

KINGDOM OF BAHRAIN
Ministry of Transportation
and Telecommunications



مملكة البحرين
وزارة المواصلات والاتصالات

CIVIL AVIATION REGULATION 006

UNMANNED AERIAL VEHICLE REGULATIONS

6 OCTOBER 2016

PREFACE

As air traffic continues to increase in Bahrain, and international obligations evolve to assure safe aviation operations, it falls to Bahrain Civil Aviation Affairs (BCAA) to continue to develop its own standards, Regulations and procedures in accordance with its international obligations and the Kingdom's Law.

These Regulations set out the means by which the Kingdom registers Unmanned Aerial Vehicles (UAVs) and the rules for use of those UAVs. These Regulations accord with Article 48 of Law 14 of 2013 with respect to the issuance of Civil Aviation Law, ANTR Volume I Part III, and with Annex 6 to the Convention on International Civil Aviation.

This document specifies the criteria applied by the registering Authority (BCAA) on any person or organization desiring to operate an Unmanned Aerial Vehicle within the Kingdom of Bahrain. The document also provides a reference to the holders of a registration so that they may ensure compliance with the BCAA's requirements as they relate to the operation UAVs.

If the BCAA determines that an applicant is properly and adequately organized, resourced, equipped and able to conduct a safe operation in accordance with the requirements of these rules, Regulations, and standards prescribed hereunder, the BCAA shall register the UAV. The BCAA may impose conditions on the operation of registered UAVs.

Amendments to these Regulations are the responsibility of the Bahrain Civil Aviation Affairs. Suggestions for improvement should be forwarded to the Authority.

Hussain Ahmed Al-Shuail

Asst. Undersecretary Safety and Security

RECORD OF AMENDMENTS AND CORRIGENDA

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INTRODUCTION

Unmanned Aerial Vehicles (UAVs)

(1) Civil Aviation Affairs of the Kingdom of Bahrain (the Authority) may make Regulations with respect to aviation and, without restricting the generality of the foregoing, may make Regulations with respect to registration and the operation of UAVs.

(2) Any registered organization or individual desiring to operate a UAV that is required by the Authority, by rule, to be registered may file with the Authority an application for an UAV registration. Such application shall include the operating manual for the UAV. If the Authority determines that an applicant is properly and adequately equipped and able to conduct a safe operation in accordance with the requirements of these rules, Regulations, and standards prescribed hereunder, the Authority shall issue a UAV registration to the applicant. Each UAV registration shall prescribe such terms, conditions, and limitations as are reasonably necessary to assure safety.

(3) The Authority or its representative may

a) enter any premises named in a registration application for the purposes of making inspections relating to the enforcement of this Regulation;

b) enter any place named in a registration application for the purposes of an investigation of matters concerning aviation safety;

c) seize anything found in any place referred to in paragraph (a) or (b) that the Authority or its representative believes on reasonable grounds will afford evidence with respect to an offence under paragraph (4) or the causes or contributing factors pertaining to an investigation referred to in sub-paragraph (b).

(4) It shall be an offence to provide false information in support of an application for registration of a UAV or to otherwise act, or fail to act, so as to endanger the safety of UAV operations. The operator and/or the registered owner of a UAV may be proceeded against if found to have committed an offence in relation to the UAV or associated conditions for which he is responsible under the terms of the UAV registration and conditions of operation. In such eventuality the operator and the registered owner of the UAV are liable to the penalty prescribed in Law no. 14 of 2013 with respect to the issuance of Civil Aviation Law.

GENERAL

Chapter 1 Application

1.1 These Regulations apply to the registration and operation of any Unmanned Aerial Vehicle within the Kingdom of Bahrain.

Interpretation

1.1.1 The terms described in this sub-section shall have the following meaning whenever they appear in these Regulations;

Accuracy; A degree of conformance between the estimated or measured value and the true value.

Aerodrome; A defined area on land (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Aircraft; Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Authority; the Civil Aviation Affairs of the Kingdom of Bahrain (CAA or BCAA).

Autonomous aircraft; An unmanned aircraft that does not allow pilot intervention in the management of the flight.

Command and control link; The data link between the remotely-piloted aircraft and the remote pilot station for the purposes of managing the flight.

Detect and avoid; The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action to comply with the applicable rules of flight.

Flying pilot; A person who operates the flying controls of an aircraft and is responsible for the flight trajectory of the aircraft.

Helicopter; An aircraft whose lift is derived from the aerodynamic forces acting on one or more powered rotors turning about substantially vertical axes.

Helicopter Landing Area (HLA);

(i) a Helicopter Landing Site, or

(ii) a heliport, or

(iii) a helideck.

Helideck; an area intended for use wholly or partly for the arrival or departure of helicopters on:

- (i) a ship; or
- (ii) a floating or fixed off-shore structure.

Helicopter Landing Site (HLS); A defined area on the surface of the earth or on a structure, to be used in other than international operations for the arrival and departure of aircraft other than fixed –wing aircraft, which may not meet the requirements of Volume II of Annex 14 to the Chicago Convention.

Heliport; An area that is intended to be used wholly or in part for the arrival, departure and surface movement of helicopters in either domestic or international operations and meets or exceeds the heliport standards set out in Volume II of Annex 14 to the Chicago Convention

- (i) on land, or
- (ii) on a building or other raised structure on land.

ICAO; International Civil Aviation Organization.

LIFT-OFF; in relation to a helicopter, means to raise the helicopter from a position of being in contact with the surface of the HLS into the air.

Local mean sea level; the mean sea level measured at Mina Salman – the location of the Bahrain National Level Datum.

Lost link; The loss of command and control link contact with the remotely-piloted aircraft such that the remote pilot can no longer manage the aircraft's flight.

LSALT: Lowest safe altitude.

Obstacle; All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:

- (i) Are located on an area intended for the surface movement of aircraft: or
- (ii) Extended above a defined surface intended to protect aircraft in flight; or
- (iii) Stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.

Obstacle free zone; The airspace above the inner approach surface, inner transitional surfaces, the balked landing surface and that portion of the strip bounded by these surface, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes.

Obstacle limitation surfaces; A series of surfaces that define the volume of airspace at and around an aerodrome or HLA to be kept free of obstacles in order to permit the intended aeroplane operations to

be conducted safely and to prevent the aerodrome or HLA from becoming unusable by the growth of obstacles around the aerodrome or HLA.

OEI; One engine inoperative.

Operational control; The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of safety of the aircraft and the regularity and efficiency of the flight.

Operator; A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Orthometric height; Height of a point related to the geoid, generally presented as an MSL elevation.

Populous area; an area in relation to the operation of a UAV that has a sufficient density of population for some aspect of the operation, or some event that might happen during the operation (in particular, a fault in, or failure of, the UAV) to pose an unreasonable risk to the life, safety or property of somebody who is in the area but is not connected with the operation.

Remote pilot; The person who manipulates the flight controls of a remotely-piloted aircraft during flight time.

Remotely-piloted aircraft; An aircraft where the flying pilot is not on board the aircraft. *Note— This is a subcategory of unmanned aerial vehicles.*

Rotorcraft; aircraft other than fixed –wing aircraft.

Rotor diameter (RD); the diameter of the main rotor with the engine/s running.

Safety management system; A systematic approach to managing safety including the necessary organizational structure, accountabilities, policies and procedures.

Segregated airspace; Airspace of specified dimensions allocated for exclusive use to a specific user(s).

SUITABLE FORCED LANDING AREA (UAV); an area of land or water on which the UAV could make a forced landing with a reasonable expectation that there would be no injuries to persons on the ground or water.

TAKE-OFF; in relation to a stage of flight of a UAV from a launching site, means the stage of flight where the UAV accelerates into forward flight and commences climb at the relevant climb speed, or if not intending to climb, enters level flight for the purposes of departure from the launching site.

TOUCHDOWN; means lowering the UAV from a flight phase not in contact with the surface of the earth into a position which is in contact with the surface of the earth for a landing.

Touchdown and lift-off area (TLOF); a defined area in which a UAV may touchdown or lift-off.

Unmanned Aerial Vehicle(UAV); An aircraft which is intended to operate with no pilot on board.

UAV operator; a person who performs a function that would be, if the UAV were a manned aircraft, a function of its flight crew.

Visual line-of-sight operation; An operation in which the remote crew maintains direct visual contact with the aircraft to manage its flight and meet separation and collision avoidance responsibilities.

Visual meteorological conditions (VMC); an aviation flight category in which visual flight rules (VFR) flight is permitted—that is, conditions in which pilots have sufficient visibility to fly the aircraft maintaining visual separation from terrain and other aircraft.

1.3 Standards and Recommended Practices

Any reference in these Regulations to standards is a reference to ICAO standards and recommended practices with particular reference to the latest version of Annex 2 to the Convention on International Civil Aviation (Chicago 1944). Additional references to the Global Air Traffic Management Operational Concept (Doc 9854) are for guidance only unless otherwise specified.

1.4 Reference Systems

1.4.1 Horizontal reference system: WGS-84 shall be used as the horizontal (geodetic) reference system. Reported aeronautical geographical data (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

1.4.2 Vertical reference system: Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to the geoid shall be used as the vertical reference system.

1.4.3 Temporal reference system: The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system.

Chapter 2 UAV Registration

2.1 Requirement for UAV registration

2.1.1 All UAVs, regardless of size or weight, shall be registered at the BCAA.

2.1.2 UAVs shall be registered as either Type A, B or C, according to weight:

(a) Type A UAV; is a UAV weighing under 5kg

(b) Type B UAV; is a UAV weighing from 5kg to 25kg inclusive

(c) Type C UAV; is a UAV weighing in excess of 25kg.

2.1.3 An application for registration of any Type B or Type C UAV shall be submitted by the owner or intended owner of the UAV to the BCAA prior to importation of that UAV into the Kingdom of Bahrain.

2.2 Application for UAV registration

2.2.1 An applicant for a UAV registration shall have reached the age of at least 18 years by the date of submission, and shall submit to the Authority an application in the form prescribed in Appendix A. The application shall include any fee levied by the Authority for processing of the application.

2.2.2 The application shall specify the names, addresses, CPR or CR numbers and contact details of any persons or entities that will be permitted by the owner to operate the UAV. The registered owner of the UAV shall bear ultimate responsibility for the operation of the UAV.

2.3 Grant of UAV registration

2.3.1 Before granting a UAV registration, the Authority shall, having due consideration for the Type of UAV and its intended use, be satisfied that;

2.3.1.1 the applicant's facilities, services and equipment (if applicable) are in accordance with these regulations, and

2.3.1.2 the UAV's operating procedures make satisfactory provision for the safety of both aircraft and the public, and

2.3.1.3 the UAV's operating manual has been submitted with the application and contains all the relevant information, and

2.3.1.4 the applicant, and any intended operator, has the necessary competence, experience and resources to operate and maintain the UAV to the satisfaction of the Authority, and

2.3.1.5 the applicant holds a certificate of insurance against liability or risk arising from the operation of the UAV, to the satisfaction of the Authority (if required), and

2.3.1.6 any fees levied by the Authority in respect of the application have been paid, and

2.3.1.7 the UAV is airworthy to a standard acceptable to the Authority, and

2.3.1.8 permission to own and/or operate the UAV has been obtained from both the Ministry of Interior and the Bahrain Defense Force.

2.4 Endorsement of Conditions

2.4.1 After successful completion of the processing of the application, the Authority may endorse the UAV registration with conditions pertaining to the use of the UAV.

2.4.2 The Authority may restrict operation of the UAV to operators acceptable to the authority.

2.5 Validity of the UAV registration

2.5.1 UAV registration shall be valid for 3 years if no shorter period is endorsed, or until it is suspended or cancelled, whichever is earlier.

2.6 Transfer of a UAV registration

2.6.1 The Authority may give its consent to, and issue an instrument of transfer of a UAV registration to a transferee where:

a) the current holder of the UAV registration notifies the Authority in writing that the current holder will cease to operate the UAV as of the date specified in the notice. In the case of TYPE B or C UAVs; notification shall be made at least 90 days before ceasing to own or operate the UAV; and

b) the current holder of the UAV registration notifies the Authority in writing, the name of the transferee; and

c) the transferee applies in writing to the Authority for the UAV registration to be transferred to the transferee. In the case of TYPE B or C UAVs, application shall be made at least 60 days before the current holder of the UAV registration cease to operate the UAV,

2.6.2 If the Authority does not consent to the transfer of a UAV registration, it shall notify the transferee, in writing, of its reasons within 7 days after making that decision.

2.7 Amendment of the UAV registration

2.7.1 The Authority may, provided that the requirements of Regulation 2.2.1 is met, amend a UAV registration where:

a) there is a change in the use or operation of the UAV;

b) there is a change in the performance of the UAV; or

c) the holder of the UAV registration requests the amendment.

2.7.2 If there is a change in ownership or operator of the UAV, the new owner or operator shall apply for a transfer of the UAV registration in accordance with 2.6.1.

2.7.3 If the UAV owner requests an amendment to the UAV registration or the endorsed conditions such request shall be accompanied by:

a) a detailed account of the proposed amendment including the reasons for the amendment;

b) if the Type of UAV is Type C, an assessment of the safety risks associated with any change in use or operation of the UAV including, where appropriate, the findings of any aeronautical study undertaken on behalf of the UAV owner or operator; and

c) particulars of any consequential changes to the AIP and UAV operating manual.

2.7.4 The Authority may amend a UAV registration so as to restrict or prohibit specific operations of the UAV if the UAV operator breaches the conditions of the type of use endorsed by the UAV registration. The Authority shall provide written notice of intention to amend a UAV registration stating the reasons for the proposed amendment.

2.8 Suspension or Withdrawal of a UAV registration

2.8.1 The Authority may suspend or withdraw a UAV registration if the UAV operator fails to meet the obligations set out in Chapter 3 of these Regulations.

2.8.2 In the event of a serious failure of the UAV operator's safety obligations the Authority may require specific operations to be suspended with immediate effect.

Chapter 3 OBLIGATIONS OF THE UAV OPERATOR

3.1 Compliance with standards

3.1.1 A UAV operator shall comply with the standards specified in Regulation 1.3 and with any conditions endorsed by the certificate issued pursuant to Regulations 2.4.1.

3.1.2 The Authority may require evidence of operator competence to a level acceptable to the Authority.

3.2 Competence of operational and maintenance personnel

3.2.1 The UAV operator shall employ adequate numbers of qualified and skilled personnel, as acceptable to the Authority, for performing all critical activities in the UAV operation and maintenance processes.

3.2.2 Where the Authority prescribes competency certification requirements for personnel referred to in clause 3.2.1, the UAV shall only be operated by or maintained by those persons possessing such certification.

3.2.3 The UAV operator shall implement a program to maintain and develop the competence of the personnel referred to in Regulation 3.2.1.

3.3 UAV operation and maintenance

3.3.1 An operator shall not operate a UAV in a way that creates a hazard to another aircraft, another person, or property.

3.3.2 Subject to any directions that the Authority may issue, the UAV operator shall operate and maintain the UAV in accordance with the procedures set out in the UAV manual.

3.3.3 To ensure the safety of aircraft, the Authority may give written directions to a UAV operator to alter the procedures set out in the UAV manual.

3.3.4 The UAV operator shall co-ordinate with the relevant ATS provider in order to be satisfied that appropriate air traffic services are available to ensure the safety of all aircraft in any airspace utilized by the UAV. The coordination shall cover other areas related to safety such as aeronautical information service, aerodrome or other control service, designated meteorological authorities, communications and security.

3.3.5 A UAV shall only be operated at an altitude above 400 feet AGL within 5 nautical miles of an aerodrome or Helicopter Landing Area if that operation is expressly permitted by the Authority.

3.3.6 A UAV shall not be operated above a populous area unless;

a) permission has been obtained from the Authority, and

b) at a height greater than the height from which, if any of its components fails, it would be able to clear the area.

3.3.7 A UAV shall not be operated:

(a) in or into cloud; or

(b) at night; or

(c) in conditions other than VMC; or

(d) in other than visual line-of-sight operations; or

(e) in a manner that causes or allows anything to be dropped or discharged from the UAV; or

(f) in a manner that causes or allows the recording or transmission of images from or by the UAV,

unless permitted by the Authority, or in accordance with an air traffic control instruction.

3.3.8 A UAV shall not be operated within 30 meters of a person who is not directly associated with the operation of the UAV.

3.3.9 A UAV shall not be operated in controlled airspace unless the operator:

- (a) holds an aeronautical radio operator certificate acceptable to the Authority; and
- (b) maintains a listening watch on a specified frequency or frequencies; and
- (c) makes broadcasts on a specified frequency or frequencies at the specified interval giving the specified information; and
- (d) is specifically permitted by the Authority to do so.

For the purposes of this requirement;

- (i) *specified frequency* for particular airspace means a frequency specified from time to time in AIP or by ATC as a frequency for use in the airspace, and
- (ii) *specified information* for particular airspace means information specified from time to time in AIP or by ATC as information that must be broadcast in the airspace, and
- (iii) *specified interval* for particular airspace means the interval specified from time to time in AIP or by ATC as the interval at which broadcasts must be made while in that airspace.

3.3.10 All UAVs shall be operated in a manner that gives way to manned aircraft, and avoids other UAVs.

3.4 UAV registration holder's safety management system

3.4.1 The UAV registration holder for a Type C UAV shall implement a safety management system acceptable to the Authority. The safety management system shall clearly define lines of safety accountability, including a direct accountability for safety. As a minimum the system shall:

- a) identify safety hazards;
- b) ensure that remedial action necessary to maintain an acceptable level of safety is implemented;
- c) provide for continuous monitoring and regular assessment of the safety level achieved; and
- d) aim to make continuous improvement to the overall level of safety.

3.4.2 The UAV operator shall promote safe and orderly use of the UAV and immediately inform the registration holder of any accidents, incidents, defects and faults which have a bearing on safety.

3.5 Access to the UAV

3.5.1 Persons authorized by the Authority may inspect and carry out tests on the UAV, its facilities and equipment, inspect the UAV operator's documents and records, and verify the UAV operator's safety management system before the UAV registration is granted or renewed and subsequently, at any other time, for the purpose of ensuring safety and order.

3.5.2 The UAV operator shall cooperate in conducting the activities referred to in sub-section 3.5.1.

3.6 Notifying and reporting

3.6.1 A UAV operator shall adhere to the requirements to notify and report to the Authority, registered owner, Aeronautical Information Service (AIS), air traffic control and pilots within the specified time limits required by Regulations 3.6.2 to 3.6.5 inclusive.

3.6.2 *Notification of inaccuracies in Aeronautical Information Service (AIS) Publications:* A UAV operator shall review the issues of Aeronautical Information Publication (AIP), AIP Supplements, AIP Amendments, Notices to Airmen (NOTAMS), pre-flight Information Bulletins and Aeronautical Information Circulars issued by the AIS on initial receipt thereof, and at regular intervals thereafter in accordance with the AIRAC publication cycle. Immediately after such reviews, a UAV operator shall notify AIS of any inaccurate information contained therein that pertains to the UAV operation.

3.6.3 *Notification of changes in UAV operations:* A UAV operator shall notify the Authority and AIS in writing at least 60 days before any change to the UAV operation that has been planned in advance and that is likely to affect the accuracy of the information contained in any AIS publication referred to in Regulation 3.6.2.

3.6.4 *Issues requiring immediate notification:* subject to the requirements of Regulation 3.6.5, a UAV operator shall give to the Authority and AIS, and cause to be received at air traffic control and the flight operations unit, immediate notice giving details of any of the following circumstances of which the operator has knowledge:

a) obstacles, obstructions and hazards:

i) any projections by an object through an obstacle limitation surface relating to the UAV; and

ii) the existence of any obstruction or hazardous condition affecting aviation safety at or near the place of operation of the UAV;

b) any other condition that could affect aviation safety at and against which precautions are warranted.

3.6.5 *Immediate notification to pilots:* when it is not feasible for an UAV operator to cause notice of a circumstance referred to in 3.6.4 to be received at the air traffic control or a flight operations unit in accordance with that Regulation, the UAV operator shall give immediate notice directly to the pilot who may be affected by that circumstance.

3.6.6 The registered owner shall report to the Authority any accident or incident which causes death or injury to a person or persons as soon as is practicable, but not later than one hour after the event.

3.6.7 The registered owner shall report to the Authority any accident or incident which causes loss or damage to persons or property as soon as is practicable, but not later than 24 hours after the event.

3.7 Warning notices

3.7.1 Where low flying or taxiing aircraft are likely to be hazardous to people or vehicular traffic, the UAV operator shall:

- a) Post notices warning of the hazard on any public way that is adjacent to any maneuvering area; or
- b) if such a public way is not controlled by the UAV operator, inform the authority responsible for posting the notices on the public way that there is a hazard.

APPENDIX A

KINGDOM OF BAHRAIN
Ministry of Transportation
and Telecommunications



مملكة البحرين
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Application for the Registration of an Unmanned Aerial Vehicle

NAME:

ADDRESS:

DATE OF APPLICATION:

LIST OF SUPPORTING DOCUMENTS:

Include type/model and description of UAV, intended location of storage and use, intended operator(s) and intended purpose.

ACCOUNTABLE PERSON:

On behalf of the applicant named above, I hereby certify that the information contained in this application is true and complete.

Name

Date

Position

Contacts

APPENDIX B

KINGDOM OF BAHRAIN
Ministry of Transportation
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مملكة البحرين
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Certificate of Registration of UAV

NAME/TYPE OF UAV:

REGISTRATION NUMBER:

NAME OF THE HOLDER:

DATE OF VALIDITY:

SPECIAL CONDITIONS:

This certificate is issued by the Civil Aviation Affairs of the Kingdom of Bahrain (the Authority) in pursuance of its obligations to ensure enforcement of Law No. 14 of 2013 with respect to the issuance of the Civil Aviation Law, and acceptance of international standards in the registration and operation of Unmanned Aerial Vehicles. The Authority hereby certifies that above named holder has registered this UAV, and its operation is subject to any Special Conditions attached.

This registration may be amended, suspended or withdrawn at any time by the Authority in the event of failure of the holder to comply with Regulations or the Special Conditions attached.

Signing authority:

Title:

Date

APPENDIX C Schedule of fees

Type A	
UAVs of less than 5kg	30BHD
Type B	
UAVs from 5kg up to and including 25kg	100BHD
Type C	
UAVs exceeding 25kg	150BHD