

**DEPARTMENT OF THE INTERIOR – AVIATION MANAGEMENT**  
**AIRCRAFT RENTAL AGREEMENT PROVISIONS: SUPPLEMENT NO. 10**  
**SPECIAL USE – PARACARGO**

**Definition**

**Paracargo Operations:** The aerial delivery of cargo and equipment by parachute.

**B8.10.1 GENERAL – Refer to Section B1**

**B8.10.2 OPERATIONS**

B8.10.2.1 Low-level flight (below 500 feet AGL) shall be required, 14 CFR 135.203 notwithstanding. The minimum safe altitude requirements of 14 CFR 91.119 shall be adhered to at all times.

B8.10.2.2 Only personnel necessary to the mission shall be on board the aircraft.

**B8.10.3 PERSONNEL REQUIREMENTS**

B8.10.3.1 Pilots shall have 100 hours Pilot-in-Command (PIC) in make and model. (250 hours PIC if large aircraft).

B8.10.3.2 200 hours PIC low level flying experience (less than 500 feet AGL) performing paracargo drops, aerial seeding, crop dusting, retardant dropping, wildlife surveys, or other activities accepted by the COTR.

B8.10.3.2.1 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.

B8.10.3.2.2 All pilots shall pass a flight evaluation administered in accordance with the Alaska Smokejumpers Paracargo Pilot Handbook. (Copy is available upon request.)

B8.10.3.3 Personal Protective Equipment (PPE). The following items shall be worn by the pilot, be operable, and maintained in good repair:

B8.10.3.3.1 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, and be compatible with required avionics (see section B8.10.5.2.3). "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. Aviator protective helmets are not required in multiengine fixed wing airplanes.

B8.10.3.3.2 A long-sleeved shirt and trousers (or long-sleeved flight suit) made of fire-resistant polyamide or aramid material or equal.

B8.10.3.3.3 Boots made of all-leather uppers which extend above the ankles.

B8.10.3.3.4 Gloves made of leather, fire-resistant polyamide or aramid material.

B8.10.3.3.5 Shirt with sleeves overlapping gloves and pants with legs overlapping boots.

**B8.10.4 EQUIPMENT REQUIREMENTS**

B8.10.4.1 DOI AM shall approve the aircraft for Paracargo operations. (Previously approved aircraft

include DHC-6, BE-99, VOLPAR, SC7, Beech-200, Beech-90B, Shorts 330, Dornier 228, CASA 212, DC-3TP67, CE-208 Caravan.)

B8.10.4.2 Two high visibility strobe lights (one above and one below the fuselage) or a wingtip and tail strobe system.

B8.10.4.3 Cabin heater with windshield de-fogger.

B8.10.4.4 A first aid kit containing items specified in Exhibit 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.10.4.5 A survival kit containing items specified in Exhibit 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.10.4.6 The aircraft shall be equipped with FAA approved cargo tie down provisions, cargo nets and/or cargo tie-downs for cargo operations. The aircraft configuration must allow the cargo to be loaded and operated while not obstructing the ingress/egress of any cockpit seats.

B8.10.4.7 Cargo restraint installation shall secure cargo from shifting, or slipping through or under restraint.

B8.10.4.7.1 Cargo tie-down provisions shall conform to 14 CFR or other approved data.

B8.10.4.7.2 Cargo nets and straps shall not be attached to pilot and/or passenger seat structures.

B8.10.4.8 The aircraft shall have a cargo door at least 50 inches wide and 50 inches high.

B8.10.4.9 Paracargo Operations/Equipment. No protrusions shall be allowed between the paracargo exit door and the tail that may interfere with retrieving parachute static lines. All antenna and protrusions in the path of the static line and canopy shall be relocated or faired to prevent damage to aircraft, equipment, or cargo. Door hinges and pins shall be completely covered by a fairing to prevent damage to static lines.

B8.10.4.9.1 The aircraft shall be FAA approved for flight with the door(s) opened/removed. All equipment required for that approval shall be installed (i.e. flight manual supplement, spoiler, etc.).

B8.10.4.9.2 Checklists shall be developed for paracargo operations including "Before Drop" and After Drop". Items on the list may include similar items found on before landing and after take-off checks.

B8.10.4.9.3 Paracargo Placards. The aircraft shall have placards that denote prescribed paracargo drop speed and flap setting. The placards shall be of a permanent type with letters 3/8 inch minimum height. The placards shall be clearly visible at the pilot-in-command position and at the paracargo spotter's station.

B8.10.4.9.4 The aircraft shall be equipped with one safety point in the cargo compartment allowing maximum mobility to cargo handlers in cargo area while hooked to the safety point. Douglas track and tie-down fittings may be acceptable.

B8.10.4.9.5 The safety point shall permit a cargo handler access to all portions of the forward cargo area without reaching the end of an adjustable tether.

B8.10.4.9.6 The safety point shall prevent the cargo handler attached to an adjustable tether from exiting the aircraft through the cargo door.

B8.10.4.9.7 The safety point shall be capable of withstanding a 750 pound static load.

B8.10.4.9.8 Primary static line anchor shall be located adjacent to the paracargo door. The static line anchor installation shall be FAA approved and pull tested to withstand 500 pounds. Douglas track and fittings may be acceptable.

B8.10.4.9.9 Aircraft shall have cargo tie-down capability for individual bundles, allowing restraint of cargo not actually being dropped.

## **B8.10.5 AVIONICS REQUIREMENTS**

### **B8.10.5.1 Communications**

#### **B8.10.5.1.1 Provisions for Auxiliary VHF-FM (AUX-FM) Portable Radio.**

B8.10.5.1.1.1 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 both the pilot and the copilot, and utilizing the contact assignments as specified by drawing FS/OAS-17 in Exhibit 6.

B8.10.5.1.1.2 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).

B8.10.5.1.1.3 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 both the pilot and the copilot, when seated, have full view and unrestricted movement of the radio's display and controls, without interference from clothing, the cockpit structure, or the flight controls.

B8.10.5.1.1.4 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).

B8.10.5.1.1.5 In lieu of the above AUX-FM requirements, the Contractor may substitute one VHF-FM aeronautical transceiver (FM-1) which is capable of communicating with the Government's VHF-FM portable radios.

### **B8.10.5.2 Audio Systems**

B8.10.5.2.1 Two separate audio control systems (which may be combined in a single unit) shall be provided for the pilot and copilot. Each system shall provide pilot and copilot with separate controls for selection of receiver audio outputs and transmitter microphone/PTT audio inputs for all installed radios and PA systems. Each system shall also provide pilot and copilot with separate controls for adjustment of both ICS and receiver audio output levels (NAT AMS-42F or equivalent).

B8.10.5.2.1.1 Transmitter selection and operation. Separate transmitter selection controls shall be provided for the microphone/PTT inputs of both pilot and copilot. The system shall be configured so that the pilot and copilot may each simultaneously select and utilize a different transmitter (or PA system when installed) via their respective microphone/PTT. Whenever a transmitter is selected, the companion receiver audio shall automatically be selected for the corresponding earphone. The loadmaster position shall be equipped to utilize the transmit function as selected by the copilot, unless equipped with a separate audio control system. Transmitter sidetone audio shall be provided for the user as well as for cross-monitoring via the corresponding receiver selection switch on the other audio control system.

B8.10.5.2.1.2 Receiver selection and operation. Separate controls shall be provided for both pilot and copilot selection of audio from one or any combination of available receivers. The loadmaster position shall be equipped to monitor the receiver(s) as selected by the copilot, unless equipped with a separate audio control system. 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.

B8.10.5.2.1.3 The controls of the audio system(s) must be located and arranged so that both the pilot and 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.

B8.10.5.2.2 An intercommunications system (ICS) shall be provided for the pilot, copilot, and loadmaster positions. ICS audio shall mix with, but not mute, selected receiver audio. An ICS audio level control shall be provided for each position above. Adjustment of the ICS audio level at any position shall not affect the level at any other position. ICS sidetone audio shall be provided for the earphones 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.

B8.10.5.2.3 Earphones, microphones, PTTs, and jacks:

B8.10.5.2.3.1 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 CE-100 TR preamplifier, or equivalent).

B8.10.5.2.3.2 J-033 and J034 type connector jacks shall be provided at all required positions in the aircraft to accept the PJ-055B and PJ-068 type connector plugs as utilized with the headset/ microphone. The Loadmaster's jacks shall be located forward of and above the paracargo door.

B8.10.5.2.3.3 Separate PTT switches shall be provided for radio transmitter and ICS microphone operation at the pilot, copilot, and loadmaster positions. The pilot's and copilot's PTT switches shall be mounted on the control yoke. **Note:** PTT switches other than those mounted on the flight controls at the copilot position must be provided if that position is to be occupied and used by a crewmember other than a qualified copilot. The loadmaster's PTT switches shall be mounted on the cord to the headset/microphone connector.

B8.10.5.2.3.4 The Vendor shall furnish a noise-attenuating headset with boom microphone at each flight crew position and the loadmaster position. A handheld noise-canceling microphone shall also be furnished at the loadmaster position. Therefore, the loadmaster's headset may be furnished without the boom type microphone.

B8.10.5.2.3.5 A headset cord of a length adequate to allow the loadmaster access to the center aft edge of the ramp when opened shall be furnished. The transmit and interphone push-to-talk switches (spring loaded to the off position) shall be located on the cord of the headset/boom-microphone.

B8.10.5.3 Other Avionics

B8.10.5.3.1 One ATC transponder system, and altitude reporting system, meeting the requirements of 14 CFR 91.215(a), and tested and inspected per 14 CFR 91.413. The transponder shall have been last tested during the one year period preceding the start or renewal date of the agreement.

## **B8.10.6 MAINTENANCE REQUIREMENTS**

B8.10.6.1 **Weight & Balance.** The aircraft's required weight and balance data shall be determined by actual weighing of the aircraft within 24 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.

B8.10.6.1.1 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.

B8.10.6.1.2 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, 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.

**B8.10.6.2 Time Between Overhaul and Life Limited Parts.**

B8.10.6.2.1 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.

B8.10.6.2.2 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.

B8.10.6.2.3 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.

**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.		
Item	Passenger Seats 0-9	Passenger Seats 10-50
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 AIRCRFT SURVIVAL KIT ITEMS**

These are minimum required items for special use activities in the conterminous United States (including Alaska) and U.S. possessions.

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| Fire Starter (can be two boxes of matches in a waterproof container) | Magnesium fire starter                         |
| One knife  | Signal Mirror                                  |
| Signal Flares (six each)   | 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)         |

**These are additional items for the contiguous U.S. and U.S. Possessions:**

Water (one quart per occupant required when operating over areas without adequate drinking water)

**These are additional items for Alaska only:**

- Rations for each occupant sufficient to sustain life for one week
- One axe or hatchet
- One first aid kit
- One mosquito headnet for each occupant
- Insect repellent
- An assortment of tackle such as hooks, flies, lines, sinkers, etc.

**OCTOBER 15 TO APRIL 1**

- One pair of snowshoes
- One sleeping bag
- One wool blanket or equivalent for each occupant over four years of age

**Note: Operators of multiengine aircraft licensed to carry more than 15 passengers need carry only the food, mosquito nets, and signaling equipment at all times other than the period from October 15 to April 1 of each year, when two sleeping bags and one blanket for every two passengers shall also be carried. All of the above emergency rations and equipment requirements are the minimum requirements under current law.**

