

# Civil Aviation Rules



## **Part 133**

### **CAA Consolidation**

**25 October 2007**

### **Helicopter External Load Operations**

## DESCRIPTION

Part 133 prescribes rules that are in addition to, and exceptions from, the general operating and flight rules contained in Part 91, for persons performing a helicopter external load operation.

Part 133 does not apply to operations involving the suspension of a person beneath a helicopter, or the towing of a person by a helicopter, for sporting or recreational purposes.

**This document is the current consolidated version of Part 133 produced by the Civil Aviation Authority, and serves as a reference only. It is compiled from the official ordinary rules that have been signed into law by the Minister of Transport. Copies of the official rule and amendments as signed by the Minister of Transport may be obtained from the Civil Aviation Authority or may be downloaded from the official web site at: [www.caa.govt.nz](http://www.caa.govt.nz)**

**Bulletin**

This Part first came into force on 1 April 1997 and now incorporates the following amendments:

<b>Amendment</b>	<b>Effective Date</b>
Amendment 1	22 June 2006
Amendment 2	30 August 2007
Amendment 3	25 October 2007

***Summary of amendments:***

Amendment 1 (3/CAR/4)	Rules 133.5 and 133.51 are revoked and substituted.
Amendment 2 (6/CAR/1)	Rule 133.7 is revoked.
Amendment 3 (5/CAR/3)	Rules 133.51, 133.65, 133.69 and 133.255 are revoked and substituted.

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## Subpart A — General

### 133.1 Applicability

(a) This Part prescribes rules that are additions to, and exceptions from, the general operating and flight rules contained in Part 91, for persons performing a helicopter external load operation.

(b) This Part does not apply to operations involving the suspension of a person beneath a helicopter, or the towing of a person by a helicopter, for sporting or recreational purposes.

### 133.3 Definitions

In this Part—

**Helicopter external load operation** means—

- (1) a helicopter external load towing operation; or
- (2) a helicopter sling load operation; or
- (3) a helicopter winching operation; or
- (4) a helicopter rappelling operation:

**Helicopter external load towing operation** means the towing, lowering, and laying down of external cargo, that remains in contact with the ground during the operation, by a helicopter:

**Helicopter sling load operation** means the external carriage, lowering, or picking up, of a load, cargo, or passengers by a helicopter by means of a bucket, net, harness, sling, or stretcher, suspended beneath the helicopter:

**OGE** means out of ground effect.

### 133.5 Pilot licence requirements

(a) A pilot-in-command performing a helicopter external load operation must hold—

- (1) a current commercial pilot licence (helicopter); or

- (2) a current private pilot licence (helicopter), if a flight instructor (helicopter) has certified in the pilot's logbook that the pilot has satisfactorily completed the flight training required by rule 61.153 for the carriage of sling loads.
- (b) Notwithstanding paragraph (a)(2), a pilot-in-command performing a helicopter winching, rappelling, or human sling load operation must hold a current commercial pilot licence (helicopter).
- (c) Notwithstanding paragraphs (a) and (b), a pilot under training may act as pilot-in-command on a helicopter external load training operation without a current commercial pilot licence (helicopter), or a current private pilot licence (helicopter), if authorised to do so immediately before the operation by the holder of a flight instructor rating (helicopter).

## **Subpart B — Operating Rules and Related Requirements**

### **133.51 Minimum Safe Height**

(a) Notwithstanding rule 91.311, a pilot-in-command of a helicopter performing a helicopter external load operation may, if necessary for the accomplishment of the operation, conduct the operation, including approaches, departures, and load positioning manoeuvres necessary for the operation, at a height less than 500 feet above the surface and closer than 150 metres to a person, vessel, vehicle, and structure, if reasonable care is taken to conduct the operation without creating a hazard to any person or property on the surface.

(b) A pilot-in-command of a helicopter performing a helicopter external load operation must take reasonable care to ensure that the flight is conducted at a height, and on a route, that allows a jettisonable external load to be released and the helicopter to be landed, in an emergency without creating a hazard to a person or property on the surface.

### **133.53 Carriage of persons**

(a) A pilot-in-command shall not carry a person inside the helicopter on a helicopter external load towing operation, who is not performing a function essential to the external load towing operation.

(b) A pilot-in-command shall not carry a person inside the helicopter on a helicopter sling load operation, who is not performing a function essential to the helicopter sling load operation, unless—

- (1) the operation is not a human sling load operation; and
- (2) the person is necessary to accomplish the on site work activity directly associated with the sling load; and
- (3) the safety of the operation is not compromised.

(c) A pilot-in-command shall not carry a person inside the helicopter on a winching, rappelling, or human sling load operation, who is not performing a function essential to the winching, rappelling, or human sling load operation.

(d) Notwithstanding paragraphs (a), (b), and (c), a pilot-in-command may carry a crew member trainee inside the helicopter, who is not performing an essential function in connection with the operation, provided that—

- (1) the pilot-in-command is qualified to instruct in the type of operation to be carried out; and
- (2) the safety of the operation is not compromised.

### **133.55 Third party risk**

(a) A pilot-in-command shall not carry a load suspended beneath a helicopter—

- (1) in such a manner that causes danger to any person or to any person's property unless the consent of that person has been obtained; or
- (2) over an open air assembly of people.

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(b) Except as provided in paragraph (c), each pilot-in-command of a helicopter engaged in an external load operation that is hovering shall ensure that no person is in the area in which the helicopter is hovering

unless the person's presence is essential to the operation and they have been briefed, as appropriate, on—

- (1) normal external load procedures; and
  - (2) the procedures to be followed by all personnel in the event of an emergency; and
  - (3) the nature of the load and any special handling requirements; and
  - (4) the lifting capability of the helicopter; and
  - (5) hand or radio signals appropriate to the operation.
- (c) Compliance with paragraph (b) is not required in the case where assistance is being delivered to injured persons on the ground.

### **133.57 Weight limitations**

Each pilot-in-command of a helicopter performing a helicopter external load operation shall ensure that the weight of the load to be carried does not exceed the weight limitations of the cargo hook or device required by 133.255(1).

### **133.59 VFR**

Each pilot-in-command of a helicopter performing a helicopter external load operation shall ensure that the operation is performed under VFR.

### **133.61 Night operations**

A pilot-in-command shall not perform a helicopter external load operation at night when the flight attitude, height, and position of the helicopter cannot be maintained by reference to external objects adequately illuminated by the helicopter, ground, or celestial lighting.

### **133.63 Carriage of loads**

Each pilot-in-command performing a helicopter external load operation shall ensure that the external load is carried on a hook or device required by 133.255(1).

**133.65 Dangerous Goods**

(a) A pilot-in-command of a helicopter may accept Class 1 dangerous goods for carriage as an underslung load beneath a helicopter without complying with Part 92, if—

- (1) carriage of the dangerous goods is approved by an approved handler as defined in Part 92; and
- (2) safety, and emergency procedures are established for the carriage of the dangerous goods; and
- (3) the dangerous goods are—
  - (i) in a proper condition for carriage by air; and
  - (ii) stowed and secured for safe carriage; and
- (4) the operation is performed clear of any congested area of a city, town or settlement.

(b) A pilot-in-command of a helicopter may accept Class 2 to Class 9 dangerous goods for carriage as an underslung load beneath a helicopter without complying with Part 92 if—

- (1) the carriage of the dangerous goods are not forbidden by the Technical Instructions; and
- (2) safety and emergency procedures have been established for the carriage of the dangerous goods; and
- (3) each item of dangerous goods is identified; and
- (4) the pilot-in-command is informed of the hazardous nature of the dangerous goods; and
- (5) the dangerous goods are—
  - (i) in a proper condition for carriage by air; and

- (ii) segregated if they are likely to react dangerously together; and
- (iii) stowed, secured, and, if necessary, packed, to prevent leakage or damage in flight.

### **133.67 Flight characteristics**

(a) Each pilot-in-command of a helicopter performing a helicopter external load operation shall ensure that the load is adequately rigged and settled before the helicopter leaves the loading zone.

(b) Each pilot-in-command of a helicopter performing a helicopter external load operation shall fly in conditions and in such a manner as to maintain adequate control of the helicopter and the load.

### **133.69 Operations over congested areas**

A pilot-in-command of a helicopter performing a helicopter external load operation over or adjacent to a congested area of a city, town, or settlement must—

- (1) prepare a plan of the operation in conjunction with, and for the briefing of, every person involved in the operation containing—
  - (i) a chart depicting flight routes and altitudes; and
  - (ii) a means for avoiding obstructions to flight; and
  - (iii) details of the actions to be taken in the event of a serious malfunction of the helicopter; and
  - (iv) risk assessment and mitigation procedures developed from the Risk Management Standard published by Standards New Zealand, to ensure that reasonable care is taken to conduct the operation without creating a hazard to any person or property on the surface; and
  - (v) any co-ordination necessary with air traffic control service; and
- (2) keep the plan, referred to in paragraph (1), for a period of at least 6 months from the date the operation is performed; and

- (3) give prior written notification to the appropriate territorial authority; and
- (4) comply with any requirements made by the territorial authority; and
- (5) give prior public notice of the operation by an effective means.

### **133.71 Suspension of persons beneath helicopters**

(a) Each pilot-in-command performing an operation involving the suspension of a person beneath a helicopter shall ensure that—

- (1) the helicopter is not operated at a weight in excess of 90 percent of its OGE hover weight; and
- (2) the distance the person is carried is the minimum distance necessary to achieve the objective of the operation; and
- (3) the equipment on which the person is suspended is capable of release from the helicopter by the crew, and that the release system is so arranged that two separate actions must be taken to effect release; and
- (4) the equipment on which the person is suspended is such that the possibility of inadvertent release is eliminated; and
- (5) the helicopter is operated in a safe manoeuvring area that has—
  - (i) a diameter not less than twice the overall length of the helicopter; and
  - (ii) no obstructions within one metre vertically below the lowest fixed part of the helicopter; and
  - (iii) a clear zone for winching, rappelling, or human sling loads.

(b) Each pilot-in-command of a helicopter shall ensure that, where a person is raised or lowered by winch beneath the helicopter—

- (1) the person to be lowered is attached to the cable before being released from the seat harness; and

- (2) the person who has been raised is secured by means of a safety strap or seat belt before being released from the cable; and
  - (3) unless the person is unconscious or unable to understand, that person has been briefed, by a crew member of the helicopter, on normal and emergency procedures appropriate to the operation.
- (c) Each pilot-in-command of a helicopter shall ensure that, when an injured person is carried beneath the helicopter in a harness or stretcher—
- (1) the distance the person is carried is the minimum distance necessary—
    - (i) to transfer the person to a more suitable means of transport; or
    - (ii) to safely land and transfer the suspended person inside the helicopter; and
  - (2) unless the person is unconscious or unable to understand, that person has been briefed, by a crew member of the helicopter, on normal and emergency procedures appropriate to the operation.
- (d) Each pilot-in-command of a helicopter shall ensure that, when a rappelling operation is performed, the person to be rappelled—
- (1) has successfully completed a course of training appropriate to the rappelling operation being conducted; and
  - (2) has been adequately briefed by a crew member on normal and emergency procedures appropriate to the operation; and
  - (3) is attached to the rope before being released from the seat harness.

### **133.73 Supplementary crew member**

- (a) Each pilot-in-command of a helicopter performing a helicopter external load operation shall ensure that a supplementary crew member—
- (1) is carried when the pilot-in-command is unable to—
    - (i) operate the winch; or

- (ii) observe the load; or
  - (iii) release the load; or
  - (iv) observe clearances; or
  - (v) emplane and deplane persons; and
- (2) has been fully briefed on the operation, and specific tasks to be carried out, prior to take-off; and
  - (3) is secured by a harness that can readily be released in the event of an emergency but that cannot be inadvertently released; and
  - (4) is provided with a system that enables two way communication with the pilot.

### **133.75 Crew member competency**

(a) No operator shall permit any winching, rappelling, or human sling load operation to be performed unless all crew members have successfully completed a check or flight review to demonstrate their technical knowledge, competence, and ability to execute normal and emergency manoeuvres appropriate to the operation and the aircraft and equipment concerned.

(b) Every check or flight review referred to in paragraph (a) shall be carried out—

- (1) by the holder of an—
  - (i) air operator certificate issued under Part 119 that authorises the holder to conduct the check or flight review; or
  - (ii) aviation training organisation certificate issued under Part 141 that authorises the holder to conduct the check or flight review; and
- (2) in an aircraft, in which the member's ability to perform the required manoeuvres can be adequately assessed; and
- (3) within the period of 24 months prior to the flight.

(c) The check or flight review referred to in paragraph (a) shall include all normal and emergency situations that might arise in the operation and shall include—

- (1) preparation for flight; and
- (2) crew team management; and
- (3) target identification and positioning; and
- (4) communications failure; and
- (5) procedures for assisting personnel in distress; and
- (6) helicopter caution lights; and
- (7) power loss; and
- (8) electrical failure.

(d) Each helicopter external load operator shall retain records of all checks and flight reviews for a period of at least 4 years.

(e) Each pilot-in-command performing a helicopter external load operation for the purpose of training, shall ensure that the operation is not performed over or adjacent to a city, town, or settlement.

## **Subpart C — Reserved**

## **Subpart D — Reserved**

## **Subpart E — Reserved**

## **Subpart F — Instruments and Equipment**

### **133.251 Applicability**

This Subpart prescribes the instruments and equipment required, in addition to Part 91, for helicopters carrying an external load.

**133.253 General**

(a) Each operator performing a helicopter external load operation shall ensure that a flight does not commence unless the instruments and equipment, required by this Subpart—

- (1) comply with the specifications and airworthiness design standards listed in—
  - (i) this Subpart; or
  - (ii) alternative specifications or standards approved by the Director for the operation; and
- (2) are installed in accordance with the requirements applicable to them, including operational and airworthiness requirements; and
- (3) are in operable condition and in the numbers required for the kind of operation being conducted.

**133.255 External Load Equipment**

An operator performing a helicopter external load operation must ensure that the helicopter is equipped with—

- (1) a cargo hook, or similar device, approved by the helicopter manufacturer for use on the helicopter, or approved and installed in accordance with a design change under Subpart C of Part 21; and
- (2) external load equipment that—
  - (i) is appropriate and of a standard that prevents breakage to it or damage to the helicopter; and
  - (ii) when a person is carried using the equipment, can withstand a loading of 3.75 times the weight of the load.

**133.257 Quick release devices**

(a) Each operator performing a helicopter external load operation shall ensure the helicopter has—

- (1) an electrical quick release device; and

- (2) a mechanical or independent electrical quick release device.
- (b) The operator shall ensure that the quick release devices required by paragraph (a) functions properly with all external loads up to and including the helicopter's maximum external load.
- (c) The operator shall ensure that the quick release system—
  - (1) has a primary control—
    - (i) installed on one of the pilot's primary flight controls; and
    - (ii) designed and located so that it may be operated by the pilot without limiting the pilot's ability to control the helicopter during an emergency situation; and
  - (2) has a secondary control readily accessible to a crew member.

## Subpart G — Maintenance

### 133.301 Applicability

This Subpart prescribes rules specifying the maintenance requirements for New Zealand registered helicopters carrying an external load.

### 133.303 Maintenance requirements

Each operator shall ensure that the helicopter, including the cargo hook or other similar device required by 133.255(1), is maintained in accordance with Part 91 and this Part.

### 133.305 Persons certifying maintenance

Each operator shall ensure that each person certifying a release to service is properly trained and qualified to do so.

### 133.307 External load equipment

- (a) Each operator shall ensure that external load equipment is—
  - (1) visually inspected, for signs of distress, within the preceding 50 hours time in service; and

- (2) proof loaded to 1.25 times its rated strength within the preceding 12 months or 500 hours time in service, whichever is the sooner.
- (b) As an alternative to paragraph (a), an operator may maintain external load equipment in accordance with—
- (1) the mandatory replacement times, inspection intervals, and related procedures specified in the manufacturer's maintenance manual or instructions for continued airworthiness; or
  - (2) a maintenance programme approved under Part 91 or 119.