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Part 133 New

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Title 14—AERONAUTICS AND SPACE

Chapter 1—Federal Aviation Agency

[Reg. Docket No. 1592; Amdts. 1-2; 42-3]

SUBCHAPTER A—DEFINITIONS [NEW]

PART 1—DEFINITIONS AND ABBREVIATIONS [NEW]

SUBCHAPTER A—CIVIL AIR REGULATIONS

PART 42—IRREGULAR AIR CARRIER AND OFF-ROUTE RULES

SUBCHAPTER G—AIR CARRIER AND COMMERCIAL OPERATOR CERTIFICATION AND OPERATIONS [NEW]

PART 133—ROTORCRAFT EXTERNAL-LOAD OPERATIONS [NEW]

Miscellaneous Amendments

Part 133 [New] of the Federal Aviation Regulations, "Rotorcraft External-Load Operations," is being adopted to establish certification and operating rules governing non-passenger-carrying rotorcraft external-load operations, conducted for compensation or hire within the United States, by persons other than air carriers or other than those authorized to conduct operations under Part 375 of this title; and to govern persons engaged in such operations.

Rotorcraft have the ability, exceptional among aircraft, to raise, lower, or transport external loads and to tow objects on land or water. A large number of civil rotorcraft are now being used in such operations, performing tasks that are frequently difficult, or impossible, to perform by other means.

Rotorcraft external-load operators have pointed out, however, that under the current regulations rotorcraft could not be operated with external loads for compensation or hire unless the rotorcraft-load combination had been approved under the provisions of Part 6 or 7; that the burden and expense of obtaining such approval was unnecessarily severe; and that safety would not be

compromised if less restrictive airworthiness requirements (relative to those prescribed in Part 6 or 7) were established for rotorcraft with external loads to be operated for compensation or hire. As evidence supporting their views, the rotorcraft external-load operators offered the service record of numerous restricted category rotorcraft type certificated under the provisions of Part 8 and operated with external loads for various authorized purposes, although not for compensation or hire.

Recognizing that the type certification rules prescribed in Parts 6 and 7 might be unduly restrictive when applied to rotorcraft with external-load provisions, the Agency published in the FEDERAL REGISTER (27 F.R. 748) as a notice of proposed rule making, and circulated as Draft Release No. 62-2 dated January 18, 1962, a proposed Special Civil Air Regulation containing airworthiness standards for the approval of rotorcraft that were to be operated with external loads for compensation or hire, and containing appropriate operating limitations for such rotorcraft.

An evaluation of the comments received in response to Draft Release No. 62-2 persuaded the Agency that it was necessary to make the original proposals more restrictive. Accordingly, the Agency published a new notice of proposed rule making in the FEDERAL REGISTER (28 F.R. 1343) that was circulated as Draft Release No. 63-5 dated February 12, 1963.

This last notice withdrew the previous notice and proposed a new Part 133 Rotorcraft External-Load Operations [New], containing certification and operating rules for persons engaged in rotorcraft external-load operations within the United States. The applicability provisions were broad, embracing all civil rotorcraft external-load operations in the United States, whether or not conducted for compensation or hire.

A number of comments received in response to the proposal in Draft Release No. 63-5 suggested that there was no need to regulate, in the manner pre-

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Revised Part 42

scribed in proposed Part 133 [New], rotorcraft external-load operations that are not conducted for compensation or hire, nor those operations requiring an air carrier certificate. As indicated in the preamble to proposed Part 133 [New], Part 42 (derived partially from rescinded Part 45) is being amended, and proposed Part 135 [New] (formerly proposed Part 125) relating to air taxi operations is being changed, so that both exclude from their applicability operations under Part 133 [New]. The Agency believes that its original regulatory objective can be attained, and a beneficial simplification of the proposed rule achieved, by narrowing the applicability of Part 133 [New] as suggested. The applicability provisions of the part have been revised accordingly.

By reason of the revision of the applicability provisions eliminating the applicability of the part to air carriers, it was necessary to delete reference to Class I rotorcraft-load combinations. To avoid confusion, the remaining classes of rotorcraft-load combinations have been redesignated as follows: Class II is now Class A; Class III is now Class B; and Class IV is now Class C.

Comment was received from several persons who questioned the need to issue Rotorcraft External-Load Operator Certificates, as prescribed in Part 133 [New]. The Agency firmly believes that this operator certificate is a necessary administrative tool for achieving full compliance with the safety provisions of the new part in the public interest. Mandatory display of the operator certificate in the rotorcraft during external-load operations (as prescribed in § 133.27) makes it possible to determine, via on-the-job inspections in the field, whether the rotorcraft and its external-load attaching means had been approved, whether the rotorcraft-load combination had been authorized, and whether the operator had demonstrated his knowledge and skill in rotorcraft external-load operations. Field inspections are thereby facilitated, leading to effective rules enforcement.

Several persons commented on the proposed provision requiring pilots to demonstrate their knowledge and skill concerning rotorcraft external-load operations. It would serve no useful purpose, they stated, to require such demonstration when other evidence is available that the pilot has had extensive experience, and a satisfactory safety record, in rotorcraft external-load operations. The Agency agrees that knowledge and skill demonstrations may be superfluous in such cases, and the provision has been revised to cater to these situations.

Comments were received objecting to the severity of the pilot flight time provisions in the proposal, particularly the provision requiring the pilot to have 50 hours of flight time in rotorcraft external-load operations. The Agency has reexamined the need for these provisions, taking into consideration that each pilot is required to demonstrate his knowledge and skill in rotorcraft external-load operations in compliance with § 133.23, and has concluded that they may be deleted without compromising safety.

Several operators commented concerning the proposed provision requiring each pilot to demonstrate his knowledge and skill to the Administrator. They contended that this requirement would create delays and hardship when a new pilot is employed by the operator at a remote location where no representative of the Administrator is available and suggested that the knowledge and skill demonstration, in the case of pilots other than the designated chief pilot, be made to the designated chief pilot rather than to the Administrator. The Agency considers the objection valid and the suggested solution reasonable. This revision has been incorporated.

The proposed provisions dealing with operations over noncongested areas have been deleted, since they are contained in other parts of the Agency's regulations. The proposed provisions dealing with operations over congested areas have been revised by deleting: (1) the requirement that the copilot (if any) demonstrate his knowledge and skill in rotorcraft external-load operations; and (2) the requirement that the zero-load automatic activation features of release devices be rendered inoperative. Of these, the first was deleted because the Agency knows of no rotorcraft external-load operation for which it is necessary to have a copilot with the same knowledge and skill as the pilot, and the second because the provision in § 133.31(f) (2) relating to the release of jettisonable external loads during an emergency also covers inadvertent release by means of any zero-load release device.

Comments were received urging that the proposed recordkeeping provisions be deleted since the cost of keeping such records on pilot personnel was excessive in relation to any administrative benefits the Agency might derive. The Agency agrees in principle with this view, believing that the records the pilot is required to carry under the provisions of other Agency regulations, and the information on the Rotorcraft External-Load Operator Certificate (a facsimile of which must be displayed in the rotorcraft to comply with § 133.27) are generally sufficient for its administrative needs. The Agency believes it necessary, however, to require that the pilot, when conducting external-load operations, have evidence on his person that he had previously demonstrated his knowledge and skill with respect to the class of rotorcraft-load combination involved. Accordingly, the proposed recordkeeping provisions have been deleted, and a new provision (§ 133.31(d) (4)) added to require the pilot to have in his possession his log book containing an appropriate entry indicating that he has demonstrated his knowledge and skill with respect to the rotorcraft-load combination he is operating.

Numerous comments referred to the disparity between the notice's preamble and the provisions in proposed Part 133 [New] with respect to the regulations applicable to external-load attaching means. The preamble implied some relief would be granted from the burden of compliance with the provisions of Part 6 or 7, yet the proposed new part

still required such compliance. The Agency has studied this question in detail, and has developed a simple static-load criterion, less severe than the provisions of Part 6 or 7, to serve as the basis for approval of external-load attaching means installed on rotorcraft operating under Part 133 [New]. This criterion has been set forth in § 133.43(a). Moreover, the Agency has found that numerous rotorcraft, fitted with external-load attaching means that had been approved under the provisions of Part 8, have been operated safely for several years. In recognition of this safety record, an exception from the static-load test provisions of § 133.43(a) has been granted in § 133.43(b) for rotorcraft external-load attaching means that had been approved, before January 17, 1964, under Part 80.

Comments have been received from persons who contended that the total weight of any rotorcraft-load combination, irrespective of class, should not exceed the maximum certificated weight established for the rotorcraft during its type certification under the provisions of Part 6 or 7. These persons pointed out that the maximum certificated weight of the rotorcraft is a key factor in establishing the safe service life for important structural elements, including the rotor blades; and, if this weight were exceeded during external-load operations, the safety of subsequent operations with that rotorcraft (including non-external-load operations with passengers) would be jeopardized. The Agency considers this a valid objection to external-load operations at total weights exceeding the maximum certificated weight established under the provisions of Part 6 or 7. For this reason, the total weight of all classes of rotorcraft-load combinations has been limited, for all operations subject to Part 133 [New], to the maximum certificated weight established for the rotorcraft under the provisions of Part 6 or 7. The applicant may, of course, apply for an increase in the rotorcraft maximum certificated weight, but this must be done under the provisions of Part 6 or 7.

Several proposed provisions have been deleted that dealt with cable angle limits, maximum tow-loads, and related requirements, for Class C (formerly Class IV) rotorcraft-load combinations. The Agency believes that too little is known about rotorcraft towing operations to justify adoption of these provisions at this time. The need for such provisions will be studied further as service experience accumulates.

In addition to the previously discussed major revisions to Part 133 [New], a number of minor revisions have been made, including numerous editorial revisions to clarify the part. In all cases, the revised provisions are no more restrictive than those in the notice of proposed rule making circulated as Draft Release 63-5.

To arrive at an effective date for Part 133 [New], the Agency took into account two opposing factors. On the one hand, it is desirable that the relief granted by this new part be made available as soon as possible to rotorcraft external-load

operators; on the other, some interval of time is necessary (between adoption and effective date) to prepare the Agency's field offices for quick processing of operator certificate applications. An interval of 120 days between adoption and effective date has been selected as a reasonable compromise.

Interested persons have been afforded an opportunity to participate in the making of these regulations, and due consideration has been given to all relevant matter presented.

This amendment, as the first final rule to be published in Subchapter G adds that Subchapter to Chapter 1 of Title 14.

These regulations are issued under the authority of sections 307, 313(a), 601, and 607 of the Federal Aviation Act of 1958 (49 U.S.C. 1348, 1354(a), 1421, and 1427).

In consideration of the foregoing, effective May 17, 1964, Chapter I of Title 14, Code of Federal Regulations, is amended as hereinafter set forth.

Issued in Washington, D.C., on January 17, 1964.

N. E. HALABY,
Administrator.

1. Part 1—Definitions and Abbreviations [New] of the Federal Aviation Regulations is amended to include the following definitions in proper alphabetical order in § 1.1 *General definitions*:

"External load" means a load that is carried, or extends, outside of the aircraft fuselage.

"Rotorcraft-load combination" means the combination of a rotorcraft and an external load, including the external load attaching means. Rotorcraft-load combinations are designated as Class A, Class B, and Class C, as follows:

(1) "Class A rotorcraft-load combination" means one in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

(2) "Class B rotorcraft-load combination" means one in which the external load is jettisonable and is lifted free of land or water during the rotorcraft operation.

(3) "Class C rotorcraft-load combination" means one in which the external load is jettisonable and remains in contact with land or water during the rotorcraft operation.

"External-load attaching means" means the structural components used to attach an external load to an aircraft, including external-load containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load.

2. That part of § 42.1(a)(4) of the Civil Air Regulations preceding the proviso therein is amended to read as follows:

§ 42.1 Applicability of this part.

(a) * * * (4) A commercial operator when engaging with large aircraft in the carriage of persons or property in air commerce for compensation or hire, except when conducting operations under Part 133 [New]: * * *

3. The following Subchapter G [New] is added:

SUBCHAPTER G—AIR CARRIER AND COMMERCIAL OPERATOR CERTIFICATION AND OPERATIONS [NEW]

PART 133—ROTORCRAFT EXTERNAL-LOAD OPERATIONS [NEW]

Subpart A—Applicability

Sec. 133.1 Applicability.

Subpart B—Certification Rules

133.11 Certificate required.
133.13 Duration of certificate.
133.15 Application for certificate.
133.17 Requirements for issuance of a rotorcraft external-load operator certificate.
133.19 Rotorcraft.
133.21 Pilots.
133.23 Knowledge and skill.
133.25 Amendment of certificate.
133.27 Availability, transfer, and surrender of certificate.

Subpart C—Operating Rules and Related Requirements

133.31 Operating rules.
133.33 Inspection authority.

Subpart D—Airworthiness Requirements

133.41 Flight characteristics requirements.
133.43 Structures and design.
133.45 Operating limitations.
133.47 Rotorcraft-load combination flight manual.
133.49 Markings and placards.
133.51 Airworthiness certification.

AUTHORITY: The provisions of this Part 133 issued under secs. 307, 313(a), 601, and 607 of the Federal Aviation Act of 1958; 49 U.S.C. 1348, 1354(a), 1421, and 1427.

Subpart A—Applicability

§ 133.1 Applicability.

This part prescribes—

(a) Airworthiness certification rules for rotorcraft used in; and

(b) Operating and certification rules governing the conduct of; non-passenger-carrying rotorcraft external-load operations in the United States by any person (other than as an air carrier) conducting such an operation for compensation or hire. However, this part does not apply to operations conducted under Part 375 of this title.

Subpart B—Certification Rules

§ 133.11 Certificate required.

No person subject to this part may conduct rotorcraft external-load operations for compensation or hire within the United States without, or in violation of the terms of, a Rotorcraft External-Load Operator Certificate issued by the Administrator under § 133.17.

§ 133.13 Duration of certificate.

A Rotorcraft External-Load Operator Certificate is of indefinite duration and continues in effect until suspended, revoked, or voluntarily surrendered.

§ 133.15 Application for certificate.

Application for a Rotorcraft External-Load Operator Certificate is made on a form, and in a manner, prescribed by the Administrator. The form may be obtained from any General Aviation, or Air Carrier District Office, of the FAA. The

completed application is sent to the FAA district office having jurisdiction over the area in which the applicant's home base of operations is located.

§ 133.17 Requirements for issuance of a rotorcraft external-load operator certificate.

If an applicant shows that he complies with §§ 133.19, 133.21, and 133.23, the Administrator issues a Rotorcraft External-Load Operator Certificate to him with an authorization to operate specified rotorcraft with those classes of rotorcraft-load combinations for which he complies with the applicable provisions of Subpart D of this part.

§ 133.19 Rotorcraft.

(a) The applicant must have the exclusive use of at least one rotorcraft that—

(1) Was type certificated under, and meets the requirements of, Part _____ or _____ [present Part 6 or 7] (but not necessarily with external-load-carrying attaching means installed); and

(2) Complies with the certification provisions in Subpart D of this Part that apply to the rotorcraft-load combinations for which authorization is requested.

(b) For the purposes of paragraph (a) of this section, a person has exclusive use of a rotorcraft if he has the sole possession, control, and use of it for flight, as owner, or has a written agreement (including arrangements for the performance of required maintenance) giving him that possession, control, and use for at least six consecutive months.

§ 133.21 Pilots.

(a) The applicant must hold, or have available the services of at least one person who holds, a current commercial or airline transport pilot certificate, with a rating appropriate for the rotorcraft prescribed in § 133.19, issued by the Administrator.

(b) The applicant must designate one pilot, who may be the applicant himself, as his chief pilot for rotorcraft external-load operations. The chief pilot must hold a current commercial or airline transport pilot certificate, with a rating appropriate for the rotorcraft prescribed in § 133.19, issued by the Administrator.

§ 133.23 Knowledge and skill.

(a) Except as provided in paragraph (d) of this section, the applicant, or the chief pilot designated in accordance with § 133.21(b), must demonstrate to the Administrator satisfactory knowledge and skill regarding rotorcraft external-load operations as set forth in paragraphs (b) and (c) of this section.

(b) The test of knowledge (which may be oral or written, at the option of the applicant) covers the following subjects:

(1) Steps to be taken before starting operations, including a survey of the flight area.

(2) Proper method of loading, rigging, or attaching the external load.

(3) Performance capabilities, under approved operating procedures and limitations, of the rotorcraft to be used.

(4) Proper instructions of flight crew and ground workers.

(c) The test of skill consists of such of the following maneuvers, performed with the class of rotorcraft-load combination for which authorization is requested, as are appropriate for that class. The appropriate maneuvers must be demonstrated for each class, in the rotorcraft prescribed in § 133.19, at the rotorcraft's maximum certificated weight.

- (1) Takeoffs and landings.
- (2) Demonstration of directional control while hovering.
- (3) Acceleration from a hover.
- (4) Flight at operational airspeeds.
- (5) Approaches to landing or working area.

(6) For Class B rotorcraft-load combinations—

(1) Maneuvering the external load into the release position; and

(1) Demonstration of winch operation, if a winch is installed to hoist the external load.

(d) Compliance with paragraphs (b) and (c) of this section need not be shown if the Administrator finds, on the basis of the applicant's (or his designated chief pilot's) previous experience and safety record in rotorcraft external-load operations, that his knowledge and skill are adequate.

§ 133.25 Amendment of certificate.

The holder of a Rotorcraft External-Load Operator Certificate may apply to the Administrator for an amendment of his certificate, to add or delete a rotorcraft or a rotorcraft-load combination authorization, by executing the appropriate portion of the form used in applying for a Rotorcraft External-Load Operator Certificate. The completed application for amendment is sent to the FAA district office having jurisdiction over the area in which the certificate holder's home base of operation is located, or to the district office nearest the area in which operations are to be conducted. If the applicant for the amendment shows that he complies with §§ 133.19, 133.21, and 133.23, the Administrator issues an amended Rotorcraft External-Load Operator Certificate to him with authorization to operate with those classes of rotorcraft-load combinations for which he complies with the applicable provisions of Subpart D of this part.

§ 133.27 Availability, transfer, and surrender of certificate.

(a) Each holder of a Rotorcraft External-Load Operator Certificate shall keep its certificate at its home base of operations and shall make it available for inspection by the Administrator upon request.

(b) Each person conducting a rotorcraft external-load operation shall carry a facsimile of the Rotorcraft External-Load Operator Certificate in each rotorcraft used in the operation.

(c) If the Administrator suspends or revokes a Rotorcraft External-Load Operator Certificate, the holder of that certificate shall return it to the Administrator. If the certificate holder, for any other reason, discontinues operations under his certificate, and does not resume operations within two years, he shall return the certificate to the FAA

district office having jurisdiction over the area in which his home base of operations is located.

Subpart C—Operating Rules and Related Requirements

§ 133.51 Operating rules.

(a) No person holding a Rotorcraft External-Load Operator Certificate may conduct rotorcraft external-load operations subject to this part under a business name that is not on that certificate.

(b) No person may conduct a rotorcraft external-load operation without, or contrary to, the Rotorcraft-Load Combination Flight Manual prescribed in § 133.47.

(c) The holder of a Rotorcraft External-Load Operator Certificate shall report any change in the designation of chief pilot to the FAA district office having jurisdiction over the area in which the applicant's home base of operations is located. The new chief pilot must be designated and must comply with § 133.23 within 15 days or the operation may not conduct further operations under his Rotorcraft External-Load Operator Certificate.

(d) No person may conduct a rotorcraft external-load operation unless—

(1) The rotorcraft complies with § 133.19;

(2) The rotorcraft and rotorcraft-load combination are authorized under the Rotorcraft External-Load Operator Certificate;

(3) The pilot has previously demonstrated his knowledge and skill with respect to the rotorcraft-load combination in accordance with § 133.23, except that this demonstration, in the case of pilots other than the chief pilot designated in accordance with § 133.21(b), may be made to the designated chief pilot rather than to the Administrator, but in either case an appropriate entry to that effect is made in the pilot's log book by the Administrator or the chief pilot; and

(4) The pilot has in his personal possession his log book containing the appropriate entry indicating that he complied with subparagraph (3) of this paragraph.

(e) Before a person may operate a rotorcraft with an external load configuration that differs substantially from any he has previously carried with that type of rotorcraft (whether or not the rotorcraft-load combination is of the same class), he must conduct, in a manner that will not endanger persons or property on the surface, such as the following flight-operational checks, as the Administrator determines are appropriate to the rotorcraft-load combination:

(1) A determination that the weight of the rotorcraft-load combination, and the location of its center of gravity, are within approved limits; that the external load is securely fastened; and that the external load does not interfere with devices provided for its emergency release.

(2) Make an initial lift-off and verify that controllability is satisfactory.

(3) While hovering, verify that directional control is adequate.

(4) Accelerate into forward flight to verify that no attitude (whether of the rotorcraft or of the external load) is encountered in which the rotorcraft is uncontrollable, or which is otherwise hazardous.

(5) In forward flight, check for hazardous oscillations of the external load, but if the external load is not visible to the pilot, other crewmembers or ground personnel may make this check and signal the pilot.

(6) Increase the forward airspeed and determine an operational airspeed at which no hazardous oscillation or hazardous aerodynamic turbulence is encountered.

(f) Notwithstanding any provisions of Part 91 [New] of this chapter, the holder of a Rotorcraft External-Load Operator Certificate may conduct rotorcraft external-load operations over congested areas if those operations are conducted without hazard to persons or property on the surface, and are conducted in compliance with the following:

(1) The operator must develop a plan for each complete operation, must coordinate this plan with the FAA district office having jurisdiction over the area in which the operation is to be conducted, and must obtain approval for the operation from that district office. The plan must include an agreement with the appropriate political subdivision that local officials will exclude unauthorized persons from the area in which the operation will be conducted, coordination with air traffic control, if necessary, and a detailed chart depicting the flight routes and altitudes.

(2) Each flight must be conducted at an altitude, and on a route, that will allow a jettisonable external load to be released, and the rotorcraft landed, in an emergency without hazard to persons or property on the surface.

§ 133.33 Inspection authority.

Each person conducting an operation under this Part shall allow the Administrator to make any inspections or tests that he considers necessary to determine compliance with the Federal Aviation Regulations and the Rotorcraft External-Load Operator Certificate.

Subpart D—Airworthiness Requirements

§ 133.41 Flight characteristics requirements.

(a) The applicant must demonstrate to the Administrator, by performing the operational flight checks prescribed in paragraphs (b), (c), and (d) of this section, as applicable, that the rotorcraft-load combination has satisfactory flight characteristics. For the purposes of this demonstration, the external-load weight (including the external-load attaching means) is the maximum weight for which authorization is requested.

(b) Class A rotorcraft-load combinations: The operational flight check must consist of at least the following maneuvers:

- (1) Takeoff and landing.
- (2) Demonstration of adequate directional control while hovering.
- (3) Acceleration from a hover.

(4) Horizontal flight at airspeeds up to the maximum airspeed for which authorization is requested.

(c) Class B rotorcraft-load combinations: The operational flight check must consist of at least the following maneuvers:

- (1) Pickup of the external load.
- (2) Demonstration of adequate directional control while hovering.
- (3) Acceleration from a hover.
- (4) Horizontal flight at airspeeds up to the maximum airspeed for which authorization is requested.
- (5) Demonstration of winch operation, if a winch is installed to hoist the external load.
- (6) Maneuvering of the external load into release position and its release, under probable flight operation conditions, by means of each of the quick-release controls prescribed in § 133.43(d) (1) and (2).

(d) Class C rotorcraft-load combinations: For Class C rotorcraft-load combinations used in wire-stringing, cable-laying, or similar operations, the operational flight check must consist of the maneuvers, as applicable, prescribed in paragraph (c) of this section.

§ 133.43 Structures and design.

(a) *External-load attaching means.* Except as provided in paragraph (b) of this section, the applicant must demonstrate that the rotorcraft external-load attaching means can withstand a static load equal to 2.5 times the maximum external load for which authorization is requested, applied in the vertical direction or in any direction making an angle of 30 degrees with the vertical, except for those directions having a forward component. This static test must not cause detrimental deformation of the external-load attaching means. However, the 30-degree angle may be reduced to a lesser angle if the applicant shows that this lesser angle will not be exceeded in his operation.

(b) *Exception.* Compliance with paragraph (a) of this section need not be demonstrated if the rotorcraft external-load attaching means had been approved, before January 17, 1964, under Part ---- (Present Part 8), or had been approved, irrespective of date of approval, under Part ---- or ---- (Present Part 6 or 7).

(c) *Weight and center of gravity—(1) Weight.* The total weight of the rotorcraft-load combination must not exceed the maximum certificated weight established for the rotorcraft during its type certification under Part ---- or ---- (present Part 6 or 7).

(2) *Center of gravity.* The location of the center of gravity must, for all loading conditions, be within the range established for the rotorcraft during its type certification under Part ---- or ---- (present Part 6 or 7). For Class C rotorcraft-load combinations, the magnitude and direction of the loading force must be established at those values for which the effective location of the center of gravity remains within its established range.

(d) *Quick-release devices.* The external-load attaching means for Class B and Class C rotorcraft-load combinations

must include a device to enable the pilot to release the external load quickly during flight. This quick-release device, and the means by which it is controlled, must comply with the following:

(1) A control for the quick-release device must be installed on one of the pilot's primary controls and must be designed and located so that it may be operated by the pilot without hazardously limiting his ability to control the rotorcraft during an emergency situation.

(2) In addition to the control prescribed in subparagraph (1) of this paragraph, a manual mechanical control for the quick-release device, readily accessible either to the pilot or to a crewmember, must be provided.

(3) The quick-release device must function properly with all external loads up to and including the maximum external load for which authorization is requested.

§ 133.45 Operating limitations.

In addition to the operating limitations set forth in the approved Rotorcraft Flight Manual, and to any other limitations the Administrator may prescribe, the operator shall establish at least the following limitations and set them forth in the Rotorcraft-Load Combination Flight Manual for rotorcraft-load combination operations:

(a) No person who is not a flight crewmember may be carried unless he performs an essential function in connection with the external-load operation.

(b) The rotorcraft-load combination may be operated only within the weight and center of gravity limitations established in accordance with § 133.43(c).

(c) The rotorcraft-load combination may not be operated with an external load weight exceeding that used in showing compliance with §§ 133.41 and 133.43(a) and (d) (3).

(d) The rotorcraft-load combination may not be operated at airspeeds greater than those established in accordance with § 133.41 (b), (c), and (d).

§ 133.47 Rotorcraft-load combination flight manual.

The applicant must prepare a Rotorcraft-Load Combination Flight Manual and submit it for approval by the Administrator. The manual must be prepared in accordance with the rotorcraft flight manual provisions of Subpart G of Part ---- or ---- (present Part 6 or 7), whichever is applicable. The limiting height-speed envelope data need not be listed as operating limitations. The manual must set forth—

(a) Operating limitations, procedures (normal and emergency), performance, and other information established under this subpart;

(b) The class of rotorcraft-load combinations for which the airworthiness of the rotorcraft has been demonstrated in accordance with §§ 133.41 and 133.43; and

(c) In the information section of the Rotorcraft-Load Combination Flight Manual—

(1) Information on any peculiarities discovered when operating particular rotorcraft-load combinations;

(2) Precautionary advice regarding static electricity discharges, for Class B rotorcraft-load combinations; and

(3) Any other information essential for safe operation with external loads.

§ 133.49 Markings and placards.

The following markings and placards must be displayed conspicuously and must be such that they cannot be easily erased, disfigured, or obscured:

(a) A placard (displayed in the cockpit or cabin) stating the class of rotorcraft-load combination for which the rotorcraft has been approved and the occupancy limitation prescribed in § 133.45(a).

(b) A placard, marking, or instruction (displayed next to the external-load attaching means) stating the maximum external load prescribed as an operating limitation in § 133.45(c).

§ 133.51 Airworthiness certification.

A rotorcraft external-load operator certificate is a current and valid airworthiness certificate for each rotorcraft (fitted with external-load attaching means) listed in that certificate, when the rotorcraft is being used in operations under this part or in operations incidental to those operations.

[F.R. Doc. 64-650; Filed, Jan. 23, 1964; 8:45 a.m.]

SUBCHAPTER G—AIR CARRIER AND COMMERCIAL OPERATOR CERTIFICATION AND OPERATIONS [NEW]

[Reg. Docket No. 1592; Amdts. 1-2; 42-3]

PART 133—ROTORCRAFT EXTERNAL-LOAD OPERATIONS [NEW]

Operating Rules

Correction

In F.R. Doc. 64-650, appearing at page 601 of the issue for Friday, January 24, 1964, the following corrections are made in § 133.31:

1. In paragraph (c), the phrase reading "or the operation may not conduct further operations" should read "or the operator may not conduct further operations".
 2. In paragraph (e), the phrase reading "such as the following flight-operational checks" should read "such of the following flight-operational checks".
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