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OF SRI LANKA**

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Pilot License**

1st Edition -2024

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Abbreviations

UA	Unmanned Aircraft
UAS	Unmanned Aircraft Systems
UABTO	Unmanned Aircraft Basic Training Organization
UATO	Unmanned Aircraft Training and Assessment Organization
UAPL	Unmanned Aircraft Pilot License
AM	Accountable Manager
CAASL	Civil Aviation Authority of Sri Lanka
HT	Head of Training
QSM	Quality and Safety Manager
DGCA	Director General of Civil Aviation
DFE	Designated Flight Examiner

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Foreword

Pursuant to the Section 80 of Civil Aviation Act No.10 of 2014 and Section 08 of Implementing Standard 053 issued by DGCA, this document is issued to provide guidance to persons who are seeking Unmanned Aircraft Pilot License (UAPL).

P.A. Jayakantha
Director General of Civil Aviation &
Chief Executive Officer

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1 Chapter I – General

1. Purpose

Pursuant to the Implementing Standard 053, Section 08, this document is issued to provide guidance relating to persons who are seeking Unmanned Aircraft Pilot License (UAPL).

2. Applicability

This document is applicable to persons who are seeking Unmanned Aircraft Pilot License (UAPL) pursuant to Implementing Standard 053.

3. Introduction

According to Implementing Standard 053 issued by DGCA, individuals are required to obtain an Unmanned Aircraft Pilot License (UAPL) to operate an Unmanned Aircraft (UA). This license can be obtained by successfully completing a competency check conducted by the CAASL or any other designated person or organization.

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2 Chapter II – Unmanned Aircraft Pilot License (UAPL) Classes & Type Ratings

- (1) A UAPL authorizes a UA pilot to fly a UA of the class and type corresponding to that UA. There are two main classes and five sub classes of UAPL and 4 type ratings of UA within each class.
- (2) A Class 'A' UAPL allows a UA pilot to operate any UA in the corresponding category with total mass that does not exceed 25 kg.
- (3) A Class 'A' UAPL allows a UA pilot to operate a UA solely for recreational/hobby or private purposes.
- (4) A Class 'S' UAPL allows a UA pilot to operate a UA model(s), also referred to as types, with total mass that exceeds 25 kg.
- (5) A Class 'S' UAPL allows a UA pilot to operate a UA solely for commercial or any other purposes.
- (6) There are 4 types of UA within each class of UAPL. The types are:
 - (a) Single Rotor (SR)
 - (b) Multi Rotor (MR)
 - (c) Fixed Wing (FW)
 - (d) VTOL/ Hybrid (VT)

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3 Chapter III - Process of Obtaining a Class A UAPL (Open Category)

1. Subclasses

- (1) There are three subclasses within Class A, based on the Maximum Take-off Mass (MTOM) of the UA, the operating area and purpose of operation.

Class	A		
Subclass	A1	A2	A3
Weight	Below 250g	Below 4kg	Below 25kg
Allowed UA Types	(SR), (MR)	(SR), (MR)	(SR), (MR), (FW), (VT)
Flying Area	Fly over people	Fly close to people	Fly far from people
Purpose of Operation	Recreational/ Hobby or Private	Recreational/ Hobby or Private	Recreational/ Hobby or Private

2. Basic Requirements.

- (1) Applicants in subclasses A1, A2 and A3 shall be 16 years of age or older at the time of application.
- (2) All applicants shall possess a valid National Identification Card (NIC) or valid Passport at the time of application.

3. Attend Training.

- (1) The applicant can attend a training course conducted by any CAASL approved UABTO or online training provided by CAASL before attempting the theory test. The list of UABTOs are published on CAASL website.
- (2) Nevertheless, participation in the training is optional.

4. Examination.

- (1) The applicant required to achieve a minimum of 75% test score to pass the theory test.
- (2) The applicant is not allowed to attempt the theory test for more than 2 times within a period of one month (30 days).
- (3) A pass in the theory test is valid for 12 months (1 years). Refer to **Appendix 1** for the theory test syllabus.
- (4) The examination shall comprise of multiple-choice questions distributed appropriately across all subjects.
- (5) The exam shall be conducted by CAASL or any other entity designated by CAASL.

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4 Chapter IV - Process of Obtaining a Class S UAPL (Specific Category)

1. Subclasses

- (1) There are two subclasses within Class S, based on the operating area and purpose of operation.

Class	S	
Subclass	S1	S2
Allowed UA Types	(SR), (MR), (FW), (VT)	(SR), (MR), (FW), (VT)
Flying Area	Fly over people, Fly close to people & Fly far from people	Fly far from people
Purpose of Operation	All Operations	Agriculture

2. Basic Requirements.

- (1) Applicants in subclasses S1 and S2 shall be 16 years of age or older at the time of application.
- (2) All applicants shall possess a valid National Identification Card (NIC) or valid Passport at the time of application.

3. Attend Training.

- (1) The applicant can attend a training course conducted by any CAASL-approved UATO before attempting the theory test and practical assessment. The list of UATOs is published on CAASL website.
- (2) Nevertheless, participation in the training is optional.

4. Examination.

- (1) The applicant required to achieve a minimum of 75% test score to pass the theory test.
- (2) The applicant is not allowed to attempt the theory test for more than 2 times within a period of one month (30 days).
- (3) A pass in the theory test is valid for 12 months (1 years). Refer to **Appendix 2** for the theory test syllabus for UAPL Class 'S1'.

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- (4) Syllabus for UAPL Class 'S2' (Agriculture Operations) shall be developed by the UATO and get approved by CAASL.
- (5) The written examination will comprise of multiple-choice questions, structured questions or essay questions distributed appropriately across all subjects.
- (6) The exam will be conducted by CAASL or any other entity designated by CAASL.

5. Practical Assessment

- (1) A pass in the theory test is required before attempting the practical assessment.
- (2) The applicant then needs to pass the practical assessment relating to the desired UAPL's class and category, which is conducted by a DFE under a CAASL approved UATO, or by the Authority. Refer to **Appendix 3** for the scope of the practical assessment.

6. Medical Assessment.

- (1) The applicant required to obtain a medical report from a Medical Practitioner who shall be a MBBS or equivalent Doctor registered in Sri Lanka Medical Council to practice Medicine & Surgery in Sri Lanka.
- (2) Template of the Medical Assessment please refer **Appendix 4**.

7. Security Clearance.

- (1) All Unmanned Aircraft Pilot License (UAPL) holders shall obtain Security Clearance from the Ministry of Defence (MOD).

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5 Chapter V - UAPL Variation

- (1) A holder of a valid UAPL may at any time apply to the Authority to vary its license to:
 - (a) add or remove a class or subclass to the UAPL; or
 - (b) add or remove a type rating to the UAPL; or
 - (c) modify a condition of the UAPL.
- (2) An application to vary a UAPL must be submitted through a UATO or directly to CAASL and be accompanied by the relevant information as described in the following paragraphs.

Addition of Class/Subclass or Rating

- (3) An application to add a class/subclass or rating to the UAPL must be accompanied by the following information:
 - (a) Practical assessment results of the applicant (needed to be sent by the DFE) if the application is to add a Class, Subclass or Type Rating.

Removal of Limitations

- (4) Based on the practical assessment result, limitation(s) may be imposed on the UAPL. Limitation(s) can be removed by undergoing a “removal of limitations” practical assessment with a UATO or the CAASL.
- (5) Upon passing the practical assessment, the holder of the UAPL may apply to the CAASL to remove limitation(s) imposed on its license.
- (6) An application to remove limitation(s) imposed on a UAPL must be accompanied by the practical assessment results of the applicant (needed to be sent by the DFE).

Note: An application to remove limitation(s) does not extend the validity of the UAPL.

Proficiency Check (Extension of License Validity)

- (7) All UAPL holders must pass a proficiency check conducted by a DFE from an approved UATO or by the CAASL. The check must be completed at least once every 5 years from the date on which the category was specified on the UAPL.
- (8) A failure to complete the proficiency check in time will lead to the expiry of the Class S subclass and types specified in the UAPL.
- (9) If all Class A and Class B ratings within the UAPL have expired, the UAPL will become invalid. Variations and proficiency checks will not be applicable. The applicant will need to submit an initial UAPL application with a valid theory test and the relevant practical assessments.

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Appendices

Appendix 1- UAPL Learning Outcomes (Class ‘A1’, ‘A2’ & ‘A3’)

The UA basic training for Class ‘A1’, ‘A2’ & ‘A3’ UAPL (Open Category), consists of 04 modules;

1. UAS Safety and Operating Principles
2. Aviation Regulation
3. Meteorology
4. UAS Flight Performance

1. UAS Safety and Operating Principles	
Learning Objective	
Knowledge Areas	<p>1.1.</p> <p>Operational Procedures</p> <p><i>pre-flight</i></p> <ol style="list-style-type: none"> I. assessment of the area of operation & surrounding area, terrain, potential obstacles and obstructions for keeping VLOS of the UA, potential overflight of uninvolved persons, and the potential overflight of critical infrastructure; II. identification of a safe area where the remote pilot can perform a practice flight; III. environmental and weather conditions (e.g. factors that can affect the performance of the UAS such as electromagnetic interference, wind, temperature, etc.); methods of obtaining weather forecasts; and checking the conditions of the UAS <p><i>in-flight:</i></p> <ol style="list-style-type: none"> I. normal procedures and procedures for abnormal situations (e.g. for lost-data-link connections) <p><i>post-flight:</i></p> <ol style="list-style-type: none"> II. Maintenance and logging of flight details.
	<p>1.2.</p> <p>UAS operations</p> <ul style="list-style-type: none"> - Visual Line of Sight (VLOS) - Avoiding collisions – ‘See and Avoid’

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	<ul style="list-style-type: none"> - Safe distances from people, animals, property, vehicles, and other airspace users - Identification of assemblies of people - A code of conduct in case the UA encounters other traffic - Maintaining the height limitation - The responsibilities and communication between the UA observer and the remote pilot. - Non-reckless behavior - Safety precautions for UAS operations - Basic requirements regarding dangerous goods - Starting or stopping the operations taking in to account environment factors, UAS conditions and limitations. - Decision process <p><i>Congested area operations</i></p> <ul style="list-style-type: none"> - Planning and preparation - Hazard identification - Overflying of people - Public/third parties (crowds and gatherings)
<p>1.3.</p>	<p>Human Factors</p> <p><i>Medical fitness</i></p> <ul style="list-style-type: none"> - Crew health precautions - Influence of psychoactive substances or Alcohol or drugs - medication and medical restrictions <p><i>Fatigue</i></p> <ul style="list-style-type: none"> - Flight duration/flight workload - Outdoors and lone working <p>Human perception</p> <ol style="list-style-type: none"> I. Factors influencing VLOS; II. The distance of obstacles and the distance between the UA and obstacles; III. Evaluation of the speed and height of the UA; IV. Situational awareness; V. Night operations.



	1.4.	Technical and operational mitigations for ground risk - Low speed mode function - Evaluating distance from people, terrain
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2. Aviation Regulation		
Learning Objective		
Knowledge Areas	2.1	Introduction to CAASL and the aviation system
	2.2	Definitions/ Terminology Civil Aviation Act No 14 of 2010 – Section 80 and other relevant Sections. SLCAIS 053 –Implementing Standard on UAV operations - Overall principles - UAS categories - UAS registration - UAS operation categories - Specific requirements for each category - UAS geographical Zones (restricted, prohibited and security sensitive areas) - UAV Occurrence reporting - Insurance
	2.3	General overview - Responsibilities - UAS operator, remote pilot - UAS owner - UAS assembler/importer - Avoidance of collisions
	2.4	Illegal operations Third party privacy and data protection

3. Meteorology		
Learning Objective		
Knowledge Areas	3.1.	Introduction to obtaining and interpreting weather information - Weather reporting resources - Reports, forecasts and meteorological conventions appropriate for typical UAS flight operations



		- Local weather assessments
	3.2.	Effects of weather on the unmanned aircraft - Wind – urban effects, gradients, masking, turbulence - Temperature – precipitation, turbulence - Visibility factors - Clouds – Cumulonimbus (CB) hazards (including lightning)

4. UAS flight performance		
Learning Objective		
Knowledge Areas	4.1.	Typical operational envelope of a rotorcraft, fixed wing and hybrid configurations - Basic principles of flight - effect of environment conditions of the performance - Principles of command and control: <ol style="list-style-type: none"> I. overview; II. data link frequencies and spectrums; and automatic flight modes, override and manual intervention
	4.2.	User's manual of a UAS; <ol style="list-style-type: none"> I. overview of the main elements of the UAS II. Limitations (e.g. mass, speed, environmental, duration of battery, etc. III. Controlling the UAS in all phases of flights (e.g. the take-off, hovering in mid-air, when applicable, flying basic patterns and landing) IV. Features that affect the safety of flight V. Setting the parameters of the lost link procedures VI. Setting the maximum height VII. Procedures to load geographical zone data into the geo-awareness system VIII. Procedures to load the UAS operator registration number into the direct remote identification system IX. safety considerations <ol style="list-style-type: none"> a) instructions to secure the payload b) precautions to avoid injuries from rotors and sharp edges; and c) the safe handling of batteries



	4.3.	Operating guides - Flight procedures/basic drills - Emergencies
	4.4.	Maintenance of system - Scheduled and repairs - Manufacturer’s recommendations - Assessment ‘safe to be flown?’
	4.5.	Mass and balance and center of gravity (CG) - Consideration of the overall balance when attaching gimbals, payloads - Understand meaning of MTOM - Security of the payload - Payload characteristics – how differences can affect the stability of a flight - CG – differences between different types of UA
	4.6.	Batteries - Understand the terminology used for batteries (e.g. memory effect, capacity, c-rate) - Differences in battery types - Understand how a battery functions (e.g. charging, usage, danger, storage) - Battery safety - how to help prevent potential unsafe conditions



Appendix 2 – UAPL Learning Outcomes (Class ‘S1’)

The UAPL for Class ‘S1’ UAPL (Specific Category) consists of 09.

1. UAS General Knowledge
2. Principals of flight
3. Aviation Regulation (UAS)
4. Meteorology
5. Human Factors
6. Operating Procedures
7. UAS Maintenance & Emergency Procedures
8. Airmanship and Aviation Safety
9. UAS Airspace Operating Principles & Navigation Charts

1. UAS General Knowledge		
Learning Objective		
Knowledge Areas	1.1	<p><u>Introduction to UAS</u></p> <p>I. Define what is an Unmanned Aircraft System (UAS) and Unmanned Aircraft (UA)</p> <p>II. Describe the different categories of UA and its operating principles</p> <ol style="list-style-type: none"> a. Fixed Wing b. Rotorcraft <ul style="list-style-type: none"> Multi-rotor Helicopter c. Powered-Lift (VTOL) d. Airship <p>III. Explain the limitations of UAS</p> <ol style="list-style-type: none"> a. Operational envelope b. Stability c. Mass and MTOM d. Center of gravity e. Effect of payload on flight <p>IV. Explain the various applications of UAS (e.g. aerial photography/videography, surveillance, etc.)</p>

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	1.2	<p><u>UAS Components and Systems</u></p> <ul style="list-style-type: none"> I. Identify UAS components of different categories and describe its functions II. Describe major systems of UAS and how the systems are integrated with each other <ul style="list-style-type: none"> a. Power and Electrical System b. Propulsion System c. Flight Control and Navigation System d. Command and Control (C2) System e. Ground Control System III. Describe how to recognize and/or identify failed/damaged components (e.g. failed servo, propeller damage, etc.) IV. Understand the importance of following original equipment manufacturer (OEM) guidelines when repairing UAS <ul style="list-style-type: none"> a. Scheduled maintenance and repairs b. Security of aircraft/attached items c. Manufacture’s recommendations
	1.3	<p><u>UAS C2</u></p> <ul style="list-style-type: none"> I. Describe the operation of the UAS C2 link <ul style="list-style-type: none"> a. The transmitter module b. The receiver module c. Datalink frequencies/ spectrum d. Manual intervention/ override e. Flight control modes II. Understand the importance of radio-line-of-sight III. Identify the causes of radio interference and loss link

2. Principles of Flight		
Learning Objective		
Knowledge Areas	2.1	<p><u>Aerodynamics</u></p> <ul style="list-style-type: none"> I. Identify the four forces of flight <ul style="list-style-type: none"> a. Lift b. Weight c. Thrust d. Drag II. Describe the aerofoil interaction with airflow

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		<ul style="list-style-type: none"> a. Lift generation / aerodynamic force b. Angle of attack (AOA) c. Ground effect <ul style="list-style-type: none"> III. Describe aerodynamic stall and spin <ul style="list-style-type: none"> a. Causes of stalls b. Symptoms of stalls c. Stages of spins d. Basic stall/spin recovery IV. Describe Vertical lift limitations, autorotation, vortex ring states V. Describe aerodynamic stability <ul style="list-style-type: none"> a. Static stability b. Dynamic stability
	2.2	<p><u>Control of Motion (Aeroplane / Rotorcraft / Powered-lift(VTOL) / Airship)</u></p> <ul style="list-style-type: none"> I. List the axes of motion <ul style="list-style-type: none"> a. Lateral axis (pitch) b. Longitudinal axis (roll) c. Vertical axis (yaw) II. Describe the function of the main control surfaces <ul style="list-style-type: none"> a. Ailerons b. Elevator c. Rudder III. Understand the function of trim

3. Aviation Regulation (Air Law)		
Learning Objective		
Knowledge Areas	3.1	<p><u>Civil Aviation Act No.14 of 2010</u></p> <ul style="list-style-type: none"> I. Know the provisions stated in the Act. Included but not limited to; <ul style="list-style-type: none"> a. Dangerous activity involving aircraft b. Flying without satisfying safety requirements c. Trespassing at aerodromes d. Penalty for dangerous flying
	3.2	<p><u>Implementing Standard 053:</u></p> <ul style="list-style-type: none"> I. their applicability to SLCAIS 053; II. subcategories in the 'open' category and the associated classes of UAS;

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		<ul style="list-style-type: none"> III. registration of UAS operators; IV. the responsibilities of the UAS operator; V. the responsibilities of the remote pilot; and VI. incident – accident reporting;
	3.3	<p><u>Airspace</u></p> <ul style="list-style-type: none"> I. List “no-fly” zones II. List locations that require permits to fly III. State altitude restrictions for UAS operations
	3.4	<p><u>UA Registration</u></p> <ul style="list-style-type: none"> I. Understand the UA Registration process
	3.5	<p><u>Permits</u></p> <ul style="list-style-type: none"> I. State who requires an Operator Permit II. Know the UA Operator Permit conditions III. Understand the permit application process
	3.6	<p><u>Unmanned Aircraft Pilot Competency</u></p> <ul style="list-style-type: none"> I. State the requirements for the issuance and maintenance of an UAPC II. State the privileges of an UAPC
	3.7	<p><u>STS & PDRA</u></p> <ul style="list-style-type: none"> I. General overview
	3.8	<p><u>UA Basic Training</u></p> <ul style="list-style-type: none"> I. State who requires UA Basic Training
	3.9	<p><u>Penalties</u></p> <ul style="list-style-type: none"> I. State the penalties upon contravening provisions relating to UA operations of the Civil Aviation Act No.14 of 2010 and SLCAIS 053
	3.10	<p><u>Accident & Incident Reporting</u></p> <ul style="list-style-type: none"> I. How to report an accident or incident relating to UA operations as per the Civil Aviation Act. and SLCAIS 053

4. Meteorology		
Learning Objective		
Knowledge Areas	4.1	<p><u>General</u></p> <ul style="list-style-type: none"> I. State atmospheric properties and their effects on UA performance <ul style="list-style-type: none"> a. Pressure b. Temperature

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		<ul style="list-style-type: none"> c. Density d. Humidity <ul style="list-style-type: none"> II. Define basic altimetry terms <ul style="list-style-type: none"> a. Height b. Elevation c. Altitude d. Mean Sea Level (MSL) e. Above Mean Sea Level (AMSL) f. Above Ground Level (AGL) III. Identify cloud types and their impact on UAS operations <ul style="list-style-type: none"> a. Cumulus (CU) b. Cumulonimbus (CB) IV. Identify different types of winds and their impact on UA during operations <ul style="list-style-type: none"> a. Headwind b. Tailwind c. Crosswind V. Describe how to obtain and interpret reliable weather information <ul style="list-style-type: none"> a. Meteorological Services (non-aviation) b. METAR (aviation) c. Aeronautical weather charts/reports
5. Human Factors		
Learning Objective		
Knowledge Areas	5.1	<u>Physiology – Vision</u> <ul style="list-style-type: none"> I. Describe correct visual scanning techniques II. Identify visual illusions during UAS operations and how to overcome them <ul style="list-style-type: none"> a. Disorientation b. Spatial Disorientation
	5.2	<u>Physiology – Medications</u> <ul style="list-style-type: none"> I. Describe the effects of medications during UAS operations
	5.3	<u>Physiology – Psychoactive Substances</u> <ul style="list-style-type: none"> I. Know the prohibition of use of psychoactive substances during UAS operations II. Describe the effects of intoxication during UAS



		<p>operations</p> <p>III. State the penalty on operating an UA under the influence of any psychoactive substances</p>
	5.4	<p><u>Psychology – Fatigue</u></p> <p>I. Identify the causes of fatigue</p> <ol style="list-style-type: none"> a. Flight duration/ flight workload b. Time of flight c. Working hours d. Effects of weather e. Outdoor, remote and lone working f. Crew/ colleague management g. Depth perception h. Blind spot i. Scan technique j. Decision process k. Public/ third parties <p>l. Stress/ pressure from ‘customers’</p> <p>II. Describe the effects of fatigue on UAS operations</p> <p>III. Describe fatigue management techniques</p>
		<p><u>Psychology – Stress</u></p> <p>I. Identify the causes of stress</p> <p>II. Describe the effects of stress on UAS operations</p> <p>III. Describe stress management techniques</p>

6. Operating Procedures		
Learning Objective		
Knowledge Areas	6.1	<p><u>Pre-planning</u></p> <p>I. Consideration of intended task</p>
	6.2	<p><u>Site assessment</u></p> <ol style="list-style-type: none"> I. Establishing a safe operating environment II. Hazard identification & risk assessment III. Mitigating measures IV. Site owner’s permission
	6.3	<p><u>Situational awareness</u></p> <ol style="list-style-type: none"> I. Describe the importance of situational awareness II. Maintaining situational awareness <ol style="list-style-type: none"> a. Location

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	<ul style="list-style-type: none"> b. Airspace c. Aerodromes d. Obstructions e. Public right of way <ul style="list-style-type: none"> III. Assessing situations and making decisions IV. Task prioritization and management
6.4	<p><u>Communications</u></p> <ul style="list-style-type: none"> I. Operating alone II. Liaison with Air Traffic Control III. Operating with other air users
6.5	<p><u>Pre-flight</u></p> <ul style="list-style-type: none"> I. Pre-flight checklist II. Security of attachments/payload III. Airworthiness IV. Failsafe check V. Battery condition VI. Weather
	<p><u>In Flight</u></p> <ul style="list-style-type: none"> I. In-flight monitoring - Fuel/battery status II. Visual Line of Sight III. Emergency actions: (Emergency Response Plan), loss of control/flyaway, malfunctions IV. Deconfliction/separation V. Designated landing area not clear
	<p><u>Post-flight</u></p> <ul style="list-style-type: none"> I. Post-flight actions - debrief/logging of flight details II. Post-flight maintenance
	<p><u>Security</u></p> <ul style="list-style-type: none"> I. Public access to aircraft and control II. Other security considerations
	<p><u>Operator Responsibility</u></p> <ul style="list-style-type: none"> i. Development of Operations Manual



7. UAS Maintenance & Emergency Procedures		
Learning Objective		
Knowledge Areas	7.1	<p><u>Maintenance</u></p> <ul style="list-style-type: none"> I. Know the difference between maintenance and flight checks II. Explain the importance of maintenance III. Know the importance of keeping a maintenance log
	7.2	<p><u>Emergency Procedures</u></p> <ul style="list-style-type: none"> I. List the common emergencies and how these emergencies are identified <ul style="list-style-type: none"> a. Loss of GPS b. Low power c. Loss of C2 link d. Loss of orientation/control e. Stall (aeroplane) f. Fly-away II. Explain the importance of emergency procedures III. Development appropriate and adequate emergencies handling procedures

8. Airmanship and Aviation Safety		
Learning Objective		
Knowledge Areas	8.1	<p><u>Good airmanship principles</u></p> <ul style="list-style-type: none"> I. Aircraft safe to operate II. Remote pilot fit to operate aircraft III. Proper planning and preparation IV. Hazard identification
	8.2	<p><u>Flight Safety</u></p> <ul style="list-style-type: none"> I. Avoiding collisions II. 'See and Avoid' with respect to manned aircraft and other air users
	8.3	<p><u>Perception</u></p> <ul style="list-style-type: none"> I. Distance, height and speed awareness II. Planning, go/no go decisions III. Overflight of people, crowds and gatherings

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		<ul style="list-style-type: none"> IV. Congested area operations V. Flights at night
	8.4	<p><u>Operational mitigations</u></p> <ul style="list-style-type: none"> I. For ground and air risks
	8.5	<p><u>Remote pilot logbooks</u></p>
<p>9. UAS Airspace Operating Principles & Navigation Charts</p>		
<p>Learning Objective</p>		
<p>Knowledge Areas</p>	9.1	<p><u>UAS Airspace Operating Principles</u></p> <ul style="list-style-type: none"> I. Airspace overview <ul style="list-style-type: none"> a. Flight Information Region (FIR) II. Airspace classifications <ul style="list-style-type: none"> a. Differing considerations, controlled airspace III. Specific airspace types <ul style="list-style-type: none"> a. Flight Restriction Zone (FRZ), Aerodrome Traffic Zone (ATZ), gliding/parachuting/microlight sites etc IV. Airspace reservations <ul style="list-style-type: none"> a. Danger Areas, Prohibited Areas, Restricted Areas b. Temporary Airspace Reservations V. Obtaining information <ul style="list-style-type: none"> a. Sri Lanka Aeronautical Information Publication (AIP) b. Aeronautical Information Circulars (AICs) c. Notices to Airmen (NOTAMs) d. Whom to contact VI. UAS Operations <ul style="list-style-type: none"> a. Visual Line of Sight (VLOS) b. Segregated Airspace
	9.2	<p><u>Navigation Charts</u></p> <ul style="list-style-type: none"> I. Basic map reading (OS) <ul style="list-style-type: none"> a. 1:50,000 and 1: 25,000 II. Aviation charts

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		<ul style="list-style-type: none">a. 1:500,000 and 1: 250,000b. Interpretationc. Specialized charts (e.g. Sri Lankan helicopter routes) <p>III. Understanding of basic terms</p> <ul style="list-style-type: none">a. Aeronautical units of measurement (Ft, km, Nm)b. Elevationc. Altitude <p>IV. GPS principles</p> <ul style="list-style-type: none">a. How it works and limitations
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Appendix 3 – Practical Assessment

Knowledge Area	Learning Outcome
General Knowledge of UAS Functions	<p>The candidate should have adequate knowledge of the operating UAS as a whole which includes:</p> <ul style="list-style-type: none"> – Be able to provide an overview of the UAS in general; – Be able to identify major components and explain its functions; and – Be able to identify and explain different indication lights / sounds and flight modes / abnormal conditions.
UAS Checks	<p>The candidate should be proficient with the pre-flight (including assembly) and post-flight checks of the UA, making reference to the Original Equipment Manufacturer (OEM) documents and UATO’s training manual (if required).</p>
Flight Maneuvers via Manual Controls	<p><u>For Rotorcraft (Single Rotor) UA:</u></p> <p>The candidate should be able to demonstrate smooth and controlled flying while performing the following maneuvers without GNSS assistance or assistance from any stabilization systems:</p> <ul style="list-style-type: none"> – Precision hovering at different orientations – Straight and level circuits – Precision landing
	<p><u>For Rotorcraft (Multi-Rotors) UA:</u></p> <p>The candidate should be able to demonstrate smooth and controlled flying while performing the following maneuvers without GNSS assistance or assistance from any stabilization systems:</p> <ul style="list-style-type: none"> – Precision hovering at different orientations – Straight and level circuits – Climbing and descending circuits – Figure of ‘8’ – Precision landing
	<p><u>For Fixed Wing UA:</u></p> <p>The candidate should be able to demonstrate smooth and controlled flying while performing the following maneuvers without GNSS assistance or assistance from any stabilization systems:</p> <ul style="list-style-type: none"> – Take-off – Straight and upright level flights – Straight and inverted level flights – Figure of ‘8’ – Vertical loop – Precision landing
	<p><u>For VTOL/ Hybrid UA:</u></p> <p>The candidate should be able to demonstrate smooth and controlled flying while performing the following maneuvers without GNSS assistance or assistance from any stabilization systems:</p>



	<ul style="list-style-type: none"> - Precision hovering at different orientations - Transition from hover to forward flight and vice versa - Straight and level flights - Figure of '8' - Precision landing
Mission Planning and Execution	The candidate should be proficient with mission planning procedures via ground control system and able to execute / modify the mission during flight.
Emergency Procedures	<p><u>For Rotorcraft UA:</u></p> <p>The candidate should be able to demonstrate procedures leading to the following maneuvers in the event of emergencies:</p> <ul style="list-style-type: none"> - Immediate landing - Abort of landing - Emergency stop - Return to home
	<p><u>For Fixed Wing UA:</u></p> <p>The candidate should be able to demonstrate procedures leading to the following maneuvers in the event of emergencies:</p> <ul style="list-style-type: none"> - Abort of take-off - Abort of landing - Stall recovery - Immediate landing
	<p><u>For VTOL/ Hybrid UA:</u></p> <p>The candidate should be able to demonstrate procedures leading to the following maneuvers in the event of emergencies:</p> <ul style="list-style-type: none"> - Immediate landing - Abort of landing - Emergency stop - Return to home



Appendix 4 – Medical Examination Form

1. Section A – Particular of Applicant (To be completed by Applicant)

Name (as in NIC/Passport)	
NIC number/Passport number	
Contact number	

.....
Applicant’s signature

2. Section B (To be completed by *Medical Practitioner)

****Medical Practitioner – Shall be a MBBS or equivalent qualified Doctor registered in Sri Lanka Medical Council to practice Medicine & Surgery in Sri Lanka.***

Please tick (✓) in the appropriate column.

Does the applicant have any history or does he/she suffer from	Yes	No	Remarks if any
1 Nervous breakdown or mental trouble			
2 Severe headache or migraines			
3 Fits or convulsions of any kind			
4 Fainting attack or giddiness			
5 Head injuries or concussions			
6 Eye trouble if any			
7 Colour blindness			
8 Difficulty in seeing in the dark			
9 Deafness or hearing impairment			
10 Asthma			
11 High blood pressure			
12 Diabetes			
13 Thyroid disease			
14 Heart attack/disease			
15 Palpitation or breathlessness			
16 Illness or any injuries not mentioned above			Please specify (if yes)
17 Undergone any surgical interventions			Please specify (if yes)



3. Section C – General Medical Examination (To be completed by Medical Practitioner)

Test	Yes	No	Remarks
1 Colour perception – is the applicant able to accurately identify the colours – green, red and amber			
2 Visual Acuity			
Distance vision- Both 6/6 without or with correction			
Near Vision- N5 each eye with or without correction			
3 Hearing – Whisper & conversation voice normal			
4 Muscular skeletal system			
Any abnormality and/or physical disability observed?			
Finger movements of both hands are free from any restrictions			
Any limitation in strength of upper limbs?			
Any limitation in strength in lower limbs?			
5 Cardio-vascular system			
Blood pressure Heart rate			
Cardiac murmurs			
6 Respiratory System			
Lungs			
RR			
7 Mental status			
Any evidence of psychiatric disorder?			
Does the applicant show any evidence of being addicted to alcohol, or any drug use?			
8 Others			
Any other abnormalities not stated above			



4. Section D – Details of Overall results (to be completed by Medical Practitioner)

I certify that I have on this day examined the applicant named in section A. Based on my observations and the clinical examination set out in section B & C, I find the applicant physically and mentally;

FIT	UNFIT
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To hold drone operator certificate.

Additional remarks, if any:

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Signature of Medical Practitioner	
Qualifications of Medical Practitioner	
Official Stamp	
Date	

