



Guidelines on Unmanned Aircraft Systems (UAS)/Drone Operations System

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Forward

The Bhutan Civil Aviation Authority (BCAA) has developed this Guidelines to support the safe, secure, and standardized operation of Government Unmanned Aircraft Systems (UAS) in Bhutan. As the use of UAS continues to expand across Government agencies, it is essential to establish consistent procedures that promote safety, operational efficiency, and regulatory compliance.

This Guidance streamlines procedures for the import, registration, pilot competency assessment, and operation of Government UAS, particularly rotorcraft with a maximum take-off weight (MTOW) exceeding 6 kg. It also introduces the Temporary Drone Pilot Authorization (TDPA) as an interim competency framework to facilitate Government projects under special circumstances.

This document should be read inline with the UAS Regulation 2017 and is intended to facilitate Government UAS operations while maintaining an appropriate level of safety and regulatory oversight. This guideline shall come into effect from 1 July 2026.



(Kinley Wangchuk)
Director General



Abbreviations

AGL	Above Ground Level
BCAA	Bhutan Civil Aviation Authority
BVLOS	Beyond Visual Line of Sight
C2	Command and Control
GNSS	Global Navigation Satellite System
MTOW	Maximum Take-Off Weight
TDPA	Temporary Drone Pilot Authorization
UAOP	Unmanned Aircraft Operation Permit
UAS	Unmanned Aircraft System
UAV	Unmanned Aerial Vehicle
VLOS	Visual Line of Sight
VMC	Visual Meteorological Conditions

Purpose

These Guidelines for the Unmanned Aircraft System/Drone Operations have been developed by the Bhutan Civil Aviation Authority to support the safe, secure, and standardized operation of Government unmanned aircraft in Bhutan inline with UAS Regulation 2017.

The Guidelines specifically developed for Government UAS relating services for unmanned aircraft exceeding 6 kg maximum take-off mass (MTOW) intended to facilitate Government UAS operations while ensuring an appropriate level of safety and regulatory oversight within the provision of UAS Regulation.

Scope and Applicability

These Guidelines apply exclusively to unmanned aircraft operated by Government organizations, agencies, and instrumentalities of the Royal Government of Bhutan under special circumstances. They do not apply to private, recreational, commercial, or tourist UAS operations, which continue to remain prohibited in accordance with UAS regulation 2017.

These guidelines are of particular application to UAS with an MTOW exceeding 6 kg operated by Government agencies (up to the 25 kg ceiling permitted under Clause 4.12.1(e) of the UAS Regulation 2017, under special circumstances). Provisions on import (Section 1) and Temporary Drone Pilot Authorization (Section 3) apply specifically to this weight category. Registration validity (Section 2) applies to all Government-registered UAS regardless of weight.

Aircraft Category

Considering current regulatory capability and availability of infrastructure, the drone operations are limited to rotorcraft-type unmanned aircraft only (multi-rotor and single/twin-rotor helicopter-type UAS).

Section 1. Drone Import Requirements

The following procedure applies to the import of UAS/Drone with an MTOW exceeding 6 kg by Government agencies, in addition to the general import requirement under Clause 4.12.4.9 of the UAS Regulation 2017.

1.1 Import condition for drone above 6kg

Applicants intending to import a UAS with an MTOW exceeding 6 kg shall obtain special approval from BCAA prior to importation. Import shall not proceed, and Customs clearance shall not be sought, until such approval has been granted in writing by BCAA.

1.1.1 Supporting Documentation

Applications for special import approval shall be supported by:

- A detailed operational justification explaining the operational need for the aircraft; and
- Full technical specifications of the aircraft, including make, model, manufacturer, MTOW, dimensions, and payload capacity specifications.

Section 2. Drone Registration

All Government rotorcraft UAS shall be registered with BCAA in accordance with Clause 4.12.5 of the UAS Regulation 2017 with the following details.

2.1 Registration Validity

UAS/Drone shall be issued a registration with a validity period of five (5) years from the date of registration regardless of its MTOW and BCAA shall provide a unique registration number.

2.2 Renewal

Registration renewal shall be required upon expiry of the five-year validity period to ensure continued compliance with applicable regulatory and safety requirements. Further to have the updated repository of functional UAS with the government agencies. The operator shall submit a renewal application to BCAA with following documents:

- Confirmation that the UAS is in line with manufacturer approved configuration; and details of modifications if any (modification is any deviation from manufacturer configuration).
- Payment of the applicable registration renewal fee.

Section 3. Temporary Drone Pilot Authorization (TDPA)

Bhutan does not currently have established civil aviation standards for the issuance of UAS pilot licences. As an interim measure to facilitate Government drone operations, BCAA shall issue Temporary Drone Pilot Authorization (TDPA).

3.1 Applicability

The Temporary Drone Pilot Authorization shall apply to pilots conducting Government UAS operations involving aircraft above 6 kg MTOW. Pilots of Government UAS at or below 6 kg MTOW shall continue to demonstrate competency in accordance with Clause 4.12.18 of the UAS Regulation 2017.

3.2 Eligibility

- Be no less than 18 years of age (Clause 4.12.18.1);
- Be a serving employee, or engaged representative, of a Government agency undertaking the UAS operation;
- Be medically fit to fly (General medical certificate or equivalent); and
- Have successfully completed the Theoretical Knowledge Examination and Practical Flight Assessment.

3.3 Assessment Overview

The competency assessment for TDPA above 6 kg shall comprise two components;

- A theoretical knowledge assessment covering applicable regulations, operational procedures, safety, and airspace awareness; and
- A practical flight skills assessment conducted by BCAA

Given the higher operational safety risk associated with larger rotorcraft UAS, both components are mandatory irrespective of the applicant's prior flying experience, and shall verify the pilot's ability to safely operate the aircraft throughout normal and abnormal/emergency conditions.

3.4 Validity and Renewal of TDPA

A Temporary Drone Pilot Authorization shall be valid for a period of two (2) years from the date of issue. To renew the authorization, the holder shall meet the following requirements:

- Continue to be a serving employee, or engaged representative, of a Government agency undertaking the UAS operation;
- Be medically fit to fly (General medical certificate or equivalent);
- Drone flying experience within the last two years (BCAA issued drone operation authorization)
- Theoretical assessment (Required only if there were major changes to UAS rules and regulation within last two years)

TDPA shall be automatically suspended if the holder is found to be in breach of the UAS Regulation 2017.

3.5 Theoretical Knowledge Examination

Applicants for TDPA (above 6 kg) must sit for, and pass, a theoretical knowledge examination.

3.5.1 Examination Structure

Knowledge Area	Duration	No. of Questions	Passing Mark
General UAS Knowledge	45 mins	30	70%
Principles of Flight			
Air Law/UAS Regulation 2017			
Navigation and Meteorology			
Human Factors			
Safety and Operations			

- A. Format: 30 multiple-choice questions (MCQs);
- B. Scoring: 1 mark per question (Total: 30 marks);
- C. Passing threshold: a minimum score of 70%;
- D. Duration: 45 minutes.

3.5.2 Examination Syllabus

The examination shall be drawn from the following areas;

Recommended study guide
1. UAS Regulation 2017 2. Guidelines on Unmanned Aircraft Systems (UAS)/Drone Operations System 3. The Complete Remote Pilot – Aviation Supplies & Academy (ASA) By: Bob Gardner and David Ison 4. The Droner’s Manual – Aviation Supplies & Academy (ASA) By: Kevin Jenkins 5. Remote Pilot – Small Unmanned Aircraft Systems Study Guide (FAA-G-8082-22) By: Federal Aviation Administration

3.6 Practical Flight Assessment

Applicants who pass the Theoretical Knowledge Examination must successfully complete a practical flight assessment. The practical flight test shall be assessed based on the applicant's flight control, accuracy, situational awareness, and compliance with all applicable safety requirements. Each maneuver shall be assessed using the prescribed checklists and assessment Forms provided in the Appendices. Any safety-critical violation, including actions that compromise the safety of persons, property, or the aircraft, shall result in the immediate termination of the assessment.

3.6.1 Pre-Flight Procedures

Prior to flight, the examinee shall conduct a pre-flight inspection. The pre-flight inspection shall be assessed in accordance with the pre-flight assessment checklist (Appendix 1).

3.6.2 In-Flight Maneuvers

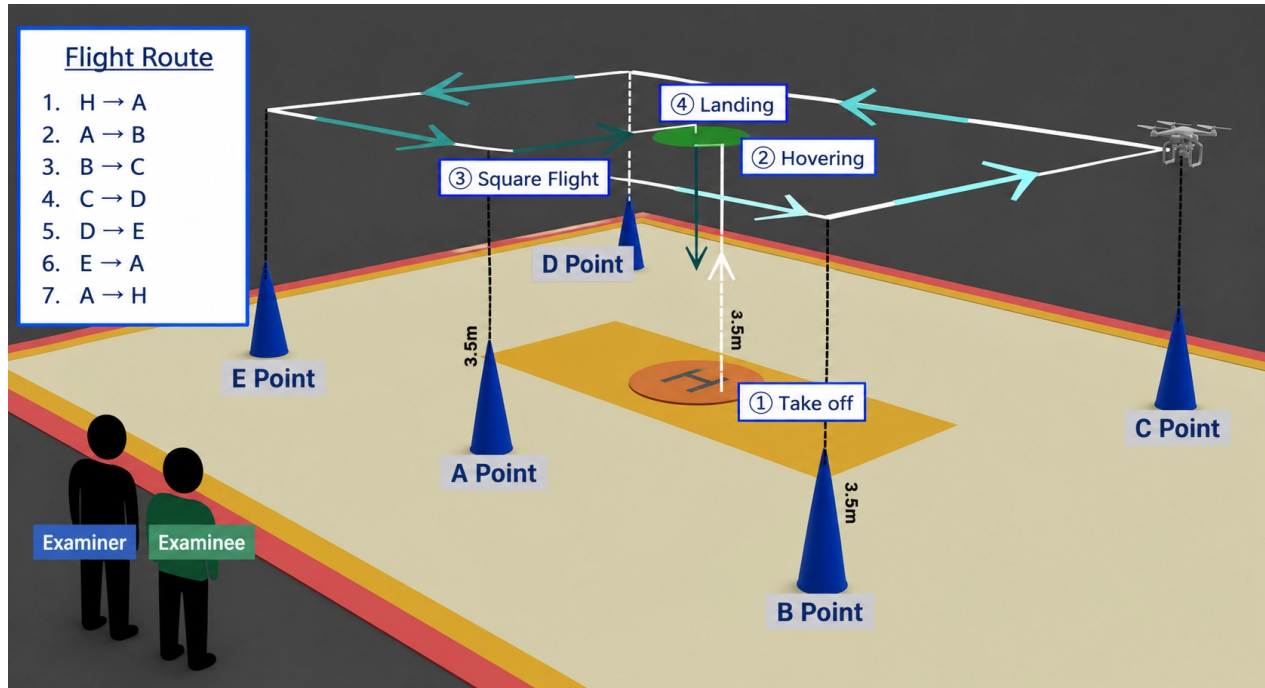
The applicant shall demonstrate core piloting skills and precision control through the standard maneuver set described in 3.6.2.1 Basic flights for Temporary Drone Pilot Authorization (TDPA) below, including the square pattern, the figure-8 pattern, and flight in emergency situations. The in-flight inspection shall be conducted in accordance with the in-flight assessment checklist (Appendix 2).

Fail (Immediate Failure): The test is considered a failure if any of the following occurs:

- A. Crash
- B. Loss of control
- C. Deviation from the designated airspace
- D. Other serious safety violations

3.6.2.1 Basic flights for Temporary Drone Pilot Authorization (TDPA):

A. The Square Pattern



Purpose of the Flight: To confirm that the examinee possesses the appropriate control skills to operate the UAV safely within the designated square area.

Flight Conditions (Outline of the Flight)

- A. Horizontal position stabilization (GNSS, Vision Sensors, etc.) shall be turned ON.
- B. Perform a Square Flight.
- C. Maintain a constant altitude of 3.5 m throughout the flight.

Flight Route

1. H → A
2. A → B
3. B → C
4. C → D
5. D → E

6. $E \rightarrow A$

7. $A \rightarrow H$

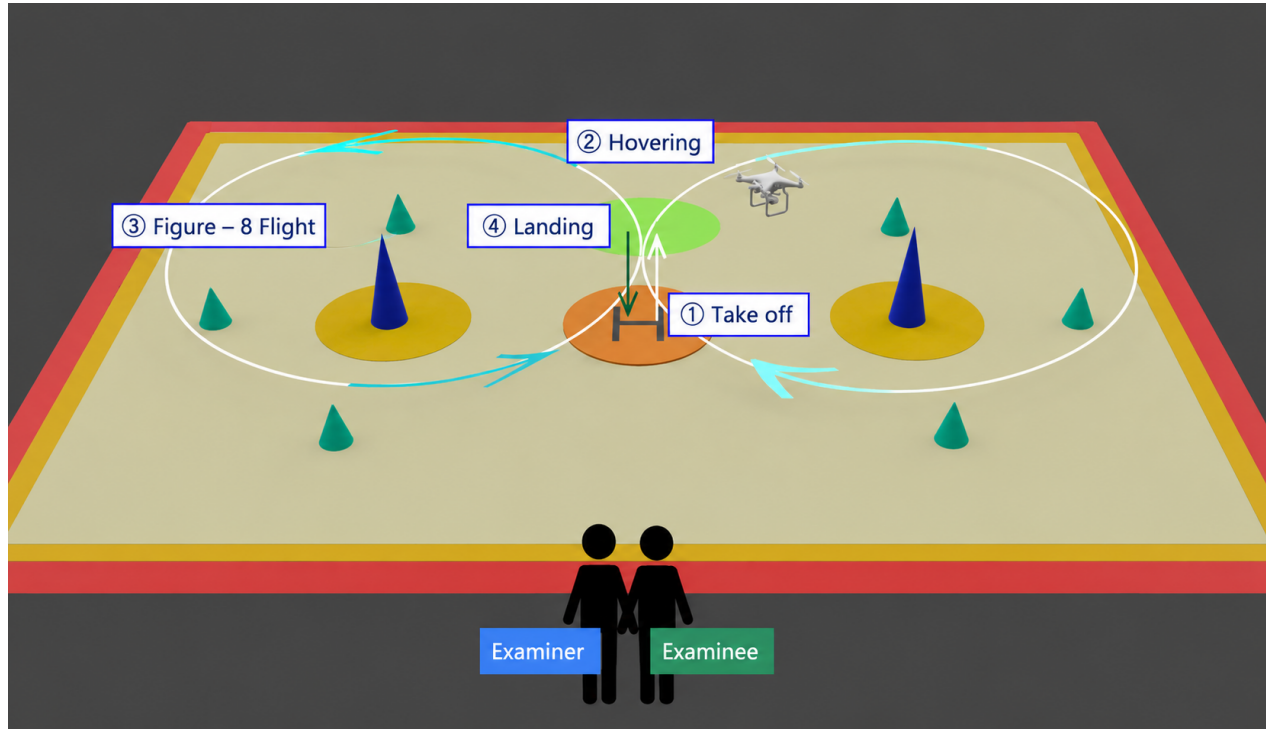
Flight Sequence

1. Take-off
2. Hovering
3. Square Flight
4. Landing

Test Conditions

- A. Flight Pattern: Square Flight
- B. Flight Altitude: 3.5 m
- C. Horizontal Position Stabilization: ON (GNSS/Vision Sensors)
- D. Time Limit: 8 minutes
- E. The distance between each cone shall be 8 metres.

B. Figure-8 Flight



Purpose of the Flight: Confirmation that the examinee possesses appropriate control skills for composite maneuvers to safely operate the UAV.

Flight Conditions (Outline of the Flight)

With the horizontal position stabilization (GNSS, Vision Sensors, etc.) turned ON, Figure-8 Flight is performed with smooth and precise curves. (Altitude: 1.5 m)

Flight Route

Perform two laps of figure-8 flight while executing right turns, with the nose oriented in the direction of travel.

Flight Sequence

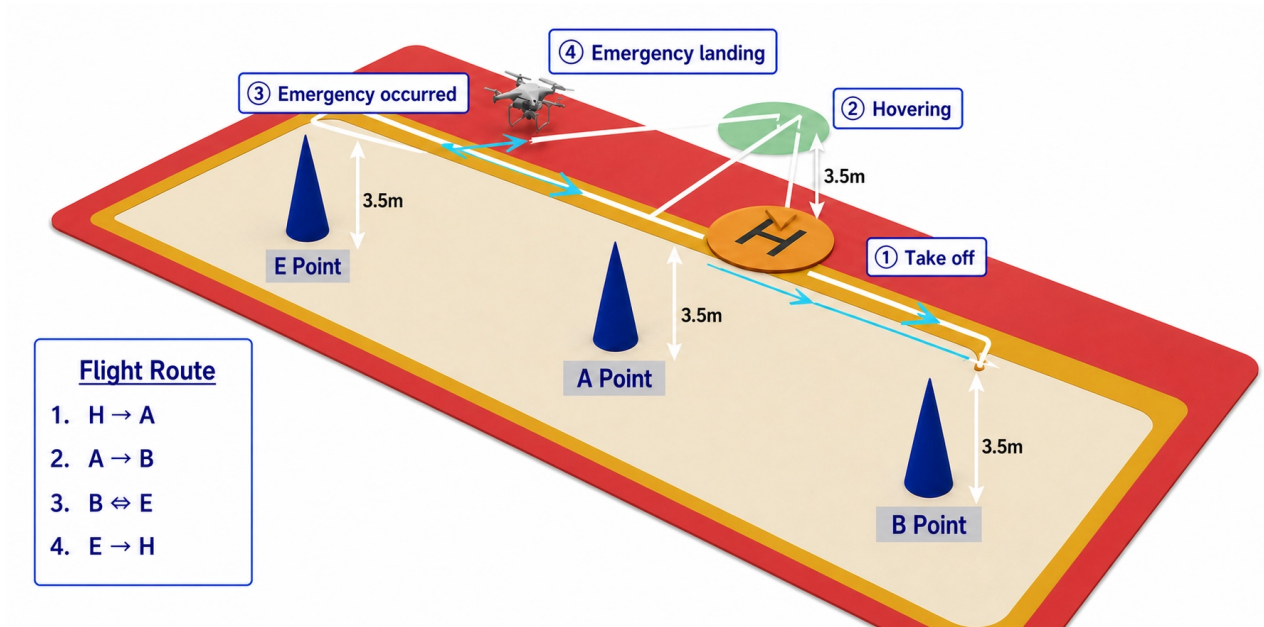
A. Take off

- B. Hovering
- C. Figure-8 Flight
- D. Landing

Test Conditions

- A. Flight Pattern: Figure-8 Flight
- B. Time limit: 8 min.
- C. Flight Altitude: 1.5 m
- E. Horizontal Position Stabilization: ON (GNSS/Vision Sensors)
- G. The distance between the two main cones shall be 10 metres.

C. Flight in Emergency Situation



Purpose of the Flight: In the event of an emergency, confirmation that the examinee possesses appropriate control skills to perform a safe landing without deviating from the rectangular area.

Flight Conditions (Outline of the Flight)

With the horizontal position stabilizer (GNSS, vision sensor, etc.) turned OFF, move forward, backward, left, and right, and perform an emergency landing while keeping the nose facing forward.

Flight Route

1. $H \rightarrow A$
2. $A \rightarrow B$
3. $B \Leftrightarrow E$
4. $E \rightarrow H$

Flight Sequence

1. Take off
2. Hovering
3. Emergency occurred
4. Emergency landing

Test Conditions

- D. Flight Pattern: Flight in Emergency Situation
- E. Time limit: 6 min.
- F. Flight Altitude: 3.5 m
- H. Horizontal Position Stabilization: OFF (GNSS/Vision Sensors)
- I. The distance between each cone shall be 8 metres.

3.6.3 Post-Flight Procedures

Upon completion of the in-flight assessment, the examinee shall conduct a post-flight inspection of the unmanned aircraft to identify any damage, defects, or signs of wear. The post-flight inspection assessment shall be carried out in accordance with the post-flight assessment checklist (Appendix 3).

3.7 Assessment Outcome

Upon successful completion of the theoretical exam and the practical skills assessment, the examinee shall be deemed competent and will be issued a Temporary Drone Pilot Authorization (TDPA) by the Authority. The TDPA shall be valid for a period of two (2) years from the date of issue, unless suspended, revoked, or otherwise cancelled by the Authority in accordance with the applicable regulatory requirements.

3.8 Eligibility for Re-Assessment

An applicant who does not achieve a passing score in either the theoretical examination or practical assessment may reapply for a re-test after a minimum cooling period of seven (7) calendar days from the date of the previous assessment.

3.9 General Operating Conditions for Test Flights

- A. Test flights shall be conducted in VLOS, during daylight hours, and in Visual Meteorological Conditions (VMC), in accordance with Clauses 4.12.11 and 4.12.13 of the UAS Regulation 2017;
- B. A minimum lateral distance of 50 m (150 ft) shall be maintained from any building, structure, vehicle, animal, uninvolved person, or spectators, except persons inherent to the test (Clause 4.12.10.1);
- C. Maximum operating height shall not exceed 90 m (300 ft) AGL, and the site shall not be within 5 km of a controlled aerodrome (Clause 4.12.10.3);
- D. A designated Pilot/Observer Station and a clearly marked Maneuvering/Test Box shall be established prior to the test;

Appendices

Appendix 1. Pre-Flight Assessment Checklist

No.	Item	✓	X	Remarks
Aircraft & Equipment				
1	Aircraft/frame free from visible damage	☐	☐	
2	Propellers secure and free of cracks or defects	☐	☐	
3	Landing gear in good condition	☐	☐	
4	Camera/Payload securely attached (if applicable)	☐	☐	
Power System				
5	Flight battery fully charged and properly installed	☐	☐	
6	Remote controller battery sufficient	☐	☐	
7	Spare batteries available (if required)	☐	☐	
System Checks				
8	GNSS signal acquired and Home Point recorded	☐	☐	
9	Compass/IMU status normal	☐	☐	
10	Control link (C2) functioning correctly	☐	☐	
11	Return-to-Home/Lost-link settings verified	☐	☐	
Operational Assessment				
12	Site survey completed	☐	☐	
13	Airspace checked (Appendix V compliance)	☐	☐	
14	Weather suitable for flight	☐	☐	
15	Operating area clear of people and obstacles	☐	☐	
16	Emergency procedures reviewed	☐	☐	
Pre-Flight Status: ☐ Pass ☐ Fail				

Appendix 2. In-Flight Assessment Checklist

Flight Exercises to be Assessed (select all that apply)

- ☐ Square Pattern
- ☐ Figure-8 Pattern
- ☐ Emergency Flight (GNSS OFF)

Flight Exercise	Completed	Pass	Fail	Remarks
Take-off	☐	☐	☐	
Stable Hover	☐	☐	☐	
Square Pattern	☐	☐	☐	
Figure-8 Pattern	☐	☐	☐	
Emergency Flight (GNSS OFF)	☐	☐	☐	
Controlled Landing	☐	☐	☐	

Safety Monitoring

Assessment Item	✓	✗	Remarks
Maintained assigned altitude	☐	☐	
Aircraft remained within designated flight area	☐	☐	
Smooth and controlled manoeuvres	☐	☐	
Maintained orientation throughout flight	☐	☐	
Safe landing completed	☐	☐	
In-Flight Status: ☐ Pass ☐ Fail			

Immediate Failure Criteria

- ☐ Crash
- ☐ Loss of aircraft control
- ☐ Exceeded designated flight area
- ☐ Serious safety violation

Appendix 3. Post-Flight Assessment Checklist

No.	Item	✓	X	Remarks
1	Aircraft inspected for damage	☐	☐	
2	Propellers checked for damage or wear	☐	☐	
3	Battery removed safely and inspected	☐	☐	
4	Flight log completed (time, location, observations)	☐	☐	
5	Any defects or anomalies recorded	☐	☐	
6	Aircraft powered off correctly	☐	☐	
7	Remote controller powered off	☐	☐	
8	Aircraft and accessories packed securely	☐	☐	
Post-Flight Status: ☐ Satisfactory ☐ Unsatisfactory				

