



**USDA Forest Service
DOI OAS**



IMCS

Special Use Mission – Airplane Interagency Mission Certification Standards

October 2024

Availability

This IMCS is available for download at <https://www.fs.usda.gov/managing-land/fire/aviation/publications> and <https://www.doi.gov/aviation/library>. Please send comments regarding this document to the USFS National FW Inspector Pilot and/or the DOI National Fixed Wing Specialist.

Material in this IMCS will be effective September 1, 2024. The 2012 (Revision 2.0) Interagency Airplane Pilot Practical Test Standards will be obsolete as of this date for Special Use Mission pilot applicants.

Foreword

The US Forest Service and DOI Office of Aviation Services (hereafter Interagency) have published the Interagency Mission Certification Standards (IMCS) document to communicate the aeronautical knowledge, risk management, and flight proficiency standards for fixed-wing Special Use Mission pilot certification. This IMCS incorporates and supersedes the 2012 Revision 2.0 Interagency Airplane Pilot Practical Test Standards.

The IMCS is the foundation of the transition to a more integrated and systematic approach to Special Use Mission airman certification. The IMCS is part of the Safety Management System (SMS) framework that the Interagency uses to mitigate risks associated with Special Use Mission airman certification training and testing. Specifically, the IMCS and associated guidance are constructed around the four functional components of an SMS:

- Safety Policy that defines and describes aeronautical knowledge, flight proficiency, and risk management as integrated components of the airman certification system;
- Safety Risk Management processes through which both internal and external stakeholders identify changes in policy, safety recommendations, or other factors. These changes are then evaluated to determine whether they require modification of airman testing and training materials;
- Safety Assurance processes to ensure the prompt and appropriate incorporation of changes arising from new regulations and safety recommendations; and
- Safety Promotion in the form of ongoing engagement with both external stakeholders (e.g., aviation vendors) and Interagency policy divisions.

The Interagency has developed this IMCS and its associated guidance in collaboration with a diverse group of aviation experts. The goal is to drive a systematic approach to all components of the Special Use Mission airman certification system. The Interagency acknowledges and appreciates the many hours that these aviation experts have contributed toward this goal. This level of collaboration, a hallmark of a robust safety culture, strengthens and enhances aviation safety at every level of the certification system.

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Revision History

Date	Change	Summary of Changes
September 2024	0	Initial Release

INTRODUCTION

Interagency Mission Certification Standards Concept

The U.S. Forest Service (USFS) and the U.S. Department of the Interior (DOI) have partnered to establish this interagency standard for airplane operations that go beyond the scope of the Federal Aviation Administration (FAA). Hereafter, USFS and the DOI will be referred to as the Government.

Some Government flight operations are deemed 'special use missions' and require pilot knowledge and skills not covered by the FAA Airman Certification Standards (ACS). The *Interagency Mission Certification Standards* (IMCS) supplements the FAA ACS. The IMCS establishes the additional pilot knowledge and skills that are required for specific mission pilot qualifications. This IMCS is applicable to Government (fleet or agency) pilots and contract pilots working for the Government. Hereafter, Government pilots and contract pilots will simply be referred to as pilots.

The Interagency Mission Certification Standards (IMCS) is similar in construct to the methodology found in the FAA ACS. This document identifies and establishes the additional pilot knowledge, risk management, and skills that are expected for each specific interagency airplane pilot qualification.

For example, in **Area of Operation** "Preflight", **Tasks** such as "Records, Certificates, and Documents" (Task A), the applicant should be prepared for questions on all or any of the **knowledge, risk management** and **skills** in that task.

The IMCS is a dynamic document to be reviewed and updated as needed. Please forward suggested changes to USFS National FW Inspector Pilot and/or the DOI National Fixed Wing Specialist. When changes occur, the document's revision history log will reflect an updated version number, date, and change description.

Notice to the Applicant

The tasks in the IMCS require Knowledge, Risk Management, and Skills beyond FAA certification. It is expected that applicants procure training for any desired pilot authorization listed in the IMCS prior to attempting an evaluation by an interagency approved inspector pilot. The applicant is expected to:

1. Execute procedures and maneuvers within the aircraft's performance capabilities and limitations including the use of the aircraft's equipment and systems.
2. Execute emergency procedures and maneuvers appropriate to the aircraft and the POH/AFM.
3. Pilot the aircraft with smoothness and accuracy.
4. Exercise good judgment.
5. Apply aeronautical knowledge.
6. Show that the pilot is master of the aircraft with the successful outcome of a procedure or maneuver never seriously in doubt.

Special Mission Evaluator Responsibilities

The special mission TRAINER / COACH is responsible for training the applicant to meet the established standards for knowledge, risk management, and skill elements in all Tasks appropriate to the special use mission authorization sought. The TRAINER / COACH should use this IMCS and its references as part of preparing the applicant to take the evaluation and, if necessary, in retraining the applicant to proficiency in all subject(s) areas which were shown to be deficient by the EVALUATOR / FINAL EVALUATOR / INSPECTOR.

Instructions to the Inspector Pilot and Special Mission Final Evaluator

The specific tasks necessary for completion of an interagency pilot authorization signoff are found in the IMCS Authorization Table. Each task called for in the table for the desired pilot authorization shall be completed fully. The inspector pilot may combine tasks when appropriate. During the flight evaluation, the pilot is expected to perform all maneuvers to the full standards established by the FAA ACS appropriate to the pilot license and/or the IMCS even if a particular maneuver was not specifically requested by the inspector pilot.

Example: During the evaluation while flying to a location to do low level operation, the pilot is expected to meet the tolerances identified in the FAA ACS for straight and level flight, climbs, turns, and descents.

The IMCS evaluation flight is not meant to duplicate an FAA evaluation flight such as 14 CFR Parts 61.57, 135.293, or 137.19. Historically, however, it has been found that some applicants did not meet basic commercial pilot proficiency standards despite having current FAA flight evaluations. The inspector pilot is not expected to accept that a pilot is proficient simply based on a paperwork presentation. The inspector pilot shall ask the pilot to demonstrate required IMCS tasks.

It should be noted that if the inspector pilot identifies deficiencies in airmanship or knowledge, risk, or skill areas covered by the FAA ACS (not directly addressed in the mission evaluation) that could adversely affect contract performance, it will be at the inspector's discretion to further explore those areas and/or terminate the evaluation.

Each pilot, whether contract or Government pilot, shall be approved for Government use by an appropriate fixed wing inspector pilot. The following administrative procedures will be followed:

Records and Documents

Inspector pilots are required to know record and document requirements defined in vendor contracts or agency policy.

Before commencing the evaluation, Inspector pilots shall have applicants read and sign the purpose and PIC statement on the bottom of the Special Mission Gradesheet.

The applicant is required to produce records and documents in accordance with their contract or agency policy to show that he/she meets the requirements under which he/she will be approved. These may include but not be limited to:

1. Valid commercial or airline transport pilot certificate with appropriate ratings.
2. Current Class I or Class II medical certificate, as required.
3. Current pilot logbook, military flight records, and/or other acceptable documentation of pilot experience.
4. Copy of the following, as applicable:
 - a. Current 14 CFR Part 135, "Airman Competency/Proficiency Check" (FAA 8410-3) or FAA-approved equivalent form. (Required for all vendor pilots, except USFS National Pilot Services Contractors and SEATs.)
 - b. Current 14 CFR Part 61.57 and 61.58, "Proficiency Check." For pilots of aircraft requiring more than one pilot flight crewmember. Not applicable to pilots approved under 14 CFR 121, 135, or 137.
 - c. Current 14 CFR Part 137, "Competency Endorsement" if applicable.

Special Emphasis Areas

Inspectors shall place special emphasis upon areas of aircraft operation considered critical to flight safety. Among these are:

1. Cooperation, professionalism, and positive attitude toward aviation safety.
2. Risk assessment and risk management.
3. Crew resource management.
4. Checklist usage.

Although these areas may not be specifically addressed under each Task, they are essential to flight safety and will be evaluated during the practical test. In all instances, the applicant's actions will relate to the **complete** situation.

Use of Checklists

Throughout the flight evaluation, the applicant is graded on the use of an appropriate checklist. Proper use is dependent on the specific Task being evaluated. The situation may be such that the use of the checklist while accomplishing elements of an Objective would be either unsafe or impractical, especially in a single pilot operation. In this case, a review of the checklist after the elements have been accomplished would be appropriate. Division of attention and proper visual scanning should be considered when using a checklist.

Satisfactory Performance

Satisfactory performance to meet the requirements for authorization is based on the applicant's ability to safely:

1. Perform the Tasks specified in the Areas of Operation for the authorization(s) sought.
2. Meet the specifications within the contract or policy as appropriate.

A pilot qualification card will be issued after satisfactory performance has been demonstrated.

Unsatisfactory Performance

When the pilot applicant does not meet the standard, or in the judgement of a qualified airplane inspector the evaluation was unsatisfactory, the practical test is failed. The inspector pilot will not issue an airplane pilot qualification card or agency designation. After the inspector informs the applicant, they will then/also inform (as applicable) the USFS National Fixed Wing Inspector Pilot or the OAS National Fixed Wing Specialist, pilot supervisor / employer, and contracting officer representative. Refer to the contract and/or agency policy for next steps. If a subsequent evaluation is administered, the inspector will at a minimum evaluate those tasks that were determined to be unsatisfactory. Additional Tasks may be evaluated at the discretion of the inspector.

Key Position Definitions

NWCG Glossary

Trainer / Coach	A position-qualified individual who provides instruction to a trainee in the classroom, on-the-job, or on an incident. While many of the requirements of the trainer/coach are similar to the evaluator, it is important that the roles of training and evaluation remain separate.
Evaluator	The individual who is qualified in the position being evaluated, or supervises the position being evaluated, having responsibility for observing task(s) being performed and documenting successful performance for agency certification or re-certification. Evaluator responsibilities must remain separate from the individual assigned as Trainer / Coach.
Final Evaluator	The individual responsible for completing the position task book's verification statement once all tasks in the position task book have been completed and signed off. Only the evaluator on the final position performance assignment (the

assignment in which all remaining tasks have been evaluated and signed off) will complete the verification statement recommending certification

Forest Service FSM 5705.1 Definitions

Instructor Pilot (IP)	A pilot designated by the Agency to instruct other agency pilots. Instructor pilots are authorized to conduct aircraft-specific equipment evaluations, except for initial type ratings.
Inspector Pilot	An agency pilot that is designated to inspect contract and cooperator pilots. Refer to FSH 5709.16, chapter 50.

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Task Table

IMCS Areas of Operation	INTERAGENCY AIRPLANE PILOT TASK TABLE											
	Pilot/Special Use Mission Authorization Sought											
	Air Attack	Airtanker	Leadplane	Smokejumper	Scooper	IAA	Reconnaissance	Point-to-Point	Forest Health	Backcountry Airstrip	Special Takeoff & Ldg	Ski Plane
I	ALL	ALL	ALL	ALL	ALL	ALL	A,C,D,E,F,G	A,E,F,G	A,C,D,E,F	A,C,E,F,G	A,C,D,E,F,G	A,C,D,E,F,G
II	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	ALL	A	ALL	ALL	A	A	ALL	NONE	ALL	ALL	ALL	ALL
IV	NONE	ALL	ALL	ALL	ALL	NONE	NONE	NONE	NONE	ALL	ALL	ALL
V	NONE	ALL	ALL	ALL	ALL	NONE	NONE	NONE	NONE	NONE	NONE	NONE
VI	ALL	ALL	ALL	ALL	ALL	A	NONE	NONE	NONE	NONE	NONE	NONE
VII	ALL	NONE	NONE	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE	NONE
VIII	NONE	ALL	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE	NONE	NONE
IX	NONE	NONE	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
XI	NONE	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
XII	NONE	NONE	NONE	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE	NONE
XIII	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	ALL	NONE	NONE
XIV	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	A,B,C	D,E,F
XV	NONE	NONE	NONE	NONE	NONE	NONE	ALL	NONE	NONE	NONE	NONE	NONE
XVI	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	ALL	NONE	NONE	NONE
XVII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	B	ALL	ALL	ALL	ALL
XVIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

I. Preflight

Task	A. Records, Certificates, and Documents
References	Vendor Contract, FSM 5700, FSH5709.16, Part 61, Part 91/135, Special Use Mission Guides, IAT.gov, NWCG Standards for Aviation Risk Management, NWCG Aviation Transport of HAZMAT.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with pilot certification & records requirements, the contents of the contract, and aircraft carding.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Pilot privileges and limitations applicable to Government flight operations.
<i>K2</i>	Personal pilot logbook or flight record.
<i>K3</i>	Contract requirements including special equipment if applicable.
<i>K4</i>	Flight, Training, and Contract record keeping requirements.
<i>K5</i>	Application of the Safety Management Systems (SMS) applicable to vendor and/or agency.
<i>K6</i>	Flight and duty limitations.
<i>K7</i>	Aircraft Data Card and Airplane Pilot Qualification Card.
<i>K8</i>	Operating limitations, mission handbooks, guides, and manuals.
<i>K9</i>	Equipment list/minimum equipment list (as appropriate).
<i>K10</i>	Maintenance requirements, tests, and appropriate records applicable to contract flights, including preventive maintenance.
<i>K11</i>	Contract or rental agreement and any special equipment requirements or additional pilot requirements.
<i>K12</i>	If applicable, use of the NWCG Passenger / Crew and Cargo Manifest (PMS 245)
<i>K13</i>	If applicable, use of the NWCG Standards for Aviation Transport of Hazardous Materials Handbook and Guide.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Understanding records to ensure aircraft and pilot flight & duty time do not exceed limits.
<i>R2</i>	Aircraft weight and balance, inoperative equipment, performance limitations.
<i>R3</i>	Hazardous Material Control Measures (if mission applicable).
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Explain the appropriate pilot and medical certificates and personal flight records & Training Certificates applicable to contract flights.
<i>S2</i>	Locate and explain the applicable mission handbook or applicable guides.
<i>S3</i>	Locate and explain airplane documents, lists, and other required data including airplane maintenance records, contract requirements, and the <i>NWCG Standards for Aviation Transport of Hazardous Materials</i> (if mission applicable).
<i>S4</i>	Report hazard or safety related concerns through the SAFECOM system.

I. Preflight

Task	<i>B. Incident Organization</i>
References	Web: training.fema.gov IS-200 (Vendors); Aglearn ICS-200 (Gov)
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with incident organization.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	The purpose and function of the Incident Command System (ICS).
<i>K2</i>	The air operations positions in ICS for initial attack or large fire incidents.
<i>K3</i>	The flexibility afforded by the ICS model to easily scale based on the incident.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Taking action early in Initial Attack scenarios where ICS not yet fully implemented and lines of authority are unclear.
<i>R2</i>	Instructions given by supervisors are unclear or seem to contradict previous guidance.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Identify where in ICS they are operating.

I. Preflight

Task	<i>C. Obtaining Special Mission Weather, Incident, and Flight Information</i>
References	Web Resources - IMCS Appendix I, Local Hazard Maps & Guides
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with obtaining special use mission weather & flight information.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Local and web-based fire and other special mission weather resources.
<i>K2</i>	Meaning of predictive fire weather behavior indices and indicators.
<i>K3</i>	Gathering preflight briefing/weather from field personnel and/or civil resources to supplement official weather.
<i>K4</i>	Availability and utilization of local aviation hazard maps.
<i>K5</i>	TFR and FTA operational requirements and differences.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Factoring risk of encountering extreme fire behavior into crew briefings.
<i>R2</i>	Briefing CRM techniques in the FTA to convey concerns regarding fire behavior and changes or benefits to continued operations.
<i>R3</i>	Factoring risk of high wind, high density altitude, mountain obscuration, reported ground hazards into non-fire special mission go / no-go decisions.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Gather preflight briefing/weather information from various sources and interpret formal weather briefings, unofficial weather reports, and other relevant reports.
<i>S2</i>	Identify and brief when density altitude exceeds charted aircraft performance.
<i>S3</i>	Acquire large incident / extended attack maps, frequencies, briefings, and TFRs.
<i>S4</i>	Exercise a Flight Risk Assessment Tool (FRAT).
<i>S5</i>	Articulate go / no-go weather decision criteria.

I. Preflight

Task	<i>D. Operation of Airplane Systems Relevant to Special Use Missions</i>
References	Aircraft POH & Supplements
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with the operation of the applicable special use equipment required for contract compliance or mission specification.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Automated Flight Following (AFF)/satellite tracking equipment.
<i>K2</i>	TCAS and TAWS/GPWS system testing, interpretation, and override features.
<i>K3</i>	Payload / Cargo containers: tanks, pods, or racks.
<i>K4</i>	Operational Loads Monitoring Systems, Telemetry antennas and receivers.
<i>K5</i>	Camera mounts, computer mounts, and auxiliary power requirements.
<i>K6</i>	Smokejumper/paracargo equipment.
<i>K7</i>	Retardant/ Suppressant Door / Hopper Gate operation and associated computer controller and emergency dump system.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Special use equipment and troubleshooting anomalies.
<i>R2</i>	How to properly store and secure gear and cargo.
<i>R3</i>	Brief and execute techniques to mitigate negative effects to aircraft performance.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Explain normal operating procedures and limitations of the airplane special use mission systems using correct terminology in identifying components.
<i>S2</i>	Calculate Weight and Balance accounting for Special Mission configurations.
<i>S3</i>	Explain how special use equipment could adversely affect the performance characteristics of the aircraft or the pilot's workload in flight and how to manage.

I. Preflight

Task	<i>E. FM Radio Equipment Operation</i>
References	Vendor Contract, FM Radio Supplement / Users Guide, National Interagency Mobilization Guide
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with installed FM radio equipment.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Frequency & channel programming and operation of the required radio equipment installed in the aircraft used in the evaluation.
<i>K2</i>	FM operational procedures including programming tones, transmit selection, and possible interferences.
<i>K3</i>	Interagency communication procedures including dispatch, flight following, tactical, and guard as applicable.
<i>K4</i>	Describe wideband vs. narrowband and explain:
<i>K4a</i>	a) What is meant by kHz spacing?
<i>K4b</i>	b) How mixed use of both causes repeater disruption, frequency overlap, and incomplete transmission and reception quality.
<i>K5</i>	Explain the applicable interagency communications protocols including:
<i>K5a</i>	a) Local and central dispatch: Whom to call, on what frequency, and how often.
<i>K5b</i>	b) Use of AFF with radio communications.
<i>K5c</i>	c) National flight following.
<i>K5d</i>	d) Tactical frequencies.
<i>K5e</i>	e) Guard and its intended emergency, lost comm, and recall uses.
<i>K6</i>	Troubleshooting radio anomalies and handling lost FM Communications.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Dividing attention between flying and programming radios.
<i>R2</i>	Prioritizing reception of multiple radios to enhance SA while mitigating unnecessary distractions.
<i>R3</i>	Use of Guard channels when appropriate.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Without assistance, program simplex and duplex frequencies.
<i>S2</i>	Program transmit (TX) and receive (Rx) tones and explain what function they perform.
<i>S3</i>	Visually identify when FM radio is receiving transmissions.
<i>S4</i>	Demonstrate how to program Guard frequency, set unique volume (if equipped), and be able to use it wideband or narrowband.
<i>S5</i>	Explain and demonstrate all onboard audio control panel transmit and reception settings.

I. Preflight

Task	<i>F. Global Positioning System (GPS) Operation</i>
References	Aircraft Avionics Supplement.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with GPS.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	GPS make and model installed in aircraft used for evaluation.
<i>K2</i>	Applicable regulatory requirements for updating navigation databases.
<i>K3</i>	Accessing NOTAMs of GPS interference or outages.
<i>K4</i>	Differences in Latitude and Longitude formats and how to convert.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Misprioritizing heads down avionics programming during critical phases of flight.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Initialize the GPS navigation system and confirm database current.
<i>S2</i>	Successfully load special use mission waypoints into a flight plan.
<i>S3</i>	Determine ownship position at anytime during flight.
<i>S4</i>	If equipped, demonstrate the use of Nearest features if divert or ATC assistance needed.
<i>S5</i>	If applicable for special missions such as mapping, demonstrate advanced features to track precise lines of latitude or search patterns.
<i>S6</i>	Explain backup navigation principles in the event of GPS interference or malfunction.

I. Preflight

Task	G. Initial Dispatch
References	Vendor Contract, Agency Policy, National Interagency Mobilization Guide, Interagency Aviation Life Support Equipment
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with Initial Dispatch.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Source and format of dispatch orders.
<i>K2</i>	Compliance with Personal Protective Equipment (PPE) requirements specific to special use mission.
<i>K3</i>	Special use mission equipment AFM supplemental performance information.
<i>K4</i>	Aircraft charted density altitude limits which preclude mission accomplishment.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Awareness of 'mission-itis' pitfalls during time critical dispatches.
<i>R2</i>	Deliberate use of checklists to avoid errors of omission.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Process all information elements on dispatch order.
<i>S2</i>	Preflight aircraft and special mission equipment at the beginning of shift.
<i>S3</i>	Calculate aircraft takeoff, climb, and landing performance for current conditions and configuration.
<i>S4</i>	Preflight PPE for serviceability and ensure all mission crewmembers do same.
<i>S5</i>	If applicable, briefs passengers on seat belts, emergency egress, fire extinguishers, ELT location, HAZMAT, first aid, and survival equipment.

II. En Route

Task	A. En Route Procedures and Flight Following
References	National Mobilization Guide, Interagency Standards for Fire and Fire Aviation Operations ('Red Book'), NWCG Standards for Airspace Coordination, Applicable Special Use Mission Guides
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with en route procedures and flight following.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Application of sterile cockpit procedures.
<i>K2</i>	If applicable, proper wildland fire transponder code and when to utilize.
<i>K3</i>	Flight Following frequencies and policy requirements.
<i>K4</i>	Flight Following protocols for various scenarios: incident response, point-to-point, IFR.
<i>K5</i>	Operating inside Special Use Airspace (SUA) and FAR 91.137 Temporary Flt Restrictions.
<i>K6</i>	Familiarity with dispatch centers relative to origin, en route, and destination.
<i>K7</i>	Potential to receive a mission divert from dispatch and critical information elements.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	No radio contact or response from Dispatch.
<i>R2</i>	Loss of intercom with aircrew or mission crewmembers.
<i>R3</i>	Dispatch notification that AFF is not tracking.
<i>R4</i>	Managing confusion associated with a Dispatch divert order to a new mission.
<i>R5</i>	Resolving ambiguities with TFR / FTA guidance prior to entering.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	File agency flight strip and FAA flight plan (if applicable).
<i>S2</i>	Initiate flight following at the beginning of the flight using the standard script.
<i>S3</i>	Effectively use CRM techniques with aircrew and mission crewmembers to:
<i>S3a</i>	a) Coordinate crew radio responsibilities and usage.
<i>S3b</i>	b) Manage wear of seatbelts and moving about the cabin.
<i>S4</i>	Check-in at proper intervals throughout the flight if required.
<i>S5</i>	Process a dispatch divert order, assess impacts to time and fuel, identify hazards, and potential landing destinations.
<i>S6</i>	Terminate flight following after landing.

III. Mountain Flying

Task	A. Mountain Flying and Terrain Avoidance
References	Vendor Contract, FSH 5709.16, Interagency Smokejumper Pilots Operations Guide, DOI OPM-29, FAA Aeronautical Information Manual
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with mountain flying and avoiding terrain.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Agency mountain flying endorsement.
<i>K2</i>	Application of FAR 91.159 VFR hemispheric altitudes when mountain flying.
<i>K3</i>	Weather planning resources specific to mountain flying.
<i>K4</i>	Describe mountain wave and thunderstorm development.
<i>K5</i>	Negative impacts to performance based on density altitude and mechanical shear & convective wind effects.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Seeking input and delegating tasks to crewmembers.
<i>R2</i>	Utilizing other aircraft and flight service as outside resources to enhance situational awareness.
<i>R3</i>	Recognize then mitigate external pressures such as time schedules.
<i>R4</i>	Recognize then mitigate flat or low light conditions and winter whiteout phenomenon.
<i>R5</i>	Mitigating risks of encountering Mountain Obscuration.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Plan a mountain flight and define mission go / no-go criteria.
<i>S2</i>	Effective MULTICOM use to aid traffic avoidance and enhance situational awareness.
<i>S3</i>	Brief parallax mitigating techniques to assess distant ridge crossing altitudes.
<i>S4</i>	Cross ridges >500 feet AGL except for approach to drop zone, landing, or departure routing.
<i>S5</i>	Utilize ridge crossing headings that allow for quick turning to areas of lower terrain.
<i>S6</i>	Fly canyons at altitudes and offsets that allow for level flight course reversals.
<i>S7</i>	Proficient use of onboard weather reporting systems.

III. Mountain Flying

Task	<i>B. Canyon Escape Maneuver</i>
References	Vendor Contract, FSH 5709.16, Interagency Smokejumper Pilots Operations Guide
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with the Canyon Escape Maneuver.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Reasons and purpose of the canyon escape maneuver.
<i>K2</i>	Aircraft optimized configuration and stall airspeeds.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Early establishment of canyon abort criteria.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Set a geographic point in canyon where escape maneuver can be safely executed.
<i>S2</i>	Brief and execute optimum airspeed and configuration for minimum radius turn.
<i>S3</i>	Maintain maneuver altitude ± 100 feet.
<i>S4</i>	Maintain briefed airspeed -0/+5 KIAS.
<i>S5</i>	Maintain 30°-45° bank angle.
<i>S6</i>	Effective division of attention inside and outside to maintain flight parameters while clearing for terrain and traffic.

IV. Low Level Operations

Task	<i>A. Flight Below 500 Feet AGL for Purposes of Observation, Scooping, or Dropping Payloads.</i>
References	Vendor Contract, NWCG Standards for Aerial Supervision, OPM-29 and Interagency Aviation Life Support Equipment Handbook/Guide, Appropriate Special Use Mission Operating Guides
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and, skills associated with flight below 500 feet AGL.
Knowledge	For items relevant to special mission, the applicant demonstrates understanding of:
<i>K1</i>	Utilizing published hazard resources: local aviation hazard maps, sectional map quadrant maximum elevation figure, power lines, tower height, and military training routes.
<i>K2</i>	14 CFR 91.119 limitations to low level flight and when agency Grant of Exemptions apply.
<i>K3</i>	(If applicable) Grand Canyon SFRA rules and exemptions.
<i>K4</i>	How to determine if a Military Training Route (MTR) is active.
<i>K5</i>	Aircraft specific GPWS and TAWS displays and override features.
<i>K6</i>	Typical low-level wind and cloud weather effects at different times of the day.
<i>K7</i>	Mechanical lift effects over sunny, shady, and water features.
<i>K8</i>	Methods for determining surface winds and applying drift corrections.
<i>K9</i>	Lighting hazards such as glares, flat, or white out. For incident response, rules governing low light conditions (SAS).
<i>K10</i>	Methods for crossing and mitigating power lines.
<i>K11</i>	Methods for operating in vicinity of towers and guy wires.
<i>K12</i>	Minimum radius turns and associated aircraft configuration, airspeeds, bank angles, and stall predictions.
<i>K13</i>	(If authorized to operate in trail with other aircraft) Wake turbulence / vortices dispersion at low level & avoidance techniques.
<i>K14</i>	Aircraft load factor limits based on low level configuration.
<i>K15</i>	For DOI Missions when required slow flight and stall avoidance and/or recovery at low levels including flight "behind the power curve". Explain the reduction of flight load factors with flaps extended and the consequences of exceeding the limiting load factors.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Assessing hazards, briefing impacts to mission, and mitigating prior to flight below 500'.
<i>R2</i>	Establishing abort criteria that ensures a safe exit from the low-level environment.
<i>R3</i>	Managing distractions to ensure stable flight parameters.
<i>R4</i>	If applicable, briefs crewmembers on immediate action roles and responsibilities in the event of an emergency at low level.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	(If applicable to en route terrain) visually determine if current level altitude is sufficient to clear distant ridgelines.
<i>S2</i>	Upon arrival, identify hazards in the low-level area of operation.
<i>S3</i>	From a safe altitude, identify and brief best exit and abort routes.

<i>S4</i>	If canyon flying, brief and execute a practice minimum radius escape turn above the highest ridgeline with zero stall indications or loss of altitude.
<i>S5</i>	If operating low level in proximity / concert with other aircraft, brief and execute wake vortices mitigation flight paths; along with deconfliction plans in the case of emergency.
<i>S6</i>	If applicable, coordinates with crewmembers on low level plan prior to execution. Flight crew are assigned specific roles or duties that enhance watch-outs and safety.
<i>S7</i>	Position aircraft flight path and airspeed to optimize observer unobstructed field of regard and dwell time to adequately assess the ground objective(s).
<i>S8</i>	If performing smokejumper operations, relays jump spot elevation in MSL to spotter.
<i>S9</i>	Ensure canyon escape and / or ability to abort or exit in an emergency is never in question.
<i>S10</i>	Maintain safe separation from Towers and Guy Wires.
<i>S11</i>	Unless responding to an actual incident, maintains appropriate separation from persons, vessels, vehicles, or structures.
<i>S12</i>	Execute an observation, scoop, or drop profile while appropriately dividing attention inside and outside the cockpit.
<i>S13</i>	For DOI Missions when required, Maneuver the aircraft at 1.1 V _{so} with flaps down and 1.1 V _s with flaps up (for multiengine aircraft: Vy _{se} for flaps down and Vy _{se} flaps up, or V ₂ , as applicable to the aircraft) maintaining airspeed at +10, -5 knots and altitude within 50 feet. This will include both turns to heading and straight and level flight. Demonstrate full stalls and recoveries in all of the configurations that the aircraft will be flown during the proposed low level missions. Minimum loss of altitude and precise control of the aircraft during recovery shall be demonstrated.

V. Operations as a Flight

Task	A. <i>Operations as a Flight</i>
References	Vendor Contract, Vendor SOPs, NWCG Standards for Aerial Supervision, NWCG Standards for Airtanker Operations, SEAT Operations Guide, Applicable Mission Guides
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with operating multiple aircraft as a flight.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	If applicable to authorized operations: flight positions and procedures.
<i>K2</i>	{Placeholder}
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	If applicable to authorized operations: mitigating formation overshoots, wake turbulence, loss of visual, and windsheild retardant contamination.
<i>R2</i>	{Placeholder}
Skills	The applicant demonstrates the ability to:
<i>S1</i>	If applicable to authorized operations: executes proper flight procedures during all FTA phases.
<i>S2</i>	{Placeholder}

VI. Fire Airspace

Task	A. Fire Traffic Area (FTA)
References	NWCG Standards for Airspace Coordination, National Mobilization Guide, NWCG Standards for Aerial Supervision, FTA Kneeboard, Applicable Special Mission Guides
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with operating inside the Fire Traffic Area.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	When an FTA is in effect.
<i>K2</i>	When Aerial Supervision is Required. Explain procedures in absence of Aerial Supervision
<i>K3</i>	Explain the role of Air Attack (ATGS), Lead Plane/Aerial Supervision Module (ASM), and Helicopter Coordinator (HELCO).
<i>K4</i>	FTA Dimensions, Altitudes, Speeds, Standard Patterns, and Communications Protocols.
<i>K5</i>	FTA frequency and entry requirements with or without Aerial Supervision.
<i>K6</i>	When and how to execute Blind calls responding to Initial Attack incidents.
<i>K7</i>	If first aircraft on scene, how to authorize entry of other aircraft using the standard clearance script.
<i>K8</i>	Use of Initial Points (IP).
<i>K9</i>	Differences between FTA and TFR.
<i>K10</i>	14 CFR 91.137 requirements and TFR entry and operating procedures to include media.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Congested airspace and communications.
<i>R2</i>	Communicating terrain and visibility concerns.
<i>R3</i>	Recognizing and confirming non-standard patterns.
<i>R4</i>	Pilot authority to abort individual missions and recommend to supervision that aerial operations cease when adverse conditions are encountered.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Establish positive communications prior to FTA entry. If applicable, correctly tunes and monitors other FTA required frequencies (FM Guard, 122.925, etc)
<i>S2</i>	If no communication, holds as published.
<i>S3</i>	If first on scene, ensures PIC (or ATGS) makes blind calls on all incident published frequencies and 122.925.
<i>S4</i>	Complete appropriate Mission and Aircraft Configuration Checklists.
<i>S5</i>	Communicate and sequence through a designated IP if applicable.
<i>S6</i>	Comply with published FTA airspeed limitations and maintain briefed mission airspeeds.
<i>S7</i>	Comply with instructions while operating within an FTA / TFR.
<i>S8</i>	Maneuver aircraft to allow other crewmembers to size up incident without creating hazard to other aircraft.
<i>S9</i>	Assist with updating incident GPS coordinates if requested.
<i>S10</i>	Maintain terrain awareness, identify hazards, and brief exit / escape paths.
<i>S11</i>	Maintain assigned altitude ± 100 feet while operating within an FTA / TFR.

VI. Fire Airspace

Task	<i>B. On Scene / Over-Incident Procedures</i>
References	Vendor Contract, NWCG Standards for Aerial Supervision, Training Syllabi
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with over-incident procedures.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Difference between Holding, Orbiting, and Maneuvering Altitudes.
<i>K2</i>	Sequencing with other aircraft in the hold or orbit, and procedures if visual contact lost.
<i>K3</i>	Airspeed considerations and techniques when sequencing with different aircraft types.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Clarifying instruction ambiguities with aerial supervision or conveying observed hazards to other aircraft.
<i>R2</i>	CRM use to suggest alternate/safer/more effective gameplan, altitudes, or pattern direction based on observed terrain, smoke columns, fire behavior, etc.
<i>R3</i>	Maintain situational awareness of changing weather conditions and relay hazardous weather information to ground resources and aerial supervision as necessary.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Utilize mission checklists to correctly configure the aircraft prior to entering the orbit.
<i>S2</i>	Maintains visual separation from other aircraft and assigned altitude ± 100 feet.
<i>S3</i>	Brief and maintain hold / orbit airspeed ± 10 KIAS.
<i>S4</i>	Predominately maintains bank angles $\leq 30^\circ$. Recognizes and audibles momentary excursions to a maximum 45° bank.
<i>S5</i>	If applicable, monitor other mission frequencies to enhance incident situational awareness.
<i>S6</i>	Assess wind drift effects and adjust bank to maintain a predictable constant radius orbit.
<i>S7</i>	Divide attention inside and outside the cockpit to maintain flight parameters, sequence in orbit, and situational awareness of incident.
<i>S8</i>	Execute non-standard turn direction if directed by aerial supervision.
<i>S9</i>	Safety, Judgement, and Aeronautical Decision Making (ADM) are never in question.
<i>S10</i>	If applicable, foster team environment through effective use of Crew Resource Management (CRM) principles:
<i>S10a</i>	a) Utilization of brevity and mission specific standard terminology.
<i>S10b</i>	b) Prioritize, direct, delegate, and defer mission tasks.
<i>S10c</i>	c) Continually update crewmembers on mission status (identified hazards, other aircraft, fuel / time remaining, alternate airfields, etc.)

VII. Air Attack

Task	A. Time/Fuel Management Over an Incident and Station Keeping
References	Vendor Contract, Vendor SOPs, NWCG Standards for Aerial Supervision, FSM5700
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with crew coordination and time & fuel management over an incident.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Time over incident calculations, and fuel management techniques that provide mission options to aircrew members while complying with the contract, policy, and FARs.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	External pressures, distractions, mission-itis, and environmental factors that could challenge the PIC's authority or fuel/flight time decisions.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Brief aircrew members on roles, responsibilities, checklist coordination (if applicable), and use of CRM principles.
<i>S2</i>	Brief and enforce sterile cockpit rules.
<i>S3</i>	Brief flight time & fuel limits when arriving on scene at the incident, along with suitable alternates that provide mission options.
<i>S4</i>	Maintain assigned orbit altitude $\pm 100'$, briefed airspeed $\pm 10\text{KIAS}$, and bank angle $\leq 30^\circ$.
<i>S5</i>	Continually position aircraft such that ATGS incident field of regard is optimized. If ATGS requests observation pass over specific area of interest with no conflicting traffic, the pass is conducted above 500' AGL with a clear avenue away from terrain.

VIII. Airtanker

Task	A. Fire Knowledge
References	NWCG Standards for Aerial Supervision, Training Syllabi, NWCG Standards for Airtanker Base Operations, Interagency Standards for Fire and Aviation Operations (Red Book), SEAT Operations Guide and OPM-29 (For SEATS).
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with basic firefighting knowledge
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	(IA Applicable Only) Fire behavior triangle.
<i>K2</i>	Retardant coverage levels and flight factors that affect actual distribution on the ground.
<i>K3</i>	Fire anatomy.
<i>K4</i>	Common terminology used to describe fire behavior over the radio.
<i>K5</i>	Target description techniques using big to small, landmarks, and terrain features.
<i>K6</i>	Principals of retardant application and various line construction techniques.
<i>K7</i>	Common strategy and tactics.
<i>K8</i>	Difference between Initial and Extended Attack.
<i>K9</i>	When aerial supervision is required over a fire.
<i>K10</i>	Policy for delivering chemicals near waterways.
<i>K11</i>	(SEAT Applicable Only) Under what wind conditions shall SEAT operations cease?
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	(IA Applicable Only) Understanding factors that contribute to extreme fire behavior and adjusting course of action.
<i>R2</i>	How to communicate concerns over strategy, tactics, and retardant use.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Discuss basic aerial firefighting principles on above knowledge and risk areas.
<i>S2</i>	(IA Applicable Only) Discuss Initial Attack procedures with and without additional air and/or ground resources on scene.

VIII. Airtanker

Task	<i>B. Tanker Ground Operations</i>
References	NWCG Standards for Airtanker Base Operations, USFS Standards for Airtanker Operations, Local Airtanker Base Operations Plan (ABOP).
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with Ground Operations unique to Airtankers.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	The two types of Airtanker Bases.
<i>K2</i>	Aircrew briefing and orientation packets.
<i>K3</i>	Tanker base frequencies and standard calls.
<i>K4</i>	Reaction times, dispatch, and tanker rotation procedures.
<i>K5</i>	Performing aircraft maintenance on the tanker base and staffing requirements.
<i>K6</i>	Fueling and hot fueling requirements and procedures.
<i>K7</i>	Retardant loading and hot loading procedures; with and without mass flow meters.
<i>K8</i>	Retardant off-loading requirements and procedures.
<i>K9</i>	Loading of water and/or water enhancers (gels).
<i>K10</i>	Simultaneous fuel and loading procedures.
<i>K11</i>	Retardant and / or fuel spill response procedures.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Taking policy prescribed or appropriate action when hazards to ground operations are observed.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Demonstrate a working knowledge of the above areas. If at a tanker base, guide the inspector on a tour of the ramp and practical application of the knowledge areas.
<i>S2</i>	If PIC of a crewed aircraft, ensure crewmember training and compliance with tanker base policy and procedures.

VIII. Airtanker

Task	<i>C. Maneuvering & Drop Procedures</i>
References	NWCG Standards for Aerial Supervision, Training Syllabi, NWCG Standards for Airtanker Base Operations, Interagency Standards for Fire and Aviation Operations (Red Book), SEAT Operations Guide and OPM-29 (For SEATS).
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with Airtanker Maneuver & Drop Procedures.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Required maneuver clearance script before departing orbit altitude.
<i>K2</i>	(IA Applicable Only) Required pattern calls when not being led on a drop.
<i>K3</i>	Why and when a leadplane will direct a joinup prior to entering the orbit.
<i>K4</i>	Post leadplane joinup responsibility for separation of aircraft.
<i>K5</i>	(IA Applicable Only) Provide IC or ground resources a fire size up.
<i>K6</i>	Use of right patterns and associated radio calls.
<i>K7</i>	Difference in post drop maneuvering plan for split load vs full load.
<i>K8</i>	Jettison criteria and designated areas.
<i>K9</i>	Minimum drop height.
<i>K10</i>	Overrun procedures.
<i>K11</i>	Ultimate authority and responsibility to execute flight profiles in accordance with aircraft characteristics and limitations and not matching leadplane.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Crewed aircraft: utilize company crew coordination SOPs that divide cockpit and scan duties and provide for callouts.
<i>R2</i>	Complying with policy guidance for two or more tankers simultaneously at maneuver altitude.
<i>R3</i>	Identifying tailwind on base to final.
<i>R4</i>	Identifying wind shear, lost of lift, or down air.
<i>R5</i>	Recognition of reduced separation or lost visual with Leadplane or following another tanker.
<i>R6</i>	Eliminating uncertain target description or maneuver ambiguity by proactively clarifying instructions with aerial supervision.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Successfully execute a minimum of two drops where target, clearances, and safety of flight are never in question.
<i>S2</i>	(IA Applicable Only) Establish ground communications, provide size-up, and coordinate drop location.
<i>S3</i>	(IA Applicable Only) Demonstrate elements of clearance to enter and tactical briefings for other arriving aircraft.
<i>S4</i>	Use maneuver and pre-drop checklist to ensure aircraft is always correctly configured.
<i>S5</i>	Prior to maneuvering, visually acquires all briefed and highlighted low level hazards.
<i>S6</i>	If applicable, effective communications with leadplane to include deconflicted exit plan.
<i>S7</i>	If authorized to maneuver in trail with other tankers, uses SOPs and callouts to maintain safe separation.

<i>S8</i>	(IA Applicable Only) Ensure line clearance and drop pattern does not pose hazard to personnel, vehicles, or structures.
<i>S9</i>	Demonstrate consistent airspeed & energy management.
<i>S10</i>	Establish a stable final lined up with appropriate drift correction and drop above minimum height at correct start point.
<i>S11</i>	Execute a heavyweight abort on final; jettison if appropriate.
<i>S12</i>	Ensure safe escape and / or ability to abort or exit in an emergency is never in question.
<i>S13</i>	Gain a post drop evaluation and correctly analyze any errors.

IX. Scooper

Task	A. Circuit Operations (ASES & AMES Water Scooping Aircraft)
References	PMS 518 NWCG Standards for Water Scooping Operations, PMS 505 NWCG Standards for Aerial Supervision, SEAT Operations Guide and OPM-29 (For Single Engine Scooper).
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with Circuit Operations.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Initial circuit setup: route, altitude, scoop / drop patterns, checkpoint, communication and separation protocol.
<i>K2</i>	Standardized scripts specific to water scooping operations: passive (blind), active, and comfort radio calls and responses.
<i>K3</i>	Varying helicopter types, make/model/configuration identification, missions, routes, patterns, dip sites, helispots, and helibases.
<i>K4</i>	Varying airtanker and scooper types, mission specifics, and predicted FTA entries, orbits, patterns, and reload bases and water sources.
<i>K5</i>	Operations as a flight, and in the circuit with multiple flights.
<i>K6</i>	Non supervised operations working directly with a ground contact and other air resources in an IA Scenario, or extended attack operations.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Recognize proper circuit altitude to deconflict with helicopter routes and airtanker patterns and exits.
<i>R2</i>	Recognize proper circuit routing to deconflict with helicopter routes, patterns, dip sites, helispots, helibase locations, airtanker pattern and exit.
<i>R3</i>	Maintain situational awareness of all helicopters operating in the same target area, or area of operations to include: number of helicopters, types, make/model/configuration, missions, routes, patterns, helispots, helibases, and dip sites.
<i>R4</i>	Maintain situational awareness of resources on scene and monitor changes as aircraft enter and depart the working area.
<i>R5</i>	Use of standardized scripts off the water, at the checkpoint (if in-use), off the drop, and in the drop pattern as appropriate. Utilize comfort calls to ensure and maximize situational awareness with other resources.
<i>R6</i>	Recognize proper aircraft spacing in Flights (scooping / enroute / drop profile), and utilize appropriate and standardized communication and separation protocol within the flight.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Establish circuit identifying, altitude, route, checkpoint (if necessary), drop pattern and exit that does not conflict with terrain or other aircraft.
<i>S2</i>	Maintain circuit altitude +/- 100 feet. Request altitude deviations or block when working with aerial supervision, communicate circuit altitude changes to other resources when working IA.
<i>S3</i>	Identify and monitor all helicopters operating in the same target area, or area of operations to include: number of helicopters, types, make/model/configuration, missions, routes, patterns, helispots, helibases, and dip sites.
<i>S4</i>	Identify and monitor all airtankers and proximity to scooper working area to include: airtanker entry angles, orbit, pattern, and ensure circuit deconfliction with maneuvering and exiting airtankers.

<i>S5</i>	Ensure proper separation and communication protocol is setup, maintained, and updated internally (within the Flight), and externally (with all other aviation resources within the FTA, TFR, or Area of Operations as appropriate).
<i>S6</i>	Demonstrate proper calls and adherence to clearance limits at checkpoints, and make pattern calls to maximize situational awareness for aerial supervision and other air resources.
<i>S7</i>	Maintain appropriate spacing in the flight on the drop (minimum 1500 feet). Adjust spacing as appropriate based on conditions. Maintain safe distance and lateral separation when scooping, anticipating rejected scoop, or loss of directional control of other scoopers.
<i>S8</i>	Avoid overflight of Helicopters.
<i>S9</i>	When multiple scooper flights are operating in the circuit, flight lead will coordinate: water source information, hazards, frequency management, and monitor the workload on aerial supervision to ensure well-organized operations.
<i>S10</i>	Coordinate deconfliction with other scooper flights when multiple water sources and circuits are used such as parallel or concentric shaped circuits.
<i>S11</i>	Coordinate altitude deconfliction with other scooper flights when a figure 8 circuit is used.
<i>S12</i>	Coordinate and/or adhere to geographic separation when fences are utilized to separate varying mission types as appropriate such as simultaneous: airtanker, helicopter, recon, or smokejumper operations.
<i>S13</i>	Use standardized scripts, blind, active, and comfort radio calls and responses as appropriate using brevity.
<i>S14</i>	Perform communication and coordination functions as the flight lead, or as following aircraft within the flight as appropriate.
<i>S15</i>	Coordinate directly with helicopters as necessary, and when operating outside the FTA to include coordination with helibases located in close proximity to water sources.
<i>S16</i>	Communicate directly with ground contact (if assigned, or IA scenario) to determine objectives, determine ground resources location, ensure line clearance, and relay hazardous weather information as appropriate.
<i>S17</i>	Demonstrate Line clearance is confirmed with aerial supervisor, or directly with a ground contact, and geographic drop limitations are maintained with movement of ground resources.

IX. Scooper

Task	B. Water Scooping
References	OEM Aircraft Flight Manual & Checklist, Standard Operating Procedures (operator specific), FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23 (Risk management / Airplane flying handbook / Seaplane flying handbook), PMS 518 NWCG Standards for Water Scooping Operations, SEAT Operations Guide and OPM-29 (For Single Engine Scooper).
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with Water Scooping.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Water source selection.
<i>K2</i>	Water source surface conditions.
<i>K3</i>	Hydrodynamic characteristics and differences between normal seaplane and water scooping operations, to include hull / float construction and stability characteristics.
<i>K4</i>	Porpoising, skipping, and loss of control recovery theory and techniques.
<i>K5</i>	Water System normal, abnormal, emergency procedures.
<i>K6</i>	Confined area scooping operations.
<i>K7</i>	Right of way rules when scooping in proximity to watercraft.
<i>K8</i>	Wake turbulence avoidance.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Water source identification and hazard mitigation: hazards (natural and human-made), suitability, recreation, local restrictions, aquatic invasives species status and mitigation.
<i>R2</i>	Factors influencing water source surface conditions: (wind, gusts, downdrafts, surrounding terrain, vegetation, current, rough water, swells, glassy water).
<i>R3</i>	Contingency planning for rejected scoop and rejected takeoffs.
<i>R4</i>	Factors influencing loss of control while scooping (specific aircraft design, environmental, technique, density altitude, crosswind and tailwind operations).
<i>R5</i>	Consider hazards off/into the scoop: Terrain awareness, confined area operations, low-light, reduced visibility, natural and human-made hazards.
<i>R6</i>	Properly configure and disarm / arm water system for scooping and dropping as appropriate.
<i>R7</i>	Utilize CRM principals within the flight to ensure well-organized coordination and situational awareness.
<i>R8</i>	Situational awareness of recreation and anticipation of vessel movements and change of course.
<i>R9</i>	Maintain safe distance and lateral separation when scooping, anticipating rejected scoop, or loss of directional control of other scoopers.
<i>R10</i>	Consider water wake, and wake vortice effects for following scoopers.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Perform pre-scooping checklist and briefing ensuring crew and flight concurrence.
<i>S2</i>	Utilize most appropriate scooping location and scooping lane considering weather, terrain, water conditions, recreation, contingencies, aircraft performance, and trailing aircraft.

<i>S3</i>	Determine aircraft and scooping performance and limitations utilizing Aircraft Flight Manual considering density altitude, surrounding terrain, water and weather conditions.
<i>S4</i>	Determine contingency plan considering rejected scoop, rejected takeoff, or disabled aircraft on water scenarios.
<i>S5</i>	Determine exit route, plan, and divert airport for one engine inoperative scenarios (AMES).
<i>S6</i>	Determine exit route, plan, and emergency landing areas (ASES).
<i>S7</i>	Utilize appropriate scooping technique based on conditions (rough, glassy, high density altitude, low-light, or reduced visibility).
<i>S8</i>	Touchdown +/- 200 ft from selected point
<i>S9</i>	Avoid porpoise or skipping and use appropriate corrective action and techniques for varying water conditions.
<i>S10</i>	Use proper pitch/roll/yaw controls and power inputs to maintain directional control and longitudinal stability.
<i>S11</i>	Maintain least drag pitch attitude to ensure acceleration and lift-off, and appropriate airspeed and configuration after lift-off for varying conditions.
<i>S12</i>	Choose scooping lane considering water wake and wake vortices from other scoopers.
<i>S13</i>	Correctly identify and use appropriate procedures for abnormal and emergency situations: flood on water, flood while airborne, elevator jam, emergency dump, use of bilge system (AMES), and asymmetric probe, emergency dump (ASES).
<i>S14</i>	Use appropriate planning / briefing, configuration, airspeed, angle of attack, and turn geometry associated with confined area approaches and departures from water source.
<i>S15</i>	Maintain conservative separation from recreation areas, boats, and personal watercraft ensuring adequate spacing and considering rejected scoop, rejected takeoff, emergency dump, and loss of directional control.
<i>S16</i>	Coordinate and communicate with scooper manager, water source coordinator, law enforcement, lake patrols, or USCG as appropriate. Report water source usage and gallons scooped as requested.

X. Leadplane

Task	A. Fire Knowledge
References	NWCG Standards for Aerial Supervision, Training Syllabi, NWCG 9065 Interagency Leadplane Pilot Training Course, NWCG Standards for Airtanker Base Operations, Interagency Standards for Fire and Aviation Operations (Red Book), as appropriate.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with advanced firefighting knowledge.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Fire behavior triangle and changing environmental effects on rate of spread.
<i>K2</i>	Fuel types, retardant coverage levels, and flight factors that affect actual distribution on the ground.
<i>K3</i>	Fire anatomy.
<i>K4</i>	Common terminology used to describe fire behavior over the radio.
<i>K5</i>	Conditions that affect fire spotting.
<i>K6</i>	Explain minimum drop heights by tanker type.
<i>K7</i>	Principals of retardant application and various line construction techniques.
<i>K8</i>	Common strategy and tactics.
<i>K9</i>	Structure protection tactics.
<i>K10</i>	Unique operational aspects of the MAFFS mission to include agency policy, training requirements, and specific MAFFS procedures.
<i>K11</i>	Unique operational aspects of the VLAT mission to include differences in drop altitudes, speed differences, wake turbulence avoidance, and additional aircraft separation procedures.
<i>K12</i>	Difference between Initial and Extended Attack.
<i>K13</i>	Where to acquire incident action plans and operations maps.
<i>K14</i>	Policy for delivering chemicals near waterways and designated riparian areas.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Understanding factors that contribute to extreme fire behavior and adjusting course of action.
<i>R2</i>	How to communicate concerns over strategy, tactics, and retardant use.
<i>R3</i>	Threat to aircraft posed by thick towering smoke & debris columns.
<i>R4</i>	Fire generated wind and turbulence effects.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Discuss advanced aerial firefighting principles on above knowledge and risk areas.
<i>S2</i>	If no ATGS on scene, provide IC or ground resources a fire size up.

X. Leadplane

Task	<i>B. Supervision of Aerial Resources</i>
References	NWCG Standards for Aerial Supervision, Training Syllabi, NWCG 9065 Interagency Leadplane Pilot Training Course, NWCG Standards for Airtanker Base Operations, Interagency Standards for Fire and Aviation Operations (Red Book), as appropriate.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with supervising aerial resources.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	When aerial supervision is required over an incident.
<i>K2</i>	Air and ground interface and coordination with tanker bases.
<i>K3</i>	Initial, Tactical, Departure, and Transition briefing scripts.
<i>K4</i>	Required maneuver clearance script before departing orbit altitude.
<i>K5</i>	Required tanker pattern calls when not being led on a drop.
<i>K6</i>	Why and when a leadplane will direct a joinup prior to entering the orbit.
<i>K7</i>	Use of right patterns and associated radio calls.
<i>K8</i>	Flight characteristics unique to each airtanker type.
<i>K9</i>	Low light rules.
<i>K10</i>	Designated jettison areas.
<i>K11</i>	Helicopter typing scheme and bucket vs tank delivery systems.
<i>K12</i>	Helicopter routing, sequencing, and clearances.
<i>K13</i>	Protocols and practices to handle incident-within-incident.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Using mitigation strategies with dissimilar airtankers in the orbit, and managing span of control to a reasonable level.
<i>R2</i>	Complying with policy guidance for two or more tankers simultaneously at maneuver altitude.
<i>R3</i>	Proactive measures to mitigate when too many aircraft are within the FTA.
<i>R4</i>	Requesting altitude adjustment from Air Attack due to terrain driving altitude compression.
<i>R5</i>	Establish airtankers in holding or utilize an IP.
<i>R6</i>	Exit procedures, to include communicating altitude, heading, and any nonstandard expectations.
<i>R7</i>	Ensure positive handoff of control of tactical resources (helicopters, scoopers).
<i>R8</i>	Increased complexity when working in South Ops or with other jurisdiction assets.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Effectively prioritize radio communication to prioritize aircraft separation and sequencing over other incident communication.
<i>S2</i>	Coordinate with other supervision resources to establish span of control and positive incident aircraft control responsibilities.
<i>S3</i>	Correctly employ initial, tactical, departure, and transition scripts.
<i>S4</i>	Sequence and assign tanker relative position in the orbit with other tankers.
<i>S5</i>	Proactively hold aircraft out when circumstances dictate.
<i>S6</i>	Execute a joinup with an inbound tanker to position tanker 1/2 to 1 mile in trail.

<i>S7</i>	Continually work to ensure aircraft acquire visual contact with the leadplane or other orbiting tankers.
<i>S8</i>	Issue explicit clearance for tankers to descend from orbit to maneuver altitude.
<i>S9</i>	Issue clearance to utilize right hand pattern when appropriate.
<i>S10</i>	Advise inbound traffic of outbound traffic.
<i>S11</i>	Identify, designate, recommend, and relay use of Initial Points to aid deconfliction.
<i>S12</i>	Ensure appropriate situational awareness of helicopters in the area, and they're receiving the appropriate level of Command and Control.
<i>S13</i>	Issue clearance to helicopters that ensures positive visual or route deconfliction.
<i>S14</i>	Deconfliction of assigned aircraft vertically, horizontally, and visually is never in question.

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Task	C. Leadplane Profiles
References	NWCG Standards for Aerial Supervision, Training Syllabi, NWCG 9065 Interagency Leadplane Pilot Training Course, NWCG Standards for Airtanker Base Operations, Interagency Standards for Fire and Aviation Operations (Red Book), as appropriate.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Aircraft configuration limits, energy management options, and the concept of asymmetric G forces.
<i>K2</i>	Standard Lead and Chase profiles.
<i>K3</i>	Appropriate actions when overrun is declared.
<i>K4</i>	Appropriate level of assistance for a tanker declaring an emergency within the FTA, to include communication, response, and suggested actions.
<i>K5</i>	Wind/environmental conditions that make retardant use ineffective and may require SEAT/tanker operations to cease.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Eliminating target description ambiguity by proactively seeking feedback from tankers.
<i>R2</i>	Recognize and relay when encountering soft or down air in the drop pattern.
<i>R3</i>	Recognize and relay when encountering a tailwind on base-to-final.
<i>R4</i>	Recognize and relay when encountering bank angles that will exceed 30°.
<i>R5</i>	Recognize, relay, and set minimum altitudes when terrain features on exit are at or above drop altitudes.
<i>R6</i>	Recognize and relay when obstacles or terrain will be in close proximity to a wing.
<i>R7</i>	Recognize, mitigate, and relay changing environmental and weather conditions.
<i>R8</i>	Recognize environmental/effectiveness factors when tanker operations should cease.
<i>R9</i>	Identify alternative drop areas and strategies should conditions deteriorate or change.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Build situational awareness via map study and radio traffic prior to entering the FTA.
<i>S2</i>	Coordinate with Air Attack or IC on incident objectives and priorities.
<i>S3</i>	Perform high level incident recon; identifies hazards, likely exits, and water sources.
<i>S4</i>	Request clearance before exiting the assigned orbit altitude for low level recon.
<i>S5</i>	Record heading, aircraft altitude, and drop altitude (in AGL) during low recon.
<i>S6</i>	Provide concise target description.
<i>S7</i>	Execute a show me profile; highlight all relevant hazards.
<i>S8</i>	Positively ensures line clearance before executing live runs.
<i>S9</i>	Relay drop data including heading, altitude, drift, exit, crossing restrictions, etc.
<i>S10</i>	Basic airmanship to include airspeed control of -0/+10 Kts; altitude control of $\pm 100'$; bank angle $\leq 30^\circ$ with momentary excursions allowed not to exceed 45° . Brief airtanker and crew of any intentional deviations exceeding 30° bank.
<i>S11</i>	Execute smooth exit maneuver.
<i>S12</i>	Provide a drop evaluation in accordance with script.

<i>S13</i>	Successfully execute drops where target, clearances, and safety of flight are never in question.
<i>S14</i>	Brief or execute actual leadplane transition.
<i>S15</i>	Situational awareness and judgement never in question.

X. Leadplane

Task	<i>D. Aerial Supervision Module</i>
References	NWCG Standards for Aerial Supervision, Training Syllabi, NWCG 9065 Interagency Leadplane Pilot Training Course, NWCG Standards for Airtanker Base Operations, Interagency Standards for Fire and Aviation Operations (Red Book), as appropriate.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with operating as an Aerial Supervision Module (ASM).
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Intra-cockpit CRM Skills.
<i>K2</i>	Roles and responsibilities of an ATP and ATS.
<i>K3</i>	Pilot in Command and Mission Commander responsibilities/differences.
<i>K4</i>	Verbal and non-verbal cockpit communications to ensure synchronization.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Routing and synchronizing different aircraft categories on different frequencies to the same target area.
<i>R2</i>	Potential for crew friction under stress and fatigue that could degrade performance.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Conduct crew briefing addressing roles and responsibilities in addition to:
<i>S1a</i>	a) Crew default point of contact for dispatch and tanker base coordination.
<i>S1b</i>	b) Aircraft maintenance status, weight & balance, weather, NOTAMs, TFRs, FRAT.
<i>S1c</i>	c) Specific checklist challenge & response; and ATS safety callouts to raise attention to abnormal engine indications, airspeed, bank angle, and drop altitudes.
<i>S1d</i>	d) Radio frequency setup along with ATP and ATS default transmit ownership.
<i>S1e</i>	e) CRM verbal or non-verbal cues that ensure fixed and rotor wing deconfliction.
<i>S2</i>	Identify, discuss, and actively mitigate real time risk during FTA operations.
<i>S3</i>	Sequencing fixed wing aircraft with rotor wing where deconfliction is never in question.
<i>S4</i>	Actively seeks ATS validation of retardant strategy and tactics.
<i>S5</i>	Conduct crew AAR that accurately captures mission execution and lessons learned.

XI. Smokejumper and Paracargo

Task	A. Streamer Drops
References	Interagency Smokejumper Pilots Operations Guide, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with streamer drops.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Identification of a jump spot with spotter.
<i>K2</i>	Streamer construction, wind drift effects, and ideal drop altitude vs descent times.
<i>K3</i>	Wind identification, pattern direction & spacing on final, and optimized alignment.
<i>K4</i>	Purpose of a streamer check set; and streamers-to-spot alignment.
<i>K5</i>	Difference between an identified 'release point' and jump spot.
<i>K6</i>	Calculating the correct jumper drop altitude in MSL based on higher of release point or jump spot.
<i>K7</i>	Standard spotter heading correction calls on final; pilot reply to "streamers away". Awareness of wing masking during streamer descent.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Mitigating target fixation to maintain stable flight parameters.
<i>R2</i>	Using flight, aircrew, and ground personnel as applicable to assist with traffic and terrain lookout.
<i>R3</i>	At "Streamers Away" call, inform spotter of radar altimeter reading for accurate timing.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Ability to take on airspace coordination / deconfliction responsibility with Air Attack or other aircraft on scene.
<i>S2</i>	Effectively identify the spotter designated jump spot and estimate the wind direction.
<i>S3</i>	Terrain permitting and post observation pass (see Area of Operation IV), establish and maintains 1,500 feet (+100'/-0') above the jump spot.
<i>S4</i>	When wings level with 10-15 seconds from drop, call "Final, 1500', Streamers"
<i>S5</i>	Fly final at airspeed appropriate to aircraft (minimum 90 KIAS or 1.3V _{so} , never to exceed 120 KIAS +/-5 Kts).
<i>S6</i>	Fly standard bank angles of ≤30° with momentary excursions allowed not to exceed 45°. Brief any intentional deviations exceeding 30° bank.
<i>S7</i>	Work with spotter to acquire and confirm visual contact with streamers, and smoothly maneuver the aircraft to provide both pilot and spotter an adequate view of the streamers.
<i>S8</i>	Identify the point where streamers land to identify the wind line.
<i>S9</i>	Make smooth and timely control corrections to position the aircraft on final as the spotter commands.
<i>S10</i>	After streamer check set, work with spotter to identify Release Point ground references.
<i>S11</i>	Calculate correct jump altitude in MSL.

XI. Smokejumper and Paracargo

Task	B. Smokejumper Drops
References	Interagency Smokejumper Pilots Operations Guide, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with smokejumper drops.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Process for ensuring parachute NOTAMs are filed with the FAA for practice jumps.
<i>K2</i>	Standard, crosswind, downwind, and right-hand jump patterns.
<i>K3</i>	Calculating MSL jump altitudes and limitations of some radar altimeters to register higher AGL altitudes.
<i>K4</i>	Standard spotter correction calls on final.
<i>K5</i>	Jumper Automatic Activation Devices (AAD).
<i>K6</i>	Pattern adjustments when checking first stick jumper status.
<i>K7</i>	Use of multi-jumpship operations, roles, spacing, and loss of visual contact.
<i>K8</i>	Use of smokejumper emergency exit procedures under extreme circumstances.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Effective division of attention between outside visual scanning and inside flight parameters. Notes momentary deviations and makes immediate corrections.
<i>R2</i>	Using flight and aircrew members as applicable to assist with traffic and terrain lookout.
<i>R3</i>	Proactively informs spotter of inadvertent descent below AAD arming altitude.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Inform the spotter when leveling at 'jump altitude'.
<i>S2</i>	Fly the appropriate jump pattern and continually update the spotter on leg position.
<i>S3</i>	Maintain jump exit altitude -0'/+100' feet, ≤30° bank, and aircraft appropriate airspeed -0/+5 KIAS.
<i>S4</i>	Accurately apply spotter corrections on final and maintains wings level on final until "jumpers away" is called.
<i>S5</i>	Informs spotter of notable environmental conditions (up air, down air, wind shear, etc).
<i>S6</i>	If applicable, coordinates with other on-scene aircraft before reversing turn direction if a non-standard right-hand pattern is necessary.

X. Smokejumper and Paracargo

Task	C. Paracargo Operations
References	Interagency Smokejumper Pilots Operations Guide, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with paracargo operations.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	How terrain planning defines the paracargo pattern along with low altitude parallax in relation to cargo spot acquisition.
<i>K2</i>	Aircraft specific drop speeds in relationship to Vyse.
<i>K3</i>	Minimum paracargo drop altitudes to ensure full chute deployment.
<i>K4</i>	Free-fall cargo types and trajectories.
<i>K5</i>	Pattern spacing and pre-drop cadence callouts.
<i>K6</i>	Cargo in-tow emergency procedures.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Ensuring all jumpers on the ground are clear and acknowledge live cargo runs.
<i>R2</i>	Mitigating target fixation to maintain stable flight parameters.
<i>R3</i>	Warning spotter when approaching areas of anticipated turbulence.
<i>R4</i>	Raising drop height or aborting paracargo when low light, sun glare, etc obscure terrain.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Explain, plan and execute paracargo flight patterns which will not endanger persons, vehicles, or structures in the event of paracargo malfunctions.
<i>S2</i>	Brief and fly airspeed appropriate for aircraft type -0/+10 KIAS. Fly bank angles $\leq 30^\circ$ with momentary excursions allowed to never exceed 45° .
<i>S3</i>	Update spotters on pattern position and use steady pre-drop cadence on final.
<i>S4</i>	'Kick' cargo at appropriate altitude depending on type of cargo being dropped, never any lower than 150 ft AGL.
<i>S5</i>	Make aiming adjustments on subsequent drops based on feedback; and reasonably place cargo in vicinity of designated spot.
<i>S6</i>	Ensure canyon escape and / or ability to abort or exit in an emergency is never in question.

XII. Incident Awareness and Assessment

Task	A. Incident Awareness and Assessment
References	Vendor Contract, IAA SharePoint
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with IAA Operations.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Incident request and crew premission flight planning.
<i>K2</i>	Downloading and displaying incident maps on electronic flight bag software.
<i>K3</i>	Sensor designators.
<i>K4</i>	Effects of load shedding or inoperative generators on mission power needs.
<i>K5</i>	Sensor terminology: NADIR, SAR, WAMI, aircraft masking.
<i>K6</i>	Basic fire anatomy.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	VFR night operations in mountainous terrain.
<i>R2</i>	Risks associated with inadvertent night flight through smoke columns / plumes.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Coordinate application of mission power with crew.
<i>S2</i>	At night, utilize all available cockpit aids and avionics to avoid smoke columns.
<i>S3</i>	At night, select working altitudes that ensure terrain clearance.
<i>S4</i>	Follow crew altitude and heading instructions to optimize aircraft position.
<i>S5</i>	During periods of video recording, minimize discussions and fly predictable flight path.
<i>S6</i>	Provide crew awareness of all known air traffic in vicinity of incident.

XII. Incident Awareness and Assessment

Task	<i>B. Night InfraRed Operations (NIROPS)</i>
References	Vendor Contract, National InfraRed Operations Guide
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with NIROPS.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Coordinating imagery orders via NIFC and/or NIROPS Website.
<i>K2</i>	Scan line spacing and turn allowance to cover scan area with adequate overlap.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Fatigue hazards associated with flying backside of the clock.
<i>R2</i>	VFR operations at night.
<i>R3</i>	Night ground operations at unfamiliar and uncontrolled airfields.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Effectively coordinate and confirm orders with NIFC and Techs.
<i>S2</i>	Conducts crew prebriefing that includes factoring fatigue and experience levels.
<i>S3</i>	Coordinate ground logistics and accommodations for after business hour arrivals.
<i>S4</i>	Telephonically calls NIFC Dispatch prior to each departure and after arrival.
<i>S5</i>	Quality assures all planned fire orders provide proper 10K' AGL ground clearance.
<i>S6</i>	Quality assures Airfield & Runway NOTAM and TFR effective hours.
<i>S7</i>	Runs all mission checklists to ensure proper power and sensor configuration.
<i>S8</i>	Utilizes all available map and avionics aids to ensure safe altitude when under VFR.
<i>S9</i>	Demonstrates effective use of forward IR camera and handheld NVG to avoid plumes.
<i>S10</i>	Above FL180, disables 1/2 bank on Flight Guidance.
<i>S11</i>	Effective CRM to ensure situational awareness by all mission crewmembers.
<i>S12</i>	Successfully scans a minimum of two fires without having to refly a line.

XIII. Backcountry Airstrip

Task	A. Backcountry Airstrip Operations
References	Vendor Contract, USFS Backcountry Guide, FSH 5709.16
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with landing and taking off from Backcountry Airstrips.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Route considerations for safety.
<i>K2</i>	Accessing supplemental backcountry airstrip information and weather.
<i>K3</i>	Runway surface condition and effects of slope, vegetation, ground saturation on performance.
<i>K4</i>	Define Relative Hazard Index (RHI).
<i>K5</i>	Applying Density Altitude effects specifically to: landing and takeoff aerodynamics, true airspeed vs ground speed inertia, and engine power production.
<i>K6</i>	Mechanical influences on approach and departure over sunny, shady, cold water areas.
<i>K7</i>	Techniques to mitigate risk of aircraft damage when operating from poorly maintained soft and short airstrips.
<i>K8</i>	Parking clear of traffic and tie down options.
<i>K9</i>	Communication procedures in remote areas.
<i>K10</i>	Initial courses of action to protect life in the event of a mishap.
<i>K11</i>	Options for reporting observed airstrip degradation or hazards to safe operations.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Sound go/no-go decisions predicated on weather, time of day, RHI, and airstrip condition.
<i>R2</i>	Disciplined flight following to include dispatch notification of anticipated airstrip ETD.
<i>R3</i>	Disciplined checklist usage to guarantee aircraft configuration.
<i>R4</i>	Briefing mitigation plans on approach and takeoff in the event of engine failure.
<i>R5</i>	Utilizing other backcountry traffic for airstrip PIREPs and communication relay if needed.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Demonstrate remote communication flight following techniques.
<i>S2</i>	From a safe altitude make a go/no-go land decision based on real-time airstrip conditions.
<i>S3</i>	Analyze optimum landing direction and approach path that allows an abort option.
<i>S4</i>	Communicate the target touchdown zone / spot prior to base leg.
<i>S5</i>	Communicate go-around options and a go / no-go point for the approach to landing.
<i>S6</i>	Execute a practice low approach and departure if applicable.
<i>S7</i>	Manage energy by maintaining target airspeed -0/+5 KIAS.
<i>S8</i>	Touchdown within -0/+100 feet of designated spot.
<i>S9</i>	Brief abort criteria and demonstrate appropriate takeoff technique for airstrip condition.
<i>S10</i>	Climb at V _x until obstacles are cleared or V _y if no obstacles within -0/+5 KIAS.
<i>S11</i>	Continuously evaluate weather based on inflight (landing) or surface observation (pre-takeoff) and announce potential impacts to continued operations.

XIV. Special Takeoffs and Landings

Task	A. Off Airport Wheels - Mission Planning
References	Vendor Contract, OPM-29, OPM-22, OPM-06, ALSE Handbook, 351DM3.1 D.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with Mission Planning for Off Airport on wheels.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	The definition of 'off airport'; currency and carding requirements.
<i>K2</i>	Prerequisites for off airport: low level, mountainous terrain, UPRT.
<i>K3</i>	Aircraft/equipment selection for off airport operations.
<i>K4</i>	Aircraft tie down and securing gear.
<i>K5</i>	Communications procedures in remote areas.
<i>K6</i>	Procedures for off airport operations including:
<i>K6a</i>	a) High reconnaissance to identify obstructions to approach and departure corridors.
<i>K6b</i>	b) Methods to determine usable runway length (timing).
<i>K6c</i>	c) Low reconnaissance to identify obstructions on landing surface, verify approach and departure corridors.
<i>K6d</i>	d) Methods (typically dragging) to determine landing surface conditions (firm/soft, rough/smooth, wet/dry).
<i>K6e</i>	e) Decision points on approach, go-around courses, and one-way in and out scenarios.
<i>K6f</i>	f) Decision points on departure, go/no-go points, overrun areas, and climb gradients.
<i>K6g</i>	g) After landing actions: postflight insp, walking strip, making improvements.
<i>K7</i>	Substrate differences in soils and terrain including:
<i>K7a</i>	a) The effects of standing water/saturated ground on rolling resistance, braking action, and takeoff performance.
<i>K7b</i>	b) The effects of various rock/cobble size on different landing gear types, tire sizes, and tire pressures.
<i>K7c</i>	c) The effects of steep upslope/downslope on stopping and takeoff performance.
<i>K7d</i>	d) The effects of side slope on directional control
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Use of PASP or Station/Unit Aviation Safety Plan.
<i>R2</i>	Use of brakes off airport in conventional and tricycle gear.
<i>R3</i>	Consequences and possible courses of action if mishap occurs.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Plan a mission to a nearby off airport location.

XIV. Special Takeoffs and Landings

Task	<i>B. Off Airport Wheels - Site Evaluation, Approach & Landing</i>
References	Vendor Contract, OPM-29, OPM-22, OPM-06, ALSE Handbook, 351DM3.1 D.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with Off Airport Site Evaluations, Approaches, and Landings.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	DOI's recommended process for an off airport site evaluation.
<i>K2</i>	A stabilized approach, to include energy management concepts.
<i>K3</i>	Effects of atmospheric/environmental conditions, including wind and terrain on approach and landing performance.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Selection of off airport landing site based on pilot capability, airplane performance and limitations, available distance, surface suitability, and wind.
<i>R2</i>	Effects of:
<i>R2a</i>	a) Terrain
<i>R2b</i>	b) Crosswind
<i>R2c</i>	c) Windshear
<i>R2d</i>	d) Tailwind
<i>R2e</i>	e) Landing surface slope
<i>R2f</i>	f) Landing surface conditions
<i>R2g</i>	g) Use of brakes
<i>R3</i>	Planning for a go-around and rejected landing.
<i>R4</i>	Collision hazards to include aircraft, vehicles, persons, wildlife, terrain, obstacles, and wires.
<i>R5</i>	Low altitude maneuvering including stall, spin, or CFIT.
<i>R6</i>	Distractions, loss of situational awareness, and/or improper task management.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Establish the airplane over the intended landing area at safe altitude (high reconnaissance), airspeed, and configuration that allows for effective selection of a suitable landing site considering pilot capabilities, wind, slope, hidden obstructions, and surface conditions to include considerations of safe egress/escape routes.
<i>S2</i>	Determine usable runway length, identify planned touch down, roll out, taxi, parking, and take off areas.
<i>S3</i>	When possible, communicate landing site location and expected time on ground to dispatch, other agency aircraft or personnel, flight service, or other responsible party.
<i>S4</i>	Make a low level reconnaissance of the site to confirm observations made during the high reconnaissance and to additionally check for:
<i>S4a</i>	a) Cutbanks, gullies, ruts, or standing water on intended landing area
<i>S4b</i>	b) Size of cobble, if any
<i>S4c</i>	c) Debris, brush, logs, or other hazards not seen from high reconnaissance
<i>S5</i>	Maintain a stabilized approach and the recommended airspeed (Maximum 1.3 V _{so} or V _{mc} , whichever is higher) with gust correction factor applied within 5 knots.

<i>S6</i>	Demonstrate techniques for ensuring that the aircraft can be safely flown into and out of an intended landing site and verifying surface conditions (dragging).
<i>S7</i>	Maintain directional control and appropriate crosswind correction throughout the approach and landing.
<i>S8</i>	Touch down smoothly at the approximate stalling speed (3 point), or slightly above the approximate stalling speed (wheel ldg) on the specified point or within 50 feet beyond, with no drift, and the airplane's longitudinal axis aligned with the landing track.
<i>S9</i>	Execute a timely go-around if the approach and touchdown cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
<i>S10</i>	Complete the prescribed checklist and (when applicable) relay planned down time to dispatch.
<i>S11</i>	Perform a thorough post flight inspection of the airplane to ensure debris or rock damage has not affected airworthiness or safety of flight.
<i>S12</i>	Make improvements to the landing area to remove any hazards prior to taxi and takeoff operations.

XIV. Special Takeoffs and Landings

Task	C. Off Airport Wheels - Takeoff
References	Vendor Contract, OPM-29, OPM-22, OPM-06, ALSE Handbook, 351DM3.1 D.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with Off Airport Takeoffs and Postflight Procedures.
Knowledge	The applicant demonstrates understanding of:
K1	Effects of atmospheric/environmental conditions, including wind and terrain on takeoff and climb performance.
K2	Vx and Vy.
K3	Appropriate airplane configuration.
K4	Effects of surface conditions on takeoff performance.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
R1	Selection of off airport takeoff path based on pilot capability, airplane performance and limitations, available distance, surface suitability, and wind.
R2	Effects of:
R2a	a) Crosswind
R2b	b) Windshear
R2c	c) Tailwind
R2d	d) Terrain
R2e	e) Surface Conditions
R3	Abnormal operations, to include planning for:
R3a	a) Rejected takeoff
R3b	b) Engine failure in takeoff/climb phase of flight
R4	Collision hazards to include aircraft, vehicles, persons, wildlife, terrain, obstacles, and wires.
R5	Low altitude maneuvering including stall, spin, or CFIT.
R6	Distractions, loss of situational awareness, and/or improper task management.
Skills	The applicant demonstrates the ability to:
S1	Complete the appropriate checklist and (when applicable) relay planned takeoff time to dispatch.
S2	Verify correct takeoff path.
S3	Ascertain wind direction.
S4	Position the flight controls for the existing wind conditions.
S5	Clear the area, taxi into position utilizing maximum available takeoff area and align the airplane on the takeoff path.
S6	Identify selected abort point prior to starting takeoff.
S7	Confirm takeoff power and proper engine and flight instrument indications prior to reaching abort point.
S8	Execute a timely aborted takeoff at or before abort point if takeoff cannot be made safely within the specified area.
S9	Rotate and lift off at the recommended airspeed, and (when applicable) accelerate to the recommended obstacle clearance airspeed or Vx.

<i>S10</i>	When applicable, establish a pitch attitude that will maintain the recommended obstacle clearance airspeed or V_x , ± 5 knots until obstacle is cleared.
<i>S11</i>	After clearing obstacle, establish pitch attitude for V_y and accelerate to and maintain V_y ± 5 knots during the climb.
<i>S12</i>	Retract flaps, if extended, after a positive rate of climb has been verified or in accordance with airplane manufacturer's guidance.
<i>S13</i>	Maintain directional control and proper wind drift correction throughout takeoff and climb.

XIV. Special Takeoffs and Landings

Task	<i>D. Ski Plane Operations - Site Evaluation, Approach & Landing</i>
References	Vendor Contract, FAA-H-8083-23, 351DM1.6 A., OPM-16, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with ski plane operations, site evaluations, approaches, and landings.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Snow and ice including:
<i>K1a</i>	a) Effects of snow consistency and depth on aircraft performance
<i>K1b</i>	b) Effects of temperature on snow consistency
<i>K1c</i>	c) Different characteristics of lake, river, and saltwater ice
<i>K1d</i>	d) Methods to determine ice thickness
<i>K2</i>	Procedures for site evaluation, landing, taxi, parking, securing, & takeoff
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Cold weather operations including:
<i>R1a</i>	a) Effects of cold on flight crew
<i>R1b</i>	b) Effects of cold on aircraft systems and equipment
<i>R2</i>	Selection of a ski landing site based on pilot capability, airplane performance and limitations, lighting conditions, available distance, surface suitability, and wind.
<i>R3</i>	Effects of:
<i>R3a</i>	a) Terrain
<i>R3b</i>	b) Crosswind
<i>R3c</i>	c) Windshear
<i>R3d</i>	d) Tailwind
<i>R3e</i>	e) Landing surface slope
<i>R3f</i>	f) Landing surface conditions including overflow, blowing snow, drifts, hidden obstructions, etc.
<i>R3g</i>	g) Lighting conditions/precipitation including flat light, whiteouts
<i>R3h</i>	h) Failure to adequately assess/prepare landing site
<i>R4</i>	Planning for:
<i>R4a</i>	a) Go-around and rejected landing
<i>R4b</i>	b) Stuck aircraft
<i>R4c</i>	c) Equipment failures
<i>R4d</i>	d) Collision hazards to include aircraft, vehicles, persons, wildlife, terrain, obstacles, and wires
<i>R4e</i>	e) Low altitude maneuvering including stall, spin, or CFIT
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Establish the airplane over the intended landing area at safe altitude, airspeed, and configuration that allows for effective selection of a suitable landing site (high reconnaissance), considering pilot capabilities, lighting, wind, slope, hidden obstructions, and surface conditions to include considerations of safe egress/escape routes.
<i>S2</i>	Determine usable runway length, identify planned touch down, slide out, taxi, parking, and take off areas.

<i>S3</i>	When possible, communicate landing site location and expected time on ground to dispatch, other agency aircraft or personnel, flight service, or other responsible party.
<i>S4</i>	Make a low level reconnaissance of the site to confirm observations made during the high reconnaissance and to additionally check for:
<i>S4a</i>	a) Snow drifts: size, orientation, spacing, etc.
<i>S4b</i>	b) Debris, brush, logs, or other hazards not seen from high reconnaissance
<i>S5</i>	Maintain a stabilized approach and the recommended airspeed (Maximum 1.3 V _{so} or V _{mc} , whichever is higher) with gust correction factor applied within 5 knots.
<i>S6</i>	Lay tracks as required to ensure landing and takeoff areas are firmly packed, watching for indications of overflow.
<i>S7</i>	Maintain directional control and appropriate crosswind correction throughout the approach and landing.
<i>S8</i>	Touch down in the appropriate configuration, smoothly, at or near the approximate stalling speed, with no drift, the airplane's longitudinal axis aligned with the landing track, and in the ski tracks.
<i>S9</i>	Execute a timely go-around if the approach and touchdown cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
<i>S10</i>	Park aircraft where it can be safely stopped and easily repositioned for takeoff.
<i>S11</i>	Complete the prescribed checklist and (when applicable) relay planned down time to dispatch
<i>S12</i>	Perform a thorough post flight inspection of the airplane to ensure debris, snow, or ice damage has not affected safety of flight.

XIV. Special Takeoffs and Landings

Task	<i>E. Ski plane Operations - Takeoff & Departure</i>
References	Vendor Contract, FAA-H-8083-23, 351DM1.6 A., OPM-16, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with ski plane takeoffs & departures
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Effects of atmospheric/environmental conditions, including wind, snow conditions, temperature, & terrain on takeoff and climb performance
<i>K2</i>	Vx and Vy
<i>K3</i>	Appropriate airplane configuration
<i>K4</i>	Effects of surface conditions on takeoff performance
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Selection of ski takeoff path based on pilot capability, airplane performance and limitations, available distance, surface suitability, and wind.
<i>R2</i>	Effects of:
<i>R2a</i>	a) Crosswind
<i>R2b</i>	b) Windshear
<i>R2c</i>	c) Tailwind
<i>R2d</i>	d) Terrain
<i>R2e</i>	e) Surface Conditions
<i>R3</i>	Abnormal operations, to include planning for:
<i>R3a</i>	a) Rejected takeoff
<i>R3b</i>	b) Engine failure in takeoff/climb phase of flight
<i>R3c</i>	c) Frozen wheel skis/tires/brakes
<i>R4</i>	Collision hazards to include aircraft, vehicles, persons, wildlife, terrain, obstacles, and wires
<i>R5</i>	Low altitude maneuvering including stall, spin, or CFIT
<i>R6</i>	Distractions, loss of situational awareness, and/or improper task management
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Complete the appropriate checklist and (when applicable) relay planned takeoff time to dispatch
<i>S2</i>	Verify correct takeoff path
<i>S3</i>	Ascertain wind direction
<i>S4</i>	Position the flight controls for the existing wind conditions
<i>S5</i>	Clear the area, taxi into position utilizing maximum available takeoff area and align the airplane on the takeoff path
<i>S6</i>	Identify selected abort point prior to starting takeoff
<i>S7</i>	Confirm takeoff power and proper engine and flight instrument indications prior to reaching abort point
<i>S8</i>	Execute a timely aborted takeoff at or before abort point if takeoff cannot be made safely within the specified area
<i>S7</i>	Rotate and lift off at the recommended airspeed, and (when applicable) accelerate to the recommended obstacle clearance airspeed or VX

<i>S8</i>	When applicable, establish a pitch attitude that will maintain the recommended obstacle clearance airspeed or V_x , ± 5 knots until obstacle is cleared
<i>S9</i>	After clearing obstacle, establish pitch attitude for V_y and accelerate to and maintain V_y ± 5 knots during the climb
<i>S10</i>	Retract flaps, if extended, after a positive rate of climb has been verified or in accordance with airplane manufacturer's guidance
<i>S11</i>	Maintain directional control and proper wind drift correction throughout takeoff and climb

XIV. Special Takeoffs and Landings

Task	<i>F. Glacier Operations (Ski plane)</i>
References	Vendor Contract, FAA-H-8083-23, 351DM3, OPM-16, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with glacier operations.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	How to operate an aircraft safely in glacier operations including required equipment.
<i>K4</i>	Landing areas and terrain associated with mountain geography including ridges, confined areas, saddles, cirques, glaciers, snow fields, and canyons.
<i>K7</i>	Weather related micro-climates associated with glaciers.
<i>K8</i>	Techniques for ensuring aircraft can be safely flown into and out of intended landing site.
<i>K9</i>	Taxi, take off, and departure procedures to include unsticking frozen skis, cooling skis, laying tracks, and checking for crevasse and obstructions.
<i>K10</i>	The relationship between snow conditions and required take off run.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Pioneering glaciers vs. known landing sites.
<i>R2</i>	Selection of a ski landing site based on pilot capability, airplane performance and limitations, lighting conditions, available distance, surface suitability, and wind.
<i>R3</i>	Effects of:
<i>R3a</i>	a) Density altitude
<i>R3b</i>	b) Terrain
<i>R3c</i>	c) Crosswind
<i>R3d</i>	d) Windshear
<i>R3e</i>	e) Tailwind
<i>R3f</i>	f) Landing surface slope
<i>R3g</i>	g) Landing surface conditions including, rutted snow, crusted snow, blowing snow, drifts, crevasses, hidden obstructions, etc.
<i>R3h</i>	h) Lighting conditions/precipitation including flat light, whiteouts
<i>R3i</i>	i) Failure to adequately assess/prepare landing site
<i>R4</i>	Planning for:
<i>R4a</i>	a) Go-around point
<i>R4b</i>	b) Stuck aircraft
<i>R4c</i>	c) Equipment failures
<i>R4d</i>	d) Collision hazards to include aircraft, vehicles, persons, wildlife, terrain, obstacles, and wires
<i>R4e</i>	e) Low altitude maneuvering including stall, spin, or CFIT
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Establish the airplane over the intended landing area at safe altitude, airspeed, and configuration that allows for effective selection of a suitable landing site (high reconnaissance), considering pilot capabilities, lighting, wind, slope, hidden obstructions, and surface conditions to include considerations of safe egress/escape routes.

<i>S2</i>	Select appropriate approach path and angle to the intended landing area while demonstrating proper power management.
<i>S3</i>	Complete a low reconnaissance during approach considering additional obstacles, slopes, and intended touchdown point.
<i>S4</i>	Select go around point prior to descending below height of the barriers.
<i>S5</i>	Select proper landing site considering slope, hidden obstructions, snow conditions, crevasses, and any other variables unique to that site.
<i>S6</i>	Initiate approach downslope when possible, laying tracks as required and ensuring landing and takeoff areas are firmly packed.
<i>S7</i>	Park aircraft where it can be safely stopped and easily repositioned for take off.
<i>S8</i>	Verify performance and power are available for successful departure from landing area prior to take off.
<i>S9</i>	Select appropriate take off procedures, departure path, obstacle clearance, and forced landing areas.
<i>S10</i>	Exhibit proper taxi, take off and departure procedures.
<i>S11</i>	Complete the appropriate checklist

XV. Reconnaissance – Resource / Fire

Task	A. Reconnaissance - Resource / Fire
References	Vendor Contract, NWCG Standards for Airspace Coordination, National Mobilization Guide, FSH 5709.16, OPM-29
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills associated with Resource Reconnaissance.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Policy and program goals for reconnaissance flights.
<i>K2</i>	Command and control elements overseeing the tasking.
<i>K3</i>	Operation of mission specific equipment if applicable.
<i>K4</i>	Minimum Reconnaissance Altitudes.
<i>K5</i>	Requirements for operating in the vicinity of special use or controlled airspace.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	External pressures, distractions, mission-it-is, and environmental factors that could challenge the PIC's authority or fuel/flight time decisions.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Perform a thorough preflight briefing for mission crewmembers to include equipment requirements, intercom communications procedures, minimum altitudes, and crewmember actions during abnormal or emergency events.
<i>S2</i>	Identifies types of airspace such as Military Training Routes (MTR) in the vicinity of the planned reconnaissance route / area.
<i>S3</i>	Briefs crewmembers on minimum mission altitudes and maintains $\geq 500'$ AGL.
<i>S4</i>	Brief and demonstrate Steep Turns in accordance with the FAA Commercial Pilot ACS.
<i>S5</i>	Configures aircraft to optimize reconnaissance observation, remain within AFM limitations, and if single engine - always considers glide options.
<i>S6</i>	Perform a reconnaissance operation along a ridge, river, beach, tree line, or other briefed reference with airspeed $\geq 1.3 V_{so}$, bank angles $\leq 30^\circ$ (intermittent $\leq 45^\circ$) and $\pm 100'$ of briefed altitude.
<i>S7</i>	Perform an overfly mark/fix of a point of interest and record coordinates.
<i>S8</i>	Multitask mission crew coordination while maintaining visual traffic scan.
<i>S9</i>	Periodically provides updates on fuel and time remaining.
<i>S10</i>	Safely manage pilot workload to prevent distractions from compromising control of the aircraft.

XVI. Forest Health

Task	A. Contour
References	Vendor Contract, Agency Policy, Aerial Survey Standards (1999)
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with using a contour flight profile.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Concept of Contour sketch mapping and program objectives.
<i>K2</i>	Utilizing a topographical map for planning to fly individual drainages.
<i>K3</i>	Climb, range, and endurance performance calculations at high density altitudes.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Operations during mountain wave, high winds, and high density altitudes.
<i>R2</i>	Potential for inadvertent VMC to IMC due to storms, smoke, mountain obscuration.
<i>R3</i>	Physiological emergencies such as motion sickness or fatigue on long flights in rough air.
<i>R4</i>	Disciplined visual lookout for traffic during a mission focused on ground features.
<i>R5</i>	Maintain situational awareness of escape routes while maneuvering in tight mountainous drainages and box canyons.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Conduct flight prebrief with mission crewmembers to establish mission objectives.
<i>S2</i>	Establish the aircraft over the terrain in a position where the area of interest is within visual field of regard for the observer.
<i>S3</i>	Maneuver the aircraft so that secondary drainages are flown before completing the survey of the main drainage.
<i>S4</i>	Smoothly adjusts heading, power, and pitch changes to meet the existing conditions.
<i>S5</i>	Smoothly maneuver the aircraft utilizing medium-banked turns while the altitude varies depending on terrain, temperature, and winds.
<i>S6</i>	Select a safe altitude no lower than 500 feet AGL and up to 2,500 feet AGL or higher as directed by the observer. Selected altitude will be maintained within ± 100 feet.
<i>S7</i>	Efficiently plan and perform contour sketch mapping where safety is never in question.

XVI. Forest Health

Task	B. Grid
References	Vendor Contract, Agency Policy, Aerial Survey Standards (1999)
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with using a grid flight profile.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Concept of Grid sketch mapping.
<i>K2</i>	The use of a topographical chart, setting up a grid or series of parallel GPS transect lines over a defined geographical area including deriving latitude and longitude of each end point of the transects.
<i>K3</i>	Selecting a safe altitude based on terrain, wind, and mission requirements of no less than 500 feet AGL, altitude within ± 100 feet.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Working within active MTR, MOA, TFR's and Warning Areas.
<i>R2</i>	Loss of communication with dispatch in remote locations or improper use of local repeaters.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Conduct flight prebrief with mission crewmembers.
<i>S2</i>	Starting transects precisely over the start waypoint, on course, on altitude, and on briefed groundspeed parameters of ± 10 knots.
<i>S3</i>	Precisely fly GPS transect lines while correcting for wind drift and compensating for terrain obstructions.
<i>S4</i>	Ending transects precisely, initiating smooth turn to next transect while selecting subsequent waypoints.
<i>S5</i>	Smoothly adjusts heading, power, and pitch changes to meet the existing conditions.
<i>S6</i>	When dispatch communications lost, demonstrates alternate means to provide updates such as cell, text, satellite phone, etc.
<i>S7</i>	Efficiently plan and perform grid sketch mapping where safety is never in question.

XVII. Emergency / Abnormal Operations

Task	A. Emergency / Abnormal Operations
References	Vendor contract, Aircraft AFM and Supplements, NWCG Aviation Mishap Response Guide and Checklist, Training Syllabi
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with special use mission emergency/abnormal procedures while under operational control of a government agency.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Failure of special mission equipment and associated AFM supplemental guidance.
<i>K2</i>	Missionized modification to aircraft emergency exits, extinguisher location, ELTs, etc.
<i>K3</i>	Contract requirements covering first aid and survival kits.
<i>K4</i>	Best use of aircrew and mission crewmembers to assist.
<i>K5</i>	Knowledge of Priority Actions, Accident Checklists, and 888-4MISHAP Reporting phone number.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Ensuring time sensitive hazard or risk information is relayed through supervision or dispatch.
<i>R2</i>	Increased risk when employing untrained assistance such as utilization of chase aircraft or low passes to get air / ground confirmation of aircraft configuration.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Analyze impacts of installed special use mission equipment on emergency procedures and take appropriate action.
<i>S2</i>	Articulate scenario-based selected emergency or abnormal procedures to include jettison criteria if applicable.
<i>S3</i>	Describe safely exiting remote and special mission areas after encountering inflight emergencies including two-way radio communications failure.

XVII. Emergency / Abnormal Operations

Task	B. SAFECOM Procedures
References	Vendor contract, www.safecom.gov
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with SAFECOM Procedures.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	The safety benefits of a healthy reporting culture.
<i>K2</i>	The purpose and use of the SAFECOM system.
<i>K3</i>	When a SAFECOM should be filed and who to involve.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Importance of processing time sensitive hazard or lessons learned through SAFECOMs.
<i>R2</i>	Safety muting effects when SAFECOM is misunderstood to imply or intend punitive measures.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	File a SAFECOM and encourage voluntary participation of others.

XVIII. Postflight Procedures

Task	A. Government Facility Parking
References	Vendor Contract, Local Guides, NWCG Standards for Airtanker Base Operations.
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with parking on government controlled property.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Where to find guidance for taxi and parking on government controlled property.
<i>K2</i>	Low visibility ramp operations.
<i>K3</i>	Fuel ordering procedures.
<i>K4</i>	Monitoring fueling operations.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Cease aircraft ramp movement if communications lost or instructions not understood.
<i>R2</i>	Proactively communicating and taking action when ground hazards are observed.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Ensures flight following is closed out upon landing.
<i>S2</i>	Establish communications prior to entry on government controlled property.
<i>S3</i>	Visually clear taxiway and ramp for personnel and obstructions.
<i>S4</i>	Follow ramp and parking tender instructions.
<i>S5</i>	Quality assure wing walker instruction and take positive control when doubt exists.
<i>S6</i>	Perform post flight walk around.
<i>S7</i>	Initiate AAR if applicable.

XVIII. Postflight Procedures

Task	<i>B. Maintenance</i>
References	Vendor Contract, Agency Policy, 14 CFR Part 43
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with coordinating maintenance actions.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Determining when maintenance or required inspections are due.
<i>K2</i>	How to coordinate and who can perform maintenance.
<i>K3</i>	Deferring inoperative equipment.
<i>K4</i>	Required quality assurance processes for aircraft contract availability.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Airworthiness and contract availability are never in question.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Explain privileges and limitations a pilot has in performing preventive maintenance.
<i>S2</i>	Explain inoperative equipment MEL deferral procedures.

XVIII. Postflight Procedures

Task	<i>C. Aircraft Security</i>
References	Vendor Contract, Agency Policy
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft security.
Knowledge	The applicant demonstrates understanding of:
<i>K1</i>	Agency or contract specified aircraft security requirements and procedures.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>R1</i>	Awareness and vigilance appropriate to the local area and airfield capabilities.
Skills	The applicant demonstrates the ability to:
<i>S1</i>	Secure the aircraft in accordance with contract or policy requirements.

Appendix 1: Web Resources

(Last Updated: 03/08/2024)

National SitRep	https://www.nifc.gov/nicc-files/sitreprt.pdf
Fire Weather	https://www.weather.gov/fire/
Fire Weather	https://www.weather.gov/wrh/
Fire Weather	https://forecast.weather.gov/product_sites.php?site=NWS&product=FWF
Wind / Humidity	https://www.ventusky.com/
NWCG Pubs	https://www.nwcg.gov/publications
DOI Pubs	https://www.doi.gov/aviation/library
Fire Webcam	https://www.alertwildfire.org/
Incident Web	https://inciweb.nwcg.gov/
AFF	https://www.aff.gov/
SAFECOM	https://www.safecom.gov/
IAT	https://www.iat.gov/default.asp