GHANA CIVIL AVIATION (FLIGHT STANDARDS) DIRECTIVES



PART 11 – AERIAL WORK

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INTRODUCTION

Part 11 sets forth the requirements for aerial work operations, including agricultural aviation, helicopter external load carrying, glider and banner towing, TV and movie operations, sight-seeing flights, fish spotting and traffic reporting.

For aerial work operations carried out outside the boundaries of Ghana the aircraft involved must be operated and maintained in accordance with the International Civil Aviation Organization Standards set forth in these Flight Standards Directives.

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11.1 GENERAL

11.1.1 APPLICABILITY

- (1) This part shall be applicable to operators and operations that are considered to be aerial work in Ghana.
- (2) No person shall conduct aerial work in Ghana without having been certified by the Authority.
- (3) All persons who conduct aerial work in Ghana shall comply with the applicable airworthiness and operational requirements of this Part, except where this part grants relief from those requirements or specifies additional requirements.
- (4) All persons who conduct aerial work in Ghana in a Remotely Piloted Aircraft (RPA) shall comply with the requirements for Remotely Piloted Aircraft in Part 28 of these Flight Standards Directives.

11.1.2 DEFINITIONS

For the purpose of this Part, the following Definitions shall apply:

Aerial work. An aircraft operation in which an aircraft is used for specialised service such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

Aerobatic flight. An intentional manoeuvre involving an abrupt change in an aircraft's attitude, and abnormal attitude, or abnormal acceleration, not necessary for normal flight.

Agricultural aircraft operation. The operation of an aircraft for the purpose of-

- (a) Dispensing any economic poison,
- (b) Dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control, or
- (c) Engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.

Banner. An advertising medium supported by a temporary framework attached externally to the aircraft and towed behind the aircraft.

Economic poison. Any substance or mixture of substances intended for-

- (a) Preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, weeds, and other forms of plant or animal life or viruses, except viruses on or in living human beings or other animals, which the Ghana may declare to be a pest, and
- (b) Use as a plant regulator, defoliant or desiccant.

Rotorcraft load combinations. Configurations for external loads carried by rotorcraft-

(a) Class A – external load fixed to the rotorcraft, cannot be jettisoned, and does not extend below the landing gear, used to transport cargo.

- (b) Class B external load suspended from the rotorcraft, which can be jettisoned, and it transported free of land or water during rotorcraft operations.
- (c) Class C external load suspended from the rotorcraft, which can be jettisoned, but remains in contact with land or water during rotorcraft operation.
- (d) Class D external load suspended from the rotorcraft for the carriage of persons.

11.1.3 ABBREVIATIONS

The following acronyms are used in this Part:

- AGL Above Ground Level
- PIC Pilot in Command
- IFR –Instrument Flight Rules

11.2 AGRICULTURAL AIRCRAFT OPERATIONS

11.2.1 GENERAL

- (1) This Part prescribes rules governing-
 - (a) Agricultural aircraft operations within Ghana; and
 - (b) The issue of commercial and private agricultural aircraft operator certificates for those operations.
- (2) In a public emergency, a person conducting agricultural aircraft operations under This Part may, to the extent necessary, deviate from the operating rules of This Part for relief and welfare activities approved by an agency of the national or a local government.
- (3) Each person who, under the authority of this section, deviates from a rule of This Part shall, within 10 days after the deviation send to the Authority a complete report of the aircraft operation involved, including a description of the operation and the reasons for it.

11.2.2 CERTIFICATION RULES

11.2.2.1 CERTIFICATE REQUIRED

- (1) Except as provided in paragraphs (3) and (4) of this section, no person may conduct agricultural aircraft operations without, or in violation of, an agricultural aircraft operator certificate issued under This Part.
- (2) An operator may, if it complies with this Subpart, conduct agricultural aircraft operations with a rotorcraft with external dispensing equipment in place without a rotorcraft external-load operator certificate.

- (3) A local or national government conducting agricultural aircraft operations with public aircraft need not comply with this Subpart.
- (4) The holder of a rotorcraft external-load operator certificate under this Part may conduct an agricultural aircraft operation, involving only the dispensing of water on forest fires by rotorcraft external-load means.

11.2.2.2 APPLICATION FOR CERTIFICATE

An applicant for an agricultural aircraft operator certificate shall apply on a form and in a manner prescribed by the Authority.

11.2.2.3 AMENDMENT OF CERTIFICATE

- (1) An agricultural aircraft operator certificate may be amended-
 - (a) On the Authority's own initiative, under applicable laws and Directives; or
 - (b) Upon application by the holder of that certificate.
- (2) A certificate holder shall submit any application to amend an agricultural aircraft operator certificate on a form and in a manner prescribed by the Authority. The applicant shall file the application at least 15 days before the date that is proposes the amendment become effective, unless the Authority approves a shorter filing period.
- (3) The Authority will grant a request to amend a certificate if it determines that safety in air commerce and the public interest so allow.
- (4) Within 30 days after receiving a refusal to amend, the holder may petition the Authority to reconsider the refusal.

11.2.2.4 CERTIFICATION REQUIREMENTS

- (1) General. Except as provided by paragraph (1)(c) of this section-
 - (a) The Authority will issue a private agricultural aircraft operator certificate to an applicant who meets the requirements of this Subpart for that certificate.
 - (b) The Authority will issue a commercial agricultural aircraft operator certificate to an applicant who meets the requirements of this Subpart for that certificate.
 - (c) An applicant who applies for an agricultural aircraft operator certificate containing a prohibition against the dispensing of economic poisons is not required to demonstrate knowledge specific to economic poisons.
- (2) *Pilots.*
 - (a) A private operator-pilot applicant shall hold a current Ghana private, commercial, or airline transport pilot certificate and be properly rated for the aircraft to be used.
 - (b) A commercial operator-pilot applicant shall hold, or have available the services of at least one pilot who holds a current commercial or airline transport pilot

certificate issued by the Authority and who is properly rated for the aircraft to be used.

- (3) *Aircraft.* The applicant shall have at least one certified and airworthy aircraft, equipped for agricultural operation.
- (4) *Knowledge and skill tests*. The applicant shall show that it has satisfactory knowledge and skill of the following agricultural aircraft operations.
 - (a) **Knowledge**
 - (i) Steps to be taken before starting operations, including a survey of the area to be worked.
 - (ii) Safe handling of economic poisons and the proper disposal of used containers for those poisons.
 - (iii) The general effects of economic poisons and agricultural chemicals on plants, animals, and persons, and the precautions to be observed in using poisons and chemicals.
 - (iv) Primary symptoms of poisoning of persons from economic poisons, the appropriate emergency measures to be taken, and the location of poison control centres.
 - (v) Performance capabilities and operating limitations of the aircraft to be used.
 - (vi) Safe flight and application procedures.
 - (b) **Skill** in the following manoeuvres, demonstrated at the aircraft's maximum certified take-off weight, or the maximum weight established for the special purpose load, whichever is greater:
 - (i) Short-field and soft-field takeoffs (aeroplanes and gyroplanes only).
 - (ii) Approaches to the working area.
 - (iii) Flare-outs
 - (iv) Swath runs.
 - (v) Pull-ups and turnarounds.
 - (vi) Rapid deceleration (quick stops) in helicopters only.

11.2.2.5 DURATION OF CERTIFICATE

An agricultural aircraft operator certificate is renewable on annual basis and may be surrendered or suspended, or revoked upon violation of these Directives.

11.2.3 OPERATING RULES

11.2.3.1 GENERAL

- (1) Except as provided in paragraph (3) of this section, this section prescribes rules that apply to persons and aircraft used in agricultural aircraft operations conducted under this Part.
- (2) The holder of an agricultural aircraft operator certificate may deviate from the provisions of Part 9 without a certificate of waiver when conducting aerial work operations related to agriculture, horticulture, or forest preservation in accordance with the operating rules of this section.
- (3) The operating rules of this Subpart apply to Rotorcraft External load certificate holders conducting agricultural aircraft operations involving only the dispensing of water on forest fires by rotorcraft external-load means.

11.2.3.2 CARRYING OF CERTIFICATE

- (1) No person may operate an aircraft unless a copy of the agricultural operator certificate is carried on that aircraft.
- (2) The registration and airworthiness certificates issued for the aircraft need not to be carried in the aircraft provided that those certificates not carried in the aircraft shall be kept available for inspection at the base from which the dispensing operation is conducted.

11.2.3.3 LIMITATIONS ON PRIVATE AGRICULTURAL AIRCRAFT OPERATOR

No person may conduct an agricultural aircraft operation under the authority of a private agricultural aircraft operator certificate-

- (a) For compensation or hire;
- (b) Over a congested area; or
- (c) Over any property unless he or she is the owner or lessee of the property, or has ownership or other property interest in the crop located on that property.

11.2.3.4 MANNER OF DISPENSING

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

11.2.3.5 ECONOMIC POISON DISPENSING

- (1) Except as provided in paragraph (2) of this section, no person may dispense or cause to be dispensed, any economic poison that is registered with Ghana-
 - (a) For a use other than that which it is registered.
 - (b) Contrary to any safety instructions or use limitations on its label; or
 - (c) In violation of any law or regulation of Ghana.

- (2) This section does not apply to any person dispensing economic poisons for experimental purposes under-
 - (a) The supervision of a Ghana agency authorised by law to conduct research in the field of economic poisons; or
 - (b) A permit from Ghana.

11.2.3.6 PERSONNEL

- (1) **Information.** The holder of an agricultural aircraft operator certificate shall ensure that each person used in the holder's agricultural aircraft operation is informed of that person's duties and responsibilities.
- (2) **Supervisors.** No person may supervise an agricultural aircraft operation unless he or she has met the knowledge and skill requirements of this Subpart.
- (3) **Pilot in command.** No person may act as pilot in command of an aircraft operated under this Subpart unless that pilot-
 - (a) Holds a pilot certificate and rating prescribed by this Subpart as appropriate to the type of operation conducted; or
 - (b) Has demonstrated to the holder of the Agricultural Aircraft Operator Certificate conducting the operation, or to a supervisor designated by that certificate holder, that he or she possesses the knowledge and skill requirements of this Subpart.

11.2.3.7 OPERATIONS IN CONTROLLED AIRSPACE DESIGNATED FOR AN AIRPORT

- (1) Except for flights to and from a dispensing area, no person may operate an aircraft within the lateral boundaries of the surface area of Class D airspace designated for an airport unless authorisation for that operation has been obtained from the ATC facility having jurisdiction over that area.
- (2) No person may operate an aircraft in weather conditions below VFR minimums within the lateral boundaries of a Class E airspace area that extends upward from the surface unless authorisation for that operation has been obtained from the ATC facility having jurisdiction over that area.
- (3) A certificate holder may operate an aircraft under special VFR weather minimums without meeting the requirements prescribed in Part 9.

11.2.3.8 OPERATION OVER CONGESTED AREAS: GENERAL

- (1) A certificate holder may operate or cause the operation of an aircraft over a congested area at altitudes required if the operation is conducted with-
 - (a) The maximum safety to persons and property on the surface, consistent with the operation, and
 - (b) A plan for each operation, submitted to the Authority and has been approved by the Authority, which includes-

- i. Obstructions to flight;
- ii. Emergency landing capabilities of the aircraft to be used; and
- iii. Any necessary co-ordination with air traffic control;
- (2) Each certificate holder shall ensure that all single engine aircraft while in a congested area operate:
 - (a) Except for helicopters, during take offs and turnarounds, with no load.
 - (b) Not below the altitudes prescribed in Part 9 except during the actual dispensing operation, including the approaches and departures necessary for that operation.
 - (c) During the actual dispensing operation, including the approaches and departures for that operation, not below the altitudes prescribed in Part 9 unless it is in an area and at such an altitude that the aircraft can make an emergency landing without endangering persons or property on the surface.
- (3) Each certificate holder shall ensure that all multi-engine aircraft while in a congested area operate:
 - (a) During takeoff, under conditions that will allow the aeroplane to be brought to a safe stop within the effective length of the runway from any point on takeoff up to the time of attaining, with all engines operating at normal takeoff power, 105 percent of the minimum control speed with the critical engine inoperative in the takeoff configuration or 115 percent of the power-off stall speed in the takeoff configuration whichever is greater.

Note: Assume still-air conditions, and no correction for any uphill gradient of 1 percent or less when the percentage is measured as the difference between elevation at the end points of the runway divided by the total length. For uphill gradients greater than 1 percent, the effective takeoff length of the runway is reduced 20 percent for each 1-percent grade.

(b) At a weight greater than the weight that, with the critical engine inoperative, would permit a rate of climb of at least 1,524 metres per minute at an altitude of at least 3,048 metres above the elevation of the highest ground or obstruction within the area to be worked or at an altitude of 1,524 metres, whichever is higher.

Note: Assume that the propeller of the inoperative engine is in the minimum drag position, that the wing flaps and landing gear are in the most favourable positions; and that the remaining engine or engines are operating at the maximum continuous power available.

- (c) Below the altitudes prescribed in Part 9 except during the actual dispensing operation, including the approaches, departures, and turnarounds necessary for that operation.
- (4) Each certificate holder shall issue notice of the intended operation to the public as shall be specified by the Authority.

11.2.3.9 OPERATION OVER CONGESTED AREAS: PILOTS AND AIRCRAFT

(1) **Pilots.** Each pilot in command must have at least-

- (a) 25 hours of pilot-in-command flight time in the make and basic model of the aircraft, including at least 10 hours within the preceding 12 calendar months; and
- (b) 100 hours of flight experience as pilot in command in dispensing agricultural materials or chemicals.

(2) Aircraft.

Except for helicopters, each aircraft shall be capable of jettisoning at least one-half of the aircraft's maximum authorised load of agricultural material within 45 seconds. If the aircraft is equipped to release the tank or hopper as a unit, there shall be means to prevent inadvertent release by the pilot or other crew member.

11.2.3.10 AVAILABILITY OF CERTIFICATE

Each holder of an agricultural aircraft operator certificate shall keep that certificate at its home base and shall present it for inspection on the request of the Authority or any government law enforcement officer.

11.2.4 RECORDS AND REPORTS

11.2.4.1 RECORDS; COMMERCIAL AGRICULTURAL AIRCRAFT OPERATOR

- (1) Each holder of a commercial agricultural aircraft operator certificate shall maintain and keep current, at the home base designated in its application, the following records-
 - (a) The name and address of each person for whom agricultural aircraft services were provided;
 - (b) The date of the service;
 - (c) The name and quantity of the material dispensed for each operation conducted; and
 - (d) The name, address, and certificate number of each pilot used in agricultural aircraft operations and the date that pilot met the knowledge and skill requirements of this Subpart.
- (2) The records required by this section must be kept for at least 12 months.

11.2.4.2 CHANGE OF ADDRESS

Each holder of an agricultural aircraft operator certificate shall notify the Authority in writing in advance of any change in the address of its home base of operations.

11.2.4.3 TERMINATION OF OPERATIONS

Whenever a certificate holder ceases operations under This Part, it shall surrender that certificate to the designated office of the Authority.

11.3 ROTORCRAFT EXTERNAL LOADS

11.3.1 APPLICABILITY

- (1) This Subpart prescribes-
 - (a) Airworthiness certification rules for rotorcraft used in external-load operations; and
 - (b) Operating and certification rules governing the conduct of rotorcraft externalload operations in Ghana.
- (2) The certificate rules of This Part do not apply to-
 - (a) Rotorcraft manufacturers when developing external-load attaching means;
 - (b) Operations conducted by a person demonstrating compliance for the issuance of a certificate or authorisation under This Part;
 - (c) Training flights conducted in preparation for the demonstration of compliance with This Part; or
 - (d) A local or national government conducting operations with public aircraft.
- (3) For the purpose of This Part, a person other than a crew member or a person who is essentially and directly connected with the external-load operation may be carried only in approved Class D rotorcraft-load combinations.

11.3.2 CERTIFICATION RULES

11.3.2.1 CERTIFICATE REQUIRED

No person subject to This Part may conduct rotorcraft external-load operations without, or in violation of the terms of, a Rotorcraft External-Load Operator Certificate or equivalent authorisation issued by the Authority.

11.3.2.2 DURATION OF CERTIFICATE

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.

11.3.2.3 APPLICATION FOR CERTIFICATE ISSUANCE OR RENEWAL

Application for an original certificate or renewal of a certificate issued under This Part is made on a form an in a manner, prescribed by the Authority.

11.3.2.4 REQUIREMENTS FOR ISSUANCE OF A ROTORCRAFT EXTERNAL-LOAD OPERATOR CERTIFICATE

(1) If an applicant shows that it complies with this Subpart, the Authority will issue a Rotorcraft External-Load Operator Certificate to it.

(2) The Authority will issue authorisation to operate specified rotorcraft with those classes of rotorcraft-load combinations for which the applicant or certificate holder qualifies under the applicable provisions of this Subpart.

11.3.2.5 ROTORCRAFT

An applicant must have the exclusive use of at least one rotorcraft that-

- (a) Was type certified under, and meets the requirements of, the several parts of these Directives which prescribe requirements for rotorcraft external-load operations;
- (b) Complies with the certification provisions in this Subpart that apply to the rotorcraft-load combinations for which authorisation is requested, and
- (c) Has a valid standard or restricted category airworthiness certificate.

11.3.2.6 PERSONNEL

- (1) An applicant shall hold, or have available the services of at least one person who holds a current commercial or airline transport pilot certificate issued by the Authority with a rating appropriate for the rotorcraft to be used.
- (2) An applicant shall designate one pilot, who may be the applicant, as chief pilot for rotorcraft external-load operations.
- (3) An applicant may designate qualified pilots as assistant chief pilots to perform the functions of the chief pilot when the chief pilot is not readily available.
- (4) The chief pilot and assistant chief pilots must be acceptable to the Authority and each must hold a current Commercial or Airline Transport Pilot Certificate, with a rating appropriate for the rotorcraft to be used.
- (5) The holder of a Rotorcraft External-load Operator Certificate shall report any change in designation of chief pilot or assistant chief pilot immediately to the Authority.
- (6) A newly designated chief pilot shall comply with the knowledge and skill requirements of this Subpart within 30 days or the operator may not conduct further operations under the Rotorcraft External-Load Operator Certificate, unless otherwise authorised by the Authority.

11.3.2.7 AMENDMENT OF CERTIFICATE

- (1) The holder of a Rotorcraft External-Load Certificate may apply to the Authority for an amendment of its certificate, to add or delete a rotorcraft-load combination authorisation.
- (2) The holder of a rotorcraft external-load certificate may apply for an amendment to add or delete a rotorcraft authorisation by submitting to the Authority a new list of rotorcraft, by registration number, with the classes of rotorcraft-load combinations for which authorisation is requested.

11.3.2.8 AVAILABILITY, TRANSFER, AND SURRENDER OF CERTIFICATE

- (1) Each person conducting a rotorcraft external-load operation shall carry a copy of the Rotorcraft External-Load Operator Certificate in each rotorcraft used in the operation.
- (2) A certificate holder shall return its certificate to the Authority-
 - (a) If the Authority suspends or revokes its Rotorcraft External-Load Operator Certificate; or
 - (b) If the certificate holder discontinues operations and does not resume operations within two years.

11.3.3 OPERATING RULES AND RELATED REQUIREMENTS

11.3.3.1 OPERATING RULES

- (1) No person may conduct a rotorcraft external load operation without, or contrary to, the Rotorcraft or Load Combination Flight Manual prescribed in 11.3.4.4
- (2) No person may conduct a rotorcraft external load operation unless-
 - (a) The rotorcraft complies with 11.3.2.6, and
 - (b) The rotorcraft and rotorcraft or load combination is authorised under the Rotorcraft External Load Operator Certificate.
- (3) 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 or load combination is of the same class), that person shall conduct, in a manner that will not endanger persons or property on the surface, such of the following flight operational checks as the Authority determines are appropriate to the rotorcraft or load combination;
 - (a) A determination that the weight of the rotorcraft or load combination and the location of its centre 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.
 - (b) Make an initial liftoff and verify that controllability is satisfactory.
 - (c) While hovering, verify that directional control is adequate.
 - (d) 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.
 - (e) 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.
 - (f) Increase the forward airspeed and determine an operational airspeed at which no hazardous oscillation or hazardous aerodynamic turbulence is encountered.

- (4) Notwithstanding the provisions of Part 8, the holder of a Rotorcraft External Load Operator Certificate may conduct rotorcraft external load operations over congested areas if those operations are conducted without hazard to persons or property on the surface and comply with the following:
 - (a) The operator shall develop a plan for each complete operation and obtain approval for the operation from the Authority.

Note: The plan must include an agreement with the appropriate political subdivision that local officials will exclude unauthorised persons from the area in which the operation will be conducted, coordination with air traffic control, if necessary, and a detailed chart depicting the flight routes and altitude.

- (b) Each flight shall be conducted at an altitude and on a route, that will allow a jettisonable external load to be released, and the rotorcraft landed, in an emergency without hazard to persons or property on the surface.
- (5) Notwithstanding the provisions of Part 8, and except as provided in 11.3.4.3(d), the holder of a Rotorcraft External Load Operator Certificate may conduct external load operations, including approaches, departures, and load positioning manoeuvres necessary for the operation, below 160 metres above the surface and closer than 160 metres to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface.
- (6) No person may conduct rotorcraft external load operations under IFR unless specifically approved by the Authority.

11.3.3.2 CARRIAGE OF PERSONS

- (1) No AOC holder may allow a person to be carried during rotorcraft external load operations unless that person-
 - (a) Is a flight crew member;
 - (b) is a flight crew member trainee;
 - (c) performs an essential function in connection with the external load operation; or
 - (d) is necessary to accomplish the work activity directly associated with that operation.
- (2) The PIC 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.

11.3.3.3 CREW MEMBER TRAINING, CURRENCY, AND TESTING REQUIREMENTS

- (1) No certificate holder may use, nor may any person serve, as a pilot in helicopter external load operations unless that person-
 - (a) Has successfully demonstrated to the Authority the knowledge and skill with respect to the rotorcraft or load combination; and
 - (b) Has in his or her personal possession a letter of competency or an appropriate logbook entry indicating compliance with paragraph (1)(a) of this subpart.

- (2) No AOC holder may use, nor may any person serve as, as crew member or other operations personnel in Class D operations unless, within the preceding 12 calendar months, that person has successfully completed either an approved initial or a recurrent training program.
- (3) Notwithstanding the provisions of (2) of this subpart, a person who has performed a rotorcraft external load operation of the same class and in an aircraft of the same type within the past 12 calendar months need not undergo recurrent training.

11.3.4 AIRWORTHINESS REQUIREMENTS

11.3.4.1 FLIGHT CHARACTERISTICS REQUIREMENTS

- (1) The applicant must demonstrate to the Authority, by performing the following operational flight checks 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 purpose of this demonstration, the external-load weight (including the external-load attaching means) is the maximum weight for which authorisation is requested.
- (2) **Class A rotorcraft-load combinations:** The operational flight check must consist of at least the following manoeuvres:
 - (a) Take off and landing.
 - (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 authorisation is requested.
- (3) **Class B and D rotorcraft-load combinations:** The operational flight check must consist of at least the following manoeuvres:
 - (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 authorisation is requested.
 - (e) Demonstrating appropriate lifting device operation.
 - (f) 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.
- (4) **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 (3) of this section.

11.3.4.2 STRUCTURES AND DESIGN

- (1) *External-load attaching means.* Each external-load attaching means shall be approved by the Authority.
- (2) **Quick release devices.** Each quick release device means shall be approved by the Authority.

(3) Weight and centre of gravity.

- (a) **Weight.** The total weight of the rotorcraft-load combination must not exceed the total weight approved for the rotorcraft during its type certification.
- (b) **Centre of gravity.** The location of the centre 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 centre of gravity remains within its established range.

11.3.4.3 OPERATIONAL LIMITATIONS

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

- (a) The rotorcraft-load combination may be operated only within the weight and centre of gravity limitations established in accordance with this Subpart.
- (b) The rotorcraft-load combination may not be operated with an external load weight exceeding that used in showing compliance with this Subpart.
- (c) The rotorcraft-load combination may not be operated at airspeeds greater than those established in accordance with this Subpart.
- (d) No person may conduct an external-load operation under This Part with a rotorcraft type certified in the restricted category over a densely populated area, in a congested airway, or near a busy airport where passenger transport are conducted.
- (e) 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 certified under transport Category A for the operating weight and provide hover capability with one engine inoperative at that operating weight and altitude.
 - ii. The rotorcraft must be equipped to allow direct radio intercommunication among required crew members.
 - iii. The personnel lifting device must be approved by the Authority.

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

11.3.4.4 ROTORCRAFT-LOAD COMBINATION FLIGHT MANUAL

The applicant must prepare a Rotorcraft-Load Combination Flight Manual and submit it if for approval by the Authority. The limiting-height speed envelope data need not be listed as operating limitations. The manual shall set forth:-

- (a) Operating limitations, procedures (normal and emergency), performance, and other information established under this Subpart;
- (b) The class of rotorcraft-load combinations for which the airworthiness of the rotorcraft has been demonstrated in accordance with this Subpart; and
- (c) In the information section of the Rotorcraft-Load Combination Flight Manual
 - i. Information on any peculiarities discovered when operating particular rotorcraft-load combinations;
 - ii. Precautionary advice regarding static electricity discharges for Class B, Class C, and Class D rotorcraft-load combinations; and
 - iii. Any other information essential for safe operation with external loads.

11.3.4.5 MARKINGS AND PLACARDS

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

- (a) A placard (displayed in the cockpit or cabin) stating the class of rotorcraft-load combination and the occupancy limitation for which the rotorcraft has been approved.
- (b) A placard, marking, or instruction (displayed next to the external-load attaching means) stating the maximum external load approved.

11.3.4.6 AIRWORTHINESS CERTIFICATION

A Rotorcraft External-Load Operator Certificate is a current and valid airworthiness certificate for each rotorcraft type and listed by registration number on a list attached to the certificate, when the rotorcraft is being used in operations conducted under This Part.

11.4 GLIDER TOWING

11.4.1 APPLICABILITY

This Subpart applies to those operations involving towing gliders by aircraft.

11.4.2 CERTIFICATE OR AUTHORISATION REQUIRED

- (1) No person shall conduct glider towing operations covered by this subpart without a certificate or equivalent authorisation issued by the Authority.
- (2) The Authority shall issue a certificate or authorisation to each applicant who satisfies the requirements specified in this subpart.

11.4.3 AIRCRAFT REQUIREMENTS

- (1) No person shall operate an aircraft that is towing a glider except where:
 - (a) The aircraft is equipped with a tow hook and release control system that meets the applicable standards of airworthiness, and
 - (b) The towline used has a breaking strength not less than 80 percent of the maximum certificated operating weight of the glider and not more than twice the maximum certificated operating weight.
- (2) However, the towline used may have a breaking strength more than twice the maximum certificated operating weight of the glider if—
 - (a) A safety link is installed at the point of attachment of the towline to the glider with a breaking strength not less than 80 percent of the maximum certificated operating weight of the glider and not greater than twice this operating weight, or
 - (b) A safety link is installed at the point of attachment of the towline to the towing aircraft with a breaking strength greater, but not more than 25 percent greater, than that of the safety link at the towed glider end of the towline and not greater than twice the maximum certificated operating weight of the glider.

11.4.4 EXPERIENCE AND TRAINING REQUIREMENTS

- (1) No person may act as a tow pilot for a glider unless that person has-
 - (a) At least, a private pilot licence with a category rating for the tow aircraft,
 - (b) Logged at least 100 hours of pilot-in-command time in same aircraft category, class, and type, if applicable, as the tow aircraft;
 - (c) Received training in and instructor endorsement for
 - i. The techniques and procedures essential to the safe towing of gliders, including airspeed limitations;
 - ii. Emergency procedures;
 - iii. Signals used, and
 - iv. Maximum angles of bank.
 - (d) Except as provided in paragraph (b) of this section, has completed and had endorsed at least three flights as the sole manipulator of the controls of an aircraft towing a glider or simulation glider-towing flight procedures while accompanied by a pilot who meets the requirements of this section, and

- (e) Except as provided in paragraph (b) of this section, has received a logbook endorsement from the pilot, described in paragraph (1)(d) of this section, certifying that the person has accomplished at least 3 flights in an aircraft while towing a glider, and
- (a) Within the preceding 12 months has
 - i. Made at least three actual glider tows; or
 - ii. Made at least three flights as pilot in command of a glider towed by an aircraft.
- (2) The pilot, described in paragraph (1)(d) of this section, who endorses the logbook of a person seeking towing privileges must have
 - (a) Met the requirements of this section prior to endorsing the logbook of the person seeking glider-towing privileges, and
 - (b) Logged at least 10 flights as pilot in command of an aircraft while towing a glider.
- (3) If the pilot described in paragraph (1)(d) of this section holds only a private pilot licence, then that pilot must have,
 - (a) Logged at least 100 hours of pilot-in-command time in airplanes, or 200 hours of pilot in command time in a combination of powered and other tan powered aircraft, and
 - (b) Performed and logged at least three flights within the 12 calendar months preceding the month that pilot accompanies or endorses the logbook of a person seeking towing privileges -
 - (i) In an aircraft while towing a glider vehicle accompanied by another pilot who meets the requirements of this section, or
 - (ii) As pilot in command of a glider being towed by an aircraft.

11.5 BANNER TOWING

11.5.1 APPLICABILITY

This Subpart applies to those operations involving towing by aircraft banners or other signs, lit or unlit.

11.5.2 CERTIFICATE OR AUTHORISATION REQUIRED

- (1) The Authority will require each person conducting operations covered by this Subpart to hold a certificate or equivalent authorisation.
- (2) The Authority will issue a certificate or authorisation to each applicant who qualifies for it under the provisions of this Subpart.
- (3) A helicopter operating under the provision of Subpart 11.5 may tow a banner using an external load attaching means with a certificate only if the operator has at least a Class B authorisation on the operating certificate.

11.5.3 AIRCRAFT REQUIREMENTS

- (1) No person may operate an aircraft that is towing a banner unless the aircraft is equipped with a tow hook and release control system that meets the applicable standards of airworthiness.
- (2) No person may operate a helicopter that is towing a banner unless the helicopter has a means to prevent the banner from becoming entangled in the helicopter's tail rotor during all phases of flight, including auto-rotations.

Note: The only way to prevent the banner from entangling in the tail rotor during autorotation may be to jettison the banner.

11.5.4 EXPERIENCE AND TRAINING REQUIREMENTS

- (1) For non-revenue flights, the pilot of the tow aircraft shall hold at least a valid private pilot certificate and have a minimum of 200 hours PIC time.
- (2) When banner tow operations are conducted for compensation or hire, the pilot shall have at least a commercial pilot certificate (instrument rating not required) and at least a valid second class medical certificate.
- (3) All pilots engaged in banner towing operations shall demonstrate competence to the Authority by performing at least one pickup and drop of the maximum number of letters (panels) to be used by the certificate holder.

Note: This demonstration should be observed from the ground to allow the inspector to evaluate the competence of any essential ground personnel as well as flight operation.

11.5.5 OPERATING RULES

- (1) All banner tow operations shall be conducted only-
 - (a) In VFR weather conditions, and
 - (b) Between the hours of official sunrise and official sunset.
- (2) No person may conduct banner towing operations-
 - (a) Over congested areas or open air assemblies of persons lower than 304.8 metres, and
 - (b) Elsewhere lower than the minimum safe altitude requirements of Part 8.

Note: Helicopters may be operated at less than the minimums prescribed in paragraph (2) if the operation is conducted without hazard to persons or property on the surface.

- (3) The certificate holder shall obtain the airport manager's approval to conduct banner tow operations.
- (4) If banner towing operations take place at an airport with a control tower, the certificate holder shall inform that control tower of the time of the banner tow operation.
- (5) The certificate holder shall notify the appropriate airport officials in advance when banner tow operations will be in close proximity to an uncontrolled airport.

- (6) Only essential crew members shall be carried when conducting banner tow operations.
- (7) When banner tow operations are conducted around congested areas, the pilot shall exercise due care so that, in the event of emergency release of the banner and or tow rope, it will not cause undue hazard to persons or property on the ground.
- (8) Each pilot shall drop the tow rope in a pre-designated area at least 152.4 metres from persons, buildings, parked automobiles, and aircraft.

Note: If the tow plane lands with the rope attached, due care will be exercised to avoid trailing the rope and endangering other aircraft in the air, or persons, property or aircraft on the surface.

(9) Each pilot conducting banner towing operations shall carry onboard the aircraft a current copy of the following certificate of Waiver or Authorisation allowing banner towing operations.

11.6 TV AND MOVIE OPERATIONS

11.6.1 APPLICABILITY

- (1) This Subpart applies to those operations involving movie filming, appearance in flight in movies, and airborne direction or production of such filming when those operations are conducted as part of a business enterprise or for compensation or hire.
- (2) For purposes of this Subpart, "movie" shall include film, videos, and live broadcast in any format, and the preparation and rehearsal for those operations.

11.6.2 CERTIFICATE OR AUTHORISATION REQUIRED

- (1) The Authority shall require each person conducting operations covered by this Subpart to hold a certificate or equivalent authorisation.
- (2) The Authority will issue a certificate or authorisation to each applicant who qualifies for it under the provisions of this Subpart.

11.6.3 AIRCRAFT REQUIREMENT

In order to be used in motion picture and television filming operations, aircraft in the experimental category shall have an airworthiness certificate issued for the purpose of exhibition.

11.6.4 EXPERIENCE AND TRAINING REQUIREMENTS

No pilot may conduct television and movie operations unless he or she has;

- (a) A commercial licence with ratings appropriate to the category, class and type of aircraft to be used under the terms of the authorisation.
- (b) At least 500 hours as PIC and at least 20 hours as PIC in the aircraft type.
- (c) A minimum of 100 hours in the category and class of aircraft to be used.

- (d) A minimum of 5 hours in the make and model aircraft to be used under the authorisation.
- (e) If the pilot intends to perform acrobatics below 1,500 AGL, the pilot must hold a Statement of Acrobatic Competency for the operations to be performed.

11.6.5 OPERATING RULES AND WAIVER REQUIREMENTS

- (1) No operator shall conduct operations which endanger persons or property on the surface or aircraft in flight.
- (2) Each operator shall obtain a waiver from the Authority if filming sequences require an aircraft to be flown—
 - (a) In acrobatic flight below 1,500 AGL,
 - (b) Over a congested area,
 - (c) In controlled airspace, or
 - (d) In other instances where a departure from the requirements in Part 8 is needed.
- (3) The holder of the waiver shall provide a schedule of events that lists the-
 - (a) Identification of the aircraft, and
 - (b) Performers in the sequence of their appearance.
- (4) Any manoeuvres added or time changes to the schedule of events shall be approved by the Authority.
- (5) The holder of the waiver shall develop, have approved by the Authority, and adhere to a Motion Picture and Television Flight Operations Manual.
- (6) When conducting any filming operation requiring an authorisation, the certificate holder shall ensure that all reasonable efforts are made to confine spectators to designated areas. If reasonable efforts have been taken and unauthorised persons or vehicles enter the airspace where manoeuvres are being performed during the filming production event, efforts shall be made to remove them.

11.6.6 CONTENTS OF A MOTION PICTURE AND TELEVISION FLIGHT OPERATIONS MANUAL

Each Motion Picture and Television Operations Manual shall contain at least the following:

(a) Company Organisation.

- i. Business names, addresses, and telephone number of applicant
- ii. Numbers, grade, and class and date of medicals for the pilots
- iii. List of aircraft by make and model
- (b) **Distribution and Revision.** Procedures for revising the manual to ensure that all manuals are kept current.

- (c) **Persons Authorised.** Procedures to ensure that no persons, except those persons consenting to be involved and necessary for the filming production, are allowed within 1,524 metres of the filming production area.
- (d) **Area of Operations.** The area that will be used during the term of the waiver.
- (e) **Plan of Activities.** Procedures for the submission, within three days of scheduled filming, a written plan of activities to the Authority containing at least the following;
 - i. Dates and times for all flights.
 - ii. Name and phone number of person responsible for the filming production event.
 - iii. Make and model of aircraft to be used and type of airworthiness certificate, including category
 - iv. Name of pilots involved in the filming production event.
 - v. A statement that permission has been obtained from property owners and or local officials to conduct the filming production event.
 - vi. Signature of waiver holder or a designated representative.
 - vii. A general outline, or summary, of the production schedule, to include maps or diagrams of the specific filming location, if necessary.
- (f) **Permission to Operate.** Requirements and procedures that the waiver holder will use to obtain permission from property owners and/or local officials (e.g. police, fire departments, etc) as appropriate for the conduct of all filming operations when using the waiver.
- (g) **Security.** Method of security that will be used to exclude all persons not directly involved with the operation from the location.

Note: This should also include the provision that will be used to stop activities when unauthorised persons, vehicles, or aircraft enter the operations area, or for any other reason, in the interest of safety.

- (h) **Briefing of Pilot or Production Personnel**. Procedures to brief personnel of the risks involved, emergency procedures, and safeguards to be followed during the filming production event.
- (i) **Certification or Airworthiness.** Procedures to ensure that required inspections will be conducted.
- (j) **Communications.** Procedures to provide communications capability with all particulars during the actual operation and filming.

Note: The applicant can use oral, visual, or radio communications as along as it keeps the participants continuously apprised of the current status of the operation.

(k) Accident Notification. Procedures for notification and reporting of accidents.

11.7 SIGHTSEEING FLIGHTS

11.7.1 APPLICABILITY

- (1) This subpart applies to those operations involving the carriage of persons for viewing natural formations, manmade objects or wildlife viewing on the ground when those operations are conducted as part of a business enterprise or for compensation or hire, and
- (2) The flight is unquestionably advertised as "sightseeing," and
- (3) The flight returns to the airport of departure without having landed at any other airport,
- (4) The flight is conducted within 25 statute mile radius of the departure airport, and
- (5) The certificated passenger capacity of the aircraft does not exceed 9 passengers.

Note: Any other passenger carrying flight for remuneration, hire or valuable consideration must be conducted under an Air Operator Certificate (AOC) as contained in Part 9 of the Ghana Civil Aviation (Flight Standards) Directives.

11.7.2 CERTIFICATE OR AUTHORISATION REQUIRED

- (1) The Authority will require each person conducting operations covered by this Subpart to hold a certificate or equivalent authorisation.
- (2) Each operator under this Subpart shall hold a certificate issued under the provisions of this Part.

11.7.3 EXPERIENCE AND TRAINING REQUIREMENTS

No pilot may conduct sightseeing operations unless he or she has:

- (a) At least a commercial licence with ratings appropriate to the category, class and type of aircraft to be used under the terms of the waiver.
- (b) At least 500 hours as PIC and at least 20 hours as PIC in the aircraft type.
- (c) A minimum of 100 hours in the category and class of aircraft to be used.
- (d) A minimum of 5 hours in the make and model aircraft to be used under the authorisation.

11.7.4 OPERATING RULES

- (1) Each operator shall conduct operations so as not to endanger persons or property on the surface nor aircraft in flight.
- (2) All sightseeing operations shall be conducted only—
 - (a) In VFR weather conditions, and
 - (b) Between the hours of official sunrise and official sunset.
- (3) No person may conduct sightseeing operations-
 - (a) Over congested areas or open air assemblies of persons lower than 1,000 feet, and
 - (b) Elsewhere lower than the minimum safe altitude requirements of Part 8.
- (4) The requirements of Part 8 of these Flight Standards Directives apply to sightseeing operations described by this subpart.

11.8 FISH SPOTTING

11.8.1 APPLICABILITY

This Subpart applies to those operations involving location, and reporting on the location of fish and fish schools, when those operations are conducted as part of a business enterprise or for compensation or hire.

11.8.2 CERTIFICATE OR AUTHORISATION REQUIRED

- (1) The Authority will require each person conducting operations covered by this Subpart to hold a certificate to hold a certificate or equivalent authorisation.
- (2) The Authority will issue a certificate or authorisation to each applicant who qualifies for it under the provisions of this Subpart.

11.8.3 OPERATING RULES

- (1) Each operator shall conduct operations so as not to endanger persons or property on the surface nor aircraft in flight.
- (2) Minimum cloud clearance requirements and minimum altitude requirements of Part 8 do not apply to those persons to whom the Authority has specifically approved different minimums as a part of an authorisation under this Subpart.

11.8.4 EXPERIENCE AND TRAINING REQUIREMENTS

No pilot may conduct fish spotting operations unless he or she has:

- (a) At least a commercial licence with ratings appropriate to the category and class aircraft to be used under the terms of the waiver.
- (b) At least 500 hours as PIC.
- (c) A minimum of 100 hours in the category and class of aircraft to be used.

11.9 TRAFFIC REPORTING

11.9.1 APPLICABILITY

This Subpart applies to those operations involving the observation of, and reporting on, vehicular traffic conditions on the highways and streets when conducted by aircraft or airmen, or both, not designated as solely public use.

11.9.2 CERTIFICATE OR AUTHORISATION REQUIRED

- (1) The Authority will require each person conducting operations covered by this Subpart to hold a Certificate or equivalent authorisation.
- (2) The Authority will issue a certificate or authorisation to each applicant who qualifies for it under the provisions of this Subpart.

11.9.3 OPERATING RULES

- (1) Each operator shall conduct operations so as not to endanger persons or property on the surface nor aircraft in flight.
- (2) Minimum cloud clearance requirements and minimum altitude requirements of Part 8 do not apply to those persons to whom the Authority has specifically approved different minimums as a part of an authorisation under this Subpart.

11.9.4 EXPERIENCE AND TRAINING REQUIREMENTS

No pilot may conduct news media or traffic reporting operations unless he has:

- (a) At least a commercial licence with ratings appropriate to the category, class and type aircraft to be used under the terms of the waiver.
- (b) At least 500 hours as PIC and at least 20 hours as PIC in the aircraft type.
- (c) A minimum of 100 hours in the category and class of aircraft to be used.
- (d) A minimum of 5 hours in the make and model aircraft to be used under the authorisation.

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