

**DEPARTMENT OF THE INTERIOR – AVIATION MANAGEMENT**  
**AIRCRAFT RENTAL AGREEMENT PROVISIONS: SUPPLEMENT NO. 3**  
**SPECIAL USE - LOCAL FIRE HELICOPTER REQUIREMENTS**

**Definitions**

**Interagency Fire Suppression** requires aircraft to meet the standards agreed upon between the USDA and DOI. Aircraft equipped and approved for Interagency Fire Suppression may also be used for Local Fire Suppression. (See Supplement No. 2 Interagency Fire Suppression.)

**Local Fire Suppression** requires aircraft to meet the standards for DOI.

**B8.3.1 CERTIFICATION**

B8.3.1.1 The Vendor shall be certificated under 14 CFR Part 133, Rotorcraft External Load Operations. This certificate shall include Class A, B, or C as appropriate.

B8.3.1.2 The Vendor shall be certificated under 14 CFR Part 137, Agricultural Aircraft Operations, when dispensing fire suppressant chemicals.

**B8.3.2 FLIGHT OPERATIONS**

B8.3.2.1 **Water Bucket Use.** The following procedure **shall** be used for all bucket operations:

B8.3.2.1.1 Determine allowable payload using the Interagency Load Calculation method, appropriate HOGE helicopter performance charts and current local temperature and pressure altitude (no partial dips for performance planning purposes shall be authorized).

B8.3.2.1.2 At the beginning of the fuel cycle, adjust the bucket capacity so that the actual payload, when the bucket is filled to the maximum adjusted capacity, does not exceed the allowable payload.

B8.3.2.1.3 Use 8.3 pounds per gallon of water. If mixed fire retardant is being delivered by bucket, use the appropriate weight per gallon for that mixture. The weight of the empty bucket and any associated suspension hardware (lines, cables, connectors, etc.) must also be included in calculating the actual payload. The calculation of the actual bucket payload must be documented on the load calculation form or separate load manifest.

B8.3.2.1.4 Helicopters equipped with electronic helicopter hook load measuring system that provides a cockpit readout of the actual external load **and** a bucket that is equipped with a gating system that allows part of the load to be released while retaining the remainder of the load may be exempt from B8.3.2.1.2.

**CAUTION:** There are many different manufacturers and designs of helicopter buckets. Capacity adjustments are made in various ways: Removing plugs, opening zippers or cinching collapsible/foldable buckets. Capacity at each position or adjustment level should be marked on the bucket. Collapsible buckets with cinch straps should only be adjusted to the marked graduations (as an example, 90%, 80%, 70%, 60%). Attempts to establish intermediate graduations or capacities below the manufacturer's minimum graduation (by tying knots, etc.) is prohibited as this results in estimated capacities and may interfere with the release mechanism.

**B8.3.3 PERSONNEL REQUIREMENTS**

B8.3.3.1 200 hours PIC in category over typical terrain, involving flights of low-level (below 500 feet above the surface) and over mountains when applicable.

B8.3.3.1.1 Pilots shall show evidence of experience in low-level operations and be knowledgeable of all specialized mission requirements. This may include low level operations, special flight techniques, terrain considerations, use of specialized navigation equipment, or operation of other equipment as appropriate for the specific mission. Pilots may be required to demonstrate their ability during an agency evaluation flight.

B8.3.3.2 The precision placement of externally carried cargo is an operational requirement of this supplement. Pilots shall

**Revised (01/04)**

be required to place external cargo precisely where requested regardless of the cable length while operating within the helicopter's capability. Pilots shall provide written evidence of qualification to transport Class A, B, or C external loads as appropriate. Pilots may be required to demonstrate their ability during an agency evaluation flight.

B8.3.3.2.1 Pilot endorsements for long line (a cable length greater than 50 feet) and water/retardant application shall require an agency flight evaluation.

B8.3.3.3 Pilots shall have recorded minimum flying time as pilot-in-command as follows:

B8.3.3.3.1 200 hours Mountainous Terrain (When operating in mountainous terrain)

B8.3.3.3.2 10 hours Mountainous Terrain in Make and Model

PIC mountainous terrain experience is defined as: Experience in maneuvering a helicopter at more than 7,000 feet mean sea level (MSL) altitude including numerous take-offs and landings in situations indicative to mountainous terrain. This terrain consists of abrupt, rapidly rising terrain resulting in a high land mass projecting above its surroundings, wherein complex structures in which folding, faulting, and igneous activity have taken place. These mountainous areas produce vertical mountain winds, and turbulence associated with mountain waves, producing abrupt changes in wind direction often resulting in up flowing or down flowing air currents.

Mountain qualified pilots are considered rough terrain qualified.

B8.3.3.3.3 200 hours Rough Terrain (When operating in rough terrain)

B8.3.3.3.4 10 hours Rough Terrain in Make and Model

PIC with rough terrain experience is defined as: Experience in maneuvering a helicopter at less than 7,000-foot MSL altitude including numerous takeoffs and landings in situations indicative to rough terrain. This terrain consists of abrupt, rapidly rising terrain resulting in a high land mass projecting above its surroundings, wherein complex structures in which folding, faulting, and igneous activity have taken place. Rough terrain features can disrupt smooth wind flow into a complex of eddies or mechanical turbulence. Characteristic of this type of terrain is the higher the wind speed and/or the rougher the terrain the greater the turbulence.

B8.3.3.4 Personal Protective Equipment (PPE). The following items shall be worn by vendor personnel, be operable, and maintained in good repair:

B8.3.3.4.1 An aviator's flight helmet, consisting of a one-piece hard shell made of polycarbonate, Kevlar, carbon fiber, or fiberglass, must cover the top, sides (including the temple area and to below the ears), and the rear of the head. The helmet shall be equipped with a chinstrap and appropriately adjusted for proper fit. Flight helmets for helicopter usage must conform to a national certifying agency standard, such as DOT, Snell-95, SFI, or an appropriate military standard, and be compatible with required avionics (see section B8.3.5.4.3). "Shorty" (David Clark style) helmets are not approved. Flight helmets currently meeting this requirement are the SPH-3, SPH-4, SPH-5, SPH-4B, SPH-8, HGU-56 and HGU-84. Helmets designed for use in fixed wing aircraft do not provide adequate protection for helicopter occupants and are not approved for helicopter use.

B8.3.3.4.2 A long-sleeved shirt and trousers (or long-sleeved flight suit) made of fire-resistant polyamide or aramid material or equal.

B8.3.3.4.3 Boots made of all-leather uppers which extend above the ankles.

B8.3.3.4.4 Gloves made of leather, fire-resistant polyamide or aramid material.

B8.3.3.4.5 Shirt with sleeves overlapping gloves and pants with legs overlapping boots.

B8.3.3.4.6 Pilots shall wear a personal flotation device (PFD) when conducting hovering flight operations (water bucket dipping, snorkeling) over water sources such as ponds, streams, lakes, rivers, and coastal waters. This equipment shall be maintained in serviceable condition in accordance with the manufacturer's instructions. This equipment may, but is not required to, meet the standards of 14 CFR Part 135.167(a)(1). Automatic inflation (water activated) PFD's are not authorized.

B8.3.3.5 Personal Protective Equipment For Ground Operations

**Revised (01/04)**

B8.3.3.5.1 While within the safety circle of an operating helicopter, all personnel shall wear the following PPE:

B8.3.3.5.2 Shirt with sleeves overlapping gloves and pants with legs overlapping boots, hard hat or flight helmet with chin strap fastened, hearing protection, and eye protection .

**Note:** Maintenance personnel working on a running aircraft are exempt from glove and hardhat requirements.

B8.3.3.5.3 In addition, fuel service vehicle operators shall wear non-static (example: cotton/natural fiber) clothing and gloves.

**B8.3.4 EQUIPMENT REQUIREMENTS**

B8.3.4.1 One digital hour meter shall be installed. The meter shall be wired in series with a switch on the collective control, and a switch activated by engine or transmission oil pressure to record flight time only.

B8.3.4.2 A first aid kit containing items specified in Exhibit 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.3.4.3 A survival kit containing items specified in Exhibit 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.3.4.4 High skid-type landing gear, if available for make and model.

B8.3.4.5 Helicopters with a floor height greater than 18 inches shall have personnel access steps to assure safe entrance and exit from each door.

B8.3.4.6 (Alaska only) Tundra Boards or Snow Pads. Mandatory when the helicopter is not equipped with standard or emergency flotation gear as noted in the aircraft order.

B8.3.4.7 Aircraft lighting for night operation in accordance with 14 CFR 91.205(c), including instrument lights.

B8.3.4.8 A strobe light, with either a white, or ½ white and ½ red lens, mounted on top of the aircraft, or otherwise visible from above. If the aircraft certification requires the anticollision light to be aviation red, then a white strobe light with an independent activating switch shall be provided in addition to the red strobe.

B8.3.4.9 High visibility markings on main rotor blades as specified in Exhibit 7.

B8.3.4.10 One cargo hook that may be loaded and locked in a single motion with one hand, and is rated at the maximum lifting capacity of the aircraft.

B8.3.4.10.1 Helicopters for which an automatic locking cargo hook is not available are exempt from this requirement provided the cargo hook which is provided complies with the FAR applicable to the model aircraft.

B8.3.4.11 The aircraft shall be equipped with a convex mirror for observation of the sling load by the pilot. For aircraft equipped and modified for vertical reference external load operation (i.e., door gauges, modified seat, alternate cargo hook release positions, bubble window, etc.) or for helicopters such as the MD Model 500 where direct vertical reference is possible the convex mirror is not required.

B8.3.4.12 **Optional Water Bucket Equipment.** One (1) collapsible, variable capacity water/retardant bucket may be furnished under this contract. The capacity shall be commensurate with the maximum lifting capability of the aircraft. The bucket to be provided must have a manufacturer's capacity adjustment commensurate with the maximum lifting capability of the offered aircraft at the environmental conditions specified in the order for services. If the water bucket shall be utilized on a longline, the bucket must be capable of being operated with all increments of the longline (i.e., 50, 100, 150 feet). See CAUTION under B8.3.2.

B8.3.4.13 **Optional aerial ignition equipment.** If one or both of the following electrical connectors is installed, the aircraft may be approved for aerial ignition.

B8.3.4.13.1 **Sphere dispenser:** An accessory power source consisting of an MS 3112E-12-3S three-pin connector, accessible to the passenger compartment. Pin B shall be airframe ground; pin A shall be +28VDC (for 28-volt aircraft); and pin C shall be

**Revised (01/04)**

+14VDC (for 14-volt aircraft). The circuit shall be protected by a 5-amp circuit breaker.

B8.3.4.13.2 **Helitorch:** An MS 3101E-24-11S, nine-pin connector shall be provided as the power source for a helitorch or remote cargo hook. Pin D shall be airframe ground. Pin E shall be switched 28VDC, protected by a 50-amp circuit breaker. The water bucket open switch shall also activate this circuit. The connector shall be mounted adjacent to the cargo hook (within 12 inches) and be supported in such a way that jettisoning the load shall not damage the connector. A lanyard shall be provided for support of the connector.

NOTE: This connector has multiple circuit capacity sufficient to provide power and control for government furnished equipment. Wiring instructions can be found in FS/DOI AM Drawing A-16 (Exhibit 5).

B8.3.4.14 For Type III helicopters, dual controls shall be removed/deactivated after agency evaluation flights.

**B8.3.5 AVIONICS REQUIREMENTS**

B8.3.5.1 General:

B8.3.5.1.1 The following systems, as a minimum, shall be installed or available in addition to the basic requirements listed in the Aircraft Rental Agreement (B5). The avionics systems shall be maintained by the Vendor in accordance with the provisions of the Aircraft Rental Agreement and the installation and maintenance standards of Section B8.3.5.6 of this Supplement.

B8.3.5.1.2 Any digital aeronautical, mobile, or portable VHF-FM radios furnished to meet the requirements of this document shall also be APCO Project 25 (EIA/TIA-102) compliant.

B8.3.5.2 Communications Systems:

B8.3.5.2.1 ELT's: **NOTE: Aircraft approved under this Supplement must be equipped with an ELT meeting either TSO-C91a or TSO-C126 effective January 1, 2005, in addition to meeting any other ELT requirements specified in the basic Aircraft Rental Agreement.**

B8.3.5.2.2 VHF-AM: **NOTE: Aircraft approved under this Supplement must be equipped with a 760-channel VHF-AM transceiver covering 118.000 to 136.975 MHz effective January 1, 2005, in addition to meeting any other VHF-AM requirements specified in the basic Aircraft Rental Agreement.**

B8.3.5.2.3 Provisions for auxiliary VHF-FM (AUX-FM) portable radio:

B8.3.5.2.3.1 The Contractor shall provide the necessary interface for installing and properly operating an auxiliary VHF-FM portable radio through the aircraft's audio control system(s). The interface shall consist of the appropriate wiring from the audio control system, terminated in an ITT/Cannon type MS3112E12-10S 10-pin connector conveniently located for use by the observer/copilot, and utilizing the contact assignments as specified by drawing FS/OAS A-17 in Exhibit 6.

B8.3.5.2.3.2 One weatherproof, external, broadband antenna covering the 150-174 MHz band, with associated RG-58A/U (or equivalent) coaxial cable and connector, terminated in a bulkhead-mounted, female BNC connector (type UG-290A), conveniently located for use by the observer/copilot adjacent to the above 10-pin connector (Comant model CI-177 or equal).

B8.3.5.2.3.3 Mounting facilities, in accordance with the specifications of FAA AC 43.13-2A, for secure installation of the auxiliary VHF-FM portable radio in the cockpit shall be provided. The location of the mounting facilities shall be such that, when connected with an 18-inch adapter cable, the radio's controls shall be located and arranged so that the observer/copilot, when seated, has full and unrestricted movement of the radio's controls, without interference from clothing, the cockpit structure, or the flight controls.

B8.3.5.2.3.4 Positive-polarity microphone excitation voltage shall be provided to the AUX-FM system from the aircraft DC power system through a suitable resistor network. A blocking capacitor shall be provided to prevent the portable radio microphone excitation voltage from entering the system. Sidetone for the AUX-FM shall also be provided (NAT model AA34-300, Premier model PA-34, or equivalent).

B8.3.5.2.3.5 In lieu of the above AUX-FM requirements, the Vendor may substitute one VHF-FM aeronautical transceiver (FM-1) which meets the requirements (less guard) for a VHF-FM aeronautical transceiver, as detailed below.

## **Revised (01/04)**

B8.3.5.2.4 One VHF-FM multi-mode aeronautical transceiver (FM-1), which provides selection of both narrowband (12.5 kHz) and wideband (25.0 kHz) bandwidth operation on each channel.

B8.3.5.2.4.1 The transceiver's operational frequency range shall include the band of 150 to 174 MHz. The operator shall be able to program any usable channels within that band while in flight.

B8.3.5.2.4.2 One CTCSS sub-audible tone encoder (which may be an integral part of the transceiver), with the lowest 32 TIA/EIA-603 standard tone frequencies (from 67.0 to 203.5 Hz, less 69.3 Hz) being selectable, shall be interfaced to the above transceiver. It is desired that the encoder provide a display of the selected tone or tone frequency.

B8.3.5.2.4.2.1 The encoder/transceiver system shall be capable of encoding a 110.9 Hz tone on all guard (168.625 MHz) transmissions.

B8.3.5.3 Navigational Systems: no requirements.

B8.3.5.4 Audio Systems:

B8.3.5.4.1 One audio control system shall be provided for the pilot and observer/co-pilot. The system shall provide pilot and observer/copilot with controls for selection of receiver audio outputs and transmitter microphone/PTT audio inputs for all installed radios. The system shall also provide pilot and observer/copilot with controls for adjustment of both ICS and receiver audio output levels.

B8.3.5.4.1.1 Transmitter selection and operation. A transmitter selection control shall be provided for the microphone/PTT inputs of pilot and observer/copilot. Whenever a transmitter is selected, the companion receiver audio shall automatically be selected for the corresponding earphone. Transmitter sidetone audio shall be provided for the user.

B8.3.5.4.1.2 Receiver selection and operation. Controls shall be provided for selection of audio from one or any combination of available receivers. Any ICS-equipped aft passenger positions shall monitor the receiver(s) as selected. The receiver audio output shall be free of excessive distortion, hum, noise, and crosstalk, and shall be amplified sufficiently to facilitate ease of use in a noisy cockpit/cabin environment.

B8.3.5.4.1.3 The controls of the audio system must be located and arranged so that both the pilot and observer/copilot, when seated, have full and unrestricted movement of their respective controls without interference from their clothing, the cockpit structure, or the flight controls. Labeling and marking of controls shall be clear, understandable, legible, and permanent. Electronic label maker marking is acceptable.

B8.3.5.4.2 An intercommunications system (ICS) shall be provided for the pilot, observer/copilot, and (if required) one passenger position. ICS audio shall mix with, but not mute, selected receiver audio. An ICS audio level control shall be provided. ICS sidetone audio shall be provided for the earphone corresponding with the microphone in use. The ICS audio output shall be free of excessive distortion, hum, noise, and crosstalk; and shall be amplified sufficiently to facilitate ease of use in a noisy cockpit/cabin environment.

B8.3.5.4.3 Earphones, microphones, PTTs, and jacks:

B8.3.5.4.3.1 The system shall be designed for operation with 600-ohm earphones and carbon-equivalent, noise-canceling boom type microphones (Gentex electret type model 5060-2, military dynamic type M-87/AIC with type CE-100 TR preamplifier (or equivalent), with U-174/U (single/male) type connector plug. The pilot position only may be configured for low impedance (dynamic) operation.

B8.3.5.4.3.2 All earphone/microphone jacks in the aircraft (except the pilot's) shall be U-92A/U (single/female) type, which shall accept U-174/U type plugs.

B8.3.5.4.3.3 Separate PTT switches shall be provided for radio transmitter and ICS microphone operation at the pilot and observer/copilot positions. The pilot's PTT switches shall be mounted on the cyclic control. The observer/copilot's PTT switches shall be mounted on the cord to the earphone/microphone connector. In lieu of the observer/copilot's cord-mounted PTT switches, a footswitch-operated ICS/radio transmit PTT system may be utilized. ICS PTT switches for any other ICS-equipped positions shall be mounted on the cord to the earphone/microphone connector.

B8.3.5.5 Other Avionics: no requirements.

**Revised (01/04)**

B8.3.5.6 Avionics Installation and Maintenance Standards (in addition to those of the basic Aircraft Rental Agreement): no additional requirements.

B8.3.5.7 Drawings: FS/OAS A-17: wiring diagram for AUX-FM connector in Exhibit 6.

**B8.3.6 MAINTENANCE REQUIREMENTS**

B8.3.6.1 **Weight & Balance.** The aircraft's required weight and balance data shall be determined by actual weighing of the aircraft within 72 calendar months preceding the starting date of the agreement, or renewal 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.

B8.3.6.1.1 All weighing of aircraft shall be performed on scales that have been certified as accurate within preceding 24 calendar months. The certifying agency may be any accredited weights and measures laboratory.

B8.3.6.1.2 A list of equipment installed in the aircraft at the time of weighing must be compiled. The equipment list shall include the name of each item installed. Items which may be easily removed or installed for aircraft configuration changes (seats, doors, radios, cargo hook, baskets, special mission equipment, etc.) shall also be listed including the name, the weight and arm of each item. Each page of the equipment list must identify the specific aircraft by at least serial number or registration number of the aircraft. Each page of the equipment list shall be dated indicating the last date of weighing or computation. 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 135.23(b) and 135.185 are acceptable.

B8.3.6.2 **Time Between Overhaul and Life Limited Parts.**

B8.3.6.2.1 All components, including engines, shall be replaced upon reaching the factory-recommended TBO or FAA-approved extension. Life limited parts shall be replaced at the specified time in service hours or cycles.

B8.3.6.2.2 Aircraft operated with components or accessories on approved TBO extension programs are acceptable provided: (1) the Vendor is the holder of the approved extension authorization (not the owner if the aircraft is leased), and (2) the Vendor operates in accordance with the extension authorization.

B8.3.6.2.3 The Vendor shall supply, at the time of the initial agency inspection, a list of all items installed on the aircraft that are required to be overhauled or replaced on a specified time basis. This list shall include the components name, part number, serial number, total time, service life (or inspection/overhaul time interval), and time and date when component was overhauled, replaced, or inspected.

B8.3.6.3 **Turbine Engine Power Assurance Check.** The first day of operation and no more than each ten hours of operation thereafter, a power assurance check shall be performed. The power assurance check shall be accomplished in accordance with the helicopter flight manual (pilots operating handbook) or approved company performance monitoring program. The results shall be recorded and kept in the helicopter or at the designated base. Engines with power output below minimum approved limits shall be removed from use until the cause of the low power condition is corrected.

EXHIBIT 1

INTERAGENCY HELICOPTER LOAD CALCULATION OAS-67/FS 5700 (11/03)		MODEL	
		N#	
PILOT(S)			DATE
MISSION			TIME
1 DEPARTURE	PA	OAT	<input type="checkbox"/>
2 DESTINATION	PA	OAT	<input type="checkbox"/>
3 HELICOPTER EQUIPPED WEIGHT			
4 FLIGHT CREW WEIGHT			
5 FUEL WT (          gallons X          lbs per gal)			
6 OPERATING WEIGHT (3 + 4 + 5)			
	Non-Jettisonable		Jettisonable
	HIGE	HOGE	HOGE-J
7a PERFORMANCE REF (List page/chart from FM)			
7b COMP GROSS WT (FM performance Section)			
8 WT REDUCTION (Req for all Non-Jettisonable)			
9 ADJUSTED WEIGHT (7b minus 8)			
10 GROSS WT LIMIT (FM Limitations Section)			
11 SELECTED WEIGHT (Lowest of 9 or 10)			
12 OPERATING WEIGHT (From Line 6)			
13 ALLOWABLE PAYLOAD (11 minus 12)			
14 PASSENGERS/CARGO MANIFEST			
15 ACTUAL PAYLOAD (Total of all weights listed in Item 14) Line 15 must not exceed Line 13 for the intended mission.			
PILOT SIGNATURE			
MGR SIGNATURE			HazMat Yes ___ No ___

INTERAGENCY HELICOPTER LOAD CALCULATION  
INSTRUCTIONS  
A load calculation must be completed for all flights. A new

calculation is required when operating conditions change  
(± 1000' in elevation or ± 5°C in temperature) or when the  
Helicopter Operating Weight changes (such as changes to

## Revised (01/04)

the Equipped Weight, changes in flight crew weight or a change in fuel load).

All blocks must be completed. Pilot must complete all header information and Items 1-13. Helicopter Manager completes Items 14 & 15.

**1. DEPARTURE** – Name of departure location and current Pressure Altitude (PA, read altimeter when set to 29.92) and Outside Air Temperature (OAT, in Celsius) at departure location.

**2. DESTINATION** – Name of destination location and PA & OAT at destination. If destination conditions are unknown, use MSL elevation from a map and Standard Lapse Rate of 2° C/1000' to estimate OAT.

Check the box in Line 1 (Departure) or Line 2 (Destination) to indicate the most restrictive values used to obtain Computed Gross Weight in Line 7b.

**3. HELICOPTER EQUIPPED WEIGHT** – Equipped Weight equals the Empty Weight (as listed in the Weight and Balance Data) plus the weight of lubricants and onboard equipment required by contract (i.e. survival kit, rappel bracket).

**4. FLIGHT CREW WEIGHT** – Weight of the Pilot and any other assigned flight crewmembers on board (i.e. Co-pilot, flight engineer, navigator) plus the weight of their personal gear.

**5. FUEL WEIGHT** – Number of gallons onboard **X** the weight per gallon (**Jet Fuel = 7.0 lbs/gal**; AvGas = 6.0 lbs/gal).

**6. OPERATING WEIGHT** – Add items 3, 4 and 5.

**7a. PERFORMANCE REFERENCES** – List the specific Flight Manual supplement and **hover performance** charts used to derive Computed Gross Weight for Line 7b. Separate charts may be required to derive HIGE, HOGE and HOGE-J. **HIGE:** use Hover-In-Ground-Effect, External/Cargo Hook Chart (if available). **HOGE & HOGE-J:** use Hover-Out-Ground-Effect charts for all HOGE operations.

**7b. COMPUTED GROSS WEIGHT** - Compute gross weights for HIGE, HOGE and HOGE-J from appropriate Flight Manual **hover performance** charts using the Pressure

Altitude (PA) and temperature (OAT) from the most restrictive location, either Departure or Destination. Check the box in Line 1 (Departure) or Line 2 (Destination) to indicate which values were used to obtain Computed Gross Weight.

**8. WEIGHT REDUCTION – The Government Weight Reduction is required for all “non-jettisonable” loads .** The Weight Reduction is optional (mutual agreement between Pilot and Helicopter Manager) when carrying jettisonable loads (HOGE-J) where the pilot has total jettison control. The appropriate Weight Reduction value, for make & model, can be found in the current helicopter procurement document (contract).

**9. ADJUSTED WEIGHT** – Line 7b minus Line 8.

**10. GROSS WEIGHT LIMITATION** – Enter applicable gross weight limit from **Limitations section** of the basic Flight Manual or the appropriate Flight Manual Supplement. This may be Maximum Gross Weight Limit for Take-Off and Landing, a Weight/Altitude/Temperature (WAT) limitation or a Maximum Gross Weight Limit for External Load (jettisonable). Limitations may vary for HIGE, HOGE and HOGE-J.

**11. SELECTED WEIGHT** – **The lowest weight, either line 9 or 10, will be entered for all loads.** Applicable limitations in the Flight Manual must not be exceeded.

**12. OPERATING WEIGHT** – Use the value entered in Line 6.

**13. ALLOWABLE PAYLOAD** – Line 11 minus Line 12. The maximum allowable weight (passengers and/or cargo) that can be carried for the mission. Allowable Payload may differ for HIGE, HOGE and HOGE-J.

**14. PASSENGERS AND/OR CARGO** – Enter passenger names and weights and/or type and weights of cargo to be transported. Include mission accessories, tools, gear, baggage, etc. A separate manifest may be used.

**15. ACTUAL PAYLOAD** – Total of all weights listed in Item 14. Actual payload must not exceed Allowable Payload for the intended mission profile, i.e. HIGE, HOGE or HOGE-J.

**Both Pilot and Helicopter Manager must review and sign the form.** Check if HazMat is being transported. Manager must inform the pilot of type, quantity and location of HazMat onboard.

EXHIBIT 2

HELICOPTER FUEL CONSUMPTION AND WEIGHT REDUCTION CHART

		Fuel Consumption	Load Calculation
		Gallon/Hour	Weight Reduction-Lb
<b>EUROCOPTER</b>	AS-330J	179	NOT ESTABLISHED
	AS-332L-1	160	NOT ESTABLISHED
	AS-350B	45	130
	AS-350B-1	46	160
	AS-350B-2	48	160
	AS-350B-3	50	175
	AS-350D	38	130
	AS-355F-1	58	140
	AS-355F-2	58	140
	AS-365N-1	87	275
	BK-117	77	160
	BO-105CBS	55	180
	SA-315B	58	180
	SA-316B	58	170
	SA-318C	56	80
	SA-319B	55	NOT ESTABLISHED
	SA-341G	56	170
	----- EC-135 -----	64	220
	<b>BELL</b>	47	17A
47/SOLOY		23	120
204B (UH-1 SERIES)		88	200
205A-1		89	260
206B-II		25	100
206B-III		27	130
206L-1		32	150
206L-3 (Incl L-1 C30P)		38	180
206L-4		38	180
212		100	390
214B		160	380
214ST		133	NOT ESTABLISHED
222A		70	NOT ESTABLISHED
222B		83	NOT ESTABLISHED
222UT		83	NOT ESTABLISHED
407		45	155
412		110	390
----- 412HP -----	110	390	
<b>MD</b>	500C	23	110
	500D/E	28	120
	520N	32	100
	530F	34	120
	600N	41	155
	----- 900/902 -----	69	210
<b>HILLER</b>	SL-3/4	21A	90
	UH-12	17A	90
	1100B	22	130
	----- UH-12/SOLOY -----	23	100
<b>SIKORSKY</b>	S-55T	47	170
	S-58D/E	83A	OGE 000 IGE 400
	S-58T/PT6T-3	115	OGE 000 IGE 400
	S-58T/PT6T-6	115	OGE 000 IGE 460
	S-62A	70	300
	----- S-70 -----	160	N/A

"A" after the gallons indicates Avgas; all others are turbine.

**EXHIBIT 4**

**FIRST AID & SURVIVAL KITS**

**These are minimum required items for Special Use Activities in the United States and U.S. Possessions. Additional survival kit items are required for flight activities conducted in Canada and Alaska.**

<b>Minimum First Aid Kit Items</b>		
Each kit must be in a dust-proof and moisture-proof container. The kit must be readily accessible to the pilot and passengers.		
<b>Item</b>	<b>Passenger Seats 0-9</b>	<b>Passenger Seats 10-50</b>
Adhesive bandage strips, (3"long)	8	16
Antiseptic or alcohol wipes (pkts)	10	20
Bandage compresses, 4"	2	4
Triangular bandage, 40" (sling)	2	4
Roller bandage, 4"x 5 yds (gauze)	2	4
Adhesive tape, 1"x 5 yds (std roll)	1	2
Bandage scissors	1	1
Body Fluids Barrier kit:	1	1
2 - pair latex gloves		
1 - face shield		
1 - mouth-to-mouth barrier		
1 - protective gown		
2 - antiseptic towelettes		
1 - biohazard disposable bag		
<b>NOTE:</b> Splints are recommended if space permits.		

**MINIMUM AIRCRAFT SURVIVAL KIT ITEMS**

These are minimum required items for special use activities in the Hawaiian Islands.

- Fire Starter (can be two boxes of matches in a waterproof container)
- Magnesium fire starter
- One knife
- Signal Mirror
- Signal Flares (six each) - Flares carried shall be capable of penetrating above a forest canopy of 60'
- Food (two days emergency rations per occupant)
- Candles
- Water purification tablets
- Collapsible water bag
- Whistle
- Space Blanket (one per occupant)
- Nylon rope or parachute cord (50 feet)
- Heavy plastic sheeting or waterproof tarps (2 each – 8' X 10')
- Machete (2 each)

**Revised (1/04)**

**Griffith Bucket (7 wire)**

Pin	MS 3101E-24-11S (Helicopter)	MS 3107B-24-11P (Bucket)	
	Function	Function	
A	Up limit relay coil	Up limit switch	(Green)
B	Up switch	Up limit switch	(White #16)
F	28VDC/Ground (up)	28VDC/Ground (up)	(White #12)
G	Down limit relay coil	Down limit switch	(Red #16)
H	Ground/28VDC (down)	Ground/28VDC (Down)	(Black #12)
I	Down switch	Down limit switch	(Black #16)

**Sims Bucket (3 wire)**

Pin	MS 3101E-24-11S (Helicopter)	MS 3107B-24-11P (Bucket)	
	Function	Function	
B	28VDC/Ground	28VDC/Ground	(Green)
G	Ground (close)	Ground (close)	(White)
I	28VDC (open)	28VDC (open)	(Black)

**Sims Bucket (8 wire)**

Pin	MS 3101E-24-11S (Helicopter)	MS 3107B-24-11P (Bucket)	
	Function	Function	
A	28VDC (Open)	28VDC (Open)	(White/Black)
D	Ground	System Ground	(Blue/Green)
F	28VDC	System Power	(White, Red, Black)
H	Indicator light	Indicator light return	(Red/Black)
I	28VDC (Close)	28VDC (Close)	(Orange)

**Chadwick Bucket (2 wire)**

Pin	MS 3101E-24-11S (Helicopter)	MS 3107B-24-11P (Bucket)	
	Function	Function	
B	28VDC/Ground (Open)	28VDC/Ground (Open)	
H	Ground/28VDC (Close)	Ground/28VDC (Close)	

**Brackett Carousel/Chadwick Bucket (3 wire)**

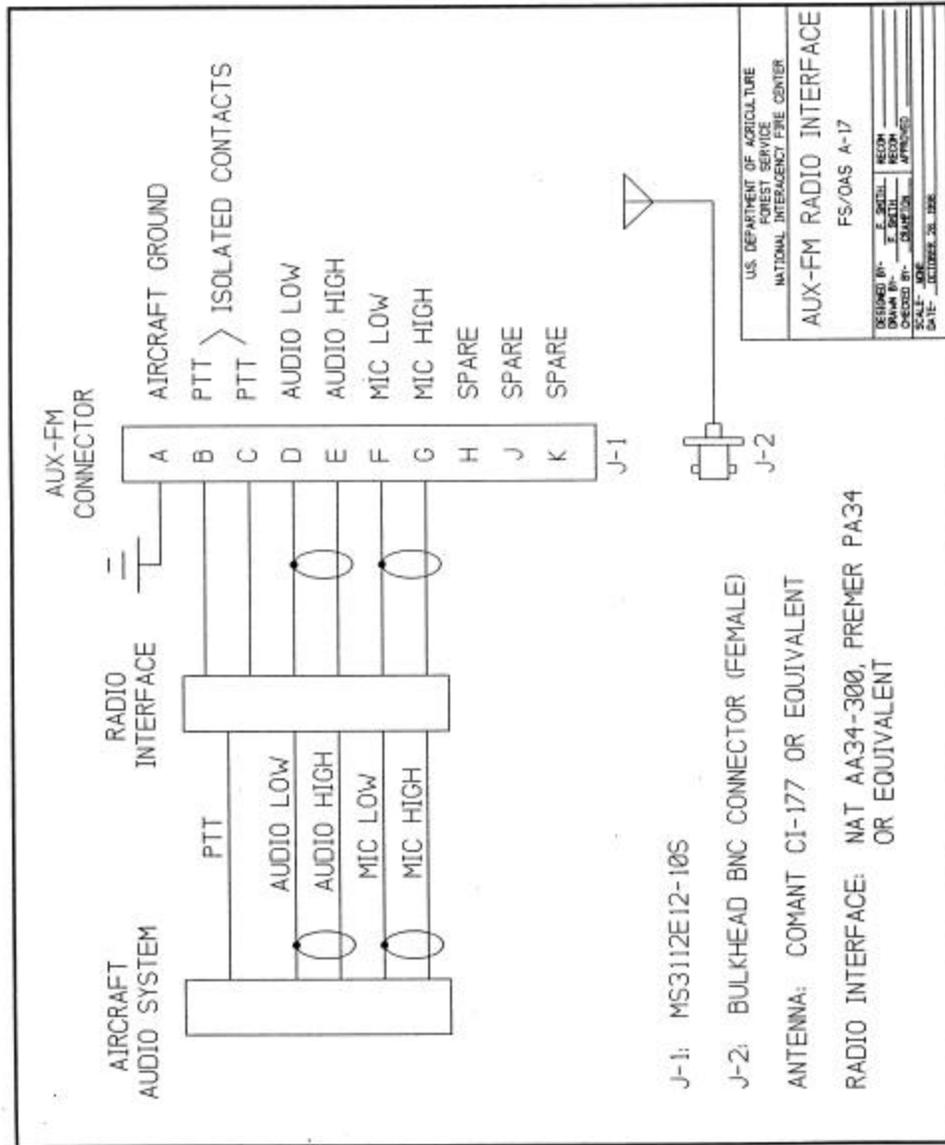
Pin	MS 3101E-24-11S (Helicopter)	MS 3107B-24-11P (Bucket)	
	Function	Function	
C	28VDC Reset/bucket (close)	28VDC Reset/bucket (close)	
D	Airframe Ground	System Ground	
E	28VDC Hook/bucket (open)	28VDC Hook/bucket (open)	

**Simplex Helitorch, Bambi Bucket, Remote Hook, And Seeders (2 wire)**

Pin	MS 3101E-24-11S (Helicopter)	MS 3107B-24-11P (Bucket)	
	Function	Function	
D	Airframe Ground	System Ground	
E	28VDC (bucket open)	28VDC Bucket/Hook Open-Torch/Seeder on	

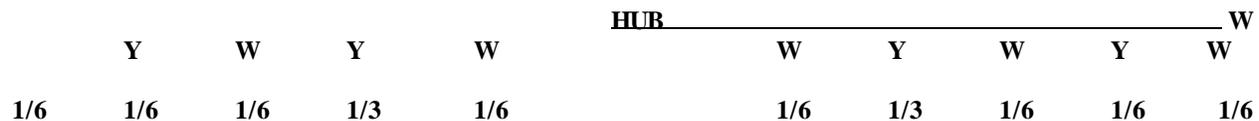
Exhibit 6

ES/DOLAM A-17: AUXILIARY FM RADIO INTERFACE



**ACCEPTABLE PAINT SCHEMES**

1. Starting at blade tip, paint the first 1/6th of the blade length with gloss white. Paint the second 1/6th length with yellow or orange. Paint the third 1/6th of blade length with gloss white. Paint the next 1/3rd of blade length with yellow or orange. Paint remaining 1/6th of the blade length with gloss white.



2. One black and one white blade (two-bladed rotor systems).
3. Pant schemes previously approved under a U.S. Forest Service or DOI AM contract.
4. High visibility paint schemes and color variations specified by manufacturer in a service bulletin, instruction, or other manufacturer-published document or text.