TABLE OF CONTENTS

SUBPART A – GENERAL

§ 101.1 Applicability.

(a) This part prescribes rules governing the operation of the following in the Kingdom of Saudi Arabia (KSA):

(1) Except as provided for in General Authority of Civil Aviation Regulation (GACAR) § 101.5, any unmanned balloon moored to the surface of the earth or an object thereon and with a diameter of more than 1.8 m or a gas capacity of more than 3 m3,

(2) Except as provided for in GACAR § 101.5, any kite with a mass of more than 2.3 kg and intended to be flown at the end of a rope or cable,

(3) Any amateur rocket as defined in GACAR Part 1 except aerial firework displays,

(4) Any unmanned free balloon as defined in GACAR Part 1,

(5) Any model aircraft as defined in GACAR Part 1, and

(6) Any unmanned aircraft system (UAS) as defined in GACAR Part 1.

(b) For the purposes of this part, a gyroglider attached to a vehicle on the surface of the earth is considered a kite.

§ 101.3 Operations in Prohibited or Restricted Areas.

No person may operate an unmanned balloon, kite, amateur rocket, model aircraft, or UAS in a prohibited or restricted area without permission from the administering authority.

§ 101.5 Hazardous Operations.

(a) No person may operate any unmanned balloon, kite, amateur rocket, model aircraft, or UAS in a manner that creates a hazard to other persons, or their property.

(b) No person operating any unmanned balloon, kite, amateur rocket, model aircraft, or UAS may allow an object to be dropped therefrom, if such action creates a hazard to other persons or their property.

SUBPART B – UNMANNED MOORED BALLOONS AND KITES

§ 101.21 Applicability.

(a) This subpart applies to the operation of unmanned moored balloons and kites. However, a person operating an unmanned moored balloon or kite within a restricted area must comply only with GACAR § 101.29 and with additional limitations imposed by the administering authority.

(b) The operation of manned tethered balloons is regulated under GACAR Part 91.

§ 101.23 Operating Limitations.

(a) Except as provided in paragraph (b) of this section, no person may operate an unmanned moored balloon or kite—

(1) Less than 500 ft (150 m) from the base of any cloud,

(2) More than 500 ft (150 m) above the surface of the earth,

(3) From an area where the ground visibility is less than 5 km, or

(4) Within 8 km of the boundary of any aerodrome.

(b) Paragraph (a) of this section does not apply to the operation of an unmanned balloon or kite below the top of any structure and within 75 m of it, if that shielded operation does not obscure any lighting on the structure.

§ 101.25 Notice Requirements.

No person may operate an unshielded unmanned moored balloon or kite more than 150 ft (50 m) above the surface of the earth unless, at least 24 hours before beginning the operation, he gives the following information to the air traffic control (ATC) facility nearest to the place of intended operation:

(a) The names and addresses of the owners and operators;

(b) The size of the balloon or the size and mass of the kite;

(c) The location of the operation.;

(d) The height above the surface of the earth at which the balloon or kite is to be operated; and

(e) The date, time, and duration of the operation.

§ 101.27 Lighting and Marking Requirements.

(a) No person may operate an unmanned moored balloon or kite, between sunset and sunrise unless the balloon or kite, and its mooring lines, are lighted to give a visual warning.

(1) The balloon or kite must be lighted using low-intensity or medium-intensity Type A or Type B obstruction lights as defined in Annex 14 to the Convention on International Civil Aviation, Volume I, Aerodrome Design and Operations, Chapter 6, Visual aids for denoting obstacles, as amended.

(2) The flashing lights must be displayed on the top, sides, and on the mooring line approximately 5 m below the balloon or kite to define the extremes of size and shape.

(3) The mooring line(s) must contain additional obstruction lights equally spaced along its length. There must be one additional obstruction light for every 100 m of length, or fraction thereof.

(4) Floodlighting may be used when the requirements of this section cannot be met.

(5) The lights required by this section may be operated 24 hours a day.

(b) No person may operate an unmanned moored balloon or kite between sunrise and sunset unless its mooring lines have flags attached beginning at 150 ft (50 m) above the surface of the earth. The size, color, and display intervals of the flags must meet the requirements specified in Annex 14 to the Convention on International Civil Aviation, Volume I, Aerodrome Design and Operations, Chapter 6, Visual aids for denoting obstacles, as amended for marking fixed objects.

§ 101.29 Rapid Deflation Device.

No person may operate an unmanned moored balloon unless it has a device that will deflate the balloon automatically and rapidly if it escapes from its moorings. If the device does not function properly, the operator must immediately notify the nearest ATC facility of the location and time of

the escape and the estimated flight path of the balloon.

SUBPART C – UNMANNED FREE BALLOONS

§ 101.41 Applicability.

This subpart applies to the operation of unmanned free balloons. However, a person operating an unmanned free balloon within a restricted area must comply with only GACAR §§ 101.45(a)(2) and (b) and with any additional limitations imposed by the administering authority.

§ 101.43 Classifications.

The following classifications apply to free balloons in this subpart:

(a) Light. An unmanned free balloon which carries a payload of one or more packages with a combined mass less than 4 kg, unless qualifying as a heavy balloon in accordance with paragraph (c)(2), (3), or (4) of this section.

(b) Medium. An unmanned free balloon which carries a payload of two or more packages with a combined mass between 4 kg and 6 kg, unless qualifying as a heavy balloon in accordance with paragraph (c)(2), (3), or (4) of this section.

(c) Heavy. An unmanned free balloon which carries a payload that—

(1) Has mass greater than 2 kg and has a mass/size ratio of more than 13 g/cm2 on any surface of the package, determined by dividing the total mass in grams of the payload package by the area in square centimeters of its smallest surface.

(2) Includes a package with a mass greater than 3 kg.

(3) Has a combined mass greater than 6 kg.

(4) Uses a rope or other device for suspension of the payload that requires an impact force of more than 230 N to separate the suspended payload from the balloon.

§ 101.45 Operating Limitations.

(a) ***All unmanned free balloons***. No person may operate an unmanned free balloon—

(1) Unless otherwise authorized by ATC, below 2 000 ft (600 m) above the surface within the

lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an aerodrome;

(2) In such a manner that impact of the balloon, or part thereof including its payload, with the surface creates a hazard to persons or property not associated with the operation; and

(3) Except for light unmanned free balloons used exclusively for meteorological purposes, with any portion of its flight path outside of KSA airspace without appropriate authorization from the foreign state:

(i) Each person operating an unmanned free balloon must obtain authorization from the foreign state prior to launch if there is any expectation that the balloon may drift into the territory of that state.

(ii) Each person operating an unmanned free balloon over the territory of a foreign state must operate in accordance with the rules of this subpart and with the rules of the foreign state.

(4) That is equipped with a trailing antenna that requires an impact force of more than 230 N to break it at any point, unless the antenna has colored pennants or streamers attached at not more than 15 m intervals and that are visible for at least 1 500 m.

(b) ***Medium and heavy unmanned free balloons***. In addition to the limitations of paragraph (a) of this section, no person may operate a medium or heavy unmanned free balloon over a congested area of a city, town, or settlement or an open-air assembly of persons not associated with the operation during the first 1 000 ft (300 m) of ascent.

(c) ***Heavy unmanned free balloons***. In addition to the limitations of paragraphs (a) and (b) of this section, no person may operate a heavy unmanned free balloon—

(1) Unless it is equipped in accordance with GACAR § 101.49,

(2) Over international waters without prior coordination with the appropriate air traffic service authority,

(3) At any altitude below 60 000 ft (18 000 m) standard pressure altitude where the

horizontal visibility is less than 8 km, or

(4) At any altitude where there are clouds or obscuring phenomena of more than 4 okta coverage.

§ 101.46 Identification Requirement.

No person may operate an unmanned free balloon carrying a payload unless an identification plate made of fireproof metal or a material of similar durability is securely and conspicuously attached to the payload. The identification plate must have sufficient information to identify the payload and for the person who finds the payload to contact the person who released the balloon.

§ 101.47 Medium and Heavy Balloons: Notice Requirements.

(a) ***Prelaunch notice***. Except as provided in paragraph (b) of this section, no person may operate a medium or heavy unmanned free balloon unless he gives the following information to the ATC facility nearest the place of intended operation at least 7 days before the intended flight:

(1) The balloon identification;

(2) The classification of the balloon and a description, including the length and diameter of the balloon, length of the suspension device, mass of the payload, and length of the trailing antenna;

(3) The estimated date and time of launching, amended as necessary to remain within plus or minus 30 minutes;

(4) The location of the launching site;

(5) If multiple balloons are to be launched, the number of balloons and scheduled interval between launches;

(6) If applicable, the transponder code or Automatic Dependent Surveillance–Broadcast (ADS–B) aircraft address;

(7) The cruising altitude;

(8) The forecast trajectory and estimated time to cruising altitude or 60 000 ft (18 000 m)

standard pressure altitude, whichever is lower;

(9) The duration of flight;

(10) The forecast time and location of impact with the surface of the earth; and

(11) The operator's name and telephone number.

(b) Except as provided in paragraph (c) of this section, any updates to the information required by paragraph (a) of this section must be provided to the ATC facility at least 6 hours before the estimated time of launch.

(c) For solar or cosmic disturbance investigations involving a critical time element, the information in paragraph (a) of this section must be updated at least 30 minutes before the estimated time of beginning the operation.

(d) ***Cancellation notice***. If the operation is canceled, the person who intended to conduct the operation must immediately notify the nearest ATC facility.

(e) ***Launch notice***. Each person operating a medium or heavy unmanned free balloon must notify the nearest ATC facility of the launch time immediately after the balloon is launched with the following information:

(1) Balloon flight identification,

(2) Launch site,

(3) Actual time of launch,

(4) Estimated time of—

(i) Reaching the cruising level if at or below 60 000 ft (18 000 m), or

(ii) Passing through 60 000 ft (18 000 m).

(5) Any changes to the information required by paragraph (a) of this section.

§ 101.49 Heavy Balloons: Equipment and Marking Requirements.

(a) No person may operate a heavy unmanned free balloon unless—

(1) It is equipped with at least two payload cut-down systems or devices that operate independently of each other;

(2) It employs at least two methods, systems, devices, or combinations thereof, that function independently of each other, for terminating the flight of the balloon envelope; and

(3) It is equipped with a radar reflective device(s) or material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range.

(b) The operator must activate the appropriate devices required by paragraphs (a)(1) and (2) of this section—

(1) When weather conditions are less than those prescribed for operation under this subpart,

(2) If a malfunction or any other reason makes the further operation hazardous to other air traffic or to persons and property on the surface, or

(3) Prior to unauthorized entry into the airspace over another state’s territory.

(c) No person may operate a heavy unmanned free balloon below 60 000 ft (18 000 m) standard pressure altitude (as corrected to the altitude of operation) between sunset and sunrise unless the balloon and its attachments and payload are equipped with lights that are visible for at least 8 km and have a flash frequency of at least 40 and not more than 100 cycles per minute. This requirement applies regardless of whether separation occurs during the operation.

(d) No person may operate between sunrise and sunset a heavy unmanned free balloon that is equipped with a suspension device (other than an open parachute of highly conspicuous colors) more than 15 m long, unless the suspension device is of alternating bands of highly conspicuous colors or has colored pennants or streamers attached which are visible for at least 1 500 m.

(e) No person may operate a heavy unmanned free balloon in an area where ground-based secondary surveillance radar is in use unless it is equipped with a transponder with pressure altitude reporting capability continuously operating on an assigned code.

(f) No person may operate a heavy unmanned free balloon in an area where ground-based ADS–B equipment is in use unless it is equipped with an ADS–B transmitter with pressure altitude reporting capability continuously operating.

§ 101.51 Heavy Balloons: Position Reports.

(a) Each person operating a heavy unmanned free balloon must—

(1) Unless ATC requires otherwise, monitor the course of the balloon and record its position at least—

(i) Every 2 hours while operating at or below 60 000 ft (18 000 m) and

(ii) Every 24 hours while operating above 60 000 ft (18 000 m).

(2) Forward any balloon position reports requested by ATC.

(b) One hour before beginning descent, each person operating an unmanned free balloon must forward to the nearest ATC facility the following information regarding the balloon:

(1) The current geographical position,

(2) The altitude,

(3) The forecast time of penetration of 60 000 ft (18 000 m) standard pressure altitude (if applicable),

(4) The forecast trajectory for the balance of the flight, and

(5) The forecast time and location of impact with the surface of the earth.

(c) If a balloon position report is not recorded in the time specified by paragraph (a) of this section, the person operating an unmanned free balloon must immediately notify the nearest ATC facility. The notice must include the last recorded position and any revision of the forecast trajectory. The nearest ATC facility must be notified immediately when tracking of the balloon is reestablished.

(d) Each person operating an unmanned free balloon must notify the nearest ATC facility when the operation is ended.

SUBPART D – AMATEUR ROCKETS

§ 101.61 Applicability.

(a) This subpart applies to operating unmanned rockets. However, a person operating an unmanned rocket within a restricted area must comply with only GACAR § 101.67(g)(2) and with any additional limitations imposed by the administering authority.

(b) No person may operate an unmanned rocket other than an amateur rocket as defined in GACAR § 1.1 without holding permission from the Ministry of Defense.

(c) Each person operating an amateur rocket must follow the applicable rules of this subpart unless the President authorizes relief under GACAR § 101.71.

§ 101.63 Classifications.

The following amateur rocket classifications apply to this subpart:

(a) Class 1 Model Rocket means an amateur rocket that—

(1) Uses no more than 125 g of propellant;

(2) Uses a slow-burning propellant;

(3) Is made of paper, wood, or breakable plastic;

(4) Contains no substantial metal parts; and

(5) Has mass no greater than 1.5 kg, including the propellant.

(b) Class 2 High-Power Rocket means an amateur rocket other than a model rocket propelled by a motor or motors having a combined total impulse of 40 960 newton-seconds (N•s) or less.

(c) Class 3 Advanced High-Power Rocket means an amateur rocket other than a model rocket or high-power rocket.

§ 101.65 General Operating Limitations.

(a) No person may operate an amateur rocket unless—

(1) It is launched on a suborbital trajectory;

(2) It will not cross into the territory of a foreign State when launched unless an agreement is in place between the Kingdom of Saudi Arabia and the State of concern;

(3) It is unmanned; and

(4) It does not create a hazard to persons, property, or other aircraft.

(b) The President may specify additional operating limitations necessary to ensure that air traffic is not adversely affected and public safety is not jeopardized.

§ 101.67 Operating Limitations for Class 2 High-Power Rockets and Class 3 Advanced High-Power Rockets.

Each person operating a Class 2 High-Power Rocket or Class 3 Advanced High-Power Rocket must comply with GACAR § 101.65. In addition, no person may operate a Class 2 High-Power Rocket or Class 3 Advanced High-Power Rocket—

(a) At any altitude where clouds or obscuring phenomena of more than 4 okta coverage prevails;

(b) At any altitude where the horizontal visibility is less than 8 km;

(c) Into any cloud;

(d) Between sunset and sunrise without prior authorization from the President;

(e) Within 8 km of any aerodrome boundary without prior authorization from the President;

(f) In controlled airspace without prior authorization from the President;

(g) Unless there is at least the greater of the following between the launch site and any person or property not associated with the operation:

(1) A horizontal distance of one-quarter of the maximum expected altitude or

(2) A horizontal distance of 500 m.

(h) Unless a person at least 18 years old is present, is charged with ensuring the safety of the operation and has final approval authority for initiating high-power rocket flight; and

(i) Unless reasonable precautions are provided to report and control a fire caused by rocket activities.

§ 101.69 ATC Notification for All Launches.

No person may operate an unmanned rocket other than a Class 1 Model Rocket unless that person gives the following information to the ATC facility nearest the place of intended operation at least 24 hours before and no more than 3 days before beginning the operation:

(a) The name and address of the operator; except when there are multiple participants at a single event, the name and address of the person designated as the event launch coordinator, whose duties include coordination of the required launch data estimates and coordinating the launch event;

(b) Date and time the activity will begin;

(c) Radius of the affected area on the ground in kilometers;

(d) Location of the center of the affected area in latitude and longitude coordinates;

(e) Highest affected altitude;

(f) Duration of the activity; and

(g) Any other pertinent information requested by the ATC facility.

§ 101.71 Information Requirements.

(a) Each person requesting relief from any requirement of this subpart to operate a Class 2 High-Power Rocket or a Class 3 Advanced High-Power Rocket must provide the information required by this section to the President at least 45 working days before the proposed operation. The President may require additional information if necessary to ensure the proposed operation can be conducted safely.

(b) ***Class 2 High-Power Rockets***. The information must include for each type of Class 2 rocket expected to be flown:

(1) Estimated number of rockets;

(2) Type of propulsion (liquid or solid), fuel(s) and oxidizer(s);

(3) Description of the launcher(s) planned to be used, including any airborne platform(s);

(4) Description of recovery system;

(5) Highest altitude, above ground level, expected to be reached;

(6) Launch site latitude, longitude, and elevation; and

(7) Any additional safety procedures that will be followed.

(c) ***Class 3 Advanced High-Power Rockets***. The information must include for each type of Class 3 rocket expected to be flown:

(1) The information requirements of paragraph (b) of this section;

(2) Maximum possible range;

(3) The dynamic stability characteristics for the entire flight profile;

(4) A description of all major rocket systems, including structural, pneumatic, propellant, propulsion, ignition, electrical, avionics, recovery, wind-weighting, flight control, and tracking;

(5) A description of other support equipment necessary for a safe operation;

(6) The planned flight profile and sequence of events;

(7) All nominal impact areas, including those for any spent motors and other discarded hardware, within three standard deviations of the mean impact point;

(8) Launch commit criteria;

(9) Countdown procedures; and

(10) Mishap procedures.

SUBPART E – MODEL AIRCRAFT

Reserved.

SUBPART F – UNMANNED AIRCRAFT SYSTEMS

§ 101.91 General.

(a) This subpart applies to the operation of unmanned aircraft systems (UAS):

(1) with a maximum take of mass in excess of 150 kg;

(2) with a maximum take of mass of 150 kg or less, where operations require a Certificate of Airworthiness;

within the sovereign area and territorial waters of the Kingdom of Saudi Arabia (KSA), including the waters within 3 NM of the KSA coast.

(b) This subpart is not applicable to unmanned aircraft systems operated under GACAR Part 107.

(c) The President may authorize relief from certain provisions of this subpart for a UAS operated entirely within a restricted airspace area and the flights are operated in accordance with all operating conditions and limitations imposed by the administering authority of the restricted airspace area. The President grants relief under this paragraph when full compliance with this subpart is unreasonable given the nature of the operation and when aviation safety is not likely to be adversely affected.

§ 101.92 Areas of operation.

Unless otherwise authorized by the President, no person may operate a UAS unless the areas of operation have been identified and within the authorized areas of operations determined by the appropriate GACA Certificated Air Traffic Services Provider under GACAR Part-171.

§ 101.93 Certificates and Authorization Required.

Unless otherwise authorized by the President, no person may operate a UAS unless—

(a) The UAS has been issued an airworthiness certificate under GACAR Part 21;

(b) The UAS has been registered under GACAR Part 47 and marked under GACAR Part 45;

(c) The UAS operator has received specific operating authority from the President; and

(d) For remotely piloted aircraft (RPA), the remote pilot(s) hold an appropriate, valid pilot certificate issued under GACAR Part 61.

§ 101.95 Application.

An application for operating authority for a UAS under this subpart must be made in a form and in a manner acceptable to the President and submitted with-

(a) Name and contact information of the operator;

(b) UAS characteristics (type of aircraft, maximum certificated take-off mass, number of engines, wing span);

(c) Copy of certificate of registration;

(d) Aircraft identification to be used in radiotelephony, if applicable;

(e) Copy of the airworthiness certificate;

(f) Reserved;

(g) Copy of the remote pilot(s) certificates;

(h) Copy of the aircraft radio station licence, if applicable;

(i) Description of the intended operation (to include type of operation or purpose), flight rules, visual line-of-sight (VLOS) operation if applicable, date of intended flight(s), point of departure, destination, cruising speed(s), cruising level(s), route to be followed, duration/frequency of flight;

(j) Takeoff and landing requirements;

(k) UAS performance characteristics, including:

(1) Operating speeds;

(2) Typical and maximum climb rates;

(3) Typical and maximum descent rates;

(4) Typical and maximum turn rates;

(5) Other relevant performance data (e.g. limitations regarding wind, icing, precipitation); and

(6) Maximum aircraft endurance;

(l) Communications, navigation and surveillance capabilities:

(1) Aeronautical safety communications frequencies and equipment, including:

(i) ATC communications, including any alternate means of communication;

(ii) Command and control links (C2) including performance parameters and designated operational coverage area;

(iii) Communications between remote pilot and RPA observer, if applicable;

(2) Navigation equipment; and

(3) Surveillance equipment (e.g. SSR transponder, ADS-B out);

(m) Detect and avoid capabilities;

(n) Emergency procedures, including:

(1) Communications failure with ATC;

(2) C2 failure, if applicable; and

(3) Remote pilot/RPA observer communications failure, if applicable;

(o) Number and location of remote pilot stations as well as handover procedures between remote pilot stations, if applicable;

(p) Document attesting noise certification that is consistent with the provisions of GACAR Part

36, if applicable;

(q) Confirmation of compliance with KSA security standards, to include security measures relevant to the UAS operation, as appropriate;

(r) Payload information/description;

(s) Proof of adequate insurance/liability coverage; and

(t) Any additional items requested by the President.

§ 101.97 Operating Rules.

(a) Each UAS must be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with any prescribed operating limitations or conditions established under paragraph (a) and (c) of GACAR § 101.93.

(b) Operation of UAS must comply with all applicable requirements of GACAR Part 91.

(c) In the event of a flight cancellation the operator or remote pilot must notify all appropriate authorities as soon as possible.