-subcommittee/becoming-giss>
- ESRI geospatial mapping software, <https://www.esri.com/en-us/home>
- FireNet, <https://www.firenet.gov/>
- Lookouts, Communications, Escape Routes, and Safety Zones (LCES), <https://www.nwcg.gov/6mfs/operational-engagement/safety-zones-1-lces>
- National Interagency Fire Center (NIFC) ArcGIS Online (AGOL), <https://nifc.maps.arcgis.com/>
- NIFC File Transfer Protocol (FTP) server, <https://ftp.wildfire.gov/>
- NWCG Leadership Toolbox, Tactical Decision Games, <https://www.nwcg.gov/wfldp/toolbox/tdgs>

- RT-130, Wildland Fire Safety Training Annual Refresher (WFSTAR): Radios of Fire, <https://www.nwcg.gov/training-courses/rt-130/communications/com301>
- RT-341, Geographic Information System (GIS) Specialist for Incident Management Annual Refresher, <https://www.wildlandfirelearningportal.net/login/index.php>
- U.S. Forest Service (USFS) Aviation Management Manual, Forest Service Manual 5700, https://www.fs.usda.gov/cgi-bin/Directives/get_dirs/fsm?5700
- U.S. General Services Administration (GSA) Travel Resources, <https://www.gsa.gov/travel>
- Wildland Fire Application Portal — FAMAuth, <https://famauth.wildfire.gov/>
- Wildfire Lessons Learned website, <https://lessons.wildfire.gov/>

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
- ***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/>
 - Data Toolbox
 - Viewshed Workflow
- ***National Interagency Standards for Resource Mobilization*, <https://www.nifc.gov/nicc/logistics/reference-documents>

***Leadership Level 1, Follower (Provide Action)**

Followers have several responsibilities: to become competent in basic job skills, take initiative, learn from others, ask questions, and develop communication skills. For additional information, review the Level 1 description, expected behaviors and knowledge, suggested development goals, and self-study opportunities <https://www.nwcg.gov/committee/leadership-committee/leadership-levels>.

Description

- Leadership development starts the first day of the job.
- Followers function as a team member.
- Part of being a leader is exercising good followership and understanding human dynamics.
- Followership begins the journey of becoming a student of fire.

Behaviors

- Performs entry-level incident management tasks, contributing to team mission accomplishment and performance.
- Takes responsibility for personal actions and decisions, demonstrating the core value of integrity.
- Takes initiative to ensure the mission is accomplished and team performance is improved.
- Practices the five communication responsibilities to develop skill and ensure individual contribution to risk management.
- Interacts with team members, in a positive and constructive manner, to build team cohesion.
- Acts with humility and learns from others to improve technical and leadership skills.
- Asks questions to increase individual knowledge and improve the safety of self and team members.

Knowledge

- Knowledge of the wildland fire leadership values, principles, and traits to inform expectations of their behaviors as a team member.
- Knowledge of leadership concepts including courage, compassion, authenticity, humility, and empathy to inform expectations of their behavior as a team member.
- Knowledge of the risk management process to understand their role in accident prevention and decision making.
- Knowledge of the decision-making process to inform their role in an effective decision process.
- Knowledge of the impacts of cumulative and traumatic stress to assist in ensuring resilience and mental and emotional health.
- Knowledge of the elements of human factors and barriers to situational awareness to understand how human elements can contribute to team performance and fireline safety.
- Knowledge of the value differences of thought and perspective bring to team performance to ensure respectful interactions with team members and to contribute to a positive team culture/command climate.



Prepare and Mobilize

***Ensure individual readiness.**

When to start task: Prior to the assignment.

Resources to complete task: *IRPG; NWCG Standards for Fire Unmanned Aircraft Systems Operations, PMS 515; A Preparedness Guide for Wildland Firefighters and Their Families, PMS 600; NWCG Standards for Geospatial Operations (GeoOps), PMS 936; NWCG Standards for Interagency Incident Business Management, PMS 902; Packing List for Wildland Fireline Personnel, J-101; UASD Data Toolbox; regional and local mobilization guides; **National Interagency Standards for Resource Mobilization; **Interagency Standards for Fire and Fire Aviation Operations (Red Book).*

How to accomplish task:

- Verify your data (e.g., contact information) and status is current in resource ordering applications (e.g., interagency resources ordering capability [IROC]).
- Prepare for a 14-day assignment.
 - For on-site assignments, prepare to be absent from home and family. Refer to *A Preparedness Guide for Wildland Firefighters and Their Families, PMS 600*, and *Packing List for Wildland Fireline Personnel, J-101*.
- Ensure ability to maintain self-sufficiency (e.g., travel payment card).
- Acquire and maintain fireline gear and personal protective equipment (PPE).
- Assemble a UASD kit per the UASD Data Toolbox information. The kit will contain critical items needed to function during the first 48 hours. The kit will be easily transportable and within agency weight limitations. Include the following in your kit:
 - Laptop capable of running GIS and photogrammetry software
 - Computer mouse
 - Power strip and charge cords
 - Relevant cables (e.g., HDMI adapters, USB-C)
 - Mobile phone
 - Software (minimums)
 - Photogrammetry processing software
 - ArcGIS Pro per NWCG standards
 - Full motion video processing capabilities (e.g., image analyst)
 - FTP client aligned with NIFC FTP instructions
 - Google Earth
 - Video editing software (e.g., VLC, iMovie, Adobe Capture)
 - Authenticators (2-factor)
 - Mobile storage device (one terabyte minimum)
 - UASD support equipment
 - Charging cables for battery-operated devices
 - Suggested items
 - Backup power supplies for laptop
 - Sunshade
 - Camp chair
 - Sunscreen/bug spray
 - Foldable table



- Extra portable monitor
 - Starlink
- Ensure/gain access/credentials to the following programs:
 - NIFC AGOL
 - ArcGIS Pro (offline license)
 - National Application Portal (NAP) account for NIFC FTP access and access to relevant Geographic Area Coordination Centers (GACCs)
 - FAMAuth
 - Email(s) (e.g., FireNet)

***Gather critical information pertinent to the assignment.**

When to start task: Upon receipt of resource order.

Resources to complete task: Resource order.

How to accomplish task:

- Coordinate with the Unmanned Aircraft Systems, Manager (UASM)/Unmanned Aircraft Systems, Module Leader (UASL) on incident needs and verify special needs for ordering.
- Acquire and review the following contents of the resource order:
 - Incident/project name
 - Incident/project order number
 - Office reference number (cost code)
 - Descriptive location/response area
 - Legal location (township, range, section)
 - Incident base/phone number
 - Request number
 - Reporting date/time and location (e.g., Incident Command Post [ICP])
- Reference UAS ordering for special instructions and verify they meet the needs of the assignment.

***Obtain and assemble incident materials needed for assignment.**

When to start task: Prior to the assignment.

Resources to complete task: *NWCG Geographic Information System Specialist (GISS) Workflow*, PMS 936-1; National Incident Feature Service (NIFS), NIFC FTP.

How to accomplish task:

- Acquire offline incident-specific base data, including the following:
 - Digital Elevation Model (DEM)
 - NIFS
- Collect basemap information, including the following:
 - Aerial imagery
 - Terrain
 - Topography
- Acquire the incident's operations map.
- Acquire Federal Aviation Administration (FAA) Sectional (GeoTiff).
- Collect other authoritative data sources as needed (e.g., Search and Rescue Common Operating Platform [SARCOP], FAA Aerial Hazards).



***Travel to and check in at the assignment.**

When to start task: Upon receipt of resource order.

Resources to complete task: GSA Travel Resources; Incident Action Plan (IAP); Incident Qualifications Card (Red Card); resource orders; ***National Interagency Standards for Resource Mobilization*.

How to accomplish task:

- Determine travel requirements based on date, time needed, additional support equipment requirements, and location, including the following:
 - Driving standards
 - Lodging
 - Fuel
 - Bathroom breaks
 - Roadside emergency
 - Traffic
 - Weather
- Follow agency-specific travel guidelines.
 - Consider air travel rules.
 - Comply with weight limitations.
 - Refer to Chapter 10 of the ***National Interagency Standards for Resource Mobilization*.
 - Note if your baggage exceeds airline limitations, additional fees may apply.
 - Check bags for hazardous materials.
 - Consider ground travel rules.
 - Follow time limitations/driver duty day limitations.
 - Consider logistical needs (e.g., restrooms, restaurants).
 - Ensure secure transportation of government equipment.
 - Ensure your rental/NERV/AOV/POV is on the resource order if applicable.
- Reference the GSA Travel Resources website for per diem and lodging rates.
- Follow per diem policy if needed.
- Coordinate travel plans with other resources as necessary.
- Confirm travel arrangements and expected time of arrival (ETA) with dispatch.
- 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.
 - Acquire additional gear, as required (e.g., radio, hard drive, sleeping bag, batteries, sunscreen).
 - Ensure radios are cloned.



***Obtain briefing from incident supervisor.**

When to start task: Upon arrival at the incident.

Resources to complete task: *IRPG*; IAP; US Wildfire Activity Web Map from ArcGIS.

How to accomplish task:

- Contact your incident supervisor, who could be one of the following, depending on incident complexity:
 - UASM
 - UASL
 - Air Operations Branch Director (AOBD)
 - Incident Commander (IC)
- Ensure the briefing includes the following information:
 - Chain of command
 - Communication protocols
 - Access to systems (e.g., NIFC FTP, ArcGIS Online [AGOL], FireNet)
 - Relevant points of contact (e.g., GISS, Situation Unit Leader [SITL], Planning Section Chief [PSC])
 - Known issues
 - Priorities
 - Shift start/end times
 - UAS tasking representative(s) (e.g., SITL, Operations Section Chief [OSC], AOBD)
 - Radio frequencies
 - Mission objectives (if not obtained previously) and potential data products
 - Meeting times
- Discuss safety considerations and emergency procedures.
 - Review the IAP(s) for the following information:
 - Incident objectives
 - Leader's intent
 - Incident information
 - Current incident status
 - Incident jurisdiction
 - Operational period(s)



Build the Team

***Establish a common operating picture.**

When to start task: Upon arrival of assigned resources.

Resources to complete task: *IRPG; NWCG Standards for Fire Unmanned Aircraft Systems Operations, PMS 515; IAP; incident maps.*

How to accomplish task:

- Participate in relevant briefings as directed by incident supervisor.
- Review the IAP.
 - Review the incident objectives.
- Receive tasking from incident supervisor and establish the chain of command.
- Determine required meeting/briefing attendance.
- Establish hours of operation.
- Confirm communication protocols/procedures.
- Check in with the SITL.
 - Determine data objectives (e.g., deliverables, timeline).
- Use Crew Resource Management (CRM) principles to maximize the collective skill set of the team.
 - Maintain awareness of the changing responsibilities and expectations throughout the assignment.
 - Apply the seven skills of CRM, including the following:
 1. Decision making
 2. Assertiveness
 3. Mission analysis
 4. Communication
 5. Leadership
 6. Adaptability/flexibility
 7. Situational awareness



Perform Unmanned Aircraft Systems, Data Specialist-Specific Duties

***Determine final data product(s), delivery location, and delivery time/method.**

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

Resources to complete task: *IRPG*; *Interagency Standards for Fire and Fire Aviation Operations* (Red Book); *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; ESRI geospatial mapping software; UASD Data Toolbox.

How to accomplish task:

- Determine the decision being informed by the UAS mission.
- Establish the final product format.
 - Determine product data type (e.g., near real-time information, imagery, spatial data).
 - Establish collection requirements (e.g., ortho imagery, video, light detecting and ranging [LIDAR], vector data, ground control points).
 - Establish sensor needs.
 - Establish processing and software requirements (e.g., ESRI geospatial mapping software, PIX4D software, video editing).
 - Determine final product recipient or viewing audience.
- Establish product delivery timeline and verify feasibility.
- Establish delivery mechanism.
 - Consider physical environment (e.g., internet connectivity, drive time), delivery timeline, and requestor access for individual(s) receiving data.
 - Consider backup delivery method for contingencies.
- Determine possible delivery methods, including the following:
 - Disconnected (e.g., hard drive, thumb drive, direct transfer/nearfield communication such as Bluetooth transfer)
 - Connected (e.g., NIFC FTP, FireNet, AGOL)

***Coordinate travel to and from the fireline.**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; standard operation guidelines (SOGs); resource order; IAP; incident maps and travel plan; travel directions to the fireline from supervisors.

How to accomplish task:

- Consider travel factors pertinent to the UAS assignment, including the following:
 - Fire behavior and expected fire behavior affecting travel
 - Identification of ingress and egress routes
 - Conditions of roads, bridges, and potential obstacles
 - Vehicle capabilities and limitations
 - Equipment weight and length
 - Weather effects



- Operational tempo on roadways
 - Duty day limitations
- Check with the supervisor on standard operating procedures (SOPs) and any special coordination requirements for the assignment, such as the following:
 - One-way, narrow, or hazardous roads
 - Radio notifications or check-in locations before driving on specific roads
 - Equipment operations in the area (e.g., chippers, dozers, logging)
- Assess driving skillsets of module members relative to vehicles and the environment and develop travel plans accordingly. Factors to consider could include the following:
 - Familiarity with large vehicles and trailers
 - Operations in poor visibility or at night
 - Vehicles with radio capabilities

***Locate the Launch and Recovery Zone (LRZ).**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; incident maps; viewshed workflow.

How to accomplish task:

- Coordinate with pilots to create a geospatial analysis to determine possible LRZ locations, as warranted by conditions and aircraft capabilities.
 - Consider aircraft footprint and takeoff as well as landing requirements.
 - Consider aircraft performance, radio communication limitations, and flight duration.
 - Evaluate assignment area.
 - Identify aerial hazards.
 - Implement LCES.
 - Assess property ownership.
 - Review airspace considerations, temporary flight restriction (TFR) heights, and spatial situations.
- Assist with scouting locations and provide relevant data/map products.
- Communicate LRZ locations to appropriate personnel (e.g., AOB, Division/Group Supervisor [DIVS], SITL).
- Maintain and update UAS LRZ locations as needed.

***Establish work area.**

When to start task: At the start of each mission.

Resources to complete task: *IRPG*; LCES; UASD Data Toolbox.

How to accomplish task:

- Locate suitable area (i.e., with a power source) away from environmental hazards and distractions.
- Set up equipment (e.g., table, extra monitor, power supply).
- Ensure sufficient communications with air crew.
- Maintain connectivity in different work environments (e.g., Team Awareness Kit [TAK]).



***Assist with UAS pre-mission-related activities.**

When to start task: At the start of each mission.

Resources to complete task: *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Geospatial Operations*, PMS 936; NIFC AGOL; NIFC FTP; Object Distance Spreadsheet (ODS) in the UASD Data Toolbox.

How to accomplish task:

- Create a geographic coordinate system (GCS) and/or sensor maps and provide air crew with incident data (e.g., fire perimeter, drop points, helispots, aerial hazards) following the *NWCG Standards for Geospatial Operations*, PMS 936.
- Provide guidance to aircrew on data collection best practices to meet production requirements (e.g., camera and sensor specifications, flight profile, gimbal operation).
 - Reference NIFC UASD Toolbox.

***Assist with UAS pre-flight preparation as needed.**

When to start task: At the start of each mission.

Resources to complete task: *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; UASD Data Toolbox.

How to accomplish task:

- Coordinate with aircrew on needs and roles, including the following:
 - Preparing the LRZ and the aircraft, as requested
 - Acting as a visual observer (VO)
 - Charging batteries
 - Fueling generator(s)
 - Handling emergency or mishap responsibilities
- Monitor the radio.
- Ensure flight data management plan is established, including the following:
 - Formatting and clearing secure digital (SD) cards
 - Establishing connectivity to GCS storage location
 - Providing aircrew with necessary data and maps for flight

***Acquire, store, and manage data, and maintain metadata necessary to facilitate incident UAS operations.**

When to start task: When preparing for and during a flight.

Resources to complete task: *NWCG Standards for Geospatial Operations (GeoOps)*, PMS 936; *NWCG Data Management Strategy*, PMS 940; UAS Incident Data Structure Reference in the UASD Data Toolbox.

How to accomplish task:

- Receive raw data and provide feedback on data quality (i.e., quality assurance/quality control [QA/QC]).
 - Verify telemetry data.
 - Ensure appropriate gimbal angle.
 - Verify image alignment/overlap.



- Check sensor settings.
 - Ensure gimbal stabilization.
 - Review flight profile.
 - Assess environmental conditions (e.g., shadows, thermal crossover).
- Execute established data management plan.
 - Follow the established folder structure from the UAS Incident Data Structure Reference document, including separate sensor data organization.
 - Utilize the established naming convention protocol.
 - Provide metadata when necessary.

***Create intelligence deliverable(s).**

When to start task: Throughout the assignment.

Resources to complete task: *NWCG Standards for Geospatial Operations (GeoOps)*, PMS 936; UASD Data Toolbox.

How to accomplish task:

- Use the appropriate software to process and analyze UAS data.
 - Digitize points/lines/polygons.
 - Create slides from imagery and vector data.
 - Clip video segments.
 - Update the NIFS.
 - Generate orthomosaic imagery.
- Facilitate conversion of data to information.
 - Provide context of data to fire situation and how it relates to decision making.
 - Communicate with site leadership to ensure context is conveyed.
 - Ensure amplifying information is incorporated into the following:
 - Attribution
 - Feature-level metadata (e.g., what, where, when)
- Follow *NWCG Standards for Geospatial Operations (GeoOps)*, PMS 936 standards when appropriate.
- Ensure intelligence deliverable(s) are named and organized appropriately.
- Develop documentation of data/products as necessary.

***Disseminate intelligence products, data, and imagery to incident personnel per established protocols or as necessary for the situation.**

When to start task: Throughout the assignment.

Resources to complete task: *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; *NWCG Standards for Geospatial Operations (GeoOps)*, PMS 936; UASD Data Toolbox.

How to accomplish task:

- Use protocol established for the situation to disseminate intelligence products, data, and imagery to incident personnel.
 - Upload data/maps to the NIFC FTP site.
 - Update NIFS.
 - Upload products to appropriate hard drive(s).
 - Stream video feed.



- Provide demonstrations, explanations, and guidance for appropriate use of data/products to incident personnel.
 - Interface with product requestor(s).
 - Handle follow-on activities.
 - Have hardware/software available to view the deliverable(s).
 - Provide spatial reference on map for location as necessary.
- Follow up with recipient(s) on suitability and make refinements as necessary.



Communicate and Coordinate

***Communicate effectively using multichannel radios.**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; IAP; RT-130, WFSTAR: Radios of Fire.

How to accomplish task:

- Prepare and program radios for assignment.
- Use plain language (e.g., no ten codes) and ICS terminology when communicating via radio.
- Familiarize yourself with incident frequencies.

***Participate in After Action Reviews (AARs).**

When to start task: Upon completion of a significant event or at the end of the day.

Resources to complete task: *IRPG*.

How to accomplish task:

- Participate in AARs with the UAS module and applicable incident personnel.
- Debrief with Incident Management Team (IMT) personnel.
- Provide lessons learned to assist program and individual development.
- Document lessons learned within the UAS module for future reference.
- Determine any needed corrective actions.

***Establish communications and exchange necessary briefings/information with relevant team members.**

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 Aviation Risk Management*, PMS 530; UASD Data Toolbox; aircraft and sensor specification sheets; manufacturer website(s).

How to accomplish task:

- Maintain situational awareness.
- Exchange technical information with operations and planning incident staff.
 - Discuss aircraft sensor capabilities and limitations.
 - Discuss appropriate use of data products.
 - Discuss data delivery options.
- Check in with the SITL and GISS to establish a data management plan.
 - Standardize structure.
 - Set timelines for submitting data.
 - Determine delivery methods.
 - Coordinate data lifecycle.
- Brief incoming UASD personnel.
 - Brief incoming UASD personnel on mission objectives, GIS workflows, and daily routines.



- Note any abnormalities in UASD workflows, including the following:
 - GIS processes
 - Imagery analysis
 - Sensor collection
- Transfer UASD folder structure.

Manage Risk

***Apply the Risk Management Process as stated in the *NWCG Incident Response Pocket Guide (IRPG)*, PMS 461: identify hazards, assess hazards, develop controls and make risk decisions, implement controls, and supervise and evaluate.**

When to start task: At the beginning of and throughout the assignment.

Resources to complete task: *IRPG*; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; Wildfire Lessons Learned website; NWCG Leadership Toolbox, Tactical Decision Games.

How to accomplish task:

- Refer to the Risk Management Process section of the *IRPG* to use as a checklist.
- Refer to the Aviation Watch Out Situations section of the *IRPG* for more information.
- Utilize learning opportunities and resources to build knowledge on risk mitigation through use cases and lessons learned.
- Act as instructed by supervision in the event of a mishap or accident.

***Ensure Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are in place.**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; IAP.

How to accomplish task:

- Post lookouts, maintain communications, and establish escape routes and safety zones.
- Ensure all firefighters are aware of these before operations begin.

***Use Look Up, Down, and Around in the *NWCG Incident Response Pocket Guide (IRPG)*, PMS 461 to help maintain situational awareness and adjust actions accordingly.**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; IAP.

How to accomplish task:

- Refer to the following sections in the *IRPG*:
 - Look Up, Down, and Around
 - Human Factor Barriers to Situation Awareness
 - Fire Assessment Process

***Plan for medical emergencies.**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; Medical Plan and Medical Incident Report (ICS 206 WF); IAP.

How to accomplish task:

- Refer to the Planning for Medical Emergencies section, Emergency Medical Care section, and Medical Incident Report in the *IRPG*, medical emergency procedures in the IAP, or other relevant guidelines.

***Identify and appropriately act on hazardous situations.**

When to start task: Throughout the assignment.

Resources to complete task: *IRPG*; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; IAP; incident maps.

How to accomplish task:

- Recognize, acknowledge, and plan for known hazards during assignment, mission, and flight preparation.
- Utilize principles of CRM and aeronautical decision making (ADM) to recognize emerging dangers or potentially hazardous situations.
- Mitigate hazards through decisive, immediate, and suitable actions to protect life, limb, and property.

***Participate in and respond to mishaps as directed.**

When to start task: Following a significant event.

Resources to complete task: *IRPG*; *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *NWCG Standards for Fire Unmanned Aircraft Systems Operations*, PMS 515; Incident Within an Incident (IWI) Plan; IAP.

How to accomplish task:

- Ensure roles and responsibilities are discussed and the situation is elevated to the appropriate program leadership in the event of an accident or mishap.
- Participate as directed in mishap/accident response.
 - Elect a point of contact (POC) or designee to follow *NWCG Aviation Mishap Response Guide and Checklist Priority of Actions*, PMS 503.
 - Protect people.
 - Protect property.
 - Preserve evidence.
 - Notify and investigate.
 - Conduct recovery operations.
 - Notify aerial supervision, aircraft in the area, and ground personnel (to be completed by the POC or designee if applicable).
 - Notify flight following contact, AOBD, IC, and/or dispatch as required (to be completed by the POC or designee).
- Follow the procedures in the IWI Plan.
- Follow additional local mishap reporting procedures.
- Follow additional agency-specific mishap reporting procedures.
- Maintain the UAS data chain of custody and integrity.
 - Secure data and reach out to the Safety Officer (SOF).

Document

***Manage and provide intelligence deliverables for incident documentation history.**

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

Resources to complete task: *NWCG Standards for Geospatial Operations (GeoOps)*, PMS 936; UASD Data Toolbox.

How to accomplish task:

- Document a fire record.
 - Deliver data, including the following:
 - Vector data
 - Processed video
 - Contextual slides and images
 - Imagery
 - Map products
 - Interpretation logs
 - Ensure use of appropriate file naming and folder structure conventions per the UASD Data Toolbox.
 - Brief the SITL, GISS, and/or Documentation Unit Leader (DOCL) as appropriate.

Complete all administrative tasks and documentation in an accurate and timely manner.

When to start task: Throughout the assignment.

Resources to complete task: *NWCG Aviation Mishap Response Guide and Checklist*, PMS 503; *Interagency Standards for Fire and Fire Aviation Operations* (Red Book) ; General Message (ICS 213); Activity Log (ICS 214); Incident Personnel Performance Rating (ICS 225 or ICS 225 WF); Crew Time Report (CTR), SF-261; USFS Aviation Management Manual, Forest Service Manual 5700; local or agency policies; ***Department of the Interior (DOI) Use of Unmanned Aircraft Systems (UAS)*, OPM 11.

How to accomplish task:

- Follow form's completion steps as outlined by the agency, instructions provided with the form, and/or specific instructions provided by the IMT for the assignment.
 - Ensure proper documentation is completed, including the following:
 - General Message (ICS 213)
 - Activity Log (ICS 214)
 - Crew Time Report (CTR), SF 261
 - Aviation safety reporting as necessary (e.g., SAFECOM, Aviation Safety Reporting System [ASRS])
 - SAFENET

Demobilize

Plan for demobilization, brief assigned resources on demobilization procedures and responsibilities, and ensure incident and agency demobilization procedures and work/rest driving standards are followed.

When to start task: At the end of the assignment.

Resources to complete task: *NWCG Standards for Helicopter Operations*, PMS 510; IAP; incident demobilization SOPs; ***Interagency Standards for Fire and Fire Aviation Operations* (Red Book); ***National Agency Standards for Resource Mobilization*.

How to accomplish task:

- Watch the bulletin board for demobilization information and list.
- Check with the Planning Section for current demobilization information.
- Attend Operational Period Briefings.
- Determine the demobilization process.
- Communicate new information to module members (e.g., new assignments, travel plans).

Return equipment and supplies to the appropriate unit.

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

Resources to complete task: IAP; incident demobilization SOPs; agency-specific SOPs.

How to accomplish task:

- Return equipment and supplies to the appropriate unit(s).
- Resupply property and supplies lost, damaged, or consumed on the incident.
- Obtain resupply from the Supply Unit at the incident, local cache, or other sources at the home unit.

Complete demobilization checkout process before being released from the incident.

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

Resources to complete task: IAP; incident demobilization SOPs; agency-specific SOPs.

How to accomplish task:

- Check out with the Planning Section.
- Submit the Demobilization Check-Out (ICS 221) to the Demobilization Unit.
- Perform proper resupply actions and restock property and supplies lost, damaged, or consumed on incident.
 - Obtain supplies from the Supply Unit at the incident, local cache, or from other sources at the home unit.
- Ensure drivers are rested and vehicles are in proper working order.
- Provide/schedule rest stops.

Upon demobilization, report status to home unit including reassignment or estimated time of arrival (ETA) to home unit.

When to start task: At the end of the assignment.

Resources to complete task: IAP; incident demobilization SOPs; agency-specific SOPs.

How to accomplish task:

- Contact dispatch, duty officer, and/or appropriate supervisor to relay travel plans and estimated timing.
- Coordinate with the appropriate GACC when outside of the home area.
- Check in with dispatch, duty officer, or appropriate supervisor upon returning to home unit.

Anticipate demobilization, identify excess resources, coordinate and prepare demobilization schedules, and communicate with the supervisor.

When to start task: Throughout the assignment.

Resources to complete task: IAP; incident demobilization SOPs; agency-specific SOPs.

How to accomplish task:

- Determine if UAS is required beyond the scheduled demobilization date.
- Coordinate a replacement with local and national coordinators as required.
- Coordinate a plan for seamless UAS coverage during the transition period if a replacement is inbound, including the following considerations:
 - Ensure timing of arrival and departures for overlapping shifts to facilitate handover.
 - Coordinate any equipment requirements, including what is being taken by the departing remote pilots (RPs), what is arriving with the incoming RPs, and what might be needed for continued operations.
 - Coordinate any equipment or other logistical concerns with the IMT or local unit, such as ordering generators, utility terrain vehicles (UTVs), fuel, hand tools, and fuses.

***During transfer of command, ensure continuity of operations, exchange critical safety information, and communicate transfer of authority through established chain of command.**

When to start task: At the end of the assignment.

Resources to complete task: *NWCG Standards for Helicopter Operations*, PMS 510; IAP; incident demobilization SOPs.

How to accomplish task:

- Perform transfer duties to incoming UASD personnel.
 - Explain mission objective(s), decision(s) being informed, and final data product requirements.
 - Provide communication information, including radio frequencies, phone numbers, email addresses, and any established communications procedures.
 - Point out any hazards to UAS operations or the incoming resources, and relay expected weather, fire behavior, or aviation activity.
 - Relay any lessons learned or best practices for the assignment and mission.
 - Perform data handover and management to ensure continuity of the UAS mission.

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