
GACAR PART 133 – AERIAL WORK OPERATIONS

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GACAR PART 133 – AERIAL WORK OPERATIONS

SUBPART A – GENERAL

§ 133.1 Scope.

This part prescribes—

(a) Operating and certification rules governing the conduct of aerial work operations, using manned aircraft, in the Kingdom of Saudi Arabia, by any person.

(b) Except as provided in paragraph (c) of this section, aerial work operations subject to this part include, but are not necessarily limited to, the following:

(1) Aerial application or dispersal of liquids or particulate matter (with the exception of dumping of fuel while engaged in operations under General Authority of Civil Aviation Regulation (GACAR) Part 121, 125, or 135);

(2) Use of aircraft to tow objects other than gliders;

(3) Operation of aircraft with any externally attached or secured object or cargo;

(4) Photography, filming, or survey operations;

(5) The carriage of personnel in support of aerial work operations in accordance with GACAR § 133.149(d); and

(6) Any other operation determined to be subject to this part by the President.

(c) The rules of this part do not apply to—

(1) Operations conducted by a person demonstrating compliance for the issuance of a certificate or authorization under this part;

(2) Training flights conducted in preparation for the demonstration of compliance with this part;

(3) Rotorcraft hoist operations (RHO); and

(4) Any aerial work operation excluded from this part by the President.

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NOTE: In accordance with GACAR § 91.413 a person may not conduct rotorcraft hoist operations (RHO) unless authorized by the President in accordance with the RHO requirements of Appendix D to GACAR Part 91. An air operator holding a certificate issued under GACAR Part 119 and appropriate operations specifications may conduct RHO without holding a certificate issued under this part.

§ 133.3 Carriage of Psychoactive Substances.

If the certificate holder permits any aircraft it owns or leases to be engaged in any operation it knows to be in violation of GACAR § 91.23, that operation is a basis for suspending or revoking the certificate.

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SUBPART B – CERTIFICATION

§ 133.11 Applicability.

This subpart sets out certification requirements and prescribes the content of operations specifications and certain other requirements for aerial work operations.

§ 133.13 Certifications, Authorizations, and Prohibitions.

- (a) A person authorized by the President to conduct aerial work operations under this part will be issued an Aerial Work Operator Certificate (AWOC) and operations specifications.
- (b) No person may operate an aircraft under this part without or in violation of an AWOC, or appropriate operations specifications issued. No person may conduct aerial work operations in violation of any exemption or special authority, if issued to that person or that person's representative.
- (c) No person may conduct aerial work operations under this part with foreign-registered aircraft without holding appropriate economic authority from the General Authority of Civil Aviation (GACA).
- (d) No person may advertise or otherwise offer to perform an aerial work operation subject to this part unless that person is authorized by the GACA to conduct that operation.

§ 133.15 Certificate Application Requirements for All Aerial Work Operators.

- (a) A person applying to the President for the issuance or renewal of an AWOC under this part must submit an application—
- (1) In a form and manner prescribed by the President and
 - (2) Containing any information the President requires the applicant to submit.
- (b) Each applicant must submit the application to the President at least 90 working days before—
- (1) The date of intended operation, for initial issuance or
 - (2) The expiration date of the existing AWOC, for renewals.

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§ 133.17 Contents of an Aerial Work Operator Certificate.

The AWOC includes—

- (a) The certificate holder's name,
- (b) The location of the certificate holder's principal base of operations in the Kingdom of Saudi Arabia,
- (c) The certificate number,
- (d) The certificate's effective date, and
- (e) The certificate's expiration date.

§ 133.19 Issuing or Denying a Certificate.

- (a) An applicant may be issued an AWOC if the President finds that the applicant meets the applicable requirements of this part.
- (b) An application for a certificate may be denied if the President finds that—
 - (1) The applicant is not properly or adequately equipped or is not able to conduct safe operations.
 - (2) The applicant previously held an AWOC, AOC, or OC, which was revoked.
 - (3) The applicant intends to or fills a key management position with an individual who exercised control over or who held the same or a similar position with a certificate holder whose certificate was revoked, or is in the process of being revoked, and that individual materially contributed to the circumstances causing revocation or causing the revocation process.
 - (4) An individual who will have control over or have a substantial ownership interest in the applicant, had the same or similar control or interest in a certificate holder whose certificate was revoked or is in the process of being revoked, and that individual materially contributed to the circumstances causing revocation or causing the revocation process.

§ 133.21 Amending a Certificate.

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- (a) The President may suspend, revoke, or amend any certificate issued under this part if—
- (1) The President determines that aviation safety and the public interest requires the suspension, revocation, or amendment or
 - (2) The certificate holder applies for the amendment, and the President determines that aviation safety and the public interest allows the amendment.
- (b) When the President proposes to amend, suspend, modify, or revoke all or part of any certificate, the procedures in GACAR Part 13 apply.
- (c) When the certificate holder applies for an amendment of its certificate, the following procedure applies:
- (1) The certificate holder must file an application to amend its certificate with the GACA at least 15 working days before the date proposed by the applicant for the amendment to become effective, unless the President approves filing within a shorter period.
 - (2) The application must be submitted in the form and manner prescribed by the President.
 - (3) When a certificate holder seeks reconsideration of a decision from the President concerning amendments of a certificate, the procedures in GACAR Part 13 apply.

§ 133.23 Certificate Holder's Duty To Maintain Operations Specifications.

- (a) Each certificate holder must maintain a complete and separate set of its operations specifications at its principal base of operations in the Kingdom of Saudi Arabia.
- (b) Each certificate holder must insert pertinent excerpts of, or references to, its operations specifications into its manual and must—
- (1) Clearly identify each such excerpt as a part of its operations specifications and
 - (2) State that compliance with the operations specifications is mandatory.
- (c) Each certificate holder must keep each of its employees and other persons used in its operations informed of the provisions of its operations specifications that apply to that employee's or person's duties and responsibilities.

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§ 133.25 Contents of Operations Specifications.

Each certificate holder conducting aerial work operations must obtain operations specifications containing all of the following:

- (a) The specific location of the certificate holder's principal base of operations in the Kingdom of Saudi Arabia and, if different, the address that will serve as the primary point of contact for correspondence between the GACA and the certificate holder;
- (b) Type of aircraft, registration markings, and serial numbers of each aircraft authorized for use;
- (c) The authorizations, limitations, and certain procedures under which each type of aerial operation, if applicable, is to be conducted;
- (d) Certain other procedures under which type of aerial work operation or class of aircraft is to be operated;
- (e) Any authorized exemption or special authority granted from any requirement;
- (f) An authorization permitting, or a prohibition against, accepting, handling, and transporting of dangerous goods by air under GACAR Part 109; and
- (g) Any other item the President determines is necessary.

§ 133.27 Amending Operations Specifications.

- (a) The President may suspend, revoke, amend, or modify any operations specifications issued under this part if—
 - (1) The President determines that aviation safety and the public interest require the amendment or
 - (2) The certificate holder applies for the amendment, and the President determines that aviation safety and the public interest allow the amendment.
- (b) When the President initiates a suspension, revocation, or amendment of a certificate holder's operations specifications, the procedures in GACAR Part 13 apply.

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(c) When the certificate holder applies for an amendment to its operations specifications, the following procedure applies:

(1) The certificate holder must file an application to amend its operations specifications at least 15 working days before the date proposed by the applicant for the amendment to become effective, unless a shorter time is approved.

(2) If the GACA approves the amendment, following coordination with the certificate holder regarding its implementation, the amendment is effective on the date the President approves it.

(3) When a certificate holder seeks reconsideration of a decision from the President concerning suspension, revocation, or amendment of a certificate, the procedures in GACAR Part 13 apply.

§ 133.29 Recency of Operation.

(a) Except as provided in paragraphs (b) and (c) of this section, no certificate holder may conduct an operation authorized by its operations specifications unless the certificate holder has conducted that type of operation within the preceding 180 consecutive days.

(b) If a certificate holder does not conduct a type of operation within the time period specified in paragraph (a) of this section, before resuming that type of operation, the certificate holder must—

(1) Advise the President at least 5 working days before resuming that type of operation and

(2) Allow the President upon request to conduct a full inspection and examination to evaluate the certificate holder's continued fitness and ability to safely conduct that type of operation.

(c) Paragraph (a) of this section does not apply to a certificate holder conducting aerial work operations under this part within 180 days of the date of original issuance of its AWOC.

(d) If a certificate holder does not conduct a type of operation within the period specified in paragraph (a) of this section, the President may suspend or revoke the operator's AWOC.

§ 133.31 Duration of Certificate.

Unless sooner surrendered, suspended, or revoked, or an expiration date is otherwise established by the President, the expiration date of an AWOC is 24 months after the month in which it is issued or

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renewed.

§ 133.33 Inspection Authority.

Each certificate holder must allow the President to make any inspections or tests that he considers necessary to determine compliance with the GACAR and the AWOC.

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SUBPART C – MANAGEMENT PERSONNEL

§ 133.41 Chief Pilot.

- (a) An applicant for an AWOC must hold, or have available the services of at least one person who holds, a current commercial or airline transport pilot (ATP) certificate issued or accepted by the President, with a rating appropriate for the aircraft operated.
- (b) The applicant must designate one pilot, who may be the applicant, as chief pilot. The applicant also may designate qualified pilots as assistant chief pilots to perform the functions of the chief pilot when the chief pilot is not readily available. The chief pilot and assistant chief pilots must be acceptable to the President and each must hold a current Commercial or ATP Certificate, with a rating appropriate for the aircraft operated.
- (c) The chief pilot must demonstrate to the President satisfactory knowledge and skill regarding the aerial work operations the certificate holder is authorized to or intends to conduct.
- (d) The chief pilot is responsible for the professional standards of flight crew members and in particular—
- (1) Developing standard operating procedures (SOP);
 - (2) Developing or implementing all required flight crew member training programs;
 - (3) Issuing directives and notices to flight crew members as required;
 - (4) Completion and dissemination of accident, incident, and other occurrence reports;
 - (5) Completion of any crew reports;
 - (6) Supervision of flight crew personnel;
 - (7) Assuming responsibilities delegated by the Operations Manager; and
 - (8) Ensuring that duties are delegated to qualified individuals.
- (e) The holder of an AWOC must report any change in designation of chief pilot or assistant chief pilot immediately to the GACA. The new chief pilot must be designated and must comply with the

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requirements of paragraphs (a) through (c) of this section within 30 days or the operator may not conduct further operations under the AWOC unless otherwise authorized by the President.

§ 133.43 Operations Manager.

(a) An applicant for an AWOC must designate one person, who may be the applicant, as operations manager. The operations manager must be acceptable to the President and must—

(1) Hold a current Commercial or ATP Certificate, with a rating appropriate for the aircraft operated or

(2) Have at least 2 years of flight operations experience with a holder of an AWOC or an AOC, or equivalent military experience.

(b) The operations manager must demonstrate to the President satisfactory knowledge and skill regarding the aerial work operations the certificate holder is authorized to or intends to conduct.

(c) The operations manager is responsible for safe flight operations and in particular—

(1) Control of day-to-day operations and operational standards of all aircraft operated;

(2) Operations co-ordination functions which impact on operational control (such as, maintenance, crew scheduling, load control, equipment scheduling);

(3) Maintenance and distribution of the certificate holder's operations manual;

(4) Training and qualification of flight operations personnel;

(5) Liaison with the GACA on matters concerning flight operations including any variation to the AWOC;

(6) Liaison with any external agencies that may affect operations;

(7) Ensuring that the certificate holder's operations are conducted in accordance with current regulations, standards and the certificate holder's operations manual;

(9) Ensuring that crew scheduling complies with fatigue management requirements;

(10) Ensuring that all crew members are kept informed of any changes to applicable regulations

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and standards;

(11) Receipt and dissemination of any aeronautical information affecting the safety of flight;

(12) Dissemination of flight operations safety information;

(13) Qualification of flight crew members; and

(14) Ensuring that responsibilities for operational control functions are delegated to qualified personnel.

(d) The operations manager may delegate responsibility for his functions, including operational control functions, to appropriately qualified personnel.

(e) The President may authorize the designation of a single person as both chief pilot and operations manager if the President finds that, because of the limited size of the operation, the functions of the chief pilot and the operations manager can be performed by one person.

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SUBPART D – AERODROME REQUIREMENTS AND LOW ALTITUDE OPERATIONS

§ 133.51 Aerodrome Requirements.

No certificate holder may use any aerodrome or take-off and landing area unless it is adequate for the proposed operation, considering such items as size, surface, obstructions, and lighting.

§ 133.53 Low Altitude Operation: General.

(a) **Airplanes.** Each certificate holder conducting airplane operations requiring flight, other than takeoff and landing, at a height of less than 500 ft (150 m) above the surface, must—

- (1) Establish operational procedures to minimize the consequences of an engine failure;
- (2) Include training on the procedures described in paragraph (a) of this section in the training program established under Subpart K of this part;
- (3) Ensure that all occupants are briefed on the procedures to be carried out in the event of a forced landing; and
- (4) Ensure that all occupants wear appropriate protective equipment.

(b) **Rotorcraft.** Each certificate holder conducting operations with rotorcraft which, in the event of a critical power unit failure, are not able to sustain flight or perform a safe forced landing, must—

- (1) Establish operational procedures to minimize the consequences of a power unit failure;
- (2) Include training on the procedures described in paragraph (b)(1) of this section in the training program established under Subpart K of this part;
- (3) Ensure that all occupants are briefed on the procedures to be carried out in the event of a forced landing;
- (4) Ensure that the rotorcraft is equipped with appropriate crash mitigation equipment pertinent to the operation; and
- (5) Ensure that all occupants wear appropriate protective equipment.

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§ 133.55 Low Altitude Operation Over Other Than Congested Areas.

Notwithstanding GACAR Part 91, during an aerial work operation, including approaches, departures, and turnarounds reasonably necessary for the operation, a certificate holder may operate an aircraft over other than congested areas below 500 ft (150 m) above the surface and closer than 150 m to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface.

§ 133.57 Low Altitude Operation Over Congested Areas: General.

(a) Notwithstanding GACAR Part 91, a certificate holder may operate an aircraft over a congested area at altitudes required for the proper accomplishment of an aerial work operation if the operation is conducted—

(1) With the maximum safety to persons and property on the surface, consistent with the operation and

(2) In accordance with the requirements of paragraph (b) of this section.

(b) No certificate holder may operate an aircraft over a congested area except in accordance with the requirements of this paragraph.

(1) Notice of the intended operation must be given to the public by some effective means, such as newspapers, radio, television, or other suitable means.

(2) A plan for each complete operation must be submitted to, and approved by the President. The plan must include consideration of obstructions to flight; the emergency landing capabilities of the aircraft to be used; and any necessary coordination with air traffic control.

(3) Single-engine aircraft must be operated as follows:

(i) Except for helicopters, no certificate holder may take off a loaded aircraft, or make a turnaround over a congested area.

(ii) No certificate holder may operate an aircraft over a congested area below the altitudes prescribed in GACAR Part 91 except during the actual aerial work operation, including the approaches and departures necessary for that operation.

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(iii) No certificate holder may operate an aircraft over a congested area during the actual aerial work operation, including the approaches and departures for that operation, unless it is operated in a pattern and at such an altitude that the aircraft can land, in an emergency, without endangering persons or property on the surface.

(4) Multi-engine aircraft must be operated as follows:

(i) No certificate holder may operate a multi-engine airplane at a mass greater than the mass that, with the critical engine inoperative, would permit a rate of climb of at least 50 ft/min (15 m/min) at an altitude of at least 1 000 ft (300 m) above the elevation of the highest ground or obstruction within the area to be worked or at an altitude of 5 000 ft (1 500 m), whichever is higher. For the purposes of this paragraph, it is assumed that the propeller of the inoperative engine is in the minimum drag position; that the wing flaps and landing gear are in the most favorable positions; and that the remaining engine or engines are operating at the maximum continuous power available.

(ii) No certificate holder may operate any multi-engine aircraft over a congested area below the altitudes prescribed in GACAR Part 91 except during the actual aerial work operation, including the approaches, departures, and turnarounds necessary for that operation.

§ 133.59 Operation Over Congested Areas: Pilots.

(a) **General.** No certificate holder may operate an aircraft over a congested area except in accordance with the pilot rules of this section.

(b) **Pilots.** Each pilot in command (PIC) must have—

(1) At least 25 hours of PIC flight time in the make and basic model of the aircraft, at least 10 hours of which must have been acquired within the preceding 12 months and

(2) At least 100 hours of flight experience as PIC in conducting aerial work operations of the type to be conducted.

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SUBPART E – MANUAL REQUIREMENTS

§ 133.61 Requirements Relating to Operations Manual.

(a) Except as provided in paragraph (b) of this section, each certificate holder must prepare and maintain a manual, acceptable to the President, setting forth the certificate holder's procedures and policies for use by the certificate holder's flight and ground personnel. The certificate holder must ensure that the following requirements are satisfied:

- (1) The design of the manual must incorporate human factors principles.
- (2) The policies and procedures contained in the manual must not be contrary to any applicable GACAR.
- (3) Each certificate holder must maintain at least one copy of the manual at its principal base of operations in the Kingdom of Saudi Arabia.
- (4) A copy of the manual, or appropriate portions of the manual (and changes and additions) must be made available to maintenance and ground operations personnel by the certificate holder and furnished to—
 - (i) Its flight crew members and
 - (ii) Representatives of the GACA assigned to the certificate holder.
- (5) To comply with paragraph (a)(4) of this section, a certificate holder may furnish the persons listed therein with all or part of its manual in printed or other form, acceptable to the President, which is retrievable in the English language. If the certificate holder furnishes all or part of the manual in other than printed form, it must ensure there is a compatible reading device available to those persons that provides a legible image of the information and instructions, or a system that is able to retrieve the information and instructions in the English language.
- (6) Each employee of the certificate holder to whom a manual or appropriate portions of it are furnished under paragraph (a)(4)(i) of this section must keep it up to date with the changes and additions furnished to them.
- (7) Except as provided in GACAR § 133.109(f), each certificate holder must ensure that

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appropriate parts of the manual are carried on board each aircraft when away from the principal operations base. The appropriate parts must be available for use by ground or flight personnel.

(b) The President may authorize a deviation from this section if the President finds that, because of the limited size of the operation, all or part of the operations manual is not necessary for guidance of flight, ground, or maintenance personnel.

§ 133.63 Manual Contents.

Each manual must have the date of the most recent revision on each revised page. The manual must include—

- (a) SOP developed in accordance with GACAR § 133.141;
- (b) The name of each management person required under Subpart C of this part who is authorized to act for the certificate holder;
- (c) A description of the operational control system required under GACAR § 133.143;
- (d) Procedures for ensuring compliance with aircraft mass and balance limitations;
- (e) Copies of the certificate holder's operations specifications or appropriate extracted information, including aircraft authorized, crew complements, and types of operations authorized;
- (f) Procedures for complying with accident notification requirements;
- (g) Maintenance control procedures, including the following:
 - (1) A description of the administrative arrangements between the certificate holder and any contract maintenance provider(s);
 - (2) A reference to the inspection program required by GACAR § 91.449 or 133.109;
 - (3) A description of the procedures for making entries in the aircraft maintenance log in accordance with GACAR § 133.179;
 - (4) A description of the methods used for the completion and retention of the certificate holder's maintenance records required by GACAR § 91.457;

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- (5) A description of the procedures for implementing action resulting from mandatory continuing airworthiness information;
- (6) A description of the system of analysis and continued monitoring of the performance and efficiency of the inspection program, in order to correct any deficiency in that program;
- (7) A description of the aircraft to which the manual applies;
- (8) Procedures for ensuring that the PIC knows that required airworthiness inspections have been made and that the aircraft has been approved for return to service in compliance with applicable maintenance requirements;
- (9) Procedures for reporting and recording mechanical irregularities that come to the attention of the PIC before, during, and after completion of a flight;
- (10) Procedures to be followed by the PIC for determining that mechanical irregularities or defects reported for previous flights have been corrected or that correction has been deferred;
- (11) Procedures to be followed by the PIC to obtain maintenance, preventive maintenance, and servicing of the aircraft at a place where previous arrangements have not been made by the certificate holder, when the pilot is authorized to so act for the certificate holder;
- (12) Procedures to be followed by a pilot to perform maintenance, preventive maintenance, and servicing of the aircraft at a place where previous arrangements have not been made by the operator, when the pilot is authorized to so act for the certificate holder in accordance with GACAR § 43.5(h); and
- (13) Procedures under GACAR § 91.309 for the release for, or continuation of, flight if any item of equipment required for the particular type of operation becomes inoperative or unserviceable en route.
- (h) Procedures for refueling aircraft, eliminating fuel contamination, protecting from fire (including electrostatic protection), and supervising and protecting personnel during refueling;
- (i) Procedures to be followed by the PIC in the briefing under GACAR § 133.145;
- (j) Flight locating procedures, when applicable;

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- (k) Procedures for ensuring compliance with emergency procedures, including a list of the functions assigned each category of required crew members in connection with an emergency; and
- (l) The certificate holder's transportation of dangerous goods policies and whether the certificate holder is authorized to carry, or is prohibited from transporting dangerous goods by air.

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SUBPART F – AIRCRAFT REQUIREMENTS

§ 133.71 Aircraft.

(a) Except as provided in paragraph (b) of this section, no certificate holder may operate an aircraft under this part unless that aircraft—

- (1) Is registered as a civil aircraft of the Kingdom of Saudi Arabia and carries an appropriate and current airworthiness certificate issued under GACAR Part 21,
- (2) Is in an airworthy condition and meets the applicable airworthiness requirements, including those relating to identification and equipment; and
- (3) All special equipment installed for the aerial work operation has been approved under GACAR Part 21.

(b) Foreign-registered aircraft may be used provided they have a valid airworthiness certificate issued by a contracting state to the Convention on International Civil Aviation and the President is satisfied that the aircraft is safe for the intended operations.

§ 133.73 Emergency Egress From the Flightdeck.

Aircraft must be equipped with effective means of breaking out of the flightdeck.

§ 133.75 Occupant Restraint Devices: Operations With Doors Opened or Removed.

Aircraft must be equipped with effective occupant restraint devices when carrying out aerial work tasks with doors opened or removed.

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SUBPART G – ROTORCRAFT PERFORMANCE OPERATING LIMITATIONS

§ 133.81 Performance Criteria: Rotorcraft.

(a) Rotorcraft operating in a congested hostile environment must be—

(1) Certificated in Category A and

(2) Operated at a mass and in conditions that, in the event of a critical power unit failure, the rotorcraft is capable of sustaining level flight. Measures must be taken to prevent risk to persons on the ground and to alleviate risk to property on the surface.

(b) Rotorcraft operating outside a congested hostile environment must be certificated in Category A or B.

(c) The mass at takeoff, landing, or hover must not exceed the maximum mass specified for a hover in ground effect (HIGE) with all power units operating at the appropriate power rating. If conditions prevail that a HIGE is not likely to be established, the rotorcraft mass must not exceed the maximum mass specified for a hover out of ground effect with all power units operating at the appropriate power rating.

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SUBPART H – INSTRUMENT AND EQUIPMENT REQUIREMENTS

§ 133.91 General.

Each certificate holder conducting operations under this part must comply with the instrument and equipment requirements of GACAR Part 91 and any additional requirements specified by the President.

§ 133.93 Inoperable Instruments and Equipment.

No certificate holder may operate an aircraft with inoperable instruments or equipment installed unless the following conditions are met:

- (a) An approved Minimum Equipment List (MEL) meeting the requirements of GACAR § 91.309 exists for that aircraft, and the certificate holder's operations specifications authorize use of an approved MEL for an aircraft.
- (b) Instruments and equipment required for specific operations by this part must not be included in the MEL.
- (c) Notwithstanding paragraphs (a) and (b) of this section, an aircraft with inoperable instruments or equipment may be operated under a special flight permit under GACAR §§ 21.179 and 21.181 or for foreign-registered aircraft under GACAR § 91.479.

§ 133.95 Individual Protective Equipment.

Persons onboard must be provided with and wear personal protective equipment which is adequate for the type of operation.

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SUBPART I – MAINTENANCE

§ 133.101 Applicability.

(a) This subpart prescribes rules, in addition to those prescribed in GACAR Parts 43 and 91, for the maintenance of aircraft, airframes, aircraft engines, propellers, appliances, each item of emergency equipment, and their component parts, operated under this part.

(b) Rules governing preventive maintenance and alterations for aircraft operated under this part are prescribed in GACAR Parts 43 and 91.

(c) Certificate holders conducting operations using aircraft of foreign registry may maintain aircraft in accordance with a maintenance program acceptable to the state of registry and to the President. Where this subpart refers to compliance with or adherence to standards contained in GACAR Part 91 or 43, compliance with and adherence to standards contained in the appropriate regulations of the state of registry will constitute compliance with or adherence to GACAR Parts 91 and 43, unless determined otherwise by the President.

§ 133.103 Certificate Holder’s Responsibilities.

With regard to aircraft, including airframes, aircraft engines, propellers, appliances, and emergency equipment, operated by a certificate holder, that certificate holder is primarily responsible for—

(a) Airworthiness;

(b) The scheduling and performance of maintenance, preventive maintenance, and alteration in accordance with applicable regulations and the certificate holder’s manual;

(c) The scheduling and performance of inspections required by GACAR Part 91 or this part; and

(d) Ensuring that maintenance personnel make entries in the aircraft maintenance log and maintenance records which meet the requirements of GACAR Part 43 and the certificate holder’s manual, and which indicate that the airplane has been approved for return to service after maintenance, preventive maintenance, or alteration has been performed.

§ 133.105 Organization Required To Perform Maintenance, Preventive Maintenance, and Alteration.

The certificate holder must ensure that each person with whom it arranges for the performance of

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maintenance, preventive maintenance, alteration, or required inspection items identified in the certificate holder's manual in accordance with GACAR § 133.63(g)(1) must have an organization adequate to perform that work.

§ 133.107 Maintenance Required.

(a) No certificate holder may operate an aircraft subject to this part unless—

(1) The replacement times for life-limited parts specified in the instructions for continued airworthiness produced in accordance with GACAR Part 21 are complied with;

(2) Defects disclosed between inspections, or as a result of inspection, have been corrected in accordance with GACAR Part 43; and

(3) The aircraft, including airframe, aircraft engines, propellers, appliances, emergency equipment, and their component parts, is inspected in accordance with the aircraft inspection requirements of GACAR Part 91, unless an aircraft inspection program has been required or approved by the President in accordance with GACAR § 133.109.

(b) No person may perform inspections required by this part unless that person is authorized to perform maintenance under GACAR Part 43.

(c) No certificate holder may operate an aircraft subject to this part unless the installed engines have been maintained in accordance with the overhaul periods recommended by the manufacturer, unless other overhaul periods have been authorized by the President.

§ 133.109 Aircraft Inspection Program.

(a) Whenever the President finds that the aircraft inspections required or allowed under GACAR Part 91 are not adequate to meet this part, or upon application by a certificate holder, the President may amend the certificate holder's operations specifications under GACAR § 133.27, to require or allow an approved aircraft inspection program for any make and model aircraft.

(b) A certificate holder who applies for an amendment of its operations specifications to allow an approved aircraft inspection program must submit that program with its application for approval by the President.

(c) Each certificate holder who is required by its operations specifications to have an approved aircraft inspection program must submit a program for approval by the President within 30 days of

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the amendment of its operations specifications or within any other period that the President may prescribe in the operations specifications.

(d) The aircraft inspection program submitted for approval by the President must contain the following:

- (1) Instructions and procedures for the conduct of aircraft inspections (which must include necessary tests and checks), setting forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including emergency equipment, that must be inspected;
- (2) A schedule for the performance of the aircraft inspections under paragraph (d)(1) of this section expressed in terms of the time in service, calendar time, number of system operations, or any combination of these; and
- (3) Instructions and procedures for recording discrepancies found during inspections and correction or deferral of discrepancies including form and disposition of records.

(e) After approval, the certificate holder must include the approved aircraft inspection program in the manual required by GACAR § 133.61.

(f) If a certificate holder conducts aircraft inspections or maintenance at specified stations where it maintains the approved inspection program manual, it is not required to carry the inspection program manual aboard aircraft en route to those stations.

(g) Whenever the President finds that revisions to an approved aircraft inspection program are necessary for the continued adequacy of the program, the certificate holder must, after notification by the President, make any changes in the program found by the President to be necessary. The certificate holder may petition the President to reconsider the notice to make any changes in a program. The petition must be filed with the representatives of the President assigned to it within 30 days after the certificate holder receives the notice. Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the President.

(h) Each certificate holder who has an approved aircraft inspection program must have each aircraft that is subject to the program inspected in accordance with the program.

(i) The registration number of each aircraft that is subject to an approved aircraft inspection program

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must be included in the operations specifications of the certificate holder.

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SUBPART J – FLIGHT CREW MEMBER REQUIREMENTS AND QUALIFICATIONS

§ 133.111 Flight Crew Members: Limitations on Use of Services.

(a) No certificate holder may use any person as a flight crew member, nor may any person serve as a flight crew member, unless that person—

(1) Holds an appropriate current flight crew member certificate issued or accepted by the President.

(2) Has any required appropriate current flight crew member and medical certificates in that person's possession while engaged in operations under this part.

(3) Meets the training and experience requirements of this part for the operation for which that person is to be used.

(b) Each airman covered by paragraph (a) of this section must present the certificates for inspection upon the request of the President.

§ 133.113 Designation of Pilot in Command and Second in Command.

Each certificate holder must designate for each flight a PIC and, where the crew includes two pilots, a PIC and an SIC.

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SUBPART K – TRAINING PROGRAMS

§ 133.121 Training Program.

(a) Every certificate holder must establish and maintain a ground and flight training program that is designed to ensure that each person who receives training acquires the competence to perform his assigned duties.

(b) A certificate holder's ground and flight training program must include—

(1) Company indoctrination training;

(2) Training in the aerial work to be conducted; and

(3) Initial and annual training, including—

(i) Aircraft type training,

(ii) Aircraft servicing and ground handling training,

(iii) Emergency procedures training,

(iv) Training for personnel who are assigned to perform duties onboard an aircraft or who are carried externally by an aircraft, and

(v) Any other training required to ensure a safe operation under this part.

(c) A certificate holder must—

(1) Include a detailed syllabus of its ground and flight training program in its operations manual and

(2) Ensure that adequate facilities and qualified personnel are provided for its ground and flight training program.

§ 133.123 Crew Member Training Requirements.

No certificate holder may use, nor may any person serve, as a pilot in operations conducted under

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this part unless that person has successfully completed the ground and flight training program specified in GACAR § 133.121.

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SUBPART L – FATIGUE MANAGEMENT REQUIREMENTS

§ 133.131 Applicability.

This subpart prescribes requirements for the management of fatigue. A certificate holder has the option to—

- (a) Comply with the duty period limitations prescribed in this subpart or
- (b) Implement a comprehensive fatigue risk management system (FRMS) that provides an equivalent level of safety to the duty period limitations. Each FRMS must comply with all of the applicable requirements for an FRMS as prescribed in GACAR Part 5, and it must be approved by the President.

§ 133.133 Duty Period Limitations.

Each flight crew member must be relieved from all duty for at least 8 consecutive hours during any 24-hour period.

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SUBPART M – FLIGHT OPERATIONS

§ 133.141 Standard Operating Procedures.

(a) Before commencing operations, each certificate holder must carry out a risk assessment and must develop appropriate SOP. The risk assessment and SOP should address at least the following:

- (1) Scope and complexity of the activity,
- (2) Aircraft and equipment,
- (3) Crew composition and training,
- (4) Aircraft performance,
- (5) Normal and emergency procedures,
- (6) Ground equipment, and
- (7) Recordkeeping.

(b) Aerial work must be performed in accordance with the SOP.

(c) Certificate holders must ensure that copies of the SOP, or pertinent portions of the SOP, are carried on board each aircraft operated under this part.

(d) Applicants for an AWOC must demonstrate to the President that the SOP are suitable for the intended operation.

§ 133.143 Operational Control System.

Each certificate holder must have an operational control system overseen by an operations manager. The certificate holder must include a description of the operational control system in the manual required by GACAR § 133.61.

§ 133.145 Briefing of Operational Personnel.

Each certificate holder must ensure that all operations personnel are properly instructed about their duties and about the relationship of their duties to the operation as a whole. Operational personnel

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involved in aerial work must be briefed on operational procedures associated with the specific task before each flight or series of flights.

§ 133.147 Special Flight Operations Authorizations and Waivers.

No person may engage in any special flight operation defined in Subpart D of GACAR Part 91 or operate contrary to the requirements in GACAR Part 91 unless in accordance with an authorization or waiver issued in accordance with that part.

§ 133.149 Carriage of Persons.

(a) Subject to paragraphs (b), (c), and (d) of this section, during aerial work operations, no operator may carry a person other than a crew member or a person who is essential and directly connected with the aerial work operation.

(b) During external load rotorcraft operations, a person may be carried external to the rotorcraft when they are carried in approved Class D rotorcraft/load combinations.

(c) This section does not apply to the carriage of persons to provide flight crew member training.

(d) This section does not prohibit the carriage of passengers for purposes of positioning personnel in support of aerial work operations.

§ 133.151 Operations With Doors Opened or Removed.

Crew members other than flight crew must be restrained when carrying out aerial work tasks with doors opened or removed.

§ 133.153 Application and Use of Dangerous Goods in Aerial Work.

(a) The operator must not fly over congested areas of cities, towns, or settlements or over an open-air assembly of persons when applying or using dangerous goods for aerial work.

(b) No persons may dispense, or cause to be dispensed, from an aircraft, any material or substance in a manner that creates a hazard to persons or property on the surface.

§ 133.155 Carriage and Use of Weapons in Aerial Work.

(a) An operator may carry weapons on a flight for aerial work provided the weapons are secured when carried.

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(b) The operator must ensure that the aircraft and persons onboard and on the ground are not endangered when the weapons are used.

§ 133.157 Additional Requirements for Certain Aerial Work Operations.

In addition to all applicable requirements of this subpart, each certificate holder must comply with all additional requirements for each type of aerial work operation specified in appendices to this part they are authorized by the President to conduct.

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SUBPART N – FLIGHT RELEASE RULES

§ 133.161 Flight Release Authority.

- (a) No person may start a flight or series of flights without authority from the operations manager.
- (b) No person may start a flight or series of flights unless the PIC or the operations manager has executed a flight release setting forth the conditions under which the flight or series of flights will be conducted. The PIC may sign the flight release only when both the PIC and operations manager believe the flight or series of flights can be made safely, unless the PIC is authorized by the certificate holder to exercise operational control and execute the flight release without the approval of any other person.

§ 133.163 Airplane Equipment.

No person may release an aircraft unless it is airworthy and is equipped as prescribed in GACAR Part 91 and this part.

§ 133.165 Flight Release Form.

The flight release may be in any form but must contain at least the following information concerning each flight:

- (a) Company or organization name;
- (b) Make, model, and registration number of the aircraft being used;
- (c) Date of flight or series of flights;
- (d) Name and duty assignment of each crew member or other person onboard;
- (e) Departure aerodrome, destination aerodromes, alternate aerodromes, and route;
- (f) Minimum fuel supply (in liters or kilograms);
- (g) A statement of the type of operation (such as, instrument flight rules (IFR), visual flight rules (VFR)) and type of aerial work operation; and
- (h) The signature of the PIC or other means of certifying acceptance.

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SUBPART O – RECORDS AND REPORTS

§ 133.171 Applicability.

(a) This subpart prescribes requirements for the following:

- (1) The preparation and maintenance of records and reports for all certificate holders and
- (2) Requirement for the retention of records for flight release, flight crew, and maintenance as applicable.

(b) Each certificate holder must maintain the records required by this subpart at its principal operations base in the Kingdom of Saudi Arabia, or at another location used by it and approved by the President.

§ 133.173 Crew Member Record.

Each certificate holder must—

(a) Maintain current records of each crew member that show whether or not that crew member complies with the GACAR (such as, proficiency checks, aircraft qualifications, test results, any required physical examinations, and flight time records) and

(b) Record each action taken concerning the release from employment or physical or professional disqualification of any flight crew member and keep the record for at least 6 months thereafter.

§ 133.175 Training and Qualification Records.

(a) Every certificate holder must, for each person who is required to receive training under this part, establish and maintain a record of—

- (1) The person's name and, where applicable, personnel license number, type and ratings;
- (2) If applicable, the person's medical category and the expiration date of that category;
- (3) The dates on which the person, while in the certificate holder's employ, successfully completed any training, required under this part or obtained any qualification required under this part;

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(4) Information relating to any failure of the person, while in the certificate holder's employ, to successfully complete any training, required under this part or to obtain any qualification required under this part; and

(5) The type of aircraft or flight training equipment used for any training, or qualification required under this part.

(b) A certificate holder must retain the records referred to in paragraph (a) for at least 3 years.

§ 133.177 Disposition of Flight Release.

(a) The PIC of an aircraft must carry the original or a signed copy of the flight release in the aircraft during the flight or series of flights.

(b) Upon completion of the flight or series of flights, the certificate holder must retain either the original or a copy of the flight release at its principal operations base in the Kingdom of Saudi Arabia for at least 30 days.

§ 133.179 Maintenance Log: Aircraft.

(a) Each person who takes corrective action or defers action concerning a reported or observed failure or malfunction of an airframe, aircraft engine, propeller, or appliance must record the action taken in the aircraft maintenance log in accordance with GACAR Part 43.

(b) Each certificate holder must establish a procedure for keeping copies of the aircraft maintenance log required by this section in the aircraft for access by appropriate personnel and must include that procedure in its SOP required by GACAR § 133.141.

§ 133.181 Electronic Recordkeeping.

(a) No certificate holder may use an electronic signature for records requiring a certifying statement unless the electronic signature system is approved by the President.

(b) No certificate holder may use an electronic recordkeeping system for any record required by this part unless the electronic recordkeeping system complies with paragraphs (c) through (e) of this section.

(c) *Storage and Retrieval.* A computer hardware and software system must have the capability to store and retrieve the records. The system must be capable of producing paper copies of the viewed

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information at the request of a GACA or Saudi Arabian Aviation Investigation Bureau (SAAIB) authorized representative.

(d) *Security*. Any electronic recordkeeping system must—

- (1) Ensure that records are retained for the retention periods prescribed in this part.
- (2) Protect confidential information.
- (3) Ensure that the information is not altered in an unauthorized way.
- (4) Have a corresponding policy and management structure to support the computer hardware and computer software that delivers the information.

(e) *Procedures*. Before employing an electronic recordkeeping system, a certificate holder must incorporate electronic recordkeeping procedures into its operations manual to include the following:

- (1) Procedures for making required records available to authorized AIB personnel and GACA inspectors. If the computer hardware and software system is not compatible with the GACA and AIB systems, the certificate holder must provide an employee or representative to assist in accessing the necessary computerized information.
- (2) Procedures for reviewing the computerized personal identification codes system to ensure that the system will not permit password duplication.
- (3) Procedures for auditing the computer system every 60 days to ensure the integrity of the system. A record of the audit must be completed and retained on file as part of the operator's record retention requirements.
- (4) Audit procedures to ensure the integrity of each computerized workstation unless the workstations are server based and contain no inherent attributes that enable or disable access.
- (5) Procedures describing how the certificate holder will ensure that the electronic records are transmitted in accordance with the appropriate regulatory requirements.
- (6) Procedures to ensure that records required to be transferred with an aircraft are in a format (either electronic or on paper) that is acceptable to the new aircraft owner/operator.

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- (7) A description of the training procedure and requirements necessary to authorize access to the computer hardware and software system.
- (8) For electronic recordkeeping systems employing digital or electronic signatures, guidelines for authorized representatives of the certificate holder to use electronic signatures and to have access to the appropriate records.

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SUBPART P – TRANSPORTATION OF DANGEROUS GOODS

§ 133.191 Applicability.

This subpart applies to certificate holders authorized in their operations specifications to transport dangerous goods and to certificate holders with a prohibition in their operations specifications against transporting or handling dangerous goods.

§ 133.193 General.

- (a) The transport of dangerous goods by air must be conducted in accordance with GACAR Part 109.
- (b) Except as provided for in GACAR § 109.5, an operator must not transport dangerous goods unless authorized to do so by the President in accordance with GACAR § 109.7.
- (c) All reasonable measures must be taken to prevent dangerous goods from being carried on board inadvertently.
- (d) The operator must, in accordance with GACAR § 109.97, report without delay to the President where the accident or incident occurred—
 - (1) Any incidents or accidents involving dangerous goods and
 - (2) The finding of undeclared or wrongfully declared dangerous goods discovered in cargo or passengers' baggage.

§ 133.195 Dangerous Goods Training Program: General.

- (a) Each certificate holder must establish and implement a dangerous goods training program that—
 - (1) Satisfies the applicable requirements of Subpart F of GACAR Part 109;
 - (2) Ensures that each person performing or directly supervising any of the job functions specified in paragraphs (i) through (vi) of this section involving any item for transport on board an aircraft is trained to comply with all applicable parts of GACAR Part 109:
 - (i) Acceptance,
 - (ii) Rejection,

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(iii) Handling,

(iv) Storage incidental to transport,

(v) Packaging of company material, or

(vi) Loading.

(3) Enables the trained person to recognize items that contain, or may contain, dangerous goods regulated by GACAR Part 109.

(b) Each certificate holder's dangerous goods training program must be approved by the President prior to implementation.

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APPENDIX A TO GACAR PART 133 – AERIAL APPLICATION OPERATIONS

(a) *Flight crew member qualifications and training.* For applicants or certificate holders conducting or seeking authorization to conduct aerial application operations, the following knowledge and skill areas are applicable to the demonstrations required under GACAR §§ 133.41(c) and 133.43(b) and the training required under GACAR § 133.121(b)(2):

(1) The knowledge areas consist of the following:

- (i) Steps to be taken before starting operations, including survey of the area to be worked;
- (ii) Safe handling of substances to be dispensed and the proper disposal of used containers for those substances;
- (iii) The general effects of pesticides, herbicides, agricultural chemicals, and other dispersants on plants, animals, and persons, with emphasis on those normally used in the areas of intended operations; and the precautions to be observed in using such substances;
- (iv) Primary symptoms of poisoning of persons from pesticides, herbicides, agricultural chemicals and other dispersants, the appropriate emergency measures to be taken, and the location of poison control centers;
- (v) Performance capabilities and operating limitations of the aircraft to be used; and
- (vi) Safe flight and application procedures.

(2) The skill areas consist of the following maneuvers that must be shown in each aircraft used in aerial application operations, and at that aircraft's maximum certificated take-off mass, or the maximum mass established for the special purpose load, whichever is greater:

- (i) Short-field and soft-field takeoffs (airplanes and gyroplanes only),
- (ii) Approaches to the working area,
- (iii) Flare-outs,
- (iv) Swath runs,

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(v) Pullups and turnarounds, and

(vi) Rapid deceleration (quick stops) in helicopters only.

(b) ***Flight operations.*** In addition to the provisions and requirements of GACAR Part 133, the following provisions and requirements are applicable to the conduct of aerial application operations:

(1) No person may dispense or cause to be dispensed from an aircraft, any substance—

(i) For a use other than that for which it is intended,

(ii) Contrary to any applicable safety instructions or use limitations, or

(iii) In violation of any law or regulation of the Kingdom of Saudi Arabia.

(2) Notwithstanding GACAR Part 91, the PIC of an aircraft engaged in aerial application operations may deviate from an aerodrome traffic pattern when authorized by the control tower concerned. At an aerodrome without a functioning control tower, the PIC may deviate from the traffic pattern if—

(i) Prior coordination is made with the aerodrome management concerned;

(ii) Deviations are limited to the aerial application operation;

(iii) Except in an emergency, landing and takeoffs are not made on ramps, taxiways, or other areas of the aerodrome not intended for such use; and

(iv) The aircraft at all times remains clear of, and gives way to, aircraft conforming to the traffic pattern for the aerodrome.

(3) Notwithstanding GACAR Part 91, an aircraft may be operated without position lights if prominent unlighted objects are visible for at least 1 600 m and takeoffs and landings at—

(i) Aerodromes with a functioning control tower are made only as authorized by the control tower operator and

(ii) Other aerodromes are made only with the permission of the aerodrome management and

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no other aircraft operations requiring position lights are in progress at that aerodrome.

(c) **Records and reports.** In addition to the records and reports required by Subpart O of GACAR Part 133, each certificate holder engaged in aerial application operations must maintain and keep current, at its home base of operations in the Kingdom of Saudi Arabia, the following records:

- (1) The name and address of each person for whom aerial application services were provided;
- (2) The date of the service;
- (3) The name and quantity of the material dispensed for each operation conducted; and
- (4) The name, address, and certificate number of each pilot used in aerial application operations and the date that pilot met the training requirements of GACAR § 133.121(b)(2).

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APPENDIX B TO GACAR PART 133 – ROTORCRAFT EXTERNAL-LOAD OPERATIONS

For applicants or certificate holders conducting or seeking authorization to conduct rotorcraft external-load operations other than RHO—

(a) ***Flight crew member qualifications and training.*** The following knowledge and skill areas are applicable to the demonstrations required under GACAR §§ 133.41(c) and 133.43(b) and the training required under GACAR § 133.121(b)(2):

(1) The knowledge areas consist of the following:

- (i) Steps to be taken before starting operations, including survey of the area to be worked;
- (ii) Proper method of loading, rigging, or attaching the external load;
- (iii) Performance capabilities under approved operating procedures and limitations, of the rotorcraft to be used;
- (iv) Proper instructions of flight crew and ground workers; and
- (v) The manual content required under paragraph (d)(1) of this appendix.

(2) The skill areas consist of the following maneuvers that must be shown for each class requested. The appropriate maneuvers for each load class must be demonstrated in a rotorcraft meeting the requirements of paragraph (d)(1) of this appendix:

- (i) Takeoffs and landings,
- (ii) Demonstration of directional control while hovering,
- (iii) Acceleration from a hover,
- (iv) Flight at operational airspeeds,
- (v) Approaches to landing or working area, and
- (vi) Maneuvering the external load into the release position.

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(b) ***Rotorcraft-load combination classifications.*** Each rotorcraft-load combination falls under a classification, as follows:

- (1) Any combination in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear is a Class A combination.
- (2) Any combination in which the external load can be jettisoned and is lifted free of land or water during the rotorcraft operation is a Class B combination.
- (3) Any combination in which the external load can be jettisoned and remains in contact with land or water during the rotorcraft operation is a Class C combination.
- (4) Any combination that does not fall under Class A, B, or C, and does not constitute RHO, but has been specifically approved by the President for use is a Class D combination.

(c) ***Aircraft and equipment.***

- (1) Each external-load attaching means must have been approved under—
 - (i) GACAR Part 27 or 29, as applicable or
 - (ii) GACAR § 21.33.
- (2) Each quick release device must have been approved under GACAR Part 21 and the device must comply with GACAR §§ 27.865(b) and 29.865(b), as applicable.
- (3) Mass and center of gravity—
 - (i) The total mass of the rotorcraft-load combination must not exceed the total mass approved for the rotorcraft during its type certification.
 - (ii) The location of the center of gravity must, for all loading conditions, be within the range established for the rotorcraft during its type certification. 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.

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(4) The applicant must demonstrate, by performing the operational flight checks prescribed in paragraphs (c)(4)(i), (ii), and (iii) of this section, 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 mass (including the external-load attaching means) is the maximum mass for which authorization is requested:

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

- (A) Takeoff and landing,
- (B) Demonstration of adequate directional control while hovering,
- (C) Acceleration from a hover, and
- (D) Horizontal flight at airspeeds up to the maximum airspeed for which authorization is requested.

(ii) For Class B and D rotorcraft load combinations, the operational flight check must consist of at least the following maneuvers:

- (A) Pickup of the external-load,
- (B) Demonstration of adequate directional control while hovering,
- (C) Acceleration from a hover,
- (D) Horizontal flight at airspeeds up to the maximum airspeed for which authorization is requested,
- (E) Demonstrating appropriate lifting device operation, and
- (F) 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 installed on the rotorcraft.

(iii) For Class C rotorcraft-load combinations used in wire stringing, cable-laying, or

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similar operations, the operational flight check must consist of the maneuvers, as applicable, prescribed in paragraph (c)(4)(ii) of this appendix.

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

(i) A placard (displayed in the flightdeck or cabin) stating the class of rotorcraft-load combination for which the rotorcraft has been approved and the occupancy limitation prescribed in paragraph (e)(1) of this appendix and

(ii) A placard, marking, or instruction (displayed next to the external-load attaching means) stating the maximum external load prescribed as an operating limitation in paragraph (e)(2) of this appendix.

(d) ***Manual requirements.***

(1) The manual required by GACAR § 133.61 must include a section on operations involving rotorcraft-load combination. The section must be prepared in accordance with the rotorcraft flight manual provisions of Subpart G of GACAR Part 27 or 29, whichever is applicable. The limiting height-speed envelope data need not be listed as operating limitations.

(2) The manual content required under paragraph (d)(1) of this appendix must set forth—

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

(ii) The class of rotorcraft-load combinations for which the airworthiness of the rotorcraft has been demonstrated in accordance with paragraphs (c)(1), (2), and (4) of this appendix;

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

(iv) Precautionary advice regarding static electricity discharges for Class B, C, and D rotorcraft load combinations; and

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

(e) ***Operating limitations.***

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(1) The rotorcraft-load combination may be operated only within the mass and center of gravity limitations established in accordance with paragraph (c)(3).

(2) The rotorcraft-load combination may not be operated with an external load mass exceeding that used in showing compliance with paragraphs (c)(1), (2), and (4) of this appendix.

(3) The rotorcraft-load combination may not be operated at airspeeds greater than those established in accordance with paragraphs (c)(4)(i), (ii), and (iii) of this appendix.

(4) No person may conduct an external-load operation under this part with a rotorcraft type certificated in the restricted category under GACAR § 21.33 over a densely populated area, in a congested airway, or near a busy aerodrome where passenger transport operations are conducted.

(5) The rotorcraft-load combination of Class D may be conducted only in accordance with the following:

(i) The rotorcraft to be used must have been type certificated under transport Category A for the operating mass and provide hover capability with one engine inoperative at that operating mass and altitude.

(ii) The rotorcraft must be equipped to allow direct radio intercommunication among required crew members.

(iii) The lifting device must be approved in accordance with GACAR Part 21.

(iv) The lifting device must have an emergency release requiring two distinct actions.

(6) A person other than a crew member 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.

(f) **Flight operations.** In addition to the provisions and requirements of GACAR Part 133, the following provisions and requirements are applicable to the conduct of rotorcraft external-load operations:

(1) No person may conduct a rotorcraft external-load operation unless the rotorcraft and

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rotorcraft-load combination is authorized under the certificate holder's operations specifications.

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

- (i) A determination that the mass 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.
- (ii) Make an initial liftoff and verify that controllability is satisfactory.
- (iii) While hovering, verify that directional control is adequate.
- (iv) 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.
- (v) In forward flight, check for hazardous oscillations of the external load, but if the external load is not visible to the pilot, other crew members or ground personnel may make this check and signal the pilot.
- (vi) Increase the forward airspeed and determine an operational airspeed at which no hazardous oscillation or hazardous aerodynamic turbulence is encountered.

(3) No certificate holder may conduct rotorcraft external-load operations under IFR unless specifically authorized by the President. However, under no circumstances may a person be carried as part of the external-load under IFR.

(g) **Low altitude operations.** In addition to the requirements and limitations of Subpart D of GACAR Part 133, certificate holders conducting operations over a congested area must satisfy the following requirements:

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- (1) The plan required under GACAR § 133.57(b)(2) must include—
- (i) An agreement with the appropriate local officials that unauthorized persons will be excluded from the area in which the operation will be conducted;
 - (ii) Coordination with air traffic control, if necessary; and
 - (iii) 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 an external load that can be jettisoned to be released, and the rotorcraft landed, in an emergency without hazard to persons or property on the surface.

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APPENDIX C TO GACAR PART 133 – BANNER TOWING OPERATIONS

For applicants or certificate holders conducting or seeking authorization to conduct banner towing operations—

(a) ***Flight crew member qualifications and training.*** The following knowledge and skill areas are applicable to the demonstrations required under GACAR §§ 133.41(c) and 133.43(b) and the training required under GACAR § 133.121(b)(2):

(1) The knowledge areas consist of the following:

- (i) Steps to be taken before starting operations, including survey of the pickup and drop areas;
- (ii) Proper assembly of the towing apparatus;
- (iii) Performance capabilities under approved operating procedures and limitations, of the aircraft to be used;
- (iv) Proper instruction of flight crew and ground workers; and
- (v) The manual content required under paragraph (c)(1) of this appendix.

(b) ***Aircraft and Equipment.***

(1) ***Towline assembly.*** The towline assembly consists of the towrope, safety link, and towings.

- (i) The towrope must have a breaking strength of 10 times the banner mass.
- (ii) The strength of the safety link must not be more than 90 percent of the strength of the towrope or 90 percent of the allowable towing force specified for the tow hook. The safety link must be installed at the point of attachment of the towrope to the tow airplane.

(2) ***Climb performance.*** When towing a banner with the tow airplane at its maximum approved operating mass, the minimum rate of climb—

- (i) Must be 100 ft/min (30 m/min) at 1 000 ft (300 m) above the take-off surface at the ambient temperature in which towing operations will take place or

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(ii) Must be 300 ft/min (75 m/min) at sea level on a standard day.

(3) *Engine cooling.* When conducting airplane banner towing operations, one of the following requirements must be satisfied:

(i) The airplane must be fitted with a functioning cylinder head temperature gauge, or

(ii) The certificate holder must demonstrate adequate cooling with the towed load.

(4) *Release lever.* Each aircraft used in banner towing operations must be equipped with an easily accessible lever or other control that permits the pilot to release the towed banner while in flight.

(5) *Tow hitch.* If the tow hitch is not part of an original factory installation, aircraft records must be inspected before initial operation to ensure the aircraft maintenance records describe the installation of the tow hitch.

(6) *Placards.* The following markings and placards must be displayed conspicuously and must be such that they cannot be easily erased, disfigured, or obscured:

(i) A placard (placed in the flightdeck) stating the banner mass limitations of the tow hitch,

(ii) A placard near the airspeed indicator noting any changes to the airplane stall speeds, and

(iii) A placard indicating the direction of operation of the release lever.

(c) ***Manual requirements.***

(1) The manual required by GACAR § 133.61 must include a section on banner towing operations.

(2) The manual content required under paragraph (c)(1) of this appendix must set forth, for each aircraft and towing apparatus configuration to be used—

(i) The maximum load that can be applied to the tow hook;

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- (ii) The maximum size of a banner that can be towed;
- (iii) Aircraft mass restrictions associated with towing, if any;
- (iv) Maneuver limitations, if any;
- (v) Any additional equipment required, such as temperature gauges or mirrors;
- (vi) Types of operation and occupancy restrictions, such as the carriage of passengers;
- (vii) Recommended normal and emergency procedures associated with towing operations, including—
 - (A) The recommended operating speeds, power settings, and preflight inspection of the towline assembly and
 - (B) Any special notes, cautions, and warnings associated with the operations.
- (viii) Any changes to the aircraft stall speeds; and
- (ix) Instructions and observations regarding the impact of the towed load on the performance of the aircraft.

(d) **Flight operations.** In addition to the provisions and requirements of GACAR Part 133, the following provisions and requirements are applicable to the conduct of banner towing operations:

- (1) Inspection procedures and the service lives of towing installation components, including towlines, must be in accordance with manufacturers' instructions. Where such instructions are not available—
 - (i) The towrope and safety link must be inspected at the start of every flying day and if broken strands are found, the rope must be replaced before conducting any flight operation. Damaged thimbles and deformed rings must be replaced before conducting any flight operation.
 - (ii) The tow hook release mechanism must be inspected daily, when in use, for wear and proper operation.

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- (2) Operations must not be conducted over an open-air assembly of persons.
- (3) Operations must begin and end in an area of the aerodrome that is free from use by the public and located away from active taxiways and runways. The pickup and drop area must have a clear approach path that allows for safe operation.
- (4) Operations must be limited to day VFR only operations.
- (5) If a ground crew is used, a prearranged communication signal must be established so the ground crew can notify the pilot and/or banner tow operator of problems or malfunctions with the equipment or banner.

(e) ***Rotorcraft banner towing.***

- (1) The certificate holder must provide means to prevent the banner from becoming entangled in the rotorcraft's tail rotor during all phases of flight, including autorotations.
- (2) A GACAR Part 133 certificate holder may tow a banner using an external-load attaching means if its operating certificate has at least a Class B authorization.
- (3) The provisions of GACAR § 91.67(e) are not applicable when conducting banner towing operations. Operations over congested areas or in close proximity to open-air assemblies of persons must not be lower than 1000 ft (300 m) above the highest obstacle within a horizontal radius of 600 m and operations elsewhere must be conducted in compliance with GACAR § 91.67(c).