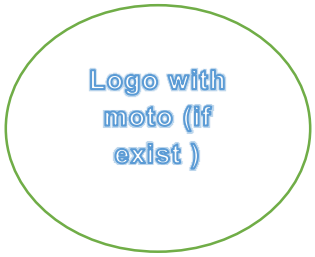


TRAINING & PROCEDURE MANUAL FOR REMOTE PILOT TRAINING ORGANISATION

***File number* – ABC/TPM/RPTO**

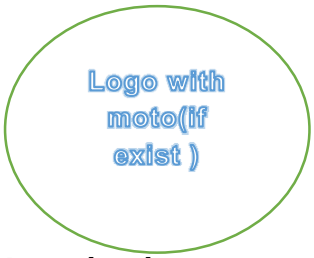
Version1,2…. dated (dd/mm/yyyy)

REMOTE PILOT TRAINING ORGANISATION

NAME OF RPTO ---------

ADDRESS OF RPTO ----------

Controlled Copy Number



Introduction:

As per ICAO Doc 9841, an Approved Training Organisation (ATO) is an organization that is approved by the Licensing Authority (DGCA) to deliver specific approved training programmes to aviation personnel for licensing purposes. As a prerequisite to the approval process, the organization will have demonstrated that it is staffed, equipped, financially resourced and operated in a manner conducive to achieving the required standards. Its approved programmes may from time to time take advantage of the reduced experience requirements provided for in both Annex 1 and the applicable national regulations for certain licences and ratings. 1.1.2 Annex 1, 1.2.8.3, 1.2.8.4 and 1.2.8.5 (including Amendment 175 for remotely piloted aircraft system licences) state that “approved training for the issuance of an Annex 1 licence or rating and “competency-based approved training for remote flight crew, and aircraft and remotely piloted aircraft system maintenance personnel shall be conducted within an ATO”.

Rule 37, 38, 39, 40 & 41 of Drone Rules 2021 notified by the Government of India vide Gazette G.S.R. 589(E) dated 25.08.2021 prescribes the regulations for authorisation of Remote Pilot training Organisation. Rule 133B of Aircraft Rules 1937, prescribes the rules relating to approval of aviation related organisations including training schools. The Civil Aviation Publication (CAP 7100) provides guidance for the certification, continued surveillance and renewal of Approved Training Organisations (ATOs) offering advanced training for aviation personnel’s as specified in ICAO Annex 1, whose principle place of business and registered offices are located within India. Though ideally ATO functions should relate to approved training for the issuance of Annex 1 licence or rating, however due to paucity of adequate training centres, ATOs will be allowed to undertake initial type training, recurrent and upgrade trainings also. The purpose of this Model TPM is to explain the administrative and operational procedures involved in Remote /Drone Pilot. Additional guidance material issued by DGCA needs to be referred to, in conjunction with this TPM. The issue of an RPTO Certificate would be dependent upon the applicant demonstrating an adequate organization, method of control and supervision of training programmes including Drone flight operations (where applicable), FSTD/synthetic training devices, ground training as well as ground handling and maintenance arrangements consistent with the nature and extent of the training courses specified.

The certification team of DGCA is responsible for conducting the required evaluations to ensure the applicant’s capability of meeting the actual and potential obligations in

establishing and continuing to maintain safe, efficient and effective training programmes, prior to issuance of the RPTO Certificate.

The TPM-Training and Procedures Manual describes the training programmes being offered and the way in which the training organization conducts its activities. It is an essential document for the training organization because it provides the management and line personnel with clear guidance on the policy of the training organization as well as the procedures and processes which are used to provide training. It is also an essential document for the Licensing Authority- DGCA. During the approval process, it allows the Authority-DGCA to assess whether the way in which a training organization is planning to operate is in line with existing requirements and accepted practices. Once the training organization is approved, a large part of the surveillance activities of the Licensing Authority -DGCA is to ensure that the Remote Pilot Trainig Organisation (RPTO) is following the training and procedures manual.

It is important that the contents of the training and procedures manual be consistent with other operational documents, regulations and manufacturer's requirements. The manual should also be user-friendly. It is also necessary to ensure that the manual is used consistently across all departments within the RPTO. This can be achieved through an integrated approach that recognizes operational documents as a complete system.

Part VII of Drone Rules 2021 stipulates the requirement for authorisation of Remote Pilot Training Organisations as follows: PART VII REMOTE PILOT TRAINING ORGANISATION

Rule 37. General. – No person other than an authorised remote pilot training organisation shall impart training to an individual seeking a remote pilot licence.

Rule 38. Eligibility. – No remote pilot training organisation shall be authorised impart training unless it meets with the eligibility criteria as may be specified by the Director General.

Rule 39. Procedure for obtaining authorisation.— (1) Any person who intends to obtain the authorisation to establish a remote pilot training organisation shall submit an application to the Director General in Form D-5 on the digital sky platform, along with the fees as specified in rule 46.

(2) The Director General may, within sixty days of the date of receipt of application under sub-rule (1), issue the authorisation to establish a remote pilot training organisation to the applicant if he satisfies the specified criteria and meets with the requirements for establishing such remote pilot training organisation.

Rule 40. Validity.— An authorisation to establish a remote pilot training organisation shall, unless suspended or cancelled, remain valid for a period of ten years, and may be renewed for the period specified therein, subject to a maximum period of ten years at a time, on payment of fee as specified in rule 46.

41. Training requirements.— (1) An Authorised remote pilot training organisation shall ensure strict compliance with the requirements specified by the Director General on the digital sky platform in respect of training, syllabus, infrastructure, instructors, proficiency testing and issuance of remote pilot certificates.

(2) The training requirements specified under sub-rule (1) shall be specific to a category, sub-category and class of unmanned aircraft system.

The contents of this document have been prepared as per guidelines issued by DGCA Drone Training Circulars and CAP7100 issued by DGCA. The objective here is to provide RPAS Instructors/RPI, RPAS trainees and other personnel & staff with all the necessary information for safe, secure and efficient conduct of Drone/RPA training operations.

It is important to note that the information published in this document must not be considered as final drafted issue of the Training and Procedure manual as it will subjected to evaluation and amendments by DGCA and other competent authorities intermittently. It will be the responsibility of Accountable Manager to implement and contemporize the manual from time to time in consultation with RPAS Instructors/HOT-CRPI.

It is paramount for the RPAS Instructors/RPI and RPA trainees to get familiarised with appropriate and necessary contents of the Training and Procedure manual prior to their training program.

The RPTO will develop an information review, distribution and revision control system to process information resulting from changes that originate within the RPTO. This includes changes to:

a) the RPTO’s policies, processes, procedures and practices;

b) respond to operating experience;

c) the scope of training provided;

d) the content of training programmes;

e) results stemming from the installation of new equipment;

f) an approval document or certificate requested by the RPTO and issued by the Licensing Authority; and

g) maintain standardization of training delivery and performance criteria.

The manual will be reviewed in association with other operational documents that form the RPTO’s document control system:

a) on a regular basis (at least once a year);

b) after major events such as mergers, acquisitions, rapid growth or downsizing;

c) after technology changes, e.g. the introduction of new equipment;

d) after changes to safety regulations; e) after changes to key operational personnel (e.g. Head of Training); and

f) after changes to the scope of training provided.

Siganture with seal

Accountable Manager

Name……
Address e mail …

1.5 **Definitions** as per Drone Rules 2021:

(a) “Act” means the Aircraft Act, 1934 (22 of 1934);

(b) “Accident” means any accident associated with the operation of an unmanned aircraft system in which a person is fatally or seriously injured or where the unmanned aircraft system sustains significant damage or goes missing or is completely inaccessible;

(c) "Aeroplane" means any power-driven heavier than air aircraft machine deriving support for its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

(d) “Authorised remote pilot training organisation” means an organisation authorised by the Director General for the purpose of imparting training under rule 39;

(e) “Authorised testing entity” means an entity authorised by the Director General or the Quality Council of India for the purpose of testing unmanned aircraft system for type certification;

(f) “Contracting State” means any country which is for the time being a party to the Convention on International Civil Aviation concluded at Chicago on 7th December 1944;

(g) “Digital sky platform” means the online platform hosted by the Directorate General of Civil Aviation for various activities related to the management of unmanned aircraft system activities in India;

(h) “Director General" means the Director General of Civil Aviation appointed under section 4A of the Act;

(i) “Drone” means an unmanned aircraft system;

(j) “Drone acknowledgement number” means the unique number issued by the digital sky platform under the voluntary disclosure scheme for unmanned aircraft systems in India;

(k) “Geo-fencing” means restricting the movement of unmanned aircraft system within a defined airspace;

(l) “Green zone” means the airspace of defined dimensions above the land areas or territorial waters of India, upto a vertical distance of 400 feet or 120 metre that has not been designated as a red zone or yellow zone in the airspace map for unmanned aircraft system operations and the airspace upto a vertical distance of 200 feet or 60 metre above the area located between a lateral distance of 8 kilometre and 12 kilometre from the perimeter of an operational airport:

“yellow zone” means the airspace of defined dimensions above the land areas or territorial waters of India within which unmanned aircraft system operations are restricted and shall require permission from the concerned air traffic control authority. The airspace above 400 feet or 120 metre in the designated green zone and the airspace above 200 feet or 60 metre in the area located between the lateral distance of 8 kilometre and 12 kilometre from the perimeter of an operational airport, shall be designated as yellow zone;

“red zone” means the airspace of defined dimensions, above the land areas or territorial waters of India, or any installation or notified port limits specified by the Central Government beyond the territorial waters of India, within which unmanned aircraft system operations shall be permitted only by the Central Government;

(m) "hybrid unmanned aircraft" means a heavier-than-air unmanned aircraft capable of vertical take-off and landing which depends principally on power-driven lift devices or engine thrust for the lift during the flight regimes and on non-rotating airfoil for lift during horizontal flight;

(n) "model remotely piloted aircraft system" means a remotely piloted aircraft system, with all-up weight not exceeding twenty-five kilograms, used for educational, research, design, testing or recreational purpose only and operated within visual line of sight;

(o) "Operator" means a person engaged in, or offering to engage in, an operation involving an unmanned aircraft system;

(p) "person" includes an individual, a company, a firm, an association of persons, a body of individuals, a local authority, the Central Government, the State Government and any legal entity, whether incorporated or not;

(q) "prototype unmanned aircraft system" means an unmanned aircraft system developed for the purpose of research and development or obtaining a type certificate;

(r) "Quality Council of India" is the autonomous body set up by the Government of India jointly with the Indian Industry in a public private partnership to establish and operate national accreditation structure and promote quality;

(s) "remote pilot" means an individual charged by the operator with duties essential to the operation of an unmanned aircraft and who manipulates the flight controls, as appropriate, during flight time;

(t) "remote pilot licence" means the licence issued by Director General to any individual under rule 34;

(u) "remote pilot station" means the component of the remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft;

(v) "remotely piloted aircraft" means an unmanned aircraft that is piloted from a remote pilot station;

(w) "remotely piloted aircraft system" means a remotely piloted aircraft, its associated remote pilot stations, the required command and control links and any other components as specified in the type design;

(x) "Rotorcraft" means a heavier-than-air aircraft supported in flight by the reactions of the air on one or more power driven rotors on substantially vertical axes;

(y) "type certificate" means a certificate issued by the Director General or any other entity authorised by the Director General, certifying that the unmanned aircraft system of a specific type meets with the requirements specified under these rules;

(z) "type of unmanned aircraft system" means all unmanned aircraft systems of the same basic design including all modifications thereto, except those modifications which result in a change in handling or flight characteristics;

(za) "Unique Identification Number" means the unique identification number issued for registering an unmanned aircraft system in India;

(zb) "unmanned aircraft system" means an aircraft that can operate autonomously or can be operated remotely without a pilot on board;

(zc) "Unmanned Aircraft System Traffic Management System" means a system that provides traffic management for safe and expeditious flow of unmanned aircraft traffic and

avoids collision between manned and unmanned aircraft through the collaborative integration of persons, information, technology, facilities and services;

Additional definitions ICAO: GLOSSARY OF TERMS AND DEFINITIONS

Terms	Definitions
Airworthy	The status of an unmanned aircraft or part or component thereof when it conforms to its approved design and is in a condition of safe operations
Autonomous Unmanned Aircraft System	An unmanned aircraft system that does not require pilot intervention in the management of the flight.
Autonomous Operation	An operation during which an unmanned aircraft is operating without pilot intervention in the management of the flight.
Beyond Visual Line-of-Sight Operation	An operation in which the remote pilot or the observer does not use visual reference to the unmanned aircraft in the conduct of flight.
Command and Control Link	The data link between the unmanned aircraft and the remote pilot station for the purpose of managing the flight.
Compliant Unmanned Aircraft System	An unmanned aircraft system compliant with the requirements as laid down under these rules.
Controlled Airspace	Airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.
Drone Rules	The Rules published by Government of India vide Gazette ,GSR 589(E) dated 25.08.2021
Danger Area	Airspace of defined dimensions within which activities dangerous to the flight of aircraft exist at specified times. Such timings are notified through NOTAMs.
Drone port	A defined area on land or water (including any buildings, installations, and equipment) intended to be used either wholly or in part for the arrival, departure, surface movement and associated maintenance or commercial activities of unmanned aircraft.
Drone Swarm	A fleet of unmanned aircraft either in communication with one another or with remote control and deployed together in order to accomplish a common objective, controlled either autonomously or by a remote control.

Enclosed Premises	A premise enclosed permanently or temporarily from all directions, within the walls of a structure except for doors or windows or passageways, and having a ceiling or roof;
Geo-fencing	Restricting the movement of an unmanned aircraft within a defined virtual space for a real-world geographic location using the global positioning system or radio frequency identification to define three dimensional geographical boundaries.
Maintenance	The performance of tasks required to ensure the continuing airworthiness of an unmanned aircraft system, including any one or combination of overhaul, inspection, replacement, defect rectification and the embodiment of a modification or repair or test.
Payload	Any component or equipment or any other material on board the unmanned aircraft that is not required for the flight or its control
Prohibited Area	The airspace of defined dimensions, above the land areas or territorial waters of India within which the flights of unmanned aircraft are not permitted, or any installation or notified port limits identified by the Central Government beyond the territorial waters of India, at any time under any circumstances.
Prototype Unmanned Aircraft System	An unmanned aircraft system developed for the purpose of research and development or obtaining a certificate of manufacture and airworthiness.
Rating	An authorization entered on a remote pilot licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.
Drone/Remote Pilot	A person charged by the operator with duties essential to the flying of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time.
Remote Pilot Station	The component of remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft.
Restricted Area	The airspace of defined dimensions above the land areas or territorial waters of India within which the flight of unmanned aircraft is restricted.
Remotely Piloted Aircraft Observer	A remote pilot designated by the operator who, by visual observation of the remotely piloted aircraft, assists the remote pilot in the safe conduct of the flight.
Segregated Airspace	The airspace of specified dimensions allocated for exclusive use to a specific user(s).

Transaction Number	A unique number generated for identifying any transaction completed through online platform such as Bharatkosh.
Unmanned Aircraft Traffic Management	A specific aspect of air traffic management which manages unmanned aircraft system operations safely, economically and efficiently through the provision of facilities and a seamless set of services in collaboration with all parties and involving airborne and ground-based functions.
Unique Identification Certificate	A certificate issued by the Director General certifying that the unmanned aircraft is in compliance with the certificate of manufacture and airworthiness with a valid certificate of conformance and includes the unique identification number assigned to such unmanned aircraft.
Visual Line-of-Sight Operation	An operation in which the remote pilot or the observer maintains direct unaided visual contact with the unmanned aircraft.

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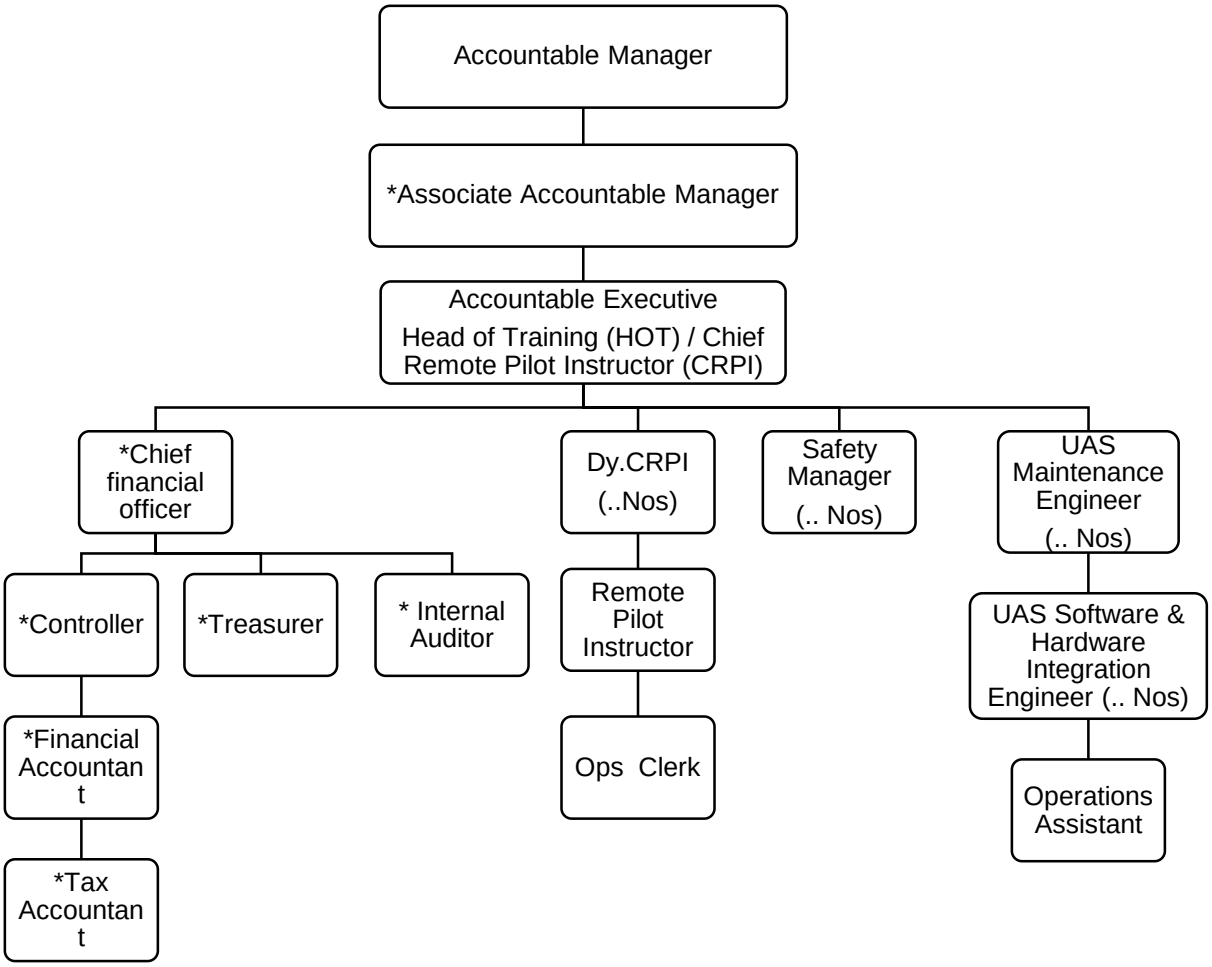
SAMPLE ORGANIZATIONAL CHART OF RPTO



* If applicable

DOCUMENT APPROVAL

ROLE	SIGNATURE WITH NAME & DESIGNATION
Prepared by	(----------) Head of Training RPTO --------
Checked by	(----------) Designation -- RPTO----------
Recommended by	(----------) Accountable Manager RPTO ----------
Approved by	Name of DGCA Director with seal Department round seal

TABLE OF CONTENTS

LOGO

RPA TRAINING AND PROCEDURE MANUAL

RPTO NAME ----------

ADDRESS ----------

Issue No: 01
Revision: 00

784449/2021/DRONE DIRECTORATE

PART – 1

784449/2021/DRONE DIRECTORATE

CHAPTER – 1

1. GENERAL

GENERAL

INTRODUCTION

ABC RPTO …….. which provides …… in India through its various …….. located at ……..

It is an endeavour of the organization to develop human resources for the Drone/ aviation industry, ensuring conformity of the processes, by adapting the best practices within industry and building higher skills and standards in training of aviation personnel. The organisation is now expanding to include ……Remote/Drone Pilot Training, Test and Certification in accordance with requirements as laid down in DGCA's ……

DGCA ……. specifies the minimum training in Drone/Remote Pilot to be undertaken by a candidate prior apply for Remote Pilot Licence .

USE OF THIS MANUAL

This manual is prepared for the information, guidance and compliance of the standards as laid down in DGCA's ……" for all personnel involved in the Drone/Remote Pilot - Training, Testing and Certification. This manual is also available to all stakeholders for their information.

In the interests of simplicity, any reference to the masculine gender in this manual can be taken to mean either male or female.

In this manual, Remote Pilot Training Organisation Service Provider at …….address ……. will be referred as RPTO/-TPM------/……..

APPLICABILITY

The provisions contained in this manual are applicable to the Accountable Manager, the HOT-Head of Training, RPI/RPAS /FSTD/RPTS Instructor, Operational Persons, the Quality Assurance/Maintenance manager Manager and participants undergoing Drone/Remote Pilot Proficiency training, testing and certification at ……..

AMENDMENT, REVISION & DISTRIBUTION OF TPM

This manual will be reviewed by a Review Committee constituted and headed by the Accountable Manager. The Review Committee shall comprise of, but not limited to, the Accountable Manager, Head of Training, Quality Assurance/Maintenance manager RPI/RPAS Instructors ,

This includes changes:

a) in the organisation's policies, procedures and practices;
b) in response to operating experience;
c) Scope of training imparted and content of training programs.
d) to the content of training and skill , exam programs;
e) resulting from the installation of new facility ;
f) to an approval document or operating certificate;
g) for the purpose of maintaining standardization; and
h) resulting from changes in national regulations DGCA /ICAO provisions in respect of RPAS/UAS/ANNEX-1.

The TPM shall be amended as necessary to keep the information contained therein up to date. Any proposed amendment to TPM shall be promptly furnished to DGCA for approval. The revisions to the TPM shall be implemented only after it has been approved by the DGCA.

The TPM shall be reviewed at least once a year along with other related documents that form the organisation's document control system. In addition to this, the TPM shall also be reviewed after:

a) major events such as mergers, acquisitions, rapid growth or downsizing etc.;
b) technology changes, e.g. the introduction of new equipment/facility ; and
c) changes in concerned regulations.

As soon as a corrigendum or amendment is issued to this TPM, it is distributed to all concerned for incorporation in the controlled copies on or before the revision's effective date. A log entry shall be maintained for all the distributions and acknowledgement receipt of the corrigendum and amendment in the tracking log.

Amendments/corrigenda shall include serial number of amendment/corrigenda along with the effective date.

Addition of chapters or pages or replacement of a page or modification of a page, shall indicate page number, amendment/corrigendum number (e.g. Amd-01, Corr-01 etc.) and effective date shown on the footer of the relevant page.

For any queries/clarifications/feedback/suggestions on TPM, please contact:

Accountable Manager,
……

1.1 Record of Amendments and Corrigenda

The amendments/corrigenda listed below have been incorporated into this copy of the Training and Procedures Manual.

Amendment/ Corrigendum No.	Effective Date	Incorporated By	Incorporated On

1.2 Distribution Method

a) The Training and Procedures Manual (TPM) and the revisions will be forwarded to all persons and organisations mentioned in the distribution list of this manual. The revised pages will be sent to all the recipients concerned in advance so as to reach the recipient at least one week prior to its effective date. A revision should be inserted and recorded as soon as it is received. Revisions will also be sent through 'Delivery Receipt' enabled emails.

b) 'Delivery Receipt' of the email will be considered as an acknowledgement by the user of receiving the amendment.

c) This confirmation will indicate that the user has inserted the revisions in the controlled copy of the manual on or before the effective date.

d) A distribution log in respect of the TPM and amendment/revision thereof will be maintained as per the distribution list.

e) A Master copy of the TPM will be maintained by the Head of Training.

1.3 Distribution List

a) The TPM will be distributed to the following officials as controlled copy:
   1. Drone Directorate Director-General of Civil Aviation (DGCA)
   2. Accountable Manager
   3. Head of Training-CRPI
   4. Quality/Maintenance Manager, ……..

b) Any amendments to TPM shall be promptly furnished to all the above officials.

Access to the TPM shall be available to all trainee ,RPAS/RPI instructors other stakeholders in electronic version in the ……RPTO

784449/2021/DRONE DIRECTORATE

1.4 EFFECTIVE PAGES – LISTS

Page No.	Issue No.	Issue Date	Revision No.	Revision Date	Revised Page No.
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784449/2021/DRONE DIRECTORATE

1.6 DESCRIPTION OF STRUCTURE AND LAYOUT OF MANUAL

1.7.1 VARIOUS PARTS, SECTIONS, THEIR CONTENTS AND USE

The manual has been prepared and organized based on information provided in the Gazette of India:……. The various contents of the Training and Procedures manual and their significance has been listed below. The overall manual has been divided into two parts. Part – 1 provides the general information concerning the organizational setup and Part – II deals with the operational and maintenance procedures of the organization. The various chapters and sub-contents presented in the manual have been organized for reader's convenience.

S.No.	CONTENTS	PAGE RANGE	SIGNIFICANCE
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1.7.2 PARAGRAPH NUMBERING SYSTEM

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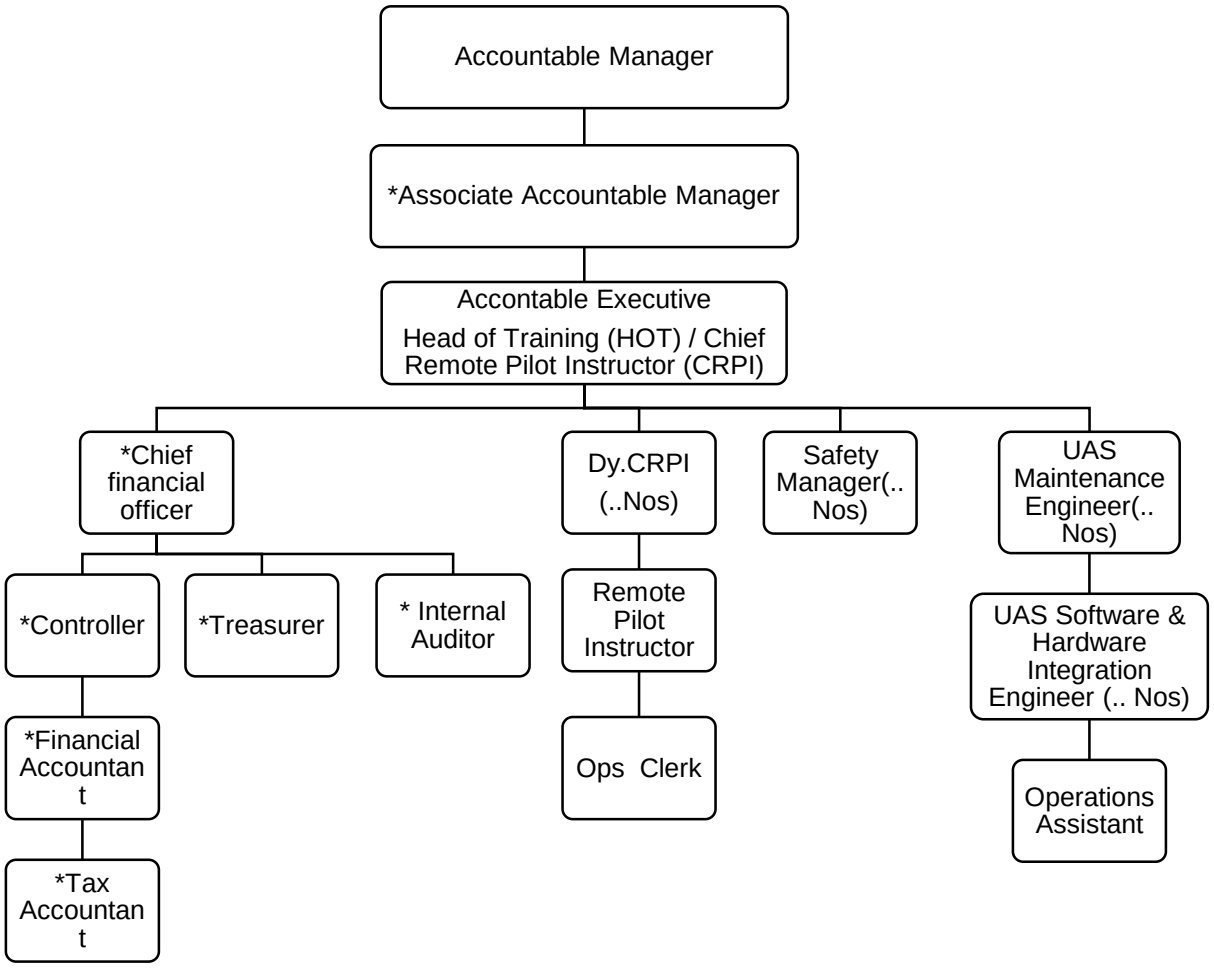
CHAPTER – 2

784449/2021/DRONE DIRECTORATE

2. ORGANIZATION AND TRAINING

2.1 AUTHORIZED SCOPE OF TRAINING

2.2 ORGANIZATIONAL CHART



ORGANIZATIONAL CHART OF REMOTE PILOT TRAINING ORGANIZATION (RPTO)

***If applicable .**

2.3 KEY PERSONNEL – QUALIFICATION, RESPONSIBILITIES AND SUCCESSION OF COMMAND

a) ACCOUNTABLE MANAGER:

QUALIFICATIONS:

RESPONSIBILITIES:

SUCCESSION OF COMMAND:

b) RPI/RPAS INSTRUCTOR:

(i) An individual seeking a Remote Pilot Instructor Rating or renewal of the Remote Pilot Instructor Rating under these rules shall submit an application to the Director General in Form as specified .

(ii) The individual shall be the holder of a valid remote pilot licence of the appropriate category and class.

(iii) The individual shall not be less than twenty years of age.

(iv) The individual shall pass an examination as per the syllabus specified and conducted by the Director General.

(v) The individual shall submit a certificate of training and a skill test report for the Remote Pilot Instructor course appropriate to the category of unmanned aircraft system and class of unmanned aircraft from an authorised training organisation.

(vi) The Director General upon being satisfied after skill test and oral may issue or renew the Remote Pilot Instructor Rating.

(vii) The Remote Pilot Instructor Rating shall remain valid for the period specified therein, subject to a maximum period of Five years and may be renewed for the period specified therein, subject to a maximum period of Five years.

c) UAS MAINTENANCE ENGINEER/QAM:

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CHAPTER – 3

784449/2021/DRONE DIRECTORATE

3. EQUIPMENTS & INFRASTRUCTURE

4.1.1 UAS/RPA/DRONE DETAILS:

The details of the Remotely Piloted Aircraft (RPA) that are to be utilized for the subsequent training programs will be furnished in the Training and Procedures manual as per the information provided in the table below.

S.No.	REMOTELY PILOTED AIRCRAFT (RPA) SPECIFICATIONS		
a)	TYPE / MODEL		
b)	RPA DAN No.	1.	2.
c)	UIN No.		
d)	UAV CATEGORY		
e)	OWNED / LEASED		
f)	NEW / USED		
g)	NAME OF OWNER		
h)	VALIDITY		
i)	DATE OF MANUFACTURE		
j)	PAYLOAD DETAILS		
k)	INTERFACE		

4.1.2 REMOTE PILOT TRAINING SIMULATOR FSTD/(RPTS) DETAILS:

The RPA simulator and its desired characteristics that are to be used for desired training programs has been furnished in the table below:

REMOTELY PILOTED AIRCRAFT (RPA) SIMULATOR SPECIFICATIONS		
REGISTRATION NO.		
RPV MODE 2		
MANUFACTURER		
SUPPORTED RPA TYPES (ROTARY / FIXED WING / OTHERS)		

4.1.3 MAINTENANCE PROCEDURE FOR RPA AND RPTS:

4.1.4 PROCEDURE FOR UTILIZING UAS AND SIMULATORS OF OTHER RPTO / ORGANIZATIONS:

4.1.5 HALLS & INFRASTRUCTURE:

a) OFFICES FOR ADMINISTRATIVE OPERATIONS.

b) STORAGE AREA / RECORDS ROOM.

c) LOBBY AREA / WAITING ROOM.

d) DRONE FLIGHT OPERATIONS AREA

e) FLIGHT PLANNING ROOM OR AREA

f) REMOTE PILOT BRIEFING / DEBRIEFING HALLS

g) INFRASTRUCTURE FOR REMOTE PILOT BRIEFING

.

h) PERSONAL WORKSPACES FOR INSTRUCTORS

.

i) **SIMULATOR ROOM AND UAS MAINTENANCE ROOM**

j) BATTERY CHARGING AND STORING FACILITIES

4.1.6 CLASSROOMS:

a) AVAILABILITY OF LECTURE HALLS.

b) EQUIPMENTS AND APPLIANCES FOR TRAINING:

4.1.7 LIBRARY FACILITIES:

a) READILY ACCESSIBLE LIBRARIES FOR TRAINEE PILOTS.

b) LEARNING MATERIAL MONITORING SYSTEM.

c) ADEQUATE FUNDAMENTAL BOOKS ON UAS AS PER REGULATIONS OF DGCA.

4.1.8 RADIO TELEPHONY:

a) RADIO TELEPHONY TRAINING AND TESTING FOR UAS AS PER REGULATIONS STIPULATED BY DGCA:

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CHAPTER – 4

784449/2021/DRONE DIRECTORATE

4. TRAINING STRATEGY

4.1.9 AIM OF COURSE : …….

4.1.10 RPA TRAINING PROGRAM – STATEMENT OF WORK AS PER DGCA.

4.1.11 REQUIRED LEVEL OF PERFORMANCE.

The duration of the ground training will be not less than that prescribed below as per regulations stipulated by DGCA from time to time.

The practical training shall comprise RPA in flight having live component, and/or simulated flight training to demonstrate control of RPA throughout its operating conditions, including safe recovery during emergencies and system malfunction. Minimum syllabus and curriculum for training capsule for Remote Pilot is given at as per regulations stipulated by DGCA.

The duration of the practical training leading to award of an RPA Training Certificate as per regulations stipulated by DGCA, will be not less than that prescribed below as per regulations stipulated by DGCA.

Sl. No.	SUBJECT	NUMBER OF CLASSES
1		
2		
3		
	TOTAL	

Note: The training can be increased at the discretion of RPA Instructor.

4.1.12 EXPECTED TRAINING CONSTRAINTS.

4.2 PRE-ENTRY REQUIREMENTS:

4.2.1 ELIGIBLE AGE LIMIT.

4.2.2 EDUCATIONAL REQUIREMENTS.

4.2.3 LANGUAGE REQUIREMENTS.

4.2.4 MEDICAL REQUIREMENTS.

4.2.5 OTHER REQUIREMENTS

.

4.3TRAINING PROGRAM CURRICULUM

4.3.1 TRAINING SCHEDULE AND END OF COURSE REPORT

4.3.2 FIXED WING RPAS – CURRICULUM AND TRAINING METHODOLOGY

4.3.3 ROTARY WING RPAS – CURRICULUM AND TRAINING METHODOLOGY

4.3.4 OTHER RPAS – CURRICULUM AND TRAINING METHODOLOGY

The basics of the methodology adopted for fixed wing RPAs and rotary wing RPAs will be applicable to RPAs other than fixed wing RPAs and rotary wing RPAs also. In addition, the curriculum will also include those specific aspects of the Other RPAs that are unique but essential for adequacy of knowledge and skills required for safe and efficient operation of the Other RPAs.

4.3.5 REMOTE PILOT TRAINING SIMULATOR (RPTS) CURRICULUM

4.3.6 GROUND TRAINING CURRICULUM

a) **DGCA REGULATIONS –**

b) Classification

c) CAR Circulars
d) Basic Air Regulations
e) AIP, AIC, ETC as applicable DGCA familiarization
f) Salient points
g) Do’s and Don’ts

I. BASIC PRINCIPLES OF FLIGHT

II. ATC PROCEDURES & RADIO TELEPHONY

III. **FIXED WING OPERATIONS AND AERODYNAMICS**

IV. **INTRODUCTION TO MULTI ROTOR**
V. **WEATHER AND METEOROLOGY**

VI. **DRONE EQUIPMENT MAINTENANCE**

VII. **EMERGENCY IDENTIFICATION AND HANDLING**

VIII. **PAYLOAD, INSTALLATION AND UTILIZATION**
IX. **IMAGE AND VIDEO INTERPRETATION**
X. **FINAL TEST – THEORY**

Performance Improvement Programme conducted after the completion of theory courses, the passing percentage is set to be 70 % of the total marks. If any student scores less/fails in theory and practical he will be subjected to PIP, he/she will be additionally cared by the Instructors and the same test may be conducted again.

Each trainee is a unique individual having different reasons for unsatisfactory progress and needing different approach to address the same. Some of the tools available for correcting unsatisfactory progress may include: -

i. Counselling
ii. Helping the trainee on his weak knowledge areas

4.4 PROGRAMMED CURRICULUM TIMES

4.4.1 COURSE ARRANGEMENTS AND CURRICULA TIME INTEGRATION.

4.5 TRAINING PROGRAM

a) SCHEDULE OF PROGRAMS FOR RPA FLIGHT, GROUND AND SIMULATOR TRAINING.

b) TRAINING TIME LIMITATIONS (FLYING, THEORETICAL KNOWLEDGE & SIMULATOR) E.G. PER DAY/WEEK/MONTH.

Following limitations must be adhered to for the conduct of training.

1) RPA Practical Training: Instructors – hours / day maximum.
2) RPA Practical Training: Students – hours/ day maximum.
3) RPA Simulating Training: Instructors – hours/ day maximum.
4) RPA Simulator Training: Students – hours/ day maximum.

5) RPA Ground Training: Instructors – hours/ day maximum.
6) RPA Ground Training: Students – hours/ day maximum.

c) DUTY PERIOD RESTRICTIONS FOR STUDENTS:
d) FLIGHT DURATIONS (SOLO OR INSTRUCTOR ASSISTED)

e) MAXIMUM FLYING HOURS IN ANY DAY

f) MAXIMUM TRAINING FLIGHTS (#) IN ANY DAY:
.
g) DUTY PERIOD RESTRICTIONS FOR INSTRUCTORS:

4.6TRAINING RECORDS

a) TRAINING CERTIFICATE AND FLIGHT LOG RECORDS

b) DEBRIEFING, EVALUATION SHEETS, TRAINING PROGRESS REPORTS AND END OF COURSE TRAINING REPORT

c) PROCEDURE FOR MAINTAINING INTEGRITY OF RECORDS AND DOCUMENTS i.e. PROTECTION FROM ALTERATION AND REMOVAL etc.
d) ATTENDANCE RECORDS

e) THE FORM OF TRAINING RECORDS TO BE KEPT e.g. DOSSIER.

f) PERSONNEL RESPONSIBLE FOR CHECKING

g) NATURE AND FREQUENCY OF RECORDS CHECKS
h) STANDARDIZATION OF ENTRIES.

i) DRONE/REMOTE PILOT'S PERSONAL LOG BOOK:

4.7 SAFETY TRAINING

A. INDIVIDUAL RESPONSIBILITIES

Safety is everybody's responsibility. Awareness towards the safety of RPA flights is indoctrinated during the RPAS capsule. However, it will be the responsibility of the Accountable Manager, the RPA Instructor and the RPA Pilot in Command who will be ultimately responsible for safe operations and for adhering to the rules of operations and respecting individual privacy.

B. BATTERY CHANGING PROCEDURES, EMERGENCIES AND MAINTENANCE OF BATTERY CHANGING LOG BOOK

a) **BATTERY CHANGING PROCEDURE:**
   i. **Disconnecting the battery:**
   ii. **Connecting a battery:**
b) **EMERGENCIES**
c) **MAINTENANCE OF BATTERY CHANGING LOG BOOK**
d) **BATTERY CHARGING**
   i. .
e) **PRECAUTIONS WHILE HANDLING BATTERIES**

C. **ESSENTIAL EXERCISES**
D. **EMERGENCY PREPAREDNESS DRILLS**
E. **PROCEDURES DURING EMERGENCIES:**
   a) **GPS FAIL SAFE LANDING**
   b) **COMMUNICATION FAILURE**
   c) **WIND DRIFT**
   d) **LOW BATTERY**
   e) **TELEMETRY LOSS AND LOSS OF VIDEO**
   f) **DISORIENTATION**
F. **CHECKS**

G. **REQUIREMENT PRIOR TO RPA TRAINING FLIGHT**
The first training flight by a trainee will commence only after he has undergone the requisite ground and simulator training.

4.8 EVALUATIONS AND TESTS

A. **KNOWLEDGE: PROGRESS AND KNOWLEDGE TESTS**

B. **AUTHORIZATION FOR TEST**

C. **RULES FOR REFRESHER TRAINING BEFORE TEST**
D. **TEST REPORTS AND RECORDS**
E. **TEST/RETEST PROCEDURES**

4.9TRAINING EFFECTIVENESS

A. **INDIVIDUAL RESPONSIBILITIES**

B. **GENERAL ASSESSMENT:**

C. **LIAISON BETWEEN DEPARTMENTS:**

D. **IDENTIFICATION OF UNSATISFACTORY PROGRESS (INDIVIDUAL STUDENTS)**

E. **ACTIONS TO CORRECT UNSATISFACTORY PROGRESS**

F. PROCEDURE FOR CHANGING RPA INSTRUCTOR

G. ALLOWED NUMBER OF INSTRUCTOR CHANGES PER STUDENT.

(*Internal Feedback System for Detecting Training Deficiencies****)***

As far as possible change of Instructor should be minimal, however, CRPI has the final authority depending on the performance of the student. Instructor may not be changed more than once during the basic certification course. If the Instructor is changed more than once then the reasons for such change to be recorded.

H. PROCEDURE FOR SUSPENDING A STUDENT FROM TRAINING

Apart from the termination of training due to insufficient progress, a student can also be suspended from training for a specified period for the following reasons

i. Lack of focus
ii. Disciplinary issues
iii. Financial issue- If some part of fee no paid then trainee may request DGCA for waiver of fee up to 20% which can be given by DGCA for Socio economical persons/any other persons
iv. Medical issues

In all cases of suspension from and termination of training, a show-cause notice will be issued providing an opportunity to the trainee to present his case. If response of the trainee is found not satisfactory, he may be suspended or terminated from training after approval of the same by CRPI. This decision can be changed by DGCA on the basis of appeal filed.

I. STANDARDS AND LEVEL OF PERFORMANCE AT VARIOUS STAGES.

The performance of a trainee may be measured on scales of progress, attitude and technique, enabling an RPA Instructor to assess his overall progress. A grading on each of these scales can be done. On such grading scale is provided below. Student must achieve minimum grade of 'C' as listed below.

Grade	Progress	Attitude	Technique
A	Remembers and applies all the important instructions you have given him. You are pleased with him.	Mature, sound, trust-worthy and alert. Seriously interested in becoming a good Remote pilot.	Above serious criticism. You feel like saying and should say "excellent, I am proud of you".
B	Good but occasionally forgets but also absorbs instructions in a reasonable time	Generally sound trust- worthy and alert and interested.	Sound and safe.

	and does not cause trouble.		
C	Steady and sure.	Not outstandingly keen, but certainly keen enough.	Safe, but not very good.
D	Progress is slow, but in the main fairly sure.	Not good, has to be pushed.	Not good, but not dangerously bad.
E	Slow, shows you doubt about his ability to make it.	Unstable and unreliable.	Erratic-consistently below standard for his flying time and experience, in fact dangerous.

J. INDIVIDUAL RESPONSIBILITIES

K. STANDARDIZATION

There can be more than one way to carry out a manoeuvres or flying procedure. However, there must be only one standardized way it will be done to ensure that a student pilot can develop adequate skill in that manoeuvres rather than learning many ways and nothing sufficiently. Towards this end, the RPA Instructor will ensure standardization of the procedures taught by various RPA Instructors.

L. STANDARDIZATION REQUIREMENTS AND PROCEDURES

Standardization meeting of all RPA Instructors will be conducted regularly but at least once in six months to discuss different techniques of teaching a certain part of curriculum. The discussion will be aimed at identifying the best technique. The same will be implemented.

M. TRAINING TO DGCA OFFICERS

RPTO …….. will provide free of charge training to DGCA officers or any other candidate recommended by DGCA for enhancement of technical as well as latest technology in drone industry. As per recommendation of Director Operations Drone Directorate of DGCA Hqrs

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CHAPTER – 5

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5. BREIFING AND AIR EXERCISES

5.1 AIR EXERCISES

A detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown with main and sub-titles. Following table provides a detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown. The RPA Instructor may increase or decreases the duration of certain exercises or alter the sequence to cater to the specific requirements of a certain trainee. In such case, the total training imparted shall not be less than that prescribed as per regulations accepted by DGCA.

Ex. No.	Duration (Hrs)	Dual / Solo	Exercise	Demo	Ex. Unassisted	Remarks
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

5.2 AIR EXERCISE REFERENCE LIST

An abbreviated list of the above exercises giving only main and sub-titles for quick reference, preferably in flip-card form to facilitate daily use by Instructors.

Ex. No.	Duration (Hrs.)	Progressive (Hrs.)	Dual / Solo	Exercise
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

11				
12				
13				
14				
15				
16				

The duration of above-mentioned exercises can be increased with no additional fee, but cannot be decreased No exercise can be added or removed. However, the minimum number of exercises prescribed as per regulations of by DGCA shall be final.

5.3 COURSE STRUCTURE – TRAINING PHASE

A. ***A statement of how the course will be divided into phases, indication of how the above air exercises will be divided between the phases and how they will be arranged to ensure that they are completed in the most suitable learning sequence and that essential (emergency) exercises are repeated at the correct frequency*****.**

The course will be divided into the following phases: -

i. Ground training phase
ii. Simulator phase
iii. Practical Drone/RPA flying phase

The three phases of training have been planned so as to equip a trainee with requisite knowledge and skill to be able to absorb instructions during succeeding phase effectively.

B. Curriculum hours for each phase and for groups of exercises within each phase shall be stated and when progress tests are to be conducted etc.

The practical exercises have been sequenced so as to initially familiarize the trainee with the working of an RPA, and then gradually progressing to more complex exercises and terminating the training at a stage where the student has adequate knowledge, skill and confidence to successfully use the privileges of his Certificate. Curriculum hours for each exercise have been assigned so as to ensure adequate practice and attainment of requisite proficiency on the individual items of the curriculum. The curriculum has been prepared to match the syllabus prescribed by DGCA

5.4 COURSE STRUCTURE INTEGRATION OF CURRICULUM

The manner in which theoretical knowledge, simulator training and flying training will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and simulator training:

……..

5.5 STUDENT PROGRESS

A. The requirement for student progress and includes a brief but specific statement of what a student is expected to be able to do and the standard of proficiency he or she must achieve before progressing from one phase of air exercise training to the next.

…….

B. Include minimum experience requirements in terms of hours, satisfactory exercise completion, etc. As necessary before significant exercises.

……

5.6 INSTRUCTIONAL METHODS

Instructions during simulator training are to be imparted through methods similar to the methods of air instructions, which is crisp, synchronized with flying and accurate demonstration of specific/reference manoeuvres. After each syllabus exercise, a detailed debrief is to be conducted for each student and record of the same is to be maintained. Normally, the following method of instructions will be followed unless specific requirements of a trainee mandate otherwise:

i. Theoretical knowledge
ii. Briefing
iii. Demonstration
iv. Assisted manoeuvre
v. Independent Manoeuvre

5.7 PROGRESS TESTS

Progress in various phases is to be assessed by the RPAS/RPI Instructors and the performance assessment of the student is to be recorded in their RPTR.

5.8 PROCEDURE FOR COMPLIANCE OF DGCA ORDERS FOR DRONE PROMOTION TRG

5.9 ANNEXURES

Following annexures will be used for records of practical flying training and related matters and their formats have been appended at the end of this TPM as annexures numbered serially:

5.10 STANDARDIZED CHECKLISTS FOR NORMAL, ABNORMAL AND EMERGENCY PROCEDURES

Instructors will be provided with standardized check lists of normal and, abnormal and emergency manoeuvres. Such check lists will be prepared based on the check lists provided by the manufacturer supplemented with provisions to address local issues.

5.11 MAPS, CHARTS AND OTHER EQUIPMENT FOR RPA FLIGHTS

Each operator shall have appropriate chart covering the full area of operation providing a minimum of the following information: -

1) **Green Zone**
2) **Yellow Zone**
3) **Red Zone**
4) Danger areas
5) Restricted areas
6) **Prohibited areas**
7) Major towns
8) Major roads
9) Airports

5.12 CHECKLIST OF DOCUMENTS REQUIRED TO BE CARRIED

The check list must be available with the RPI/RPAS Instructor under whose supervision the DRONE/UAS/ RPA flying is conducted. This check list must contain the list of documents that must be available at the site of operations. Record may be kept in Digi locker /mobile Sugam app.

1) UIN allotment record
2) ETA-WPC
3) RPI/RPAS Instructor Authorisation issued by DGCA
4) RPA Instructor approval record/log book
5) Permission of the owner of the site.
6) Aadhar/passport /Driving Licence/Voter card
7) Identity card with tag of RPAS/RPI Instructor
8) HVRJ jackets
9) Badges of Drone pilot and Instructors
10) Record of exemptions if any

5.13 DIGITAL SKY FLIGHT PLANNING / APPROVAL PROCEDURES

…….

5.14 PROCEDURES TO ENSURE STABILITY OF TRAINING RPAs

Stability is the inherent quality of an RPA to correct for conditions that may disturb its equilibrium and to return to or to continue on the original flight path. It is primarily an aircraft design characteristic which may be adversely affected by a system failure or inappropriate handling. Stability in an RPA affects two areas significantly:

i. **MANOEUVRABILITY** — The quality of an aircraft that permits it to be maneuverer easily and to withstand the stresses imposed by manoeuvres. It is governed by the aircraft's weight, inertia, size and location of flight controls, structural strength, and power plant. It is also an aircraft design characteristic which may be adversely affected by a system failure or inappropriate handling.

ii. **CONTROLLABILITY** — The capability of an aircraft to respond to the pilot's control, especially with regard to flight path and attitude. It is the quality of the aircraft's response to the pilot's control application when manoeuvring the aircraft, regardless of its stability characteristics.

It is necessary to ensure stability of an RPA in all phases of flight. The decision- making function(s) of an RPA may be autonomous or manual. In case of autonomous functions, the algorithm must be capable of handling the range of exceptional and emergency conditions as to allow safe and soft landing as well as ensuring that malfunction or loss of the decision- making function(s) itself does not cause a reduction in safety. In case of non-autonomous RPAs pilots shall have knowledge of the ensuring stability using manual control and correction of asymmetry or any other reason of instability.

5.15 PROCEDURES BRIEFING / DEBRIEFING

……..

5.16 PROCEDURES FOR TRAINEE PILOTS FOR THEIR 1st RPA SOLO FLIGHT

An RPA trainee shall be permitted to undertake their first RPA solo flight as per following procedure:

A. VLOS Solo ……B. BVLOS……C. NIGHT …….

5.17 PROCEDURES FOR CARRYING OUT DRONE FLYING CHECKS FOR TRAINEES

…….

5.18 DATABASE OF CERTIFICATES AND LOGS

While the DGCA approval of the RPTO for undertaking UAS/RPAS training will be displayed prominently at the main office of the company, other certificates and clearances shall be kept in a folder facilitating easy access.

5.19 OCCURRENCE REPORTING PROCEDURE FOR UAS/RPAS/DRONE

The Accountable Manager/CRPI-HOT/RPI of all RPAS/UAS shall be responsible for notifying any incident / accident involving during training and operations or any other occurrence which may attract social media to the Director of Air Safety, and Drone Directorate DGCA as per norms which has been reproduced as annexure-……. to this manual. On reporting of occurrence will be viewed seriously by DGCA

5.20 PROCEDURE FOR DISPOSAL OF DAMAGED DRONE/RPAS/ UAS

An UAS damaged beyond economical repair, shall not be sold or otherwise transferred to any person without the permission of DGCA. To ensure application of this condition, DGCA will be notified for cancellation of UIN if an UAS has been damaged beyond economical repair.

CHAPTER – 6

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6. RPA SIMULATOR TRAINING

6.1 EXERCISE DETAILS

UAS/RPAS Simulators certified by DGCA are available at RPTO…… these are capable of simulating most of the flying exercises / manoeuvres. The list of exercises is given below. RPAS training is to be conducted by DGCA Certified RPAS Instructors. Details of the exercises are given in the table below:

Ex. No.	Duration (Hrs.)	Progressive (Hrs.)	Exercise
01			▪
02			▪
03			▪
04			▪
05			▪
06			▪
07			▪
08			▪

6.2 EXERCISE REFERENCE LIST

Ex. No.	Exercise
1	Takeoff
2	Hover
3	Gentle turns
4	Medium and steep turns
5	Level out
6	Disorientation and recovery
7	Climbing and climbing turns
8	Descend and descending turns
9	Circuit flying
10	Gimbal controls
11	Abnormal/Emergency Procedures
12	Practice For RTL/RTH

6.3 COURSE STRUCTURE – TRAINING PHASES

……..

6.4 COURSE STRUCTURE INTEGRATION OF CURRICULAM

……

6.5 STUDENT PROGRESS

……

6.6 INSTRUCTIONAL METHODS

……

6.7 PROGRESS TESTS

……

6.8 GLOSSARY OF TERMS

……..

6.9 ANNEXURES

……..

CHAPTER – 7

784449/2021/DRONE DIRECTORATE

7. ADMINISTRATIVE PROCEDURES

7.1 ADMINISTRATION (FUNCTION AND MANAGEMENT)

Accountable Manager of RPTO ……. RPTO is responsible for the smooth and efficient management of the organization including that of UAS/RPAS training and is assisted by RPAS Instructor /RPI . RPAS Instructors are responsible for day-to-day UAS/RPAS training functions of the RPTO. The Accountable Manager is assisted by Admin Manager on administrative issues and shall be responsible to DGCA.

7.2 RESPONSIBILITIES (ALL MANAGEMENT AND ADMINISTRATIVE STAFF)

Responsibility of key operational personnel is as given para ……. The key person for administration is the Administrative Manager. He is responsible for maintenance/upkeep of infrastructure required for domestic and technical area. He is also responsible for co- ordination of all matters relating to RPA training (non-educational matters).

7.3 STUDENT DISCIPLINE AND DISCIPLINARY ACTIONS

……..

7.4 AUTHORIZATION AND SUPERVISION OF DRONE/RPA FLIGHTS

Authorization and supervision of flights are to be carried out by a DGCA approved RPAS Instructor/RPI . He will authorize each training flight. A flight by …….RPTO that is not a training flight need not be authorized by an approved RPAS Instructor/RPI. RPAS Instructors/RPI are to supervise flights in their capacity to ensure safe and efficient flying environment.

7.5 FLYING PROGRAM PREPARATION

…….

7.6 RETENTION OF DOCUMENTS

Retention of UAS documents is the responsibility of the Flight Clerk under supervision of the CRPI/HOT. The accountable manager will be finally responsible. All documents pertaining to records of training shall be kept in scanned format with a password protection permanently in PC and hard disk with a backup copy.. Video of skill test will be kept for five years .These record shall be shown to DGCA during audit.

7.7 INSTRUCTOR AND STUDENTS' QUALIFICATION RECORDS

……..

7.8 REVALIDATION (CERTIFICATES, MEDICAL AND OTHER DOCUMENTS)

……

7.9 REST PERIODS (INSTRUCTORS)

……

7.10 REST PERIODS (STUDENTS)

……..

7.11 DRONE/REMOTE PILOT LOG

All flying training conducted at ……. will be logged in the …… Logbook. The Logbook shall be as per the format and design approved by DGCA.

In addition, each RPAS Instructor/RPI and SRPL holder shall also maintain his own flying log book to record his own flying.

7.12 FLIGHT PLANNING (GENERAL)

……

7.13 SAFETY MEASURES

(General: Equipment, Radio Listening Watch, Hazards, Accidents and Incidents, Including Reports, Safety of Trainee Pilots, etc.)

a) GENERAL:

There is a need to understand that UAS/Drone/ remotely piloted aircraft is indeed an aircraft albeit unmanned. This fact demands seriousness on the part of all agencies and individuals related with RPA operations. Therefore, all individuals including but not limited to RPA pilots are expected to be very prudent. The RPA Instructor/RPI shall be responsible for the safe custody, security and access control of the RPAS. In case of loss of RPA, the he shall report immediately to the local police office, BCAS and DGCA.

The ground control station (while in use or in store) shall be secured from sabotage or unlawful interference. The RPAS (issued with UIN) shall not be sold or disposed-off in any way to any person or firm without permission from DGCA. Any changes in the contact details specified in UIN shall be immediately notified to DGCA and all other concerned agencies.

b) EQUIPMENT:

An RPA used for training shall be equipped as follows:

……
….

c) RADIO LISTENING WATCH:

……..

d) HAZARDS:

……

e) ACCIDENTS AND INCIDENTS, INCLUDING REPORTS:

……

CHAPTER – 8

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8. RPA OPERATING INFORMATION

8.1 RPA DESCRIPTIVE NOTES

……

8.2 RPA HANDLING

(Including checklists, limitations, maintenance and technical logs, in accordance with relevant requirements, etc.)……..

.

8.3 EMERGENCY PROCEDURES

……

8.4 RADIO AND RADIO NAVIGATION

……

8.5 ALLOWABLE DEFICIENCIES

……
….

8.6 FLIGHT LOG BOOK & BATTERY CHARGING LOG BOOK

……
……..Replaceable Units (LRUs) cannibalization Record and Firmware/ Software Version Records

i. Flight Log Book shall be maintained as per regulations stipulated by DGCA reproduced in this manual as annexure – .
ii. Battery Charging Log Book/ Log Card shall be maintained as per regulations stipulated by DGCA reproduced in this manual as annexure-.
iii. Line Replaceable Units (LRUs) cannibalization record shall be maintained as per regulations stipulated by DGCA and reproduced in this manual as annexure-6.
iv. Firmware / Software Version records shall be maintained as per regulations stipulated by DGCA and reproduced in this manual as annexure-.

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CHAPTER – 9

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9. STAFF TRAINING

9.1 APPOINTMENTS OF PERSONNEL RESPONSIBLE FOR STANDARDS / COMPETENCE OF STAFF

Staff work as regular employees at different levels in different sections of the organization. Staff is recruited, inducted and trained according to the post/position for which recruited. ……..RPTO believes that training is one of the instrumental factors to get optimum output from the individual and also to make him/her more efficient at work. The right training helps the individual to gain knowledge, develop skills and also improves the interaction within the team.

It is appreciated that a greater scientific approach to human factors bear an impact on an individual's performance at duty, and consequently on the output of the work / task as a whole. The end goal is to understand the factors that bear a negative impact, and factors that bear a positive impact, in order that work can be delivered to the desired level in a safe environment. It is considered absolutely imperative to build, develop and implement a safety culture within Centre for Aerospace Research, at all levels – vertical and horizontal.

This Chapter sets forth the policy and guidelines of initial training and continued training procedures to be followed in the RPTO to ensure that flying training is imparted to the desired standards in a safe environment with maximum qualitative output.

Policy

……..

Procedure for Appointing of CRPI, Dy.CRPI & RPI :

The Accountable Manager shall be responsible for planning and identifying the manpower resources for the organization. The post holder of the organization (RPA Instructor) shall keep the AM updated on the present and future manpower needs. After due assessment of the candidate the AM shall fill the position/vacancy according to the job requirement and issue the appointment letter. Appointment procedures shall be complied with the admin office, where documents shall be duly processed and the completed records forwarded to RPAS Instructor office. The AM may delegate this authority and responsibility to a post holder.

The RPA ground and flying instructional staff will report to RPA Instructor. A personnel file of the individual will be opened and maintained. RPA Instructor shall be responsible for ensuring the imparting of necessary

training. ……..RPTO shall maintain the records of training given to staff and update the records of individual once the person complete straining.

The Instructor qualification requirements differ for each type of training and topic taken. Minimum requirements for Instructors are given below.

General Requirements:

i. The person shall preferably have minimum 3 years of aviation experience in operations Flight safety , Flight planning, Maintenance/Aircraft Engineering at DGCA, AAI any Scheduled airline or Airport, FTO, RPTO.
ii. The person shall have teaching aptitude.
iii. CPL /ATPL holders with RPI/RPAS Training.
iv. AME with one years experience & RPI/RPAS Training
v. Fresh Graduate- BSc, BE Aeronautical or any Branch , BSc Aviation with RPI/RPAS Training
vi. The person shall have good communications kills
vii. For All above categories of applicant The Person shall have passed a Certified RPI/RPAS Instructor course after skill and oral from DGCA.

The Instructor shall be trained as follows:

i. For Induction Training – by a person preferably among senior most people in the organization.
ii. For Familiarization training – by a person having experience relevant to the subject/area of training to be imparted
iii. Continuation Training – by a person having experience relevant to the subject/area of training to be imparted.
iv. Human Factor training and “SMS” training – by a person who has adequate experience of flying operations.

9.2 INITIAL TRAINING

The organization gives the following training to the staff based on the guidelines given in civil aviation requirements and other national standards.

I. Induction Training
II. Familiarization Training
III. SMS Training
IV. Fire safety Training

Human factors training shall be given within 6 months of the person joining the organization. Thereafter, the training can be merged with Refresher training or Continuation Training.

Induction Training:

Induction Training is absolutely vital for starters. Good induction training ensures new starters are retained, and then settled in quickly and happily to a productive role. Induction training is more than skills training. It's about the basics that seasoned employees all take for granted: what the shifts are; where the notice-board is; what is the routine for holidays, sickness; where is the canteen; what the dress code is; where the toilet, etc. is. New employees also need to understand the organization's mission, goals, values and philosophy; personnel practices, health and safety rules, and of course the job they're required to do, with clear methods, timescales and expectations.

Professionally organized and delivered induction training is new employees' first proper impression of organization, so it's also an excellent opportunity to reinforce their decision to come and work for the organization. The training method is both ‘classroom’ and ‘walk around the facilities. The topics covered are as follows:

i. Job training relating to the role that the new starter will be performing.
ii. Departmental structure and interfaces. Who's who (names, roles, responsibilities)
iii. Basic communications overview (reporting line, horizontal vertical channels of communication etc.)
iv. Facilities and amenities
v. Dress codes
vi. Time and attendance system, Absenteeism and lateness, Holidays
vii. Personnel systems and records overview, including access control to data
viii. Security
ix. Career paths
x. Training and development
xi. Emergency procedures, fire drill, first aid
xii. Accident reporting
xiii. General administration
xiv. Restricted areas, access control
xv. Discipline procedures, Grievance procedures

Duration: ……..

9.3 REFRESHER TRAINING

The main objective of refresher training is to update the RPAS Instructors /RPI and post holders about the recent civil aviation rules and regulations, aircraft operating standards, recent Circulars, CAR and newer

Drone/UAS/RPAS technology etc. whenever the following shall be given to DGCA. The duration of the refresher training shall be conducted once every year for duration of minimum ……..days.

The refresher training will be conducted under the supervision of the RPAS Master Instructors.

9.4 STANDARDIZATION TRAINING

……..

Duration: ……

9.5 PROFICIENCY CHECKS

……..

9.6 UPGRADATION TRAINING

Whenever RPAS Instructor requires to move to a different category / type of RPA, and upgrade training will be carried out. Upgradation training will be for a duration of **Five** working days.

9.7 RPTO STAFF STANDARDS

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……..

PART – 2

784449/2021/DRONE DIRECTORATE

CHAPTER – 10

784449/2021/DRONE DIRECTORATE

10. FLYING AREA / DRONE PORT/ AERODROME (REQUIREMENTS & PROCEDURES)

10.1 PROPER PERIMETER FENCING/WATCH AND WARD FOR PREVENTING INCURSION DURING REMOTE PILOT TRAINING.

……

10.2 PROPER COMMUNICATION ARRANGEMENT WITH ATC.

……..

10.3 PROPER AND ADEQUATE SAFETY SERVICES PROVIDED BY THE TRAINING INSTITUTE OR BY ATC (AS APPLICABLE).

……
……...

10.4 PROPER CIRCUIT PATTERN FOR CARRYING OUT THE REMOTE PILOT TRAINING.

……..

10.5 PROPER DRILLS FOR UAS/RPA EMERGENCY DURING FLYING.

Emergency drills are carried at the intervals of a quarter of a year. Any lessons learnt are disseminated to all concerned.

10.6 PROPER GPS COMMUNICATION TO SUPERVISE THE UAS/ DRONE RPA TRAINING ACTIVITIES.

……
……

10.7 ALARM BELL AND SIREN FACILITIES AT A SUITABLE LOCATION.

……
……

10.8 SUFFICIENT NUMBER OF FIRE EXTINGUISHERS.

……
…… as per DGCA training circular 24/2/71-TRG, Dated 23rd June 1974 will be present with a vehicle for conducting flying.

10.9 FIRST-AID ROOM WITH PROPER KITS AND VALIDITY.

……
……..

10.10 TRAINED MANPOWER TO HANDLE SAFETY SERVICES.

Regular training from appropriately trained person is imparted to Centre for Aerospace Research staff for handling security, marshalling, fire emergency and medical emergency.

10.11 PROPER COORDINATION PROCEDURE WITH LOCAL FIRE STATION.

……
…..

10.12 DISPLAY OF 'NO-SMOKING' SIGN AT PROMINENT PLACES.

……
……..

10.13 SUITABLE AND ADEQUATE HANGER SPACE FOR PARKING, MOORING AND MAINTENANCE OF DRONE/RPA/UAS. THE HANGER SHALL BE LIGHTED AND SUITABLE FOR DRONE/RPA MAINTENANCE.

……
……..

10.14 SEPARATE DEMARCATED AREA FOR ROTARY WING RPA CONSIDERING GPS ERROR.

……

CHAPTER – 11

784449/2021/DRONE DIRECTORATE

11. MAINTANENCE ASPECTS & CHECKLIST FOR AUDIT

11.1 OFFICE SPACE – ENGINEERING AND MAINTENANCE

A part of the simulator room (……. sq feet approx.) has been provided for performing physical, maintenance and repair tasks on our Drone/UAS/RPAS. The space for office works and maintenance works are adequately available as per the scope of approval.

11.2 RESPONSIBILITY OF MAINTENANCE MANUAL OF RPAS

The Maintenance Engineer is responsible for keeping updated the Maintenance Manual of RPAS.

11.3 LOCATION FOR DISPLAY OF APPROVAL CERTIFICATE

……
……

11.4 PROCEDURES TO SET-UP EQUIPPED / BATTERY MAINTENANCE FACILITY

……

11.5 SYSTEM OF ADHERENCE TO MAINTENANCE STANDARD OF RPAS MAINTENANCE MANUAL

……

11.6 SYSTEM OF RECORDING DEVIATIONS FROM STANDARD OF RPAS MAINTENANCE MANUAL

……

11.7 PROCEDURE TO COMPLETE THE RECORDS IN RESPECT OF PERIODIC INSPECTIONS, REPLACEMENT OF PARTS / BATTERIES, ETC.

……..

11.8 PROCEDURE TO DETERMINE ADEQUACY OF QUALIFIED ENGINEERS / TECHNICIANS PROPORTIONAL TO THE ACTIVITY OF RPTO

……..

11.9 TRAINING RECORD AND ADEQUACY OF TECHNICIANS EMPLOYED

……..

11.10 MAINTENANCE SPACE AND ITS AVAILABILITY (THROUGHOUT THE YEAR OR OTHERWISE) TO CARRY OUT INSPECTION

The RPTO has ……Sq metre . for maintenance of RPAS and also to carry out inspections.

11.11 LIGHTING OF MAINTENANCE AND BATTERY ROOM

……

11.12 GROUND EQUIPMENT SUCH AS WORKBENCHES, CHARGING STATIONS TO CARRY OUT THE WORK

adequate ground support equipment like workbenches, Charging Stations for RPAS commensurate with scope of work……

11.13 PROCEDURE FOR TAGGING ALL REMOVED ARTICLES

……

11.14 SYSTEM OF CLEANING AND WELL ARRANGING OF STORES

……

11.15 SYSTEM OF PROPER TAGGING OF QUARANTINE STORE

Parts with exhausted life and due for repairs/overhaul/periodic inspections shall be quarantined so as to avoid mixing with serviceable ones.

11.16 SYSTEM OF KEEPING THE BATTERIES IN STORE AND RECORD OF ROTATION

……

11.17 MAINTENANCE OF DEFECT REGISTER

……

11.18 PROCEDURE FOR APPROVAL OF BATTERY CHARGING SHOP AND INDIVIDUAL ALONG WITH SYSTEM OF ENSURING CALIBRATION AND SERVICEABILITY OF EQUIPMENT

……

11.19 PROCEDURE TO UPDATE THE FIRST-AID STATION IN THE BATTERY SHOP

……

11.20 PROCEDURE TO CARRY OUT INSPECTIONS OF UAS/RPAS AS PER STANDARD CHECKLIST FOR SERVICEABILITY OF EQUIPMENT, INSTRUMENTS, ETC.

……

11.21 PROCEDURE FOR CALIBRATION FOR PRECISION TOOLS / INSTRUMENTS

……

……

CHAPTER – 12

784449/2021/DRONE DIRECTORATE

12. RETURNS TO BE SUBMITTED TO DGCA.

At the end of each year, RPTO will file the returns and the reports of the following with the DRONE DIRECTORATE OF DGCA or as advised by DGCA from time to time.

12.1 STUDENT RECORDS

This report shall include at least the following information unless otherwise dictated by DGCA:

i. Number of students trained.
ii. Number of Student Remote Pilot Licence (SRPL).
iii. Fee collected with GST paid
iv. Return to be submitted to DGCA attached in excel sheet and annexure……

12.2 POWER TO INSPECT BY DGCA:

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ANNEXURES

Add all annexure

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