

## EXHIBITS FOR SOLICITATION 301-20-091

The following is a list of the exhibits.

EXHIBIT #	Description	# of Pages	Page Numbers
1	Definitions and Acronyms	3	2-4
2	Aircraft Operations	9	5-13
3	Application Aircraft Requirements	3	14-16
4	Observation Aircraft Requirements	3	17-19
5	Avionics Requirements & Specifications	2	20-21
6	Restraint Systems Condition Inspection Guidelines	1	22
7	First Aid Kit (Aeronautical)	1	23
8	Aviation Operations Briefing Certificate	1	24
9	Fuel Servicing Specifications	3	25-27
10	Aircraft Guidance and Tracking Equipment	2	28-29
11	Automated Flight Following	2	30-31
12	Products and Application Procedures	3	32-34
13	Synopsis of Safety Program	3	35-37
14	Department of Labor Wage Determination Information	1	38

## EXHIBIT 1 – DEFINITIONS AND ACRONYMS

Aircraft Accident. An occurrence associated with the operation of an aircraft, which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

Aircraft Incident. An occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.

Airspace Conflict. A near mid-air collision, intrusion, or violation of airspace rules.

Alternate Base. A base, other than the designated base, established to permit operation from vicinity of a project area.

Aviation Hazard. Any condition, act, or set of circumstances that exposes an individual to unnecessary risk or harm during aviation operations.

Cargo. Any material thing carried in the aircraft.

Civil Twilight. Begins in the morning, and ends in the evening when the center of the sun is geometrically 6 degrees below the horizon.

Contractor. An operator being paid by the Government for services.

Crewmember. A person assigned to perform duty in an aircraft during flight time.

Fatal Injury. Any injury, which results in death within 30-days of the accident.

Federal Aviation Regulations. Rules and regulations contained in Title 14 of the Code of Federal Regulations.

First Aid. Any medical attention that involves no medical bill. If a physician prescribes medical treatment for less than serious injury and makes a charge for this service, that injury becomes "medical attention."

Flight Time. Pilot flight hour computations shall begin at liftoff and end at touchdown.

Forced Landing. A landing necessitated by failure of engines, systems, components, or incapacitation of a crewmember, which makes continued flight impossible, and which may or may not result in damage.

Fully Operated. The Contractor shall furnish the aircraft, pilots, and other personnel, repairs, operating supplies, service capability, and other incidentals necessary to the operation of the aircraft.

General Aviation. That portion of civil aviation that encompasses all facets of aviation except air carriers.

Ground Mishap, Aircraft. An aircraft mishap in which there is no intent to fly; however, the power plants and/or rotors are in operation and damage incurred requiring replacement or repair of rotors, propellers, wheels, tires, wing tips, flaps, etc., or an injury is incurred requiring first aid or medical attention.

Incident-With-Potential. An incident that narrowly misses being an accident and in which the circumstances indicate significant potential for substantial damage or serious injury. Classification of an incident as an "Incident with Potential" is determined by the agency ASM.

Instrument Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

Life-Threatening. A situation or occurrence of a serious nature, developing suddenly and unexpectedly and demanding immediate action to prevent loss of life.

Maintenance Deficiency. An equipment defect or failure which affects or could affect the safety of operations, or that causes an interruption to the services being performed.

Mishap, Aviation. Mishaps include aircraft accidents, incidents-with-potential, aircraft incidents, aviation hazards and aircraft maintenance deficiencies.

Night. The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time.

Official Sunset and Sunrise. The times when the upper edge of the disk of the Sun is on the horizon, considered unobstructed relative to the location of interest. Atmospheric conditions are assumed to be average and the location is in a level region on the Earth's surface.

## EXHIBIT 1 – DEFINITIONS AND ACRONYMS

Operational Control. The condition existing when an entity exercises authority over initiating, conducting or terminating a flight.

Operating Agency. An executive agency or any entity thereof using agency aircraft, which it does not own.

Operator. Any person who causes or authorizes the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft.

Passenger. Any person aboard an aircraft who does not perform the function of a flight crewmember or crewmember.

Pilot-In-Command. The pilot responsible for the operation and safety of the aircraft during the time defined as flight time.

Point-to-Point. Aircraft operations between any two geographic locations operationally suitable for take-off and landing (airport-to-airport).

Precautionary Landing. A landing necessitated by apparent impending failure of engines, systems, or components, which makes continued flight inadvisable.

Product: For the purpose of this solicitation product means either Foray 48B or other acceptable formulation of *Btk*.

SafeCom. An agency Aviation Safety Communique used to report any condition, observance, act, maintenance problem, or circumstance which has potential to cause an aviation related accident (Form AMD-34 or FS 5700-14).

Serious Injury. Any injury which: (1) requires hospitalization for more than 48-hours, commencing within 7-days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes or nose); (3) causes severe hemorrhages, nerve, muscle or tendon damage; (4) involves any internal organ; or (5) involves second or third-degree burns, or any burns affecting more than 5% of the body surface.

Special Mission Aircraft. Aircraft approved for other than point-to-point only missions. Transportation is limited to personnel required to carry out the special mission of the aircraft.

Substantial Damage. Any damage or failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage" for the purpose of this part.

Trip. The elapsed time between the time that an aircraft leaves its designated base point and time of return to that point.

Visual Flight Rules. As defined in Chapter 91 of the Federal Air Regulations of the FAA.

## EXHIBIT 1 – DEFINITIONS AND ACRONYMS

### Acronyms

AFF	Automated Flight Following
AC	Advisory Circular
AGL	Above Ground Level
A&P	Airframe & Powerplant (Mechanic)
AD	Airworthiness Directive
ASM	Aviation Safety Manager
ASTM	American Society for Testing Material
ATC	Air Traffic Control
CAB	Civil Aeronautics Board
CG	Center of Gravity
CFR	Code of Federal Regulations
CO	Contracting Officer
COR	Contracting Officer's Representative
DGPS	Differentially Corrected Global Positioning System – Based Aircraft Guidance & Tracking System
DOL	Department of Labor
DOT	Department of Transportation
ELT	Emergency Locator Transmitter
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations or Federal Acquisition Regulation (as applicable)
FS	Forest Service
FSS	Flight Service Station
GFP	Government Furnished Property
GPS	Global Positioning System
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
IP	Institute of Petroleum
MEL	Minimum Equipment List
NFPA	National Fire Protection Association
NTSB	National Transportation Safety Board
OEM	Original Equipment Manufacturer
PIC	Pilot-in-Command
PPE	Personal Protection Equipment
PPH	Pounds per Horsepower
SB	Safety Bulletin
SDS	Safety Data Sheets
SPCC	Spill Prevention, Control & Countermeasures
STC	Supplemental Type Certificate
STS	Slow the Spread
TBO	Time between Overhauls
TSO	Technical Standard Order
USDA	United States Department of Agriculture
VFR	Visual Flight Rules

## EXHIBIT 2 – AIRCRAFT OPERATIONS

### General

Regardless of any status as a public aircraft operation, the Contractor shall operate in accordance with their approved Federal Aviation Administration (FAA) Operations Specifications and all portions of 14 CFR 91 (including those portions applicable to civil aircraft) and each certification required under this Contract unless otherwise authorized by the Contracting Officer (CO).

A Government representative may inspect the pilot's Interagency Airplane Pilot Qualification Card for currency before any flight. The Government has mission control and can delay, terminate, or cancel a flight at any time.

Except for take-off, landing, and aerial application, flight below 500-feet AGL is prohibited. During application the aircraft shall maintain a height of 100 to 200 feet above treetops.

Smoking is prohibited within 50-feet of fuel servicing vehicle, fueling equipment, or aircraft.

A prework meeting between the Government, participating state agencies, and the Contractor along with their primary crew members shall be held prior to the start of work and each time a state is entered for the first time. The Contractor's primary crew members must attend any prework meeting that is scheduled. The meeting may include, but is not limited to: (1) review of the contract in detail, (2) operational procedures (dispatch, flight following, hazard/risk assessment and reduction, airspace coordination, incident/accident reporting, etc.) and (3) specific assignments and plan for the project area to be treated.

#### Pilot Authority and Responsibilities

The Pilot-In-Command (PIC) is responsible for the safety of the aircraft, loading and unloading of occupants, cargo and product and for dispersal system checks prior to take-off. The pilot shall comply with the directions of the Government, except when in the pilot's judgment compliance will be a violation of applicable federal or state regulations or contract provisions. The pilot has final authority to determine whether the flight can be accomplished safely and shall refuse any flight or landing which is considered hazardous or unsafe.

The pilot is responsible for computing the weight and balance for all flights and for assuring that the gross weight and center of gravity do not exceed the aircraft's limitations. Pilots shall be responsible for the proper loading and securing of all cargo including pesticides. The pilot must be responsible for ensuring that there are no maintenance discrepancies prior to flight. Any discrepancy must be addressed in accordance with the operator's procedures and this contract.

Pilot will use an approved 14 CFR 135 or 137 cockpit checklist for all flight operations (as applicable).

All engines shall be shut down while loading or unloading passengers, cargo or products. For propeller-driven aircraft, the propellers shall have ceased rotation. The pilot shall remain at the aircraft controls until the engine is shut down and propellers have ceased rotation.

Equipment shall be located in or on the aircraft in such a manner as to not cause damage or obstruct the operation of equipment or personnel. All cargo shall be properly secured. The pilot shall not permit any passenger in the aircraft or any cargo to be loaded therein unless authorized by the CO or Contracting Officers Representative (COR).

#### Passenger Briefing

Before each takeoff, the PIC shall ensure that all passengers have been briefed in accordance with the briefing items contained in 14 CFR 135 including (as applicable):

- Use of seat belts and/or shoulder harness
- Ingress/Egress procedures
- Emergency Locator Transmitter (ELT)
- Oxygen system
- First Aid & Survival Kit
- Personal Protective Equipment
- Location of Fire Extinguisher

## EXHIBIT 2 – AIRCRAFT OPERATIONS

In those instances where short flights are made, the briefing does not need to be repeated unless new passengers come aboard.

### Flight Plans

Pilots shall file and operate on a FAA, International Civil Aviation Organization (ICAO), or agency flight plan. Contractor flight plans are not acceptable. Flight plans shall be filed prior to takeoff when possible. Pilots must plan flights so as to land with VFR fuel minimums.

### Flight Following

Pilots are responsible for flight following with the FAA, ICAO, or in accordance with FS approved flight following procedures. When departure or arrival times will not be met within 30-minutes, the pilots shall notify the appropriate Forest Service dispatch office/coordination center/unit of the delay.

When performing aerial application, pilots are required to flight follow in accordance with the Unit Aviation Management Plan, normally every 15-minutes. When performing point-to-point flights, check-in shall not exceed 1-hour intervals under normal circumstances. Either radio/voice or AFF are acceptable methods of flight following.

### Manifesting

Prior to any takeoff, the PIC shall provide the COR or designated on site inspector center with current passenger information (observation aircraft) or load information (product and fuel on board).

### Fuel Reserve

To provide adequate fuel reserve all operations shall comply with 14 CFR 91.

### IFR/Night

Single-engine aircraft operations shall not be conducted in instrument meteorological conditions or night conditions as defined in 14 CFR with Government personnel on board.

Notwithstanding the FAA definition of night in 14 CFR Part 1; for operational purposes night shall mean: 30-minutes after official sunset to 30-minutes before official sunrise, based on local time of appropriate sunrise/sunset tables nearest to the planned destination.

Pilots flying night missions shall not land at an airport unless it meets FAA lighting standards. Single-engine aircraft flights at night may be authorized by the Forest Service dispatch office/coordination center only for ferry when:

- Requested by the pilot
- No occupants other than pilot(s) are aboard
- The flight is conducted in accordance with 14 CFR Part 91
- Agency flight and duty limitations are observed

### Fuel Servicing

(See Exhibit 9)

### Security of Aircraft, Equipment, and Product

Any aircraft used under this contract will be physically secured and disabled via a duallock method during off-duty hours. Any combination of two different anti-theft devices designed to lock aircraft flight control surfaces when not in use or designed to secure an aircraft to the ground are acceptable, provided they are appropriate for the aircraft. Operational environments and personnel safety must be considered when selecting the locking devices and methods to be used.

Removal and/or disabling of locking devices and methods must be incorporated into preflight checklists to prevent accidental damage to the aircraft and must be installed in a manner which precludes their inadvertent interference with in-flight operations. Key control procedures must be used for any lock. The security of aircraft, equipment, and product used under this contract is the responsibility of the Contractor, and must meet the the following minimum security requirements:

## EXHIBIT 2 – AIRCRAFT OPERATIONS

Application aircraft must have lock/key access to the aircraft cockpit and product dispersal system and at least two of the following: Using only locking aircraft doors and fenced or gated parking areas are unacceptable methods.

- Ignition disabling device - key operated
- Propeller lock/key
- Keyed magneto, starter switch, or master power switch
- Hidden battery cutoff switches or start relay switches
- Throttle/power or mixture/fuel lever lock
- Locking fuel cutoff
- Locking tie down cable
- Propeller lock, chain lock, or cable lock
- Locking wheel lock or chock
- Locking “club” type devices for control yoke

### Fuel Servicing Equipment

- Lock/key access to fuel storage tanks and/or fuel servicing vehicle

### Product

- Lock/key access to mixing and/or storage tanks
- Lock/key access to storage facilities
- Key control/inventory/security/chain-of-custody procedures

### Security

- Contractor will supply security personnel during off duty hours.

The Contractor shall be responsible for the security of the product(s) and sticker from the time it is released from the manufacturer through the time of application. The Contractor must be able to provide documentation disclosing the chain-of-custody for the products upon request of the Contracting Officer at any time during the project. If the integrity of the products has been compromised in any way resulting in a failure to maintain product security, all spray operations will cease until the Contractor can resolve these issues to the satisfaction of the Contracting Officer.

### Aviation Operations Briefing Certificate

The Contractor shall ensure that each pilot reviews the contract and signs the Forest Service Aviation Operations Briefing Certificate found in Exhibit 8. A current signed certificate shall be in receipt of the CO prior to operating under the contract and annually thereafter. Certificates will be maintained with the pilot approval records.

### Accident Prevention and Safety

The Contractor shall furnish a copy of all reports required to be submitted to the FAA by the Federal Aviation Regulations (FAR) that relate to pilot and maintenance personnel performance, aircraft airworthiness or operations. The Contractor will submit an FAA Form 8010-4, Malfunction or Defect Report, or file electronically in the FAA's Service Difficulty Reporting system any maintenance deficiency identified in 14 CFR Part 21.3(c), 135.415 or as requested by the government for what it considers a significant discrepancy.

Following the occurrence of a mishap, the CO will evaluate whether noncompliance or violation of provisions of the contract, the FAR applicable to the Contractor's operations, company policy, procedures, practices, programs, and/or negligence on the part of the company officers or employees may have caused or contributed to the mishap. The occurrence of the mishap may constitute default in the performance of the contract. A finding of default under the above cited conditions shall entitle the Government to exercise the right to terminate the contract for cause as provided in the “Contract Terms and Conditions” as stated herein.

The Contractor shall keep and maintain programs necessary to assure safety of ground and flight operations. The development and maintenance of these programs are a material part of the performance of the contract. . Examples of such programs are (1) personnel activities, (2) maintenance, (3) safety, (4) risk management, and (5) compliance with regulations.

## EXHIBIT 2 – AIRCRAFT OPERATIONS

When, in the sole judgment of the CO, the safety programs will not adequately promote the safety of operations, the Government may terminate the contract for cause as provided in the "Contract Terms and Conditions" as stated herein. The Contractor shall fully cooperate with the Contracting Officer in the fulfillment of this clause. The Contracting Officer may suspend performance of this contract work, during the evaluation period used to determine cause as stated above.

The Contractor must provide a written submittal in response to Exhibit 14 (Synopsis of Safety Program) as part of the technical proposal and the submittal should consist of implemented practices for their specific company. For purposes of this submittal, the contractor must describe how the specific processes or requirements are implemented within their organization. This submittal will be incorporated and made part of the contract and will be evaluated as described in the solicitation under the heading FAR 52.212-2 Evaluation – Commercial Items (JAN 1999).

The Contractor is required to provide updates that are made to their safety program during the life of the contract to the CO.

### Mishaps

#### Mishap Definitions

As used throughout this contract, the following terms will have the meanings set forth in Exhibit 1

- Airspace Conflict
- Aviation Hazard
- Incident with Potential
- Maintenance Deficiency
- SafeCom

The following terms are as defined in 49 CFR Part 830:

- Aircraft Accident
- Fatal Injury
- Incident
- Operator
- Serious Injury
- Substantial Damage

#### Reporting

The Contractor shall immediately and by the most expeditious means available, notify the National Transportation Safety Board (NTSB) and the FS (agency ASM) when an "Aircraft Accident" or NTSB reportable "Incident" occurs within any company operations, whether under the Contract or not. Also, the FS shall immediately be notified when an "Incident-with-Potential" occurs.

The toll free 24-hour Interagency Aircraft Accident Reporting Hot Line number is:

**1-888-4MISHAP (1-888-464-7427)**

**The ASM may be contacted during normal work hours by calling (208) 387-5607**

Following a mishap, the CO will evaluate whether the Contractor was in compliance with contract provisions or with the FAR applicable to the Contractor's operations, company policy, procedures, practices, or programs, or whether there was negligence on the part of the company officers or employees that may have caused or contributed to the mishap. The Contractor must fully cooperate with the CO during this evaluation.

#### Forms Submission

Following an "Aircraft Accident" or when requested by the NTSB following the notification of a reportable "incident," the Contractor shall provide the FS with the information necessary to complete a NTSB Form 6120.1/2 "Pilot/Operator Aircraft Accident Report".



## EXHIBIT 2 – AIRCRAFT OPERATIONS

The Contractor must submit a "SafeCom" to the agency ASM within 5 days upon the occurrence of any condition, observance, act, maintenance problem, or circumstance which has potential to cause an aviation-related mishap. Submission via the internet at <http://www.safecom.gov> is preferred. Blank SafeComs and assistance in submitting SafeComs can be obtained from FS. The submission of an NTSB Form 6120.1/2 does not replace the Contractor's responsibility to submit a "Safecom".

### Wreckage Preservation

The Contractor shall not permit removal or alteration of the aircraft, aircraft equipment, or records following an "Aircraft Accident", "Incident", or "Incident-with-Potential" which results in any damage to the aircraft or injury to personnel until authorized to do so by the CO. Exceptions are when threat-to-life or property exists; the aircraft is blocking an airport runway, etc. The CO shall be immediately notified when such actions take place. The NTSB's release of the wreckage does not constitute a release by the CO, who shall maintain control of the wreckage and related equipment until all investigations are complete.

### Investigation

The Contractor shall maintain an accurate record of all aircraft accidents, incidents, aviation hazards and injuries to Contractor or Government personnel arising in the course of performance under this Contract. Further, the Contractor fully agrees to cooperate with the FS during an investigation and make available personnel, personnel records, aircraft records, and any equipment, damaged or undamaged, deemed necessary by the FS. Following a mishap, the Contractor shall ensure that personnel (pilot, mechanics, etc) associated with the aircraft shall be readily available to the mishap investigation team.

### Related Costs

The NTSB, FS shall determine their individual agency investigation cost responsibility. The Contractor will be fully responsible for any cost associated with the reassembly, approval for return-to-Contract availability, and return transportation of any items disassembled by the FS.

### Search, Rescue, and Salvage

The cost of search, rescue and salvage operations made necessary due to causes other than negligent acts of a Government employee shall be the responsibility of the Contractor.

### Security of Aircraft, Equipment, and Product

The security of aircraft, equipment, and product involved in a mishap is the responsibility of the Contractor.

### Personal Protective Equipment (PPE)

The following personal safety equipment shall be furnished by the Contractor, be operable, and maintained in good repair.

- Pesticides - Any personnel handling or loading the product shall follow the recommendations on the pesticide label for PPE.
- Application airplane pilots shall possess and use the following items of PPE, which will be available for inspection for suitability and condition at the time of carding.
  - An aviator's protective helmet for the pilot equipped with a boom-microphone and earphones comparable with the radio specifications listed in the contract. The helmet shall be equipped with a chin strap and shall be individually fitted to cover the head and provide protection for ears, temples, and back of the head. The helmet shall be worn by the pilot during all flights. The flight helmet must provide full cranial impact protection and retention devices that retain the helmet in place on the wearer's head during rapid acceleration, deceleration and impact.
  - Long-sleeved shirt and trousers or a long-sleeved flight suit made of fire-resistant polyamide or aramid material or equal; leather boots; and leather or polyamide or aramid gloves. The shirt, trousers, boots and gloves shall overlap to prevent exposure to flash burns. A properly-sized flight suit will cover the maximum amount of skin area; including sleeves long enough to reach the first knuckle of the thumb before securing snugly over the flight gloves at the wrist. The legs should reach the floor while standing and before securing over the leather boot at the ankle and not ride up over the boot while seated. The slide fastener front closure shall provide coverage high on the neck. The flight glove shall have a long cuff extending several inches above the wrist to provide total coverage of the wrist area

## EXHIBIT 2 – AIRCRAFT OPERATIONS

when the flight suit is worn. The foot gear must be made of all leather uppers that come above the ankles and shall be constructed so that metal parts, shoestring eyes or zippers, are protected by leather from contact with the wearer's ankles.

- Personal Flotation Device (All Aircraft) - A personal flotation device required by 14 CFR 91 shall be worn by each individual on board the aircraft when conducting operations beyond power-off gliding distance to shore. Automatic inflation (water activated) personal flotation devices shall not be allowed.

### Contractor's Environmental Responsibilities

The Contractor is responsible to ensure that all maintenance, fueling, pesticide loading, and flight activities do not cause environmental damage to property or facilities. The Contractor is responsible to clean and rehabilitate areas adversely affected by Contractor activities and shall, whenever practical and possible, utilize solvents and cleaning agents that are either biodegradable or consistent with acceptable safety, health and environmental concern practices.

The Contractor is responsible for all clean-up of fuel, oil, and pesticide contamination on airport ramps, pesticide loading sites, parking areas, landing areas, etc., when caused by Contractor aircraft or personnel. Oil, solvents, parts, engines, etc. shall be stored and utilized in a manner consistent with acceptable safety, health and environmental concerns.

## Personnel

### Pilot Approvals and Qualifications

Forest Service pilot inspectors are responsible for ensuring Contractor pilots meet the experience and qualification requirements of the Forest Service. Only pilots that qualify shall be issued pilot approval cards indicating the missions for which approved. The Airplane Pilot Qualification Card shall be presented to Forest Service personnel, if requested. All pilots and Co-Pilots shall, at the discretion of the Government, be required to have a "background investigation".

Each PIC shall, at the discretion of the Government, pass an agency flight evaluation check. The flight check will be in an aircraft supplied by the Contractor at no expense to the Government. The satisfactory completion of the evaluation flight will not substitute for any of the total flight hour requirements listed in this contract.

Operators should complete all appropriate portions of the Airplane Pilot Qualifications and Approval Record (Form FS-5700-20) prior to Forest Service approval and inspection. Pilot carding shall be in accordance with FS regional policy.

### Observation Airplane (Special Mission Approval)

Pilots to be carded for observation only are not required take a FS flight check. The Airplane Pilot Qualification Card will be issued on the basis of FAR 135 certification and compliance with FS flight experience requirements.

The Contractor shall submit the following documentation on each offered pilot:

- A summary of flight hours to document they meet the minimum requirements as specified in the table under Pilot-in-Command Requirements below
- Completed Aviation Operations Briefing Certificate (See Exhibit 8)

### Application Airplane (Special Mission Approval)

If the aircraft is equipped with dual controls, a Forest Service Inspector Pilot may conduct a flight check in the aircraft. Subsequent flight checks are at the discretion of the Government. The flight check shall consist be conducted in typical terrain and include maneuvers such as slow flight, mountain-flying techniques, and engine failure procedures.

The Contractor shall submit the following documentation on each offered pilot:

- A summary of flight hours to document they meet the minimum requirements as specified in the table under Pilot-in-Command Requirements below
- Completed Aviation Operations Briefing Certificates (See Exhibit 8)

## EXHIBIT 2 – AIRCRAFT OPERATIONS

### Pilot-in-Command Requirements

Application and Observation PIC must be airplane instrument rated. The PIC shall have at least a FAA commercial pilot certificate with appropriate category, class, and type rating if required. All pilots must be qualified in accordance with the applicable regulations for the services they are performing. Check 14 CFR Parts 91, 135, or 137, as applicable. Pilots shall hold at least a current Second Class Medical Certificate issued under provisions of 14 CFR Part 67.

Pilots shall show evidence of satisfactorily passing all required FAA flight checks in accordance with provisions of 14 CFR Part 135 or Part 137, as applicable. All pilots shall meet the currency requirements of 14 CFR 61.57. Pilot flying hours shall be verified from certified pilot records. Further verification of flying hours may be required at the discretion of the Contracting Officer.

Application pilot must possess a valid pesticide application certification for aerial application in the states where treatments are scheduled to occur.

The pilot-in-command shall have logged the following minimum flight hours in airplanes:

Experience	Hours
Total Pilot-Time	1,500
Total Pilot-in-Command (Airplane)	1,200
Category and Class (to be flown)	200
Airplane (preceding 12-months)	100
Cross Country	500
Experience in Aerial Application (application pilot)	500
Aerial Application Operations in Typical Terrain (application pilot only)	200
Night	100
Make and Model	25
Make and Class (preceding 60-days or pass a proficiency flight check)	10

  

Experience (Multi-engine)	Hours
Pilot-in-Command	250
PIC in Type (within the past 5-years unrestricted Type Rating in the applicable airplane(s) to be flown)	25

Note: Typical terrain means pilot-in-command experience on flights in areas with forest cover, similar topography, density altitude, or hazards presented by the mission environment.

### Co-pilot Requirements

Missions requiring a co-pilot shall meet the 14 CFR 135 or 137 requirements, as applicable.

### Conduct and Replacement of Personnel

Performance of Contract services may involve work and/or residence on Federal property (e.g. National Forests and National Parks, etc.). Contractor employees are expected to follow the rules of conduct established by the manager of such facilities that apply to all Government or non-Government personnel working or residing on such facilities. The Contractor may be required to replace employees who are found to be in noncompliance with Government facility rules of conduct.

Personnel, who perform ineffectively, refuse to cooperate in the fulfillment of the Contract objectives, are unable or unwilling to adapt to field living conditions, or whose general performance is unsatisfactory or otherwise disruptive may be required to be replaced.

## EXHIBIT 2 – AIRCRAFT OPERATIONS

The CO shall notify the Contractor of specifics of the unsatisfactory conduct and/or performance by the Contractor's personnel. The determination of unacceptability is at the sole discretion of the CO. When directed by the CO, the Contractor shall replace unacceptable personnel.

### Suspension and Revocation of Personnel

The CO may suspend a contractor pilot, mechanic, or fuel servicing vehicle driver who fails to follow safe operating practices, does ineffective work, or exhibits conduct detrimental to the purpose for which contracted, or is under suspension or revocation by another government agency.

Upon involvement in an Aircraft Accident or NTSB Reportable Incident (see 49 CFR Part 830), a pilot operating under this contract shall be suspended from performing pilot duties under this contract and any other activity authorized under the interagency pilot qualification card(s) issued to the pilot pending the investigation outcome.

Upon involvement in an Incident-with-Potential as defined under mishaps, a pilot operating under this contract may be suspended from performing pilot duties under this contract and any other activity authorized under the interagency pilot qualification card(s) issued to the pilot pending the incident investigation outcome.

When a pilot/mechanic is suspended, and when requested, the interagency pilot/mechanic qualification card(s) shall be surrendered to the CO. Suspension will continue until:

- The investigation findings and decision indicate no further suspension is required and the interagency pilot/mechanic qualification card(s) is returned to the pilot/mechanic; or
- Revocation action to cancel the interagency pilot/mechanic authorization(s) is taken by the issuing agency in accordance with agency procedures.

### Substitution or Replacement of Personnel, Aircraft, and Equipment

The Contractor may substitute aircraft and pilots, after receipt of written approval by the CO. All substitute aircraft and pilots must meet the minimum specifications required for non-substitutes. Substitute pilots must be equally or better qualified than the original pilot as documented in the Offerors proposal. Substitute aircraft shall be furnished at the same flight hour rate as the aircraft replaced and may be used to the extent of its capabilities. Request for substitution shall be made at least 10 (ten) days prior to the proposed exchange, except for unforeseen conditions.

When pilots are exchanged or replaced, training and familiarization costs, including any required flight time up to 3 (three) hours, shall be accomplished at the Contractor's expense. The CO will determine the necessary amount of flight time up to 3 hours. This is not intended to affect cross shifting of Pilots that are familiar with the operating area or to affect approved relief pilots.

## Duty and Flight Limitations

### Duty Limitations

Assigned duty of any kind must not exceed 14 hours in any 24-hour period. "Duty" includes flight time, ground duty of any kind, and standby. Local travel up to a maximum of 30 minutes each way between the worksite and place of lodging will not be considered duty time. Flight crewmembers will be subject to the following duty hour limitations:

- A maximum of 14 consecutive duty hours during any assigned duty period.
- The pilot must be given 2 calendar days of rest (off duty) within any 14 consecutive calendar days.
- The pilot must be given a minimum of 10 consecutive hours of rest (off duty) prior to any assigned duty period.
- The above limits notwithstanding, pilots are expected to notify the COR if they become fatigued prior to reaching the duty day limit.

### Flight Limitations

Each crewmember must report all flight time, regardless of how or where performed, except personal pleasure flying. Crewmembers and relief crewmembers reporting for duty may be required to furnish a record of all duty and/or flight time during the previous 14 days. This record will be used to administer flight and duty time limitations.

## EXHIBIT 2 – AIRCRAFT OPERATIONS

Flight time to and from a duty station as a flight crewmember (commuting) will be reported and counted toward limitations. Flight time includes but is not limited to military flight time, charter, flight instruction, 14 CFR Part 61.56 flight review, flight examinations by FAA designees, any flight time for which a flight crewmember is compensated, or any other flight time of a commercial nature whether compensated or not.

Flight crewmembers will be limited to the following flight hour limitations, which must fall within their duty hour limitations:

- A maximum of 8 hours flight time during any assigned duty period. Pilot flight hour computations shall begin at lift-off and end at touchdown.
- A maximum of 42 hours flight time during any consecutive 6-day period. When a pilot acquires 36 or more flight hours in a consecutive 6-day period, the pilot will be given the following 1 calendar day off duty for rest, after which a new 6-day cycle will begin.

Flights point-to-point (airport to airport, etc.) with a pilot and co-pilot shall be limited to 10-flight hours per day. (An aircraft that departs from "Airport A", and flies reconnaissance on a treatment block and then flies to "Airport B", is not point-to-point).

The Contractor must monitor and remove any personnel for fatigue or other causes before they reach their daily duty or flight limitations

When pilots act as a mechanic, mechanic duties in excess of 2-hours will apply as flight hours on a one-to-one basis toward flight hour limitations.

Relief, additional, or substitute pilots reporting for duty under this Contract shall furnish a record of all duty and all flight hours during the previous 14-days.

### Mechanics

Within any 24-hour period, personnel shall have a minimum of 8 consecutive hours off duty immediately prior to the beginning of any duty day. Local travel up to a maximum of 30-minutes each way between the work site and place of lodging will not be considered duty time. When one way travel exceeds 30 minutes, the total travel time shall be considered as part of the duty day.

Mechanics will have 2 full calendar days off duty during any 14-day period. Duty includes standby, work, or alert status at any location. The mechanic shall be responsible to keep the Government apprised of their ground duty limitation status.

Mechanics may be removed from duty for fatigue or other causes created by unusually strenuous or severe duty before reaching duty limitations.

Relief or substitute mechanics reporting for duty under this contract may be required to furnish a record of all duty time during the previous 14-days.

When the mechanic serves as the fuel servicing vehicle driver, the more stringent of the duty limitations apply.

### Fuel Servicing Vehicle Drivers

It is the Contractors' responsibility to insure that employees comply with Department of Transportation (DOT) Safety Regulation 49 CFR Part 390-399, including duty limitations. The fuel servicing vehicle driver will be responsible to keep the Government apprised of their ground duty limitation status.

Fuel servicing vehicle drivers may be removed from duty for fatigue or other causes created by unusually strenuous or severe duty before reaching duty limitations.

Notwithstanding DOT Safety Regulation 49 CFR Part 390-399, the fuel servicing vehicle driver shall have a minimum of two (2) full calendar days off duty during any 14-day period. Off duty days need not be consecutive. Any substitute drivers reporting for duty under any contract may be required to furnish a record of all DOT duty time during the previous 14 days.

## EXHIBIT 3 – APPLICATION AIRCRAFT REQUIREMENTS

### General

This exhibit describes specific requirements for aerial application aircraft utilized under this contract. The Contractor and aircraft shall be currently certificated under 14 CFR Part 137 (Agricultural Aircraft Operations).

The Contractor shall have established a comprehensive inspection program based on the aerial application mission. As a minimum, the program will include the following:

- (1) The aircraft shall have been FAA Type Certificated Restricted Category and meet the requirements of FAR 21.25 (b) (1) for agricultural spraying, dusting, and seeding.
- (2) Manufacturer support and FAA Standards for Maintenance - The Contractor shall obtain documentation of Original Equipment Manufacturer (OEM) support for maintenance and engineering support of the original aircraft while under contract to the US Forest Service as an aerial application aircraft.
- (3) The aircraft shall have OEM approved maintenance and inspection program and or Instructions for Continued Airworthiness (ICAs) for the aerial application mission and the aircraft shall be in full compliance with all inspections, inspection compliance intervals and structural component life limits derived from those evaluations. The aircraft shall have complete records for airframe, engines and components certifying compliance with maintenance and all applicable 14 CFR requirements, manufacturer's Safety Bulletins that are a safety of flight item or identified by an FAA Airworthiness Directive. Each mandatory component retirement, replacement or overhaul time shall be incorporated and adhered to as specified by the OEM or FAA-approved extension.

### Mission of Application Aircraft

The mission of the application aircraft requires low level flight over both rural and urban areas in forested regions of flat to steep mountainous terrain while dispensing product. Low level flight is defined as 100-200 feet above tree tops, which is in the tower and wire environment. Avoiding accidents and minimizing the risk of a pilot injury or fatality in the event of a forced landing or accident is paramount. Excellent visibility from the cockpit is required to (1) avoid aerial hazards such as power lines and (2) insure accurate application over small wood lots while avoiding application over open water and crop fields as required by the product label. The mission also requires exceptional maneuverability in the aircraft (1) to facilitate efficient turns after each application pass and (2) to avoid aerial hazards. Nearly constant control input is necessary to counter moderate to severe turbulence and must be light enough to not exacerbate pilot fatigue. Cockpit environmental controls that nullify the fatiguing effects of flying in 80 to 90 degree days are an advantage.

### Basic Application Aircraft Requirements

All aerial application aircraft furnished under this contract shall meet or exceed the following requirements:

- Turbine engine powered
- Enclosed cockpit

Aircraft shall be maintained in accordance with all applicable mandatory manufacturer's service bulletins, alert service bulletins, and safety of flight bulletins as required by FAA Operations Specifications; FAA Airworthiness Directives (AD); and the correction of maintenance deficiencies shall be accomplished prior to delivery and continue during agreement period of performance.

All required documents needed to verify the data in Section II of Form FS-5700-21; Airplane Data Record (including airframe logs, engine logs, compliance with mandatory manufacturer's bulletins, FAA AD compliance, etc.) shall be made available to Forest Service inspector(s). Unless authorized by an approved Minimum Equipment List (MEL), aircraft shall not be approved or used if any accessory or instrument listed on the aircraft type certificate data sheet is inoperative. Aircraft shall not be approved if any engine, component, or propeller time in service exceeds the manufacturers recommended time between overhaul or FAA-approved extension. All inspection times and intervals shall comply with Section D of the Contractor's Operations Specifications.

### Condition of Equipment

Contractor-furnished aircraft and equipment shall be operable, free of damage, and in good repair. All dispersal systems must be cleaned of foreign material prior to the start of the project. Aircraft systems and components shall be free of leaks except within limitations specified by the manufacturer.

### EXHIBIT 3 – APPLICATION AIRCRAFT REQUIREMENTS

All windows and windshields must be clean and free of scratches, cracks, crazing, distortion, or repairs, which hinder visibility. Repairs such as safety wire lacing and stop drilling of cracks are not acceptable permanent repairs. Prior to acceptance, all temporarily repaired windows and windshields shall have permanent repairs completed or shall be replaced.

The interior of the application aircraft shall be clean and neat. There shall be no unrepaired tears, rips, cracks, or other damage to the interior. The exterior finish, including the paint, shall be clean, neat, and in good condition. Any corrosion shall be within manufacturer or FAA acceptable limits.

#### Additional Equipment Requirements

- Fire extinguisher(s). As required by 14 CFR 137 shall be a hand-held bottle with a minimum 2-B:C rating, mounted and accessible to the flight crew.
- A flight meter or recording tachometer displaying actual flight time in hours and tenths
- A variety of avionics (see Exhibit 5)
- First aid kit (See Exhibit 7)
- DGPS navigation system (see Exhibit 10)
- Automated flight following equipment (AFF, see Exhibit 11)
- Product dispersal system (see Exhibit 12)

#### Restraint Systems

Aircraft must be equipped, as a minimum, to the FAA certification standards for the specific aircraft. Restraint systems must be FAA approved and meet the installation guidance referenced in FAA Advisory Circular (AC 21-34), or its current revision. All installations must secure mechanism. All occupant seats must have a lap belt as a minimum (two-point system). Front seat occupants must have a lap belt and shoulder harness flight crewmember's station or any seat located alongside such a seat. Lap belt and shoulder harness installations must not restrict crewmembers for performing their duties. Shoulder harnesses utilizing a sewn loop allowing the seat belt to slide through, as a means of exit, are not approved for FS use (See Exhibit 6).

#### Maintenance

Aircraft shall be operated and maintained in accordance with 14 CFR requirements and manufacturers' recommendations. Special equipment and/or modification of the aircraft to meet requirements of this contract shall be inspected, repaired, and altered in accordance with 14 CFR requirements and manufacturer's recommendations or engineered data and, if required, be FAA approved. All "time change" components, including engines, shall be replaced upon reaching the factory recommended time or FAA approved extension if applicable. Aircraft operated with components and accessories on approved TBO extension programs are acceptable, provided the Contractor who provides the aircraft is the holder of the approved extension authorization (not the owner if the aircraft is leased), and shall operate in accordance with the extension.

Compliance with mandatory manufacturers' bulletins, FAA ADs, and the correction of maintenance deficiencies shall be accomplished prior to the start and during the period of Contract performance. Prior to the initial inspection, all maintenance deficiencies must be corrected or deferred per MEL in accordance with 14 CFR Part 91.213. Equipment required by this procurement may not be deferred. Deferred discrepancies must be evaluated and the aircraft approved for use on a case-by-case basis. Those deficiencies occurring during performance must be corrected in accordance with appropriate Federal Aviation Regulations or operator's approved maintenance manual.

The Contractor shall be capable of providing field maintenance support to each aircraft for extended periods during heavy use. Mechanics assigned to work on aircraft shall have appropriate FAA certification(s) and ratings or shall at all times be working in the presence of one so certified and rated. A certificated mechanic, other than the PIC of that aircraft, performs scheduled inspections.

A copy of the current maintenance record required by 14 CFR 91 shall be kept with the aircraft. Maintenance of aircraft records shall be in accordance with the FAA-AC No. 43-9C as revised.

### EXHIBIT 3 – APPLICATION AIRCRAFT REQUIREMENTS

The Contractor shall immediately notify the CO of any change of an engine, propeller, flight control, or major airframe component and circumstances inducing the change.

All inspection times and intervals shall comply with the Contractor's FAA Approved Maintenance Program.

#### Weight and Balance

The aircraft will be weighed in contract configuration within 90 days of the contract start date and following any major repair or major alteration or change to the equipment list which significantly affects the center of gravity of the aircraft.

All aircraft must be weighed on scales that have been certified as accurate within the preceding 24 calendar months. Any accredited weights and measures laboratory may serve as the certifying agency.

The Contractor must compile a list of equipment installed in the aircraft at the time of weighing. Each page of the equipment list must identify the specific aircraft by its serial and registration numbers and must be dated to indicate the last date of weighing or computation. Items which may be easily removed or installed for aircraft configuration changes (seats, doors, radios and special mission equipment, etc.) must also be listed including the name, the weight and arm of each item. The weight and balance must be revised each time new equipment is installed or old equipment is removed. Weight and balance procedures under 14 CFR Parts 23.29 and 23.1589 are acceptable.

#### Maintenance Flights

A functional maintenance flight shall be performed following overhaul, repair, and/or replacement of any engine, power train, rotor system or flight control equipment, and following any adjustment of the flight control systems before the aircraft is returned to service. The flight will be performed at the Contractor's expense. Results of the maintenance flights shall be reported to and approved by the FS Aviation Maintenance Inspector before the aircraft is returned to Contract availability.



## EXHIBIT 4 – OBSERVATION AIRCRAFT REQUIREMENTS

### General

This exhibit defines requirements for observation aircraft to be utilized under this contract.

The Contractor shall be currently certificated under 14 CFR Part 135 (Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons On-Board such Aircraft). Observation aircraft furnished to the FS under this contract shall possess a FAA Standard or Transport Category Airworthiness Certificate.

Aircraft shall be maintained in accordance with all applicable mandatory manufacturer's service bulletins, alert service bulletins, and safety of flight bulletins as required by FAA Operations Specifications; FAA Airworthiness Directives (AD); and the correction of maintenance deficiencies shall be accomplished prior to delivery and continue during agreement period of performance.

All required documents needed to verify the data in Section II of Form FS-5700-21; Airplane Data Record (including airframe logs, engine logs, compliance with mandatory manufacturer's bulletins, FAA Airworthiness Directives compliance, etc.) shall be made available to FS inspector(s). Unless authorized by an approved MEL, aircraft shall not be approved or used if any accessory or instrument listed on the aircraft type certificate data sheet is inoperative. Aircraft shall not be approved if any engine, component, or propeller time in service exceeds the manufacturers recommended time between overhaul or FAA-approved extension. All inspection times and intervals shall comply with Section D of the Contractor's Operations Specifications.

Prior to FS use, new or overhauled reciprocating engine(s) must accumulate 3-hours of operating time including 2-continuous hours in flight and complete a test flight.

### Mission of Observation Aircraft

The mission of the observation aircraft is to

1. facilitate communication (a) between application pilots, (b) between the base at the project area airport and the application aircraft or (3) between the base at the project area airport and personnel on the ground in the treatment blocks and
2. enhance safety by visually monitoring the application aircraft, reminding application pilots of any aerial hazards as they enter the treatment block, monitoring air traffic in the vicinity and communicating with any nearby airports, control towers or military operating areas.

### Basic Observation Aircraft Requirements

All single engine observation aircraft furnished under this contract shall meet or exceed the following performance requirements:

- Four seat minimum
- Cruising speed of not less than 120 knots
- Capable of transporting a minimum payload of 530 pounds, on a standard day at sea level
- A minimum of 6-cubic feet of baggage space
- 1.3 Vso not in excess of 70 knots
- Service ceiling of not less than 14,000-feet at gross weight
- Rate-of-climb of not less than 800-feet per minute, on standard day, at sea level, and maximum gross weight
- Cruising range of not less than 4-hours, plus 30-minutes of reserve fuel, at 5,000-feet mean sea level, on a standard day, minimum horsepower rating
- Power loading not greater than 13.5 pounds. Aircraft with a power loading greater than 13.5 pounds per horsepower (PPH) must be turbo-charged

<b>Example:</b> Cessna 182	3,100 lbs Max Certified Takeoff Weight
	230 Horsepower
<b>Answer:</b>	$3,100 \text{ lbs} \div 230 \text{ HP} = 13.48 \text{ PPH}$
<b>Note:</b> This airplane meets the PPH requirements to be approved for Special Missions	

## EXHIBIT 4 – OBSERVATION AIRCRAFT REQUIREMENTS

Multi-Engine Aircraft shall have 240-horsepower per engine, or more, unless turbo-charged.

### Condition of Equipment

Contractor-furnished aircraft and equipment shall be operable, free of damage, and in good repair. All dispersal systems must be cleaned of foreign material prior to the start of the project. Aircraft systems and components shall be free of leaks except within limitations specified by the manufacturer.

All windows and windshields must be clean and free of scratches, cracks, crazing, distortion, or repairs, which hinder visibility. Repairs such as safety wire lacing and stop drilling of cracks are not acceptable permanent repairs. Prior to acceptance, all temporarily repaired windows and windshields shall have permanent repairs completed or shall be replaced.

The aircraft interior shall be clean and neat. There shall be no un-repaired tears, rips, cracks, or other damage to the interior. The exterior finish, including the paint, shall be clean, neat, and in good condition. Any corrosion shall be within manufacturer or FAA acceptable limits.

### Additional Equipment Requirements

Aircraft approved for point-to-point passenger or cargo-carrying missions shall be equipped in accordance with the applicable FAR requirements and approved minimum equipment:

- Fire extinguisher(s). As required by 14 CFR 135 or 137, as applicable, shall be a hand-held bottle with a minimum 2-B:C rating, mounted and accessible to the flight crew.
- A flight meter or recording tachometer displaying actual flight time in hours and tenths
- First aid kit (See Exhibit 7)

### Restraint Systems

Aircraft must be equipped, as a minimum, to the FAA certification standards for the specific aircraft. Restraint systems must be FAA approved and meet the installation guidance referenced in FAA - AC 21-34, or its current revision. All installations must secure the occupant with a quick release, metal-to-metal buckle or latching mechanism. All occupant seats must have a lap belt as a minimum (two-point system). Front seat occupants must have a lap belt and shoulder harness (four-point system). FAR 91.205 defines a front seat as a seat located at a flight crewmember's station or any seat located alongside such a seat. Lap belt and shoulder harness installations must not restrict crewmembers from performing their duties. Shoulder harnesses utilizing a sewn loop allowing the seat belt to slide through, as a means of exit, are not approved for FS use.

### Maintenance

Aircraft shall be operated and maintained in accordance with 14 CFR requirements and manufacturers' recommendations. Special equipment and/or modification of the aircraft to meet requirements of this contract shall be inspected, repaired, and altered in accordance with 14 CFR requirements and manufacturer's recommendations or engineered data and, if required, be FAA approved. All "time change" components, including engines, shall be replaced upon reaching the factory recommended time.

Compliance with mandatory manufacturers' bulletins, FAA ADs, and the correction of maintenance deficiencies shall be accomplished prior to the start and during the period of Contract performance. Prior to the initial inspection, all maintenance deficiencies must be corrected or deferred per MEL in accordance with 14 CFR Part 91.213. Equipment required by this procurement may not be deferred. Deferred discrepancies must be evaluated and the aircraft approved for use on a case-by-case basis. Those deficiencies occurring during performance must be corrected in accordance with appropriate FAR or operator's approved maintenance manual.

The Contractor shall be capable of providing field maintenance support to each aircraft for extended periods during heavy use. Mechanics assigned to work on aircraft shall have appropriate FAA certification(s) and ratings or shall at all times be working in the presence of one so certified and rated. A certificated mechanic, other than the PIC of that aircraft, performs scheduled inspections.

## EXHIBIT 4 – OBSERVATION AIRCRAFT REQUIREMENTS

A copy of the current maintenance record required by 14 CFR 91 shall be kept with the aircraft. Maintenance of aircraft records shall be in accordance with the FAA Advisory Circular (AC) No. 43-9C as revised.

The Contractor shall immediately notify the CO of any change of an engine, propeller, flight control, or major airframe component and circumstances inducing the change.

### Weight and Balance

The aircraft will be weighed in contract configuration within 90 days of the contract start date and following any major repair or major alteration or change to the equipment list which significantly affects the center of gravity of the aircraft.

All aircraft must be weighed on scales that have been certified as accurate within the preceding 24 calendar months. Any accredited weights and measures laboratory may serve as the certifying agency.

The Contractor must compile a list of equipment installed in the aircraft at the time of weighing. Each page of the equipment list must identify the specific aircraft by its serial and registration numbers and must be dated to indicate the last date of weighing or computation. Items which may be easily removed or installed for aircraft configuration changes (seats, doors, radios and special mission equipment, etc.) must also be listed including the name, the weight and arm of each item. The weight and balance must be revised each time new equipment is installed or old equipment is removed. Weight and balance procedures under 14 CFR Parts 23.29 and 23.1589 are acceptable.

### Maintenance Flights

A functional maintenance flight shall be performed following overhaul, repair, and/or replacement of any engine, power train, rotor system or flight control equipment, and following any adjustment of the flight control systems before the aircraft is returned to service. The flight will be performed at the Contractor's expense. Results of the maintenance flights shall be reported to and approved by the FS Aviation Maintenance Inspector before the aircraft is returned to Contract availability.

## EXHIBIT 5 – AVIONICS REQUIREMENTS & SPECIFICATIONS

### Requirements

#### General

The Contractor must provide, install, and maintain the following systems in accordance with the manufacturer's specifications and the installation and maintenance standards.

#### Application Aircraft

- Emergency Locator Transmitter (ELT) installed on the aircraft in addition to any GPS or DGPS.
- 720-channel (or better) panel mounted VHF-AM aeronautical radio.
- Instruments and lighting for 14 CFR Part 135 night VFR operations (135.159 & 135.161) or Part 137, as applicable.
- Aircraft Guidance and Tracking Equipment (DGPS; required for application aircraft per Exhibit 10).
- Automated Flight Following (required for all aircraft per Exhibit 11).

#### Observation Aircraft

- Emergency Locator Transmitter (ELT) installed on the aircraft in addition to any GPS or DGPS.
- 720-channel (or better) panel mounted VHF-AM aeronautical radio.
- Instruments and lighting for 14 CFR Part 135 night VFR operations (135.159 & 135.161) or Part 137, as applicable
- Panel mounted GPS
- Automated Flight Following (required for all aircraft; see Exhibit 11).

#### IFR Equipped Aircraft

- IFR equipped aircraft shall meet 14 CFR Part 135.165, or Part 137 as applicable.

#### Avionics Installation and Maintenance Standards

All avionics systems used in or on the aircraft for this contract and their installation and maintenance shall comply with all manufacturers' specifications and applicable 14 CFR requirements. Note new requirements for Automatic Dependent Surveillance-Broadcast (ADS-B), covered in 14 CFR Parts 91.225 and 91.227, will go into effect in 2020, which is during the term of this project.

Strict adherence to the recommendations in FAA AC 43.13-1B Chapter 11, "Aircraft Electrical Systems", and Chapter 12, "Aircraft Avionics Systems", as well as AC 43.13-2A Chapter 1, "Structural Data", Chapter 2, "Radio Installation", and Chapter 3, "Antenna Installation", is required.

All avionics systems requiring an antenna shall be installed with a properly matched aircraft-certified, broadband antenna unless otherwise specified. Antennas shall be polarized as required by the avionics system and have a Voltage Standing Wave Ratio less than 2.5 to 1.

Although the contract aircraft may not be certified for flight under instrument flight rules (IFR), the aircraft's static pressure system, altimeter instrument system, and automatic pressure altitude reporting system must be maintained in accordance with the IFR requirements of 14 CFR Part 91.411 and inspected and tested every 24 calendar months, as specified by 14 CFR Part 43, appendices E and F.

Labeling and marking of all avionics controls and equipment shall be clear, understandable, legible, and permanent. Electronic label maker marking is acceptable.

Avionics equipment mounting location and installation shall not interfere with passenger safety, space, and comfort. Avionics equipment will not be mounted under seats designed for energy attenuation. In all instances, the designated areas for collapse shall be protected.

## EXHIBIT 5 – AVIONICS REQUIREMENTS & SPECIFICATIONS

### Avionics Specifications

#### A. Communications Systems

##### 1. Emergency Locator Transmitters (ELT)

One automatic-portable/automatic-fixed or automatic-fixed ELT, certified to either Technical Standard Order (TSO)-C91a or TSO-C126, utilizing an external antenna and meeting the same requirements as those detailed for airplanes in 14 CFR Part 91.207 (excluding section f.). The ELT must be installed in a conspicuous or marked location, with the required battery expiration date marking located in such a manner that it is easily legible without de-mounting the ELT

##### 2. VHF-AM Transceivers

One panel-mounted VHF-AM (VHF-1) aeronautical transceivers with a minimum of 760 channels covering 118.000 to 136.975 MHz. Each transceiver must have channels selectable in no greater than 25 kHz increments and a minimum of 5 watts carrier output power. The transceivers' operational controls must be mounted so they are readily visible and accessible to the pilot.

#### B. Navigation Systems

All Aircraft: One permanently installed, panel-mounted global positioning system (GPS) utilizing an approved, fixed external aircraft antenna and powered by the aircraft electrical system or an aviation portable GPS unit (Garmin GPSMap 296/396/496 or equivalent) provided the portable unit is securely mounted, is equipped with a remote (i.e., not part of the GPS unit) antenna, and presents information from an overhead orientation (not a drive-along-the-road type), and is powered by the aircraft electrical system. The GPS (permanently installed or portable) must utilize the WGS-84 datum and reference latitude and longitude coordinates in the degrees/minutes/decimal minutes (DM) mode for aircraft positioning.

Application Aircraft Only: Differentially Corrected Global Positioning System (DGPS) Aircraft Guidance and Tracking Equipment per Exhibit 10.

#### C. Audio Systems

One audio control system must be provided which provides controls for selection and operation of all installed transceivers via a single set of jacks through which the helmet-mounted, noise-cancelling microphone and earphones are connected.

#### D. Transponder/Altitude Encoders

One air traffic control (ATC) transponder and altitude reporting system meeting the requirements of 14 CFR Part 91.215 (a) and (b).

**EXHIBIT 6 – RESTRAINT SYSTEMS CONDITION INSPECTION GUIDELINES**

<b>Item</b>	<b>Unacceptable Conditions</b>
Webbing	<ol style="list-style-type: none"> <li>1. Frayed: 5 percent or more</li> <li>2. Torn</li> <li>3. Crushed</li> <li>4. Swelling: twice the thickness of original web or if difficult to operate through hardware</li> <li>5. Creased: no structural damage allowed</li> <li>6. Sun deterioration: severe fading, brittleness, discoloration, and stiffness</li> </ol>
Hardware	<ol style="list-style-type: none"> <li>1. Inoperable buckle or other hardware</li> <li>2. Nylon bushing at shoulder-harness-to-lap-belt connection missing or damaged</li> <li>3. Fabricated bushings or tie wraps used as bushings</li> <li>4. Rust/corrosion: only minor surface rust/corrosion allowed</li> <li>5. Wear: wear beyond normal use</li> </ol>
Stitches	<ol style="list-style-type: none"> <li>1. Broken or missing</li> <li>2. Severe fading or discoloring</li> <li>3. Inconsistent pattern</li> </ol>
TSO Tags (see 14 CFR 21.607)	<ol style="list-style-type: none"> <li>1. Missing</li> <li>2. Illegible</li> </ol>
Age	<p>Belts/fabric over 10 years from date of manufacture will be closely inspected for possible damage from exposure to the elements, but do not have to be replaced if they can be determined to be in serviceable condition.</p>

## EXHIBIT 7 – FIRST AID KIT

The Items below must be available in the Fuel Service/Support Vehicle and in the Aircraft

### Minimum First Aid Kit Items

Each kit must be in a dust-proof and moisture-proof container

#### The kit must be readily accessible

<u>Item</u>	<u>Quantity</u>
Adhesive bandage strips (3" long)	8
Antiseptic or alcohol wipes (packets)	10
Bandage compresses, 4"	2
Triangular bandage, 40" (sling)	2
Roller bandage, 4" x 5 yd (gauze)	2
Adhesive tape, 1" x 5 yd (standard roll)	1
Bandage scissors	1
Body fluids barrier kit	1
2 pair latex gloves	
1 face shield	
1 mouth-to-mouth barrier	
1 protective gown	
2 antiseptic towelettes	
1 biohazard disposable bag	

NOTE: Splints are recommended if space permits

**EXHIBIT 8 – AVIATION OPERATIONS BRIEFING CERTIFICATE**

It is important contract pilots be familiar with the contract specifications and applicable federal regulations. Pilot operation briefings will emphasize the following areas:

- Mission Approval
- Flight Below 500 feet AGL
- Aircraft Maintenance
- Personal Protection Equipment
- Flight and Duty Limitations
- Incident Communications
- Flight Plans
- Pilot Responsibilities
- Mishap Reporting
- Incident Communications
- Geographic Area
- AFF
- Flight Following
- Passengers
- SafeComs
- Weight and Balance
- Payment Reports
- DGPS

**\*\*\* CERTIFICATION STATEMENT \*\*\***

I certify that I have reviewed the contract and will comply with the pilot, aircraft, and operational specifications contained wherein.

\_\_\_\_\_  
Pilot's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Company



## EXHIBIT 9 – FUEL SERVICING SPECIFICATIONS

### A. Fuel Servicing

#### 1) General

- a) The Contractor must supply all fuel and lubricating oils required to operate all equipment during the contract period. All fuel must be commercial (or military) grade aviation fuel approved for use by the airframe and engine manufacturer. Only fuels meeting American Society for Testing and Material (ASTM) or Military specifications are authorized for use. [ASTM D-1655 (Jet A, A-1, or B), Mil T-5624 (JP-4, JP-8, JP-5), ASTM-D-910 or MIL T-910 (Grade 80,100,or 100LL). Contractors must ensure that bulk fuel obtained directly from distributors also meets the specifications of B25. The Contractor must keep the fuel delivery ticket through the period.

Note: Application aircraft equipped with Pratt and Whitney (P&W engines covered in P&W Service Bulletin 1244R18) may use approved fuels identified in the bulletin.

- b) The Contractor must have a fuel quality assurance program.
  - c) The NFPA fuel-handling handbook must be used as a guide, except that portion that states no passengers shall be on board the aircraft during fueling operations. Copies of NFPA Manual 407-17: Aircraft Fuel Servicing can be obtained from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.
  - d) The Contractor is responsible for maintaining and securing the fuel storage and fueling facilities. If storage facilities contain more than 1,320 gallons total or if any one container contains more than 660 gallons, EPA regulations will apply (40 CFR Part 112).
  - e) In accordance with the filter manufacturer's recommendations, fuel must pass through a filtering system as outlined in Filtering System above.
  - f) The Contractor must ensure that they are in compliance with 40 CFR Part 112: Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure Plan Requirements (SPCC). An SPCC plan is required for each mobile fueler used on this contract regardless of bulk storage container (tank) size.
- 2) Operations. The Contractor must ensure that:
- a) The NFPA 407-17: Aircraft Fuel Servicing requirement that fuel servicing must not be performed on fixed wing aircraft while an onboard engine is operating must be observed unless the aircraft is equipped with a dry-break refueling system. The fueling system port must be located behind the wing and of a different size and/or type than any other port used for the loading or unloading of any material (1-inch buckeye or equal). This port must be clearly marked as to the type and quantity of fuel.
  - b) Government personnel are not involved with refueling of contract aircraft, unless the pilot has determined that it is an absolute necessity due to an emergency situation.
  - c) Smoking is prohibited within 50 feet of the aircraft and fuel servicing vehicles.
  - d) All fueling operations are to be conducted in a secure area without presenting undue hazards to other aircraft or personnel.
  - e) There must be no simultaneous "hot" loading and refueling.

### B. Equipment

1. Each aircraft fuel servicing tank vehicle shall have two fire extinguishers, each having a rating of at least 20-B:C with one extinguisher mounted on each side of the vehicle. Extinguishers shall comply with NFPA 10 Standards for Portable Fire Extinguishers.
2. Tanks mounted on vehicles shall be designed to allow contaminants to be removed from the sediment settling area.
3. Hoses must be compatible with the aviation fuel being serviced. They must be kept free of cracks that show the underlying cord and in good repair.

## EXHIBIT 9 – FUEL SERVICING SPECIFICATIONS

4. Fuel nozzle must include a 100-mesh or finer screen, a dust protective device, and a bonding cable with clip or plug. Except for closed circuit systems, no hold-open devices will be permitted.
5. Fuel servicing vehicles configured to support single-point pressure refueling must be equipped with a deadman's switch control to shut off fuel flow the aircraft in the event the fuel handler is incapacitated.
6. The fuel servicing vehicle tank capacity shall provide for a minimum of 6 hours of flight time. The fuel servicing vehicle manufacturer's gross vehicle weight (with all required fuel and accessories) shall not be exceeded.
7. The Contractor must be responsible for all cleanup of fuel, oil, and retardant contamination on airport ramps, retardant sites, parking areas, landing areas, etc., when caused by Contractor aircraft, equipment, or personnel. Fuel servicing vehicles must carry sufficient petroleum product absorbent pad or materials to absorb or contain a 5-gallon petroleum spill. The Contractor is responsible for proper disposal of all products used in the cleanup of a spill in accordance with the EPA (40 CFR Parts 261 and 262).
8. An accurate fuel metering device for registering quantities in U.S. gallons of fuel pumped shall be provided. The meter shall be positioned in full view of the fuel handler while fueling the aircraft.
9. Fuel servicing vehicles shall have adequate bonding cables and shall be utilized in accordance with NFPA Manual 407-17.
10. Filter and pump sizes shall be compatible with the aircraft being serviced. A 10-gallon-per-minute flow rate delivered by the filter and pumped at the nozzle is the minimum size acceptable.
11. Gasoline engine-driven pumps shall have an ignition system designed to prevent arcing and an approved spark arrestor muffler. All gasoline-powered refueling pumps shall have a metal shield between the pump and engine.
12. First aid kit as per the Exhibit 7.

### C. Fuel Servicing Vehicle: Filtering System

1. The fuel filtration system must be designed to withstand fuel system pressures and flow rates.
2. The filter manufacturer's operating, installation, and service manual must be carried in the fuel servicing vehicle and followed.
3. Filtration must meet one of the following qualifications: Institute of Petroleum (IP), API 1581, or Mil-F-8901E. Some examples of IP qualified elements are Velcon CDF 210K, CDF 220K, ACO 51201K, ACO 21201K, ACO 40501SPK, and ACO 40901SPK, or Facet Spin-On cartridges FGS-O-405 and FGS-O409, and Facet FG-210-2, FG215-2, FG-220-2, FG-O-512-2, FG-O-609-2, and FG-O-614-2.
4. The filter vessel must be placarded indicating the filter change date.
5. Differential pressure gauges must be installed and operational on refueling systems if required by the filter manufacturer or in systems with operating pressures of 25 psi and above.
6. The filter assembly must be mounted to allow room for draining and pressure flushing of the unit. If installed, water sight gauge balls must be in full view of the fuel handler while fueling the aircraft.
7. Three-stage (filter, water separator, monitor) systems (API/IP 1581 or Mil-F-8901E qualified). Fueling systems must utilize a three-stage system such as a Facet part number 050970 M2 (900442-FG-220) using Facet cartridges for a 20-gallon-per-minute pump or equal. A Facet part number 050971-M2 (900443-FG-210) using Facet cartridges for a 10-gallon-per-minute pump or equal. All three-stage filter elements should be from the same manufacturer. An acceptable third stage (monitor) unit is Velcon CDF 220K for 20-gpm flow or Velcon CDF 210K for 10-gpm systems.
8. Single-stage system or three-in-one filter canister systems (API/IP 1583 qualified) must utilize a single element system such as a Velcon or Facet filter canister with Aquacon or Facet Fuel Gard (FG-O-xxx) cartridge of a size compatible with the pump's flow rate.

Examples: Velcon VF-61 canister with an ACO-51201K cartridge for 50- to 60-gpm flow rate or ACO-40501SPK for 10- to 15-gpm flow rate. Facet Fuel Gard canister with a Facet FG-O-512-2 or Facet Spin-

## EXHIBIT 9 – FUEL SERVICING SPECIFICATIONS

On cartridge FGS-O-405 and FGS-O-409 for 10 to 15-gpm flow rate. Facet 21 series canister with a FG-O-609-2 cartridge for 40-gpm flow rate. Facet 22 series canister with a FG-O-612 for 50-gpm flow rate.

9. At least one spare filter, seals, and any other spare components of the fuel servicing vehicle filtering system must be stored in a clean, dry area in the fuel servicing or support vehicle.

### D. Fuel Servicing Vehicle: Markings

1. Each fuel servicing vehicle must have NO SMOKING signs with letters that are a minimum of 3 inches high and that are visible from both sides and the rear of the vehicle.
2. Each fuel servicing vehicle must also be conspicuously and legibly marked to indicate the nature of the fuel such as Avgas by grade or jet fuel by type. The markings must be on each side and the rear in letters at least 3 inches high on a background of a sharply contrasting color.
3. Examples: Jet-A white on black background or Avgas 100 white on blue background.
4. Fuel Servicing vehicles are not required to have signage identifying the contractor.

## EXHIBIT 10 – AIRCRAFT GUIDANCE & TRACKING EQUIPMENT

### General

The Contractor will provide a Differentially Corrected Global Positioning System - Based Aircraft Tracking Guidance and Flight Path Recording System (hereafter referred to as DGPS) for use by the pilot(s) operating the application aircraft(s) during spray operations that meet the specifications listed below. The contractor will include the cost associated with the DGPS Tracking and Guidance system in the per acre cost of the application. DGPS is not required in the Observation aircraft; however, the Observation aircraft is required to have a panel mounted GPS (Global Positioning System) to assist the pilot in locating treatment blocks.

### Aircraft DGPS Capabilities

The contractor aircraft DGPS must have the following capabilities:

- DGPS with software designed for parallel offset in increments equal to the assigned swath width of the application aircraft. A course deviation indicator or a course deviation light bar must be installed on the aircraft and must be located in a position that will allow the pilot to view the indicator with direct or peripheral vision. Differential correction may be provided by a portable differential station with a signal repeater mounted on FM radio fixed towers, or satellite. Differential correction signal must cover the entire project area.
- The DGPS being used will allow the flight log to be downloaded to an on-site (airport) independent computer for post-flight analysis and review. The flight log must show the entire flight of the aircraft from takeoff to landing and differentiate between spray-on and spray-off when viewed on the computer monitor. The software must have the capability to zoom to any portion of the flight for viewing in greater detail and a method to determine distance between each flight lane. The system must be able to calculate and show total acres treated during the flight. The software must be compatible with standard portable printers and differentiate between spray-on and spray-off on the printed copy.
- The DGPS proposed must have been used operationally in a similar type aerial application program and demonstrated success. Provide name and phone number of previous clients or other users of the system to validate the DGPS.
- If at any time the DGPS, is not working properly the pilot must report this to Contracting Officer or the Contracting Officer's Representative. If the DGPS is not working properly during application, the pilot must return immediately to the airport.

### Contractor equipment requirements and support for DGPS

The contractor shall provide the following:

- All DGPS equipment, materials, computers (including additional computer other than aircraft computer for post-flight analysis and review), printers, personnel, and services required for the system to be used. The guidance equipment shall be capable of accurately guiding the aircraft, while flying at application altitude, along parallel flight lines equal to the assigned swath width of the application aircraft, in blocks designated by the soliciting agency.
- The system shall be sufficiently sensitive to provide immediate deviation indications and sufficiently accurate to keep the aircraft on the desired flight path. The guidance system shall be capable of updating current position at a rate of five (5) times per second.
- All equipment must be installed in accordance with STC or an FAA-ONE-TIME approval and FAA Form 337, by an appropriately qualified, licensed A & P mechanic/inspector.
- Differential correction coverage for the complete operation area. During operation, differentially corrected signal must be accurately recorded at least 95% of the time during spray operations.
- Post-flight processing computer and software capable of displaying track, altitude and ground speed of aircraft during flight, with differentiation between standard flight and flight when the application system is on/off. Export file format must be compatible with .dxf format (autocad) systems and must be on a mutually agreed-upon data storage medium.
- Instruction of soliciting agency personnel in the use of post-processing software. Complete operation manuals

## EXHIBIT 10 – AIRCRAFT GUIDANCE & TRACKING EQUIPMENT

- Full 24-hour on-call equipment service and operator support.
- All related equipment shipping and contractor personnel travel costs.

### DGPS technical requirements

The specific equipment needed to download data from the DGPS is a function of the DGPS system the offeror proposes to use. The export file format is specified. It is the offeror's determination to select the DGPS for use and to clearly illustrate in the project operations plan how data will be downloaded for the government each day. The equipment offered must provide the following features:

- Precision GPS tracking and guidance with pilot-selected cross-track error readout adjustable down to 3-feet.
- Easy to operate, user-friendly pilot's control keypad, with swath advance and decrement function.
- Selectable application patterns--racetrack or back-to-back.
- Visual display monitor capable of displaying swath width over flight path. Monitor must be mounted in aircraft in a location that will allow the pilot to view the screen with direct or peripheral vision; may display in real time or be available for in-flight access immediately after application has ceased.
- Variable swath width entry.
- Record logging at a minimum rate of one-second intervals. Full record includes position, time, altitude, speed, track, application system on/off, aircraft number, pilot, job name or number, and differential correction status.
- System memory capable of storing up to 8 hours of continuous flight log data.
- Capability to accept pre-loaded reference waypoints (A-B Line). Must be able to store and retrieve, in-cockpit, at least 50 individual treatment blocks, each containing up to 50 corner coordinates. Capability to link blocks together for combined treatment.
- Feature which alerts pilot when he/she is about to enter or exit a specific treatment block or an exclusion area within a block. A method to display official exclusion areas within treatment blocks.
- A course deviation indicator or light bar which displays both cross-track error and intercept angle to desired heading must be installed on the aircraft in a location that will allow the pilot to view the indicator with direct or peripheral vision without looking down.
- HOME navigational feature that provides instant range and bearing to home base airport.
- MARK feature that allows return to point in any swath before or after equipment shutdown.
- Warning method to indicate GPS or Differential Correction failures.
- Pilot-adjustable intensity lighting for light bar, keypad, and moving map display.
- Capability to end log files, rename, and start new logs in flight.

### Treatment site information furnished by the soliciting agency

Treatment area locations will be provided to the Contractor in the following format:

- Latitude and Longitude or NAD83 coordinates of individual spray block corners will be provided by the VPI database and posted to a URL. The URL will be provided by March 1 and spray blocks will be finalized at least one month prior to project implementation.

## EXHIBIT 11 – AUTOMATED FLIGHT FOLLOWING

### General

Satellite based aircraft tracking hardware is required in all aircraft. The aircraft tracking hardware shall be powered by the aircraft's electrical system, installed per the manufacturer's installation manual, and operational in all phases of flight. The satellite based aircraft tracking hardware shall utilize as a minimum:

- Satellite communications,
- An externally or internally mounted antenna.
- Aircraft power via a dedicated circuit breaker for power protection, and
- Secure mounting so as to not endanger any occupant from aircraft hardware during periods of turbulence.

Antennas should be placed to maximize the view of the overhead sky. Externally mounted antennas are recommended to improve system performance.

Any manufacturer required pilot display(s) or control(s) shall be visible or selectable by the pilot(s). Remote equipment having visual indicators should be mounted in such a manner as to allow visual indicators to be easily visible.

Satellite based aircraft tracking communications shall be fully operational in the states of North Carolina, Tennessee, Virginia, Kentucky, West Virginia, Ohio, Indiana, Illinois, Iowa, Wisconsin and Minnesota. Not all manufacturers' satellite based aircraft tracking hardware communication links will operate effectively in all geographic areas.

The contractor shall maintain a subscription service through the satellite based aircraft tracking hardware provider allowing position reporting for satellite tracking via the provider's website. The provider's website must be secure and access to the website must require a username and password. The position-reporting interval shall be a minimum of every two minutes while the aircraft is in flight. Although not required, the ability to import and display shapefiles of the treatment block boundaries on the provider's mapping service and website display is an advantage.

Prior to the aircraft's contract inspection, the Offeror shall perform an operational check of the system. As a minimum, the operational check at inspection shall consist of confirming the aircraft being tested is displayed on the provider's website (indicating it is currently transmitting data) and that all information displayed on the website is correct.

If the satellite base aircraft tracking hardware becomes inoperable/unreliable the aircraft may, at the discretion of the Government, remain available for service utilizing radio/voice system for flight following. The contractor will return the system to full operational capability within 72 hours after the inoperative/unreliable unit is first discovered as defective.

### Single Access Viewing

The government does not specify particular satellite aircraft tracking hardware providers but single access viewing of the aircraft data is required. That is, all of the Offeror's aircraft must be visible on a single screen at one secure website. The Offeror can accomplish this in two ways:

1. All of the aircraft have satellite based aircraft tracking equipment from the same provider and all aircraft are viewable at one secure website

OR

2. Multiple providers are used to equip the aircraft with satellite based tracking hardware which cannot be accessed at a single secure website; thus
  - a. All satellite based aircraft tracking hardware must be compatible with the government's Automated Flight Following (AFF) program (<https://aff.gov>) which allows position reporting from multiple providers to be viewed via single access using the government's AFF viewing software or
  - b. Some other arrangement must be negotiated that is acceptable to the government for single access viewing.

## EXHIBIT 11 – AUTOMATED FLIGHT FOLLOWING

If the Offeror plans to use more than one satellite based aircraft tracking provider, the Specification Section Supplement available at: <https://www.aff.gov/contractspecs> is herein incorporated with the same force and affect as if they were presented as full text. Not all available satellite based tracking systems are compatible with the Government's AFF Program, nor meets AFF's requirements. If the Offeror plans to use the Government's AFF Program, the Offeror shall ensure that the aircraft hardware offered is compatible with AFF. For questions about current compatibility requirements contact the AFF Program Manager listed under contacts at <https://www.aff.gov>. Additionally:

1. The contractor shall maintain a subscription service through the AFF aircraft hardware provider allowing AFF position reporting for satellite tracking via the Government AFF viewing software. The contractor shall register their AFF aircraft hardware with the Government through <https://www.aff.gov> providing: complete tail number; manufacturer and serial number of the AFF transceiver; aircraft make and model; and contractor contact information.
2. If the contractor relocates previously registered AFF aircraft hardware into another aircraft, then the contractor shall contact the government's AFF Program making the appropriate changes prior to aircraft use. In all cases, the contractor shall ensure that the correct aircraft information is indicated within AFF. The contractor shall contact the Government of system changes, scheduled maintenance, and planned service outages.
3. Registration contact information, a web accessible feedback form, and additional information is available at: <https://www.aff.gov>.
4. Prior to the aircraft's contract inspection, the Offeror shall ensure compliance with all AFF systems requirements. The Offeror shall additionally perform an operational check of the system. As a minimum, the operational check shall consist of confirming the aircraft being tested is displayed in AFF (indicating it is currently transmitting data to AFF) and that all information displayed in AFF is current.
5. A username and password are required to access AFF. Log on to the AFF website at <https://www.aff.gov> to request a username and password.

## EXHIBIT 12 – PRODUCTS & APPLICATION PROCEDURES

### Products

#### Product Packaging and Marking

All Foray 76B to be used on this project will be formulated, packaged and labeled by the manufacturer according to the rules and regulations set forth by the Environmental Protection Agency (EPA) for pesticides.

All pesticide containers shall display the product label as registered with EPA. All pesticide shipments shall be accompanied by manufacturer's Safety Data Sheets (SDS).

#### Suppliers, Application Rates and Spray Timing

Foray 76B is the trade name for the *Btk* formulation that is commercially produced to suppress gypsy moth populations. This is the only product approved for use under this contract. It may be purchased at:

Foray 76B  
Stephen Nicholson, Forestry Sales Manager  
Valent BioSciences  
870 Technology Way  
Libertyville, IL 60048  
Tel/Fax : 613.376.1070  
Mobile : 613.539.1977  
Stephen.Nicholson@valent.com

A double application per acre is made in early spring soon after larvae have hatched. The specific time would depend on weather conditions, but the operation would probably begin in early May. The applications would begin when the leaves of the white oak trees have expanded to approximately 20-35% of their normal size and the first instar caterpillars are present and feeding. The second application would occur when the leaves of white oaks have expanded to approximately 40-50% of their normal size and second instar caterpillars are present; approximately within 10 days of the first application.

Swath spacing during application will be 100 feet unless the contractor demonstrates a wider swath is validated per characterization of the aircraft. Application rate will be 0.5 gal/ac 38 BIU/ac.



## EXHIBIT 12 – PRODUCTS & APPLICATION PROCEDURES

### Application Procedures and Restrictions

All operations will conform to FAA requirements; USDA-FS requirements; pesticide label instructions; SDS; and applicable state requirements for storage, transportation, and application of insecticides.

The Contractor is responsible for obtaining pesticide licenses, aerial application licenses, insurance, FAA approval for congested area plans and other applicable licenses, clearances and documentation for full compliance with all applicable federal and state laws and regulations regarding aerial pesticide application prior to treatment activities.

**Foray labels warn** the user to keep the product out of lakes, streams and ponds unless covered by forest canopy. The application pilot, who is the holder of the appropriate state pesticide applicators license, shall be responsible for applying the insecticide according to label directions. For instance, land cover / land use patterns within a treatment block boundary may be a patchwork of forest, crop fields, pastures, residential, urban, roads, streams, lakes or ponds. Some of these areas must be excluded from treatment to insure the product is used in a manner consistent with its labeling. The number, shape and dynamic nature of the non-treatable areas preclude digitizing each as an exclusion area for use in the DGPS. Therefore, the auto on/off function that is a component of DGPS cannot be used to turn the spray system on and off automatically over these non-treatable areas. Instead it is the responsibility of the application pilot to use visual cues to determine when the spray system must be shut-off to prevent label violations.

The pilot shall be responsible for the proper loading of the aircraft. Loading will be under the pilot's direction and will be inspected by the pilot before takeoff. Ground personnel in the treatment blocks will monitor the spray application for deposits and DGPS files will be reviewed post-treatment to confirm accuracy. An estimate of any amount of insecticide that is applied in unauthorized areas, or that which is jettisoned accidentally or in an emergency will be made by the COR and deducted from the amount properly sprayed.

No material shall be loaded with the aircraft engine running or propeller turning unless the loading port is located behind the wing and clearly marked. All loading operations shall be conducted in a secure area (without presenting undue hazards to other personnel and/or property).

During application a release height of 100 to 200 feet above treetops will be maintained unless otherwise directed by government personnel to comply with FAA direction or to mitigate impacts to threatened and endangered species.

Swath spacing during application will be 100 feet unless the contractor demonstrates a wider swath is validated.

#### Environmental Limitations/Week-End Spraying

Operations will usually be prohibited when any one of the following conditions exists within the treatment area: (Insecticide label restrictions will take precedence over the conditions listed below when label restrictions are more limiting). It is at the discretion of the COR to stop spray operations when:

- Wind conditions exist or occur during treatments that are determined by the COR or project entomologist to adversely affect deposits,
- Weather is rainy or foggy, the foliage is wet, or there is an imminent threat of rain.
- Air turbulence (thermal updrafts, etc.) is so great as to seriously affect the deposit of the insecticide or compromise the safety of the operation.
- DGPS is not working properly: the application aircraft must return to the airport to avoid treatment outside of the specified areas.

Normal spraying will be conducted during the daylight hours, Monday through Friday, weather permitting. Weekend spraying may be conducted at the discretion of the Government, but is generally not done unless necessary to complete treatment before the start of moth flight.

#### Calibration and Characterization

## EXHIBIT 12 – PRODUCTS & APPLICATION PROCEDURES

The objective of calibration and characterization is to ensure that the product will be consistently discharged from the aircraft dispersal system at the specified rates and to determine the effective swath of the particular aircraft and dispersal system.

The rate of discharge from the spray system will be verified periodically during spray operations for all application aircraft and adjustments may be required to maintain application rates within 5% of the desired rate-per-acre. Application aircraft must return to base with empty hoppers/tanks at least once out of two consecutive loads to verify that the actual rate of discharge is in line with the desired calibration rate when compared to DGPS acres for those load(s). If the hopper/tank is not empty at least once after 2 loads, at the end of the 2<sup>nd</sup> load the Contractor will remove all product from the hopper/tank and weigh it to confirm that calibration is still within 5% of the desired rate. Re-calibration of dispersal systems will be required at the Contractor's expense, when application rate does not correlate with specified rates per acre.

### Reconnaissance of Treatment Areas

The Contractor is responsible for reconnaissance of treatment areas prior to treatment. This will help familiarize the pilots with the boundaries, terrain, hazards, and areas to be excluded from treatment.

## EXHIBIT 13 – SYNOPSIS OF SAFETY PROGRAM

### Synopsis of Safety/Risk Management Program

The objective of this safety requirement is to reduce aircraft accidents, incidents and fatalities. The information we request about your safety program serves as the criteria for an estimation of your safety culture and assists with our evaluation of the best value in services that you propose.

The Forest Service incorporates Safety Management Systems in its aviation program and works with vendors that service our natural resource mission on implementing Safety Management Systems, with a goal of reducing the number of accidents. Safety Management Systems achieve high standards of efficiency and effectiveness and include four primary components:

- **Policy** is management commitment, responsibility and accountability for the program and the appointment of key safety personnel.
- **Risk Management** identifies hazards and applies risk assessment and mitigation processes.
- **Assurance** is the process of monitoring controls that also includes safety and compliance audits, aviation accident prevention, review and analysis of historical data, accident investigation, error analysis, and corrective action plans.
- **Promotion** includes training for pilots, crews, managers, support personnel and end-users. Other communications, awards and lessons learned help to maintain safety awareness.

**Note:** The requirements for the Synopsis of Aviation Safety Program for this solicitation are significantly different from previous solicitations.

(a) **If your company does not have an active safety program, or if you do not respond to this item, you may not be awarded a contract.**

(b) **Even if you previously submitted materials to other contract solicitations, you must include all of the materials requested for this evaluation in a new proposal.**

Offerors will be evaluated on the basis of your submission that describes accident history and aviation safety program. Submit your response to the requested materials, including the questionnaire on the following pages, together as one package in your response to the Technical requirements of this solicitation.

**Safety Program:** Operators shall submit full and complete documentation based on the following questions.

SAFETY STANDARD		OFFEROR ACTION REQUIRED
Safety Policy and Objectives		
1	Are key safety personnel appointed? Is there an identified trained Aviation Safety Manager?	Describe and provide documentation.
2	Do you have an internal emergency response plan? Is it available to all employees?	Yes or No?

**EXHIBIT 13 – SYNOPSIS OF SAFETY PROGRAM**

<b>Safety Risk Management:</b>		
3	<p>Has the company developed and maintained a Risk Management Process to:</p> <ul style="list-style-type: none"> <li>Identify Hazards</li> <li>Risk Analysis (Exposure)</li> <li>Risk Assessment (Severity and likelihood)</li> <li>Decision Making (Mitigations)</li> <li>Validation of Control (Controls effective)</li> </ul>	Describe how this objective is met.
<b>Safety Assurance:</b>		
4	<p>Has the company developed and maintained a means of: monitoring and measuring safety performance, identifying and managing organizational changes that may affect safety, ensuring continual improvement?</p>	What action has your company taken and/or plans to take to eliminate accidents?
<b>Safety Promotion:</b>		
5	<p>Has the company developed and maintained a formal means of safety communication (like SAFECOM) and safety training programs to ensure personnel can perform their Safety duties?</p>	Briefly describe technology your company has acquired to facilitate communication with deployed pilots. Describe how your company's compensation practices discourage risk taking.
6	<p>Were there lessons-learned developed from an incident? Were they shared with the company personnel?</p>	Yes or No?
7	<p>Is a Safety Award system in place?</p>	Yes or No?
8	<p>Does your organization provide Crew Resource Management training?</p>	Describe. (e.g. frequency, mandatory or voluntary)
<b>Compliance Monitoring</b>		
9	<p>Have operations (internal or external) audits been conducted in this past field season?</p>	Describe how this objective is met.
10	<p>Are the audits documented?</p>	Yes or No?
<b>Organization and Personnel</b>		
11	<p>Does the company have an organizational structure (organizational chart) that clearly defines duties, authorities and accountabilities?</p>	Describe how this objective is met.

**EXHIBIT 13 – SYNOPSIS OF SAFETY PROGRAM**

<b>Crew Member Qualifications</b>		
12	Are there procedures to ensure that all aircraft crewmembers: hold valid licenses and certificates to include medical certificates; meet all currency requirements; and have fulfilled the company's training and proficiency requirements? Have they been effective?	Briefly describe your program for qualifying your pilots to fly the aircraft.  How do you evaluate pilot performance? Describe how this objective is met.
<b>Training Programs</b>		
13	Does the company have a training program that ensures personnel are trained and competent to perform their assigned duties?	Do you have a process that can train your pilots, both initially and annually, on the requirements of this contract? Describe how this objective is met.
<b>Maintenance Control System</b>		
14	Does the operator have a maintenance control system that is appropriate to the type and number of aircraft operated and the manner in which maintenance is conducted?	Briefly describe your home base maintenance program. In-house or sub-contracted? Inspection program is to what standard (137, 91 or 135)? Facility FAA or manufacturer certified?

**Pesticide Enforcement Actions**

Provide copies of any state pesticide regulatory enforcement actions that were issued in the past 36 months or a statement that there have been no actions taken in the past 36 months for all personnel that handle or apply pesticides.

**Accident Prevention Program**

Is your company a participant in any accident prevention program such as Air Carrier Association, Safety Management System (FAA), Tour Operators Program of Safety (TOPS), Medallion Foundation, NAAA Professional Aerial Applicators Support System (PAASS) or Other Safety program? If so, please list your prevention programs.

Has the company received a reduction in rates from your carrier as a result of your safety prevention program?

Yes  No

If yes, please briefly explain

List your insurance provider, their address, phone number and agent's Name.

## EXHIBIT 14 – DOL WAGE DETERMINATION INFORMATION

This solicitation includes Department of Labor (DOL) wage determinations as identified below. This information should be considered when submitting an offer. The DOL wage determination information identified herein will be included in the awarded contract with complete copies of the wage determinations being provided as a separate attachment to the solicitation. Wage determinations can also be obtained from <https://www.wdol.gov/>.

The following are possible airport locations for the work required in 2017. If you anticipate working from any other locations in 2017, you may request that the government provide additional wage determinations. See clause 52.222-49 for more information.

1995-0222, Revision 40 National  
2015-2285, Revision 1 Douglas County, WI  
2015-2191, Revision 2 Porter County, IN  
2015-2499, Revision 1 Washington County, VA  
2015-2547, Revision 3 Pittsylvania County, VA  
2015-2577, Revision 2 Barron and Eau Claire Counties, WI  
2015-4341, Revision 2 Suffolk County, VA  
2015-4729, Revision 1 Licking and Perry Counties, OH  
2015-4747, Revision 1 Putnam County, OH  
2015-4925, Revision 1 Grant County, WI  
2015-5035, Revision 1 LaSalle County, IL  
2015-5041, Revision 1 Stephenson County, IL  
2015-5047, Revision 1 Livingston County, IL