

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

National Policy

N 8900.272

Effective Date: 8/7/14

Cancellation Date: 8/7/15

SUBJ: Airplane External Load Operations Within the State of Alaska

1. Purpose of This Notice. This notice prescribes Federal Aviation Administration (FAA) policy for carrying external loads on airplanes and is applicable only to airplane external load operations in Alaska. This includes eligibility requirements for the airplane and the operator, and the steps for approving airplane external loads operations, as well as best practices for safe airplane external load operations.

2. Audience. The audience for this notice is the Alaska Region Flight Standards Service (AFS) and Anchorage Aircraft Certification Office (AIR) personnel, and Alaskan designees approved by the Administrator.

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at http://fsims.avs.faa.gov. Operators can find this notice on the Federal Aviation Administration's (FAA) Web site at http://fsims.faa.gov. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

4. Cancellation. This notice replaces all previous policy and guidance on airplane external load operations in Alaska.

5. Background. On June 14, 1978, the Alaskan Supplement No. 1 to Order 8130.2B, Airworthiness Certification of Aircraft and Related Products, was adopted. On March 22, 1993, it was approved for use by the Acting Alaska Flight Standards Division Manager, for Alaska operations only. The supplement replaced earlier policy that gave guidance to the aviation safety inspector (ASI) on approving airplane external load operations. This policy demonstrated that – with care, diligence, and experience – airplanes can safety carry external loads unique to operations in Alaska.

6. General. The FAA permits the carriage of external loads on airplanes in Alaska when the operator complies with this notice.

a. Airplane Eligibility. An airplane eligible for the carriage of external loads must:

(1) Be a propeller-driven airplane type-certificated in accordance with Title 14 of the Code of Federal Regulations (14 CFR) part 23 (or its predecessor regulations) in the normal, utility, or acrobatic category, and have a valid airworthiness certificate in that category.

(2) Have a maximum certificated takeoff weight of 12,500 pounds or less; and be registered in the United States.

b. Pilot Requirements. The pilot in command (PIC) of an airplane carrying an external load must:

(1) Hold a private, commercial, or airline transport pilot (ATP) pilot certificate, with appropriate ratings and currency for the airplane type and operation.

(2) Have at least 250 hours of flight time.

(3) Have at least 50 hours PIC in the make and model airplane used for the external load.

(4) Have knowledge of:

(a) External load attaching methods;

(b) The airplane operating limitations issued for the external load operation; and

(c) How the external load may affect the flight characteristics of the airplane.

(5) Operate the airplane in accordance with the operating limitations issued in 14 CFR part 91, § 91.313 when in restricted category.

c. Airplane Handling and Flight Characteristics When Carrying External Loads. Aerodynamic forces and the weight of an external load change an airplane's handling and flight characteristics. These forces can negatively affect airplane performance (takeoff, climb, cruise, and landing), airplane stability, flight control effectiveness, vibration, fuel consumption, and engine cooling, among other characteristics. The operator must take care when selecting and mounting an external load and also exercise prudence to avoid operation outside the airplane's weight & balance envelope, and to avoid aerodynamic effects that make operations unsafe.

7. Disposition. We will incorporate the information in this notice into FAA Order 8900.1, Flight Standards Information Management System (FSIMS), before this notice expires. Direct questions concerning the information in this notice to the General Aviation and Commercial Division (AFS-800) at 202-385-9600 or the Aircraft Maintenance Division (AFS-300) at 202-267-1615.

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John Barbagallo Acting Deputy Director, Flight Standards Service

Appendix A. Airplane Eligibility

This task requires coordination between Airworthiness and Operations aviation safety inspectors (ASI). However, it will be the Airworthiness ASI who will issue the restricted airworthiness certificate and associated operating limitations.

1. Except for primary category, an airplane certificated in the normal, utility, acrobatic, transport, or limited category may be issued multiple airworthiness certificates. A restricted category certificate for the purpose of carrying external loads in Alaska may be issued if the airplane can be converted to the restricted category in accordance with 14 CFR part 21, §§ 21.25, 21.185, and 21.187.

a. Section 21.25 allows a restricted category type certificate to be issued, and lists types of special purpose operations that can be authorized. Section 21.25(b)(7) lists "any other operation specified by the FAA."

b. Section 21.185 allows aircraft with a restricted category type certificate to be issued a restricted category airworthiness certificate.

c. Section 21.187 outlines the requirements for the issuance of a multiple airworthiness certificate. The conversion from one category to another must be accomplished by simple mechanical means to meet the test of the regulation. Since the conversion is by simple mechanical means, the return to the standard category does not require the airplane to be inspected by a certificated airframe mechanic.

2. In addition to the Standard Airworthiness Certificate, FAA Form 8100-2, a Special Airworthiness Certificate, FAA Form 8130-7, will be issued in the restricted category with operating limitations. Airworthiness certificate(s), FAA Form 8100-2, and/or FAA Form 8130-7, must remain in the airplane and be displayed. A method must be provided by the applicant to display the restricted identification when the airplane is in that configuration, per 14 CFR part 45, § 45.23(b).

a. Certificate Duration: In accordance with § 21.181(a), the restricted airworthiness certificate will become invalid upon transfer of ownership of the airplane. The termination date of the restricted category certificate is the date of transfer to the new owner.

b. Operation: If the pilot in command (PIC) conducting the operation changes, the new PIC must re-comply with item 11 of the operating limitations, as this limitation is specific to the pilot operating the aircraft.

3. An airplane carrying an external load which is not determined to be a major alteration (as defined by 14 CFR part 1, § 1.1) may conduct those operations in the standard category. The following items have been evaluated and are typically not considered to be major alterations as defined by § 1.1.

- a. Snowshoes,
- **b.** Cross country skis,

- c. Hunting rifle/scabbard,
- **d.** Backpack frame, and
- e. Game tracking antenna.

Note: With the exception of the game tracking antenna, these items are not considered to be installed equipment, and no further action is required. The game tracking antenna is typically a minor alteration which would require a logbook entry.

4. An airplane carrying an external load which is determined to be a major alteration (as defined by 1.1) must conduct those operations in the restricted category. The following items have been evaluated and are typically considered to be major alterations as defined by § 1.1:

- **a.** Game antlers,
- **b.** Canoe/boat,
- **c.** Lumber/plywood, and
- **d.** Other items not listed in paragraph 3.

5. When the airplane is operated in the restricted category, it shall not be operated for compensation or hire.

CERTIFICATION STEPS - GENERAL INSTRUCTIONS

1. Obtain from the applicant a properly executed Application for Airworthiness Certificate, FAA Form 8130-6, and any other documents that may be needed for certification. The applicant must submit FAA Form 8130-6 with the front completed as illustrated in Figure A-1, FAA Form 8130-6, Application For Multiple Airworthiness Certificate External Load.

2. The applicant must submit a Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), FAA Form 337, showing similar information as shown in Figure A-3, FAA Form 337, For Restricted Category Type Certificate, and Figure A-4, Reverse of FAA Form 337, For Restricted Category Type Certificate, but leaving the date blank.

3. After the inspector and applicant have completed the preceding steps, the inspector must complete FAA Form 337 by signing Block 7, approval for return to service. He/she must complete FAA Form 8130-7, Figure A-5, Example of a Special Airworthiness Certificate, FAA Form 8130-7, Issued in the Restricted Category For Airplane External Loads, and the appropriate operating limitations, as shown on pages 4, 5, and 6 in triplicate.

4. A logbook entry will be made after the inspector has completed all the certification steps and will state:

"I find that this airplane meets the requirements for the certification requested and have issued a Special Airworthiness Certificate dated ______." (It will be signed by the issuing airworthiness inspector.)

5. The original copy of FAA Form 337, FAA Form 8130-7, and the operating limitations must be given to the applicant; one copy must be forwarded to the Aircraft Registration Branch (AFS-750), and the remaining copy must be retained in the FAA Flight Standards District Office (FSDO) files.

AIRPLANE, RESTRICTED CATEGORY EXTERNAL LOAD OPERATING LIMITATIONS

 DATE ______
 N Number ______

 A/C Make & Model ______
 Serial No. ______

1. This airplane is issued a restricted category airworthiness certificate for the carriage of external loads.

2. The restricted airworthiness certificate associated with these operating limitations is valid only when the airplane is operated within the State of Alaska.

3. This airplane must not be operated in the restricted category for other than the special purpose for which it was certificated (i.e., carriage of external loads).

4. No person may operate a restricted category civil aircraft carrying persons or property for compensation or hire unless that person:

a. Is a flightcrew member;

b. Is a flightcrew member trainee;

c. Performs an essential function in connection with the carriage of the external load for which the airplane is certificated; or

d. Is necessary to accomplish the work activity directly associated with the special purpose.

5. The PIC operating the airplane with an external load must:

a. Hold a private, commercial, or airline transport pilot (ATP) pilot certificate, with appropriate ratings and currency for the airplane type and operation.

b. Have at least 250 hours of flight time.

c. Have at least 50 hours PIC in the make and model airplane used for the external load.

d. Have adequate knowledge of:

(1) External load attaching methods;

(2) The airplane operating limitations issued for the external load operation; and

(3) How the external load may affect the flight characteristics of the airplane.

e. Operate the airplane in accordance with these operating limitations when in the restricted category.

6. Takeoffs and landings will be made to provide the least possible exposure to people and property on the ground. Takeoff, landing, and enroute flight paths will be planned so that any inadvertent or accidental release of the external load will not present a hazard to persons or property on the surface.

7. No flights will be made over densely populated areas or on a congested airway.

8. Except for takeoffs and landings, operations shall not be conducted near a busy airport where passenger transport operations are conducted.

9. When airplanes with external loads are being operated to and from tower controlled airports, it shall be the responsibility of the PIC to advise the tower that the airplane is operating in the restricted category and clearance over densely populated areas cannot be accepted.

10. For operations to and from (______), all takeoff and landings must be made toward ().

Note: This paragraph can be used to limit operations to a specific departure and/or approach direction. It may also be eliminated if so desired.

11. It is the responsibility of the PIC conducting the operation to ensure that the external load is properly secured to prevent it from shifting or coming loose during flight. It is also the responsibility of the PIC conducting the operation to ensure that the airplane is safely controllable and has no adverse flight characteristics while carrying an external load. This determination must be made by conducting a flight check of the airplane with the external loads that will be carried. Upon completion of the satisfactory flight check and prior to further operation, the following entry must be made in the airplane records by the PIC conducting the operation:

Airplane flight checked in _____ (non, light, moderate, or severe) turbulent air at airspeeds from _____ and to _____ mph/kts with the following external load(s) attached

and found to be safely controllable and to operate satisfactorily.

by: ______Name

Pilot Certificate No.

12. Operations shall not be conducted at speeds exceeding that for which safe controllability has previously been demonstrated.

13. The gross weight or limits of the airplane shall not be exceeded.

14. The word "restricted" must be displayed on the airplane near each entrance to the cabin or cockpit in letters not less than 2 inches nor more than 6 inches in height.

15. External load operations with this airplane are to be conducted under visual flight rules (VFR) day/night operation only.

16. External load operations with this airplane shall not be conducted in turbulent air greater than was tested during the flight check (as noted in paragraph 11 above).

17. If the PIC conducting the operation changes or if there are changes/alterations to the external load, attaching means, and/or to the airplane which may affect the flight characteristics, the flight check (as noted in paragraph 11 above) must be conducted and recorded again.

18. The attached restricted airworthiness certificate will become invalid upon transfer of ownership of the airplane. The original applicant for the restricted airworthiness certificate, prior to transferring ownership of the airplane, must surrender the certificate and operating limitations to the nearest FSDO.

Signature

(AIRWORTHINESS INSPECTOR)

Figure A-1. FAA Form 8130-6, Application For Multiple Airworthiness Certificate External Load

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Figure A-2. Reverse of FAA Form 8130-6, Application For Multiple Airworthiness Certificate External Load

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Figure A-3. FAA Form 337, For Restricted Category Type Certificate

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FAA Form 337 (12-88)

Figure A-4. Reverse of FAA Form 337, For Restricted Category Type Certificate

FAA FORM 337 - REVERSE SIDE

NOTICE
Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.
8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
NO PERMANENT ALTERATION OF THE AIRPLANE HAS BEEN MADE; THEREFORE, ITEM
6 NEED NOT BE COMPLETED.
1. Operations Limitations- Restricted Category- External Load-Dated Oct. 28, 1991 are provided.

Additional Sheets Are Attached

U.S.GPO: 1989-0-663-171

Figure A-5. Example of a Special Airworthiness Certificate, FAA Form 8130-7, Issued in the Restricted Category For Airplane External Loads

	DEF	UNITED STATES OF AMERI PARTMENT OF TRANSPORTATION - FEDERAL SPECIAL AIRWORTHINESS C	CA AVIATION ADMINISTRATION CERTIFICATE						
A	CATEGORY	DESIGNATION RESTRICTED	NATACKA						
~	PURPOSE EXTERNAL LOAD OPERATION IN ALASKA								
-	MANU-	NAME N/A							
в	FACTURER	ADDRESS N/A							
	FLIGHT	FROM N/A							
C		TO N/A							
	1 100/5		SERIAL NO. 18-12345						
D	N-12345	27222	MODEL PA-18-150						
-	BUILDER	PIPER 28 1001	EXPIRY SEE REVERSE SIDE						
	DATE OF IS	SUANCE UCT. 20, 1991	ARE A PART OF THIS CERTIFICATE						
	OPERATING	SLIMITATIONS DATED 10/28/91	DESIGNATION OB OFFICE NO.						
E	SIGNATURE O	F FAA REPRESENTATIVE	DESIGNATION OF OFFICE NO.						
	Tom	TI TONES	AL-FSDO-03						
-	JOHN	H. JUNED	punishable by a fine not exceeding \$1,000 or						
Any	alteration, rep	acceeding'3 years, or both. THIS CERTIFICATE	MUST BE DISPLAYED IN THE AIRCRAFT IN						
ACC	ORDANCE WI	TH APPLICABLE FEDERAL AVIATION REGULA	TIONS.						
FAA FA	OBM 0130 7 /10/031		SEE HEVENOL OIL						

A	This airworthiness certificate is issued under the authority of the Federal Aviation Act of 1958 and the Federal Aviation Regulations (FAR).
в	This airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire: and/or (2) Carrying persons not essential to the purpose of the flight.
C	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
D	This airworthiness certificate certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable FAR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side. (1) except in accordance with the applicable FAR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate: (2) over any foreign country without the special permission of that country.
E	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in FAR Part 21, Section 21,181 or 21,217.

Appendix B. Some Best Operating Practices (Non-Regulatory)

1. Consider that anything attached to the struts may vibrate and cause damage. Some type of protective material should be applied at the wear spots. After the external load has been removed, the area under the protective material should be inspected for damage.

2. Attaching methods are varied and numerous. The use of the "bungee cord" has gained acceptance in recent years because it does not have a tendency to loosen as other methods, and is easier to remove. The item to be attached to the wing struts should be placed "uphill" from the jury struts. This provides a notch for the item to rest upon and aids in the securing process. When attaching snowshoes, the bungee should pass through the webbing at least once and continue around the complete snowshoe enough times to hold it in place securely. When attaching a rifle scabbard to the wing struts, it is good practice to ensure that the rifle is not going to come out of the scabbard; this may be hazardous to people and property on the ground. Backpack frames are attached in the same manner as snowshoes, using a bungee cord and wrapping it around enough times to ensure that it is secure. On some airplanes, the aileron cables are attached to the outside of the wing strut. Care should be exercised to avoid wrapping the bungee around the cable. Restricting the aileron cable could cause an airplane control problem and also may cause the cable to cut through the bungee, resulting in an inadvertent release.

3. Comments received from users reveal that PA-18 Super Cubs are capable of carrying a considerable amount of plywood on the spreader bars. The amount should be dictated by the performance factors and limitations of the airplane. Some type of protection for the spreader bars is needed at the wear spots, such as tape or rubber sheeting. The plywood can be nailed together to prevent shifting, and then be properly attached. Webbed tie-down straps with a built-in ratchet device have proven successful as an attachment method. Some operators have incorporated a piece of metal formed into a 'V' and screwed to the leading edge of the wood to streamline it; the frontal height should be kept to 6 inches to 8 inches. The carriage of dimensional lumber can be treated like plywood and secured to the top of the floats in some instances. As with any load, consideration must be given to weight & balance and the limitations of the airplane.

4. Lightweight material, such as sheets of roofing, can be placed between plywood or lumber to stiffen the load and reduce vibration. The sheets must be securely fastened to the wood to prevent them from sliding out.

5. The carriage of canoes may be conducted safely as long as appropriate safety precautions are taken. The Dehavilland DHC-2 Beaver may carry canoes as an external load while in the standard category, if the airplane is equipped as specified in the Type Certificated Data Sheet (TCDS), and is operated in accordance with an FAA-approved flight manual.

CAUTION: Various airplanes can be affected differently when carrying the same external load. The majority of experience with airplane external loads is with high-wing, float-equipped airplanes. Some external loads that can be safely carried on high-wing, float-equipped airplanes might not be safely carried on an airplane without floats.

6. The carriage of antlers may be challenging because of their shape, but this also allows for numerous fastening points. Bungee cords, parachute cord, and nylon rope have proven adequate for secure attachment. Antlers can be carried on the wing struts or on the floats. Moose antlers are particularly heavy and, while they can be attached to the wing struts, the extra weight is a consideration. Flight with heavy antlers in turbulent air or during a hard landing will impose additional loads that could result in bent wing struts, rendering the airplane unairworthy. It has been reported that, on some airplanes, antlers secured to the wing struts can cause a significant air flow disturbance to the tail surfaces. Antlers can also cause a significant amount of drag, which increases fuel consumption, which should be considered in flight planning.

7. Loads can be carried on either side of the airplane. Some pilots prefer to carry a load on the right side to balance the airplane, while others prefer the left to better monitor the load. The pilot may elect which side to place the load, depending on airplane performance and previous experience with a particular load.

8. Antennas are attached to airplanes for many purposes, but mainly for tracking radio collared game.

9. It is recommended that pilots seek the advice and experience of others to more quickly develop loading methods and procedures. Above all, remember that safety is of the utmost concern.

10. Section 45.23(b) requires that the word "restricted" be displayed when operating in that category. One method of compliance is the display of temporary signs in both side windows of the airplane.