

BELIZE DEPARTMENT OF CIVIL AVIATION



BELIZE CIVIL AVIATION REGULATIONS EXTERNAL LOAD OPERATIONS BCAR – 133

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**BELIZE CIVIL AVIATION REGULATIONS
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Issue and Revision System

ISSUE AND REVISION SYSTEM

REVISION TO THIS REGULATION WILL BE INDICATED BY A VERTICAL BAR ON THE LEFT SIDE, IN FRONT OF THE LINE, SECTION, OR FIGURE THAT HAS BEEN AFFECTED. AN ISSUE WILL BE THE REPLACEMENT OF THE COMPLETE DOCUMENT.

REVISIONS MUST BE RECORD, OF REVISIONS TABLE OF THIS DOCUMENT INDICATING THE RESPECTIVE NUMBER, DATE IT WAS ENTERED AND SIGNED BY THE PERSON ENTERNG THE REVISION.



Record of Revisions

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Preamble

The first edition of the Belize Civil Aviation Regulation (BCAR) 133 External Load Operations prescribes the rules, that are in addition to, and exceptions from, the general operating and flight rules in BCAR 02 and BCAR OPS 3, for operators performing a helicopter external load operation. This BCAR 133 was developed from the previous standards established in BCAR 137, Part III and supplemented with policy deemed necessary for improving the level of safety associated with helicopter external load operations.

The editing practices used in this document are as follows:

- (1) 'Shall' and 'Will' is used to indicate a mandatory requirement.
- (2) 'Should' is used to indicate a recommendation.
- (3) 'May' is used to indicate discretion by the BDCA, the industry or the applicant, as appropriate.

Unless otherwise stated, the definitions and abbreviations contained in the BCAR DEF are applicable to these regulations.



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SUBPART A GENERAL PROVISIONS

BCAR 133.001 Applicability

- (a) This BCAR 133 prescribes:
 - (1) The standards applicable to operators with interest in applying for a rotorcraft external load operating certificate.
 - (2) The certification process and airworthiness requirements for rotorcraft used in external load operations
 - (3) The operating rules and personnel requirements governing the conduct of rotorcraft external load operations in Belize.
- (b) The certification requirements under this BCAR shall not apply to:
 - (1) rotorcraft manufacturers when developing external load attaching means;
 - (2) operations conducted by an operator demonstrating compliance for the issuance of an authorization or certificate under this BCAR;
 - (3) training flights conducted in preparation for the demonstration of compliance with this BCAR; or
 - (4) the conduct of operations by the Government of Belize utilizing a public aircraft.
- (c) For the purpose of this regulation, a person other than a crewmember or a person who is essential and directly connected with the external-load operation may be carried only in approved Class D rotorcraft-load combinations.

Note 1: An agricultural aircraft Operator authorized under BCAR 137 may conduct agricultural Aircraft Operations with a Rotorcraft with external dispensing equipment in place without a BCAR 133 Operating Certificate.

BCAR 133.003 External Load Combinations, Designations and Related Concepts.

- (a) Rotorcraft Load Combinations, designations and related concepts are determined as follows:
 - (1) **Class A.** The external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear. An example of a Class A load is the carriage of items in an approved cargo rack, bin, or fixture attached to the exterior of the aircraft.
 - (2) **Class B.** The external load is jettisonable, carried above or below the skids, and lifted free of land or water during the rotorcraft operation. An air conditioner unit being lifted onto the roof of a tall building is an example of a Class B load.
 - (3) **Class C.** The external load is jettisonable and remains in contact with land or water during the rotorcraft operation. Wire stringing, dragging a long pole, and boat towing are some examples of Class C loads.
 - (4) **Class D.** The external load is other than Class A, B, or C and shall be approved on an individual basis through the issuance of Letter of Authorization.
 - (5) **External Load.** A load that is carried, or extends, outside the aircraft fuselage.
 - (6) **Human External Cargo (HEC).** A person(s) that at some point in the operation is carried external to the rotorcraft.



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- (7) **Non-Human External Cargo.** Any external cargo operation that does not at any time involve a person(s) carried external to the rotorcraft.

BCAR 133.005 Inspection Authority

- (a) The inspection Authority shall be the BDCA.
- (b) The operator shall ensure that any Inspector authorized and identified by the BDCA is allowed, at any time, to inspect any helicopter operated in accordance with an Operating Certificate issued by the BDCA under this regulation, taking into account that the pilot in command can refuse, if in his opinion, the overall safety of the operation could be jeopardized by doing so.
- (c) In the event that the operator or pilot in command denies access to an inspector authorized by the BDCA, he shall submit a report to the BDCA within a period of 48 hours, justifying and indicating the details of the decision.
- (d) The BDCA shall evaluate this report and, if considered necessary, shall initiate an administrative investigation in order to determine the existence of a possible fault.

BCAR 133.007 Personnel Requirements

- (a) The operator shall hold or have available the services of at least one person to act as pilot in command performing a rotorcraft external load operation with:
 - (1) a current commercial pilot license with the ratings appropriate to the rotorcraft to be operated; or
 - (2) an airline transport pilot license (ATP) with a rating appropriate for the rotorcraft to be operated.
- (b) The operator shall designate a suitably qualified person to act as chief pilot for rotorcraft external load operations.
- (c) The operator shall designate suitably qualified pilots as assistant chief pilots to perform the functions of the chief pilot where the chief pilot is not readily available.
- (d) The operator shall immediately report to the BDCA, any change in designation of the chief pilot or assistant chief pilot.
- (e) An operator shall not continue to conduct operations under the rotorcraft external load operator certificate unless the chief pilot demonstrates compliance with the knowledge and skill requirements established in Subpart E, within 30 days of his designation, or where otherwise authorized by the Director.



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BCAR 133.009 Exemptions

- (a) The BDCA may exceptionally and temporarily grant an exception to compliance with the provisions of BCAR 133 (these Regulations) when satisfied that there exists a need, and subject to the fulfilment of any additional condition that the BDCA considers necessary in order to ensure an acceptable level of safety in each particular case. The granting of exemptions shall be awarded for a period of up to 180 days, granted only by the Director of Civil Aviation after an operational risk analysis is submitted by the operator, which shall be analyzed by the BDCA State Safety Programme Coordinator and the Chief Operations Officer prior to approval/acceptance.
- (b) The exemptions granted by the BDCA, shall be issued in accordance with the nature of the request and in no event shall there be any exceptions or deviations issued with regard to the Type Certification, Supplementary Type Certificate or any aspect relating to the airworthiness or operational procedures that may affect safety.
- (c) The exemptions granted by the BDCA in accordance with paragraph (a), shall be carried in hardcopy on board the aircraft at all times.



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SUBPART B CERTIFICATION REQUIREMENTS

BCAR 133.020 Certification Process

- (a) The certification process is designed to ensure the operator meets the requirements for certification under BCAR 133. If satisfactorily completed, the certification process shall result in the issuance of a Rotorcraft External-Load Operating Certificate and any additional authorizations. The certification process is as established in BCAR 119, which is comprised in the Civil Aviation Regulations, Statutory Instrument No. 134 of 2007 relating to Air Operator Certificates (AOC), Operating Certificates and Operations Authorisation.

BCAR 133.025 Operating Certificate Requirement

- (a) A person shall not conduct rotorcraft external load operations within Belize without, or in violation of the terms of, a rotorcraft external load operator certificate or authorisation issued by the BDCA.
- (b) The holder of a rotorcraft external load operator certificate may not conduct external load operations subject to this BCAR, under a business name that is not on the operator certificate.

BCAR 133.030 Validity of Certificate

- (a) Unless sooner surrendered, suspended, or revoked, a Rotorcraft External-Load Operator Certificate expires at the end of the twenty-fourth month after the month in which it is issued or renewed.

BCAR 133.035 Rotorcraft

- (a) The applicant for a BCAR 133 Operator Certificate must have the exclusive use of at least one rotorcraft that—
 - (1) is type certificated for and meets the requirements for external load operations under this BCAR.
 - (2) Complies with the airworthiness provisions in subpart C of this BCAR that apply to the rotorcraft-load combinations for which authorization is requested; and
 - (3) Has a valid airworthiness certificate issued by the BDCA.
- (b) For the purposes of paragraph (a) of this BCAR, an operator 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.



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BCAR 133.037 Application for Issuance or Renewal of Certificate

- (a) Application for the issuance or renewal of an operator certificate under BCAR 133 shall be made on the BDCA approved Form 1010 which is available at the office of the BDCA. The completed application must be submitted to the BDCA at least 30 days prior to the date of intended operation or expiration of the certificate in the case of a renewal.

BCAR 133.039 Amendment of Certificate

- (a) The holder of a Rotorcraft External-Load Certificate may apply to BDCA for an amendment of the operator certificate, to add or remove a rotorcraft-load combination authorization, by executing the appropriate portion of the form used in applying for a Rotorcraft External-Load Operator Certificate (BDCA Form 1010). If the applicant for the amendment shows compliance with BCAR 133.035 and BCAR 133.068, the BDCA shall issue an amended Rotorcraft External-Load Operator Certificate to the applicant with authorization to operate with those classes of rotorcraft-load combinations for which the applicant complies with and the applicable provisions of subpart C of this part.
- (b) The holder of a rotorcraft external-load certificate may apply for an amendment to add or remove a rotorcraft authorization by submitting to the BDCA a new list of rotorcraft, by registration number, with the classes of rotorcraft-load combinations for which authorization is requested.

BCAR 133.040 Availability and Surrender of Certificate

- (a) Each holder of a rotorcraft external-load operator certificate shall keep that certificate and a list of authorized rotorcraft at the home base of operations and shall make it available for inspection by the BDCA upon request.
- (b) Each operator conducting a rotorcraft external-load operation shall carry a copy of the Rotorcraft External-Load Operator Certificate in each rotorcraft used in the operation.
- (c) If the BDCA suspends or revokes a Rotorcraft External-Load Operator Certificate, the holder of that certificate shall return it to the BDCA. 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 BDCA.
- (d) The operating certificate are of a personal character and are non-transferable to another person physically or with jurisdiction, in respect of which the certification procedures and accreditation of the technical capability for the service offered, have not been verified.



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BCAR 133.042 Issuance of an Operator Certificate

- (a) Where the Director is satisfied that an applicant meets the requirements under these BCAR, he shall issue a certificate to operate specified rotorcraft with the classes of rotorcraft load combinations for which the applicant or operator (in the case of renewal) qualifies under the applicable provisions.

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SUBPART C AIRWORTHINESS REQUIREMENTS

BCAR 133.045 Flight Characteristics Demonstration

- (a) The operator shall demonstrate to the BDCA, by performing the operational flight checks prescribed in paragraphs (b), (c), and (d) of this BCAR, as applicable, that the rotorcraft-load combination has satisfactory flight characteristics, unless these operational flight checks have been demonstrated previously and the rotorcraft-load combination flight characteristics were satisfactory. 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 manoeuvres:
 - (1) Take off 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 and D rotorcraft-load combinations: The operational flight check must consist of at least the following manoeuvres:
 - (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) Demonstrating appropriate lifting device operation.
 - (6) Manoeuvring of the external load into release position and its release, under probable flight operation conditions, by means of each of the quick-release controls installed on the rotorcraft.
- (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 manoeuvres, as applicable, prescribed in paragraph (c) of this section.

BCAR 133.050 Type Certification Requirements

- (a) All rotorcraft external load operations conducted in the state of Belize by any operator, shall comply with the operating and airworthiness rules prescribed in this BCAR 133.



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BCAR 133.055 Structures, Design of Attaching Means and Weight and Balance

- (a) Where the Director is satisfied that the structure and design of the external load attaching means of a rotorcraft meets the requirements of this BCAR, he may authorize:
 - (1) The external load attaching means
 - (2) The quick release device
- (b) The total weight of the rotorcraft load combination shall not exceed the total weight approved for the rotorcraft during its type certification.
- (c) The location of the center of gravity shall, for all loading conditions, be within the range established for the rotorcraft during its type certification.
- (d) 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 centre of gravity remains within its established range.

BCAR 133.060 Operating Limitations

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

- (a) The rotorcraft-load combination may be operated only within the weight and center of gravity limitations established in accordance with BCAR 133.055.
- (b) The rotorcraft-load combination may not be operated with an external load weight exceeding that used in showing compliance with BCAR 133.045 and BCAR 133.055.
- (c) The rotorcraft-load combination may not be operated at airspeeds greater than those established in accordance with BCAR 133.045.
- (d) external-load operation under this BCAR shall not be conducted with a rotorcraft type, certified in the restricted category over—
 - (i) a densely populated area;
 - (ii) in a congested airway; or
 - (iii) near a busy airport where passenger transport operations are conducted.
- (e) The limiting height-speed envelope data need not be listed as operating limitations.

BCAR 133.065 Rotorcraft-load combination flight manual

The operator shall develop a Rotorcraft-Load Combination Flight Manual and submit it for approval by the Director of Civil Aviation. The manual shall include at minimum:



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- (a) Operating limitations, procedures (normal and emergency), performance, and other information established under this BCAR;
- (b) the class of rotorcraft load combinations for which the airworthiness of the rotorcraft has been demonstrated in accordance with this BCAR;
- (c) any peculiarities discovered when operating particular rotorcraft load combinations;
- (d) precautionary advice regarding static electricity discharges for Class B, Class C, and Class D rotorcraft load combinations; and
- (e) any other information essential for the safe operation with external loads.

BCAR 133.068 Markings and Placards

- (a) All markings and placards on a rotorcraft shall be conspicuous and shall be engraved in such a manner that they cannot be easily erased, disfigured, or obscured.
- (b) The markings and placards referred to in paragraph (a) shall include a placard:
 - (1) displayed in the cockpit or cabin, stating the class of rotorcraft load combination and the occupancy limitation for which the rotorcraft has been approved; and
 - (2) with markings, or instructions displayed next to the external load attaching means stating the maximum external load approved.

BCAR 133.070 Airworthiness Certification

- (a) A valid airworthiness certificate for each rotorcraft type listed shall be carried on board the rotorcraft when being used in operations conducted under this BCAR.
- (b) The operator shall ensure that the rotorcraft include cargo hook or similar devices, are maintained in accordance with the established Operator Maintenance Manual.
- (c) The operator shall ensure each person certifying a release to service is properly trained and qualified to do so.
- (d) The operator shall ensure that the external load equipment is visually inspected, for signs of distress, within the preceding 50-hours time in service and proof loaded to 1.25 times its rated strength within the preceding 12 months or 500-hours time in service, whichever is sooner.
- (e) The operator may maintain external load equipment in accordance with the mandatory replacement times, inspection intervals and related procedures specified in the manufacturer's maintenance manual or instructions for continued airworthiness or a maintenance programme approved under BCAR 43.



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SUBPART D OPERATING PROCEDURES

BCAR 133.075 Operating Rules

- (a) An operator shall not conduct a rotorcraft external-load operation without, or contrary to, the Rotorcraft-Load Combination Flight Manual prescribed in BCAR 133.065.
- (b) An operator shall not conduct a rotorcraft external-load operation unless—
 - (1) the rotorcraft complies with BCAR 133.035; and
 - (2) the rotorcraft and rotorcraft-load combination are authorized under the Rotorcraft External-Load Operator Certificate
- (c) Before an operator operates a rotorcraft with an external-load configuration that differs substantially from that which he previously operated with that type of rotorcraft (whether or not the rotorcraft-load combination is of the same class), that operator must conduct, in a manner that will not endanger persons or property on the surface, such of the following flight-operational checks as the BDCA 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 liftoff 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.
- (d) An operator shall not conduct rotorcraft external-load operations under IFR unless specifically approved by the BDCA. However, under no circumstances may a person be carried as part of the external-load under IFR.

BCAR 133.080 Congested Area Operations

- (a) Notwithstanding the provisions established in BCAR 02 or other Regulations relating to Rules of the Air, The holder of a rotorcraft external load operator certificate may conduct rotorcraft external load operations over congested areas only if:



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- (1) the operator develops a plan including risk assessment and mitigation procedures for each complete operation, to ensure that reasonable measures are taken to conduct the operation without creating a hazard to any person or property on the surface;
 - (2) the operator coordinates this plan with the BDCA for the area in which the operation will be conducted, to include details for avoiding obstructions in flight and actions to be taken in the event of a serious malfunction of the rotorcraft.
 - (3) the operator obtains authorisation for the operation from that Director of Civil Aviation.
- (b) 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 of operations with air traffic control, if necessary, and a detailed chart depicting the flight routes and altitudes.
- (c) The operator shall conduct operations without jeopardizing the safety of persons or property on the surface.
- (d) The operator shall conduct a flight at an altitude, and on a route, that will allow jettisoning or external load and landing of the rotorcraft, in an emergency without jeopardizing the safety of persons or property on the surface.

BCAR 133.082 Minimum Safe Altitudes

- (a) 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.

BCAR 133.085 Carriage of Persons

- (a) An operator shall not allow a person to be carried during rotorcraft external-load operations unless that person:
- (1) is a flight crewmember;
 - (2) is a flight crewmember trainee;
 - (3) performs an essential function in connection with the external-load operation; or
 - (4) is necessary to accomplish the work activity directly associated with that operation.



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- (b) The pilot in command shall ensure that all persons are briefed before takeoff on all pertinent procedures to be followed (including normal, abnormal, and emergency procedures) and equipment to be used during the external-load operation.

BCAR 133.090 Human External Cargo (HEC)

- (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 Out of Ground Effect (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—



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- (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.

BCAR 133.095 Night operations

- (a) 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.

BCAR 133.100 Third Party Risk

- (a) A pilot in command shall not carry a load suspended beneath a rotorcraft:
 - (1) In such a manner that may cause danger to any person or to property unless the written consent has been obtained from such person.
 - (2) Over any open air assembly of people.
- (b) Except as provided in BCAR 133.100 (c), a 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 BCAR 133.100 (b) is not required in the case where assistance is being delivered to injured persons on the ground.

BCAR 133.105 Emergency during Operations

- (a) In an emergency involving the safety of persons or property, the certificate holder may deviate from the rules of this BCAR 133 to the extent required to meet that emergency.
- (b) Each operator who, under the authority of this BCAR, deviates from a rule of this BCAR 133 shall notify the BDCA within 10 days after the deviation. Upon the request of the BDCA, that operator shall provide a complete report of the aircraft operation involved, including a description of the deviation and reasons for it.



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SUBPART E TRAINING

BCAR 133.110 Training Requirements

- (a) The operator shall not employ any person as pilot in command of operations under BCAR 133 unless that person:
 - (1) has successfully demonstrated, to the BDCA, knowledge and skill with respect to the rotorcraft-load combination in accordance with BCAR 133.115 (in the case of a pilot other than the chief pilot or an assistant chief pilot who has been designated in accordance with BCAR 133.007, this demonstration may be made to the chief pilot or assistant chief pilot); and
 - (2) has in his or her personal possession a letter of competency or an appropriate logbook entry indicating compliance with paragraph (a)(1) of this BCAR.
- (b) No certificate holder may use, nor may any person serve as, a crewmember or other operations personnel in Class D operations conducted under this BCAR 133 unless, within the preceding 12 months, that person has successfully completed either an approved initial or a recurrent training program.
- (c) Notwithstanding the provisions of paragraph (b) of this BCAR, an operator who has performed a rotorcraft external-load operation of the same class and in an aircraft of the same type within the past 12 months need not undergo recurrent training.

BCAR 133.115 Knowledge and Skill

- (a) Except as provided in paragraph (d) of this BCAR, the operator, or the chief pilot designated, must demonstrate to the BDCA 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.
 - (5) appropriate rotorcraft-load combination flight manual.
- (c) The test of skill requires appropriate manoeuvres for each class requested. The appropriate manoeuvres for each load class must be demonstrated in the rotorcraft prescribed in BCAR 133.035:
 - (1) take-offs and landings.



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- (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) manoeuvring the external load into the release position.
 - (7) demonstration of winch operation, if a winch is installed to hoist the external load.
- (d) Compliance with paragraphs (b) and (c) of this BCAR need not be shown if the BDCA 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.