

GOVERNMENT OF INDIA CIVIL AVIATION DEPARTMENT OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION

FLYING TRAINING CIRCULAR 1 OF 2019

E-File No. DGCA-16011/2/2018-DFT

Dated 30th January 2019

SUBJECT: TRAINING AND PROCEDURES MANUAL FOR REMOTE PILOT TRAINING

1. Introduction

The Training and Procedures Manual describes the way the organisation conducts its activities in accordance with Civil Aviation Requirements Section 3, Series X Part 1. As such it is a document which is essential for the organisation as it provides the management and accountable personnel with a clear guidance on the policy of the organisation as well as the procedures and processes which are used to provide RPA training in FTO. During the approval process, it helps the DGCA to assess whether the procedures developed by the organization are in line with the existing requirements. Once the training organisation is functioning, DGCA will ensure that the organisation is functioning in line with the Training and Procedures Manual, through a planned surveillance. This training and procedure manual is applicable to all approved FTOs imparting Practical training on Remotely Piloted Aircraft as specified in CAR Section 3 Series X Par1. List of eligible FTOs to impart RPA training is available of DGCA website. FTO shall impart such training subject to availability of the approved trainers. Approved Trainer shall be accountable to DGCA for conducting RPA training in the approved FTOs as per CAR Section 3, Series X Part1.

2. General Consideration

In preparing the Training and Procedures Manual, it is important for the FTO to ensure that the Training and Procedures Manual is consistent with regulations, manufacturer requirements, other guide lines issued by the training organization and in line with and human factors principles. It is also necessary to ensure consistency across all departments within the organisation.

3. Contents

The content of the Training and Procedures Manual spelt out in this Annexure 1, provides a detailed list which expands on the structure expected for the manual. Depending on the size and scope of training provided by the organisation, some of the elements contained in the Annexure can be combined / subdivided further as determined by FTO and acceptable to DGCA.

4. Organising the Manual

- 4.1 The Training and Procedures Manual should be organised as far as practicable.
- 4.2 The manual should be consistent with the training organisation's philosophy, policies, procedures and practices and in accordance with the CAR Section 3 Series X Par1.

5. Design

- 5.1 The structure of the manual should be easy to understand, appropriate for the information documented and clearly identified through headings and other formatting devices. The document structure should be identified at its beginning by explaining organising elements such as headings, the numbering scheme, and main parts of the document and other sources of coding or grouping.
- 5.2 Precise language should be used wherever possible. Significant terms for common items and actions should be maintained throughout the manual. Terms must be clear and easily understood.
- 5.3 Writing style, terminology, formatting, and use of graphics and symbols should be consistent throughout the document. This includes the location of specific types of information and consistent use of units of measurement and codes.
- 5.4 The manual should include a glossary of terms, acronyms, abbreviations and associated definitions. The glossary should be updated on a regular basis to ensure access to the most recent terminology.
- 5.5 The revision process should be considered when designing the manual for ease of amendment and distribution.
- 5.6 The training and procedures manual should comply with the requirements of the training organisation's quality assurance system.

6. Validation

- 6.1. The Training and Procedures Manual should be reviewed and tested under realistic conditions before its use. The validation process should include using the critical aspects of the information contained in the manual to verify its effectiveness. Routine interaction among groups within the organisation should be included in the validation process.
- 6.2. A final review of the manual should ensure that all required topics have been addressed with an appropriate level of details for users. The final review should also confirm compliance with safety regulations, manufacturers' recommendations and the organisation's philosophy, policies, procedures and practices.

1. Deployment

The training organisation should have a system in place to monitor use of the Training and Procedures Manual after it is published. This will ensure appropriate and realistic use of the manual, based on the operational environment, in a way that is operationally relevant and beneficial to the personnel for whom it is intended. The monitoring system should include formal feedback to obtain inputs from the principal users of the manual and other persons who would be affected by a new or revised policy, procedure or practice.

2. Amendment

- 8.1. The training organisation should develop an effective information gathering, review, and distribution and revision control system to process information obtained from all sources relevant to the organisation. Sources include, but are not limited to the DGCA safety regulations, manufactures and equipment vendors.
- Note. Manufactures' provide information for the operation of specific aircraft that emphasizes the aircraft systems and procedures under conditions that may not fully match the requirements of the training organisation. Training organisations should ensure that such information meets their specific needs and those of the DGCA.
- 8.2. The training organisation should develop an information review, distribution and revision control system to process information resulting from changes that originate within the organisation. This includes changes:
- (a) in the organisation's policies, procedures and practices;
- (b) in response to operating experience;
- (c) to the scope of training provided;
- (d) to the content of training programs;
- (e) resulting from the installation of new equipment;

- (f) to an approval document or operating certificate; and
- (g) For the purpose of maintaining standardization.
- 8.3. The training and procedures manual should be reviewed in association with other operational documents that form the organisation's flight safety documents system:
- (a) on a regular basis (at least once a year);
- (b) After major events such as mergers, acquisitions, rapid growth, downsizing, etc.;
- (c) After technology changes, e.g.: the introduction of new equipment; and
- (d) After changes in safety regulations.
- 8.4. Permanent changes to the training and procedures manual shall be communicated through a formal amendment process. The manual should be amended or revised as necessary to ensure that the information contained is kept up to date.
- 8.5. Distribution of amendments and revisions should include a tracking system. The tracking system should include some form of log combined with a procedure to ensure that all amendments are furnished promptly to all organisation or persons to whom the manual has been issued.

3. Scope of Approval

The scope of Approval for Flying Training organization needs to be amended to include Remote Pilot Training.

Contents of the Training and Procedures Manual

1. The 'Training and Procedures Manual' should include elements as enumerated in the Annexure 1 and sample forms attached in Annexure 2.

3. Annexures

Annexures to 'Training and Procedure Manual' may be kept in a separate folder and it should include, Training Certificate/Card Format, Flight Log Book ,Battery Charging Log Book / Log Card , Line Replaceable Units (LRUs) cannibalization Record and Firmware/Software Version Records (Formats are provided in Annexures)

APPLICATION ALONG WITH CHECK LIST FOR INCREASE IN SCOPE OF APPROVAL OF FLYING TRAINING ORGANIZATION TO INCLUDE RPA TRAINING

This application form shall be used as FTO's compliance statement and DGCA inspector checklist for verification. Each page shall be initialed and last page shall be signed by Accountable Manger and Approved RPA Trainer Jointly.

1. General

SI.	Contents	Data/ information	remarks
1.1	Name and address of the flying training institute with Telephone (landline/mobile) E mail, Fax numbers		
1.2	Name of the President, (if elected Managing Committee iis functioning)		
1.3	Are the Board of Directors same, which were at the time of grant of NOC / last renewal of the Institute? If no, whether, their security clearance is obtained. (security clearance is mandatory)		
1.4	Name of the Accountable Manager and whether She/he he has been approved by DGCA.		
1.5	Name of Head of RPA Training and whether She/he has been approved by DGCA		
1.6	Scope of training authorized under the Organization's terms of approval.		
1.7	Principal base of operation aerodrome		
1.8	Other base of operation aerodrome specifically demarcated for PRA operations, if any		
1.9	Whether NOC is valid		

2. Remotely Piloted Aircraft Details (Attach Separate Sheet, if required)

S/No RPA	Type of RPA	Owned/ Leased	UID	Manufacturer

3. F	Post Holders Details (Atta	ıch multiple s	sheets, if required	<u> </u>
S/NO	POST	NAME	APPROVAL REFERENCE NUMBER(if any)	Approval Valid/ Valid up to
1.	Accountable Manager			
2.	RPA Trainer (s)			
I -	Oocumentation (Tech. & C	Operational)	STATUS	COMMENTS
S/NO	DOCUMENTATION		SIAIUS	COMMENTS
	Whether Training and Manual (TPM) along with acceptance check lis Annexure 2 and attache submitted	dully filled in st as per		
	Whether SOP/Operations RPA Submitted	al Manual for		
	Whether list of RPA eme and Contingency plan for loss/incident/accident, re RPA, list of emergency to Submitted	r RPA covery of		
	Attach all the documents as before submission)	s stated above	e. The information s	submitted shall be
	ified that the information s	ubmitted vide	this application has	s been verified and is
(Accou	ntable Manager)		(Accounta	ble Manager)
Signatu	re with Date:		Signature	with Date:

For official use

Remarks/ Action Required:

Training and Procedures Manual Checklist for Remote Pilot Training (For compliance statement by FTO & acceptance by DGCA)

This form shall be used as FTO's compliance statement and DGCA inspector checklist for acceptance of Training and Procedures Manual for RPA. FTO shall fill up checklist after ensuring each item (column 'A', 'U' & 'Remarks' be left blank). Each page shall be initialed and last page shall be signed by Accountable Manger.

Name of FTO:	
Date:	
Address of FTO:	
Website & e-mail of FTO:	
Name of Accountable manager	Tel.
Name of approved RPA Trainers with email a	•
	Tel
	Tel
Variants of RPAs used in Training	

(A = Acceptable, U = Unacceptable) T & PM = Training & Procedure Manual

PART-I

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2.4	Qualifications, responsibilities and succession of command of management and key operational personnel, including but not limited to:						
	to:						
	a) Accountable mana	ger					
	b) RPA instructor an	raining coordin	ator				
							•
3.	Facilities						
3.1	RPA details –(at leas	st with following	ng details)				
				l			
#	RPAs					Re	emarks
a)	Type of RPA with Mode and Serial Number						
b)	UI No.						
c)	Cat. of RPA- Fixed wing/ Rotary Wing/ Others						
d)	Owned/ leased						
e)	New /Used						
f)	Name of lesser						
g)	Validity of lease						
h)	Date of manufacturing						
i)	Payload Details and Payload Capability and interface Fan Out/ Fan in etc.						
	1	'	'			ı	
3.2	RPA Simulators deta details)	ils – (with follo	owing				

#	RPA Simulator			
a)	Туре			
b)	Registration			
c)	RPV Mode Details			
d)	Manufactures			
e)	RPA Supported Types (Rotary/ Fixed wing/Others)			

#		Page no. & Para of T&PM	Α	U	Rem -arks
3.3	System to ensure proper functioning of simulators and serviceable RPAs.				
3.4	Procedure to utilize the RPAs and Simulators of other FTO/ Organizations				

3.5 plann	Space for waiting, Operations, flight ing etc.	T&PM ref.	Α	U	
a)	Office space for operation and admin				
b)	Storage area including secure area for trg. and personnel record				
c)	Space for the students waiting for their training.				
d)	Flight Operation room or area.				
e)	Flight Planning room or area.				
f)	Space for pilot briefing/ debriefing.				
g)	Arrangement and equipment for pilot briefing.				

	<u>, </u>				
h)	Office facility for instructors is available.				
i)	Room for Simulator and RPA Assembling and repair room				
j)	Battery charging and Storing Facilities				
3.7	CLASS ROOMS				
a)	Proper class rooms commensurating with the plan.				
b)	Training aids such as computer, projector/suitable monitor, multimedia aids etc.				
3.8	Library				
a)	Library with system of ready access to trainee pilots.				
b)	System to track the revisions and stock position of books / study material.				
c)	Adequate number of text books for ground subjects specific to RPSs as specified in CAR Section 3 Series X Part 1.				
3.9	Radio Telephony				
a)	Arrangement for Radio telephony training and testing with facilities for Radio Telephony basic training for RPAs as specified in CAR Section 3 Series X Part 1				
		<u>.</u>	•	•	
4.	THE TRAINING PLAN				
4.1	Aim of the course -				
	A statement of what the student is expected to do as a result of the training on RPA as per CAR.				
	 The level of performance on specific category of RPA- Fixed Wing/ Rotary Wing/ others 				
	The training constraints to be observed				

Pre-entry requirements -

Minimum age

4.2

	Educational requirements		
	Language requirements		
	Medical requirements		
	Other Requirements as specified in CAR		
4.3	Training curricula/ Training Plan -		
	Training schedule and End of Course report		
	The flying curriculum and Training		
	Methodology (Fixed Wing RPAs)		
	The flying curriculum and Training Methodology (Rotary Wing PRAs)		
	 The flying curriculum and Training Methodology (Other RPAs) 		
	The RPA Simulator training curriculum		
	The Ground training Curriculum		
4.4	Programmed curriculum times -		
	Arrangements of the course and the integration of curricula time		
4.5	Training programme -		
	The general arrangements of daily and weekly programs for RPA flying, ground and Simulator training.		
	 Program constraints in terms of maximum student training times, (flying, theoretical knowledge, simulator) e.g. per day/week/month 		
	Restrictions in respect of duty periods for students		
	Duration of solo and instructor assisted flights at various stages		
	Maximum flying hours in any day		
	Maximum number of training flights in any day		
4.6	Training records -		

	 Training Certificate/Card Format and Flight Log records 		
	De Briefing , Evaluation Sheets , Flight Training Progress Report and End of Course RPA Pilot Training Report		
	 Procedure for maintaining integrity of record and documents i.e. protection from alteration and removal etc. 		
	Attendance records.		
	The form of training records to be kept e.g. dossier.		
	Persons responsible for checking.		
	The nature and frequency of records checks.		
	Standardization of entries in training records. Rules concerning training log entries.		
4.7	Safety training		
	Individual responsibilities.		
	Battery Changing procedures, emergencies and Maintenance of Battery Changing Log Book		
	Essential exercises.		
	Emergency drills including GPS fail safe landing, Communication fail, Wind drift procedure and Low battery etc.		
	Checks		
	Requirement before first RPA training flight		
4.8	Checks and tests –		
	Flying: Progress checks and skill tests.		
	Knowledge: Progress tests and knowledge tests.		
	Authorization for test.		
	Rules concerning refresher training before retest.		
	Test reports and records.		
	Test/retest procedures.		
4.9	Training effectiveness -		
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General Assessment. Liaison between departments.	
Liaison between departments.	
Identification of unsatisfactory progress (individual students).	
Actions to correct unsatisfactory progress.	
Procedure for changing RPA Trainer.	
Maximum number of instructor changes per student. Internal feedback system for detecting training deficiencies.	
Procedure for suspending a student from training.	
Standards and level of performance at various stages.	
Individual responsibilities.	
Standardization.	
Standardization requirements and procedures.	
4.10 Procedure for Transfer of Trainee to other FTO	

5.	BRIEFING AND AIR EXERCISES		
5.1	Air exercise -		
	 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. 		
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.		
5.3	Course structure- training phase		
	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 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. 		
5.4	Course structure integration of curricula		
	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		
	The requirement for student progress and include 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 exercise to the next.		
	 Include minimum experience requirements in terms of hours, satisfactory exercise completion, etc. As necessary before significant exercises/ maneuvers/emergency handling. 		
5.6	Instructional methods -		
	The FTO requirements, particularly in respect of pre and post flying briefing, adherence to curricula and training specifications, authorization and supervisions		
5.7	Progress tests -		
	The instructions given to examining staff in respect of the conduct and document of all progress tests.		
5.8	Glossary of terms		

	Definition of significant terms as necessary.		
5.9	Annexures -		
	Progress test report forms.		
	Skill test report forms.		
	FTO certificates of experience, competence, etc. as required.		
5.10	Standardized check-lists for normal, abnormal and emergency procedures?		
5.11	Maps and charts and other equipment's required to be carried for RPA flights.		
5.12	Check-list to show the documents required to be carried?		
5.13	Digi Sky flight planning/ approval procedures.		
5.14	Procedures to ensure stability of training RPA.		
5.15	Procedures briefing/ debriefing.		
5.16	Procedures have been established under which the trainee pilots can carry out their first RPA flight.		
5.17	Procedures for carrying out flying check of trainees		
5.18	System of keeping of certificates and logs for ready reference.		
5.19	Occurrence reporting procedure for RPAs.		
5.20	Procedure for disposing off damaged RPA		

6.	RPA Simulator Training		
6.1	Exercise Details		

6.2	Exercise reference list		
6.3	Course structure-phase of training		
6.4	Course structure integration of curricula		
6.5	Student progress		
6.6	Instructional methods		
6.7	Progress tests		
6.8	Glossary of terms		
6.9	Annexures		

7.	ADMINISTRATIVE PROCEDURES		
7.1	Administration (function and management)		
7.2	Responsibilities (all management and administrative staff)		
7.3	Student discipline and disciplinary		
7.4	Authorization and Supervision of flights		
7.5	Preparation of flying programmer		
7.6	Responsibilities of instructor		
7.7	Retention of documents		
7.8	Instructor and students qualification records		
7.9	Revalidation (Certificates , medical and other documents)		
7.10	Rest periods (instructors)		
7.11	Rest periods (students)		
7.12	Flying logs		
7.13	Flight planning (general)		
7.14	Safety (general: equipment, radio listening watch, hazards, accidents and incidents, including reports, safety of trainee pilots, etc.)		

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 / Log Card , Line Replaceable Units (LRUs) cannibalization Record and Firmware/Software Version Records		

9.	STAFF TRAINING		
9.1.	Appointments of persons responsible for standards/ competence of staff		
9.2.	Initial training		
9.3.	Refresher training		
9.4.	Standardization training		
9.5.	Proficiency checks		
9.6.	Upgrading training		
9.7.	FTO staff standards		

PART-II

10.	Flying Area/Aerodrome (Requirements & Procedures)		
10.1.	Proper airport perimeter fencing and/ or watch and ward for preventing runway incursion during aircraft operations.		
10.2.	Procedure for runway inspection (if Fixed wing RPA is operational).		
10.3.	Check availability of smooth runway of adequate length for the type of a/c.		
10.4.	Check availability of sufficient length of runway for type of a/c for clearing all obstacles in the take-off flight path by at least 50 feet.		
10.5.	Proper communication arrangements with ATC.		
10.6.	Proper and adequate safety services are provided by the training institute or by ATC (as applicable).		
10.7.	Visibility of wind sock or wind direction indicator from each end of the runway at ground level.		
10.8.	Proper traffic pattern for carrying out the flying training.		
10.9.	Proper drills for RPA emergency during flying at airport.		
10.10	Airport perimeter fencing with adequate watch and ward for preventing runaway incursion during aircraft operation?		
10.11	Proper air ground communication to supervise the flying training activities.		
10.12	Alarm bell and siren facilities at a suitable location.		
10.13	Sufficient number of fire extinguishers.		

10.14	First-aid room with proper kits and validity.		
10.15	Trained manpower to handle safety services.		
10.16	Proper coordination procedure with local fire station.		
10.17	Display of 'No-Smoking' sign at prominent places.		
10.18	Suitable and adequate hangar space for parking, mooring and maintenance of aircraft. The hangar shall be well lighted and suitable for aircraft maintenance.		
10.19	Separate demarcated area for Rotary wing RPA considering GPS error.		

11.	Maintenance aspects and checklist for audit		
11.1.	Office space for the engineering and maintenance personnel		
11.2.	Responsibility of MOM		
11.3.	Procedure to keep institute's approval maintenance valid.		
11.4.	Location for display of the approval certificate.		
11.5.	Procedures to set-up equipped/ Battery maintenance facility.		
11.6.	System of adhering to approved standard maintenance programme.		
11.7.	System of recording of any deviation to the approved standard maintenance programme.		
11.8.	Procedure for approval of maintenance schedules and amendment to maintenance schedules as per latest version of maintenance manual.		

11.9.	Procedure for dissemination of information to working engineers.		
11.10	Procedure to complete the records in respect of periodic inspection, replacement of parts/ Batteries etc.		
11.1	Procedure to determine adequacy of qualified engineers/ technicians proportional to the activity of the institute.		
11.12	Training record and adequacy of the technicians employed.		
11.13	Maintenance space and its availability (throughout the year or otherwise) to carry out inspection.		
11.14	Lighting of Maintenance and Battery Rooms.		
11.1	Ground equipment such as workbenches, Charging Stations to carry out the work.		
11.16	Procedure for tagging of all removed articles.		
11.17	System of cleaning and well arranging of stores.		
11.18	System of proper tagging of Quarantine store.		
11.19	System of keeping the Batteries in store and record of rotation.		
11.20	Maintenance of defect register.		
11.2	Procedure for approval of battery charging shop and individual along with system of ensuring calibration and serviceability of equipment.		
11.22	Procedure to update the first-aid station in the battery shop.		
11.23	Procedure to carry out inspections of RPAs as per standard check-list for serviceability of equipment, instruments etc.		
11.24	Procedure for calibration of precision tools/instruments.		

12.1 Students Records	
10.0	
12.2 RPA records and Utilization	

The information as mentioned on the page and para column has been verified from the Training and Procedure Manual of FTO.

(Accountable Manager) (RPA Instructor)

Signature with Date: Signature with Date:

For office use only:

Review by DGCA Inspector as under:
Remarks:

Actions required:

Name of DGCA Inspector conducted the review:

Date:

Training Certificate/Card Format

(Size: 8.5 * 5.5 Cm on at least 100 GSM glazed paper)

NAME AND LOGO OF	FTO
NAME:	
ADDRESS:	LATEST PHOTOGRAPH WITH TRAINEES
Photo ID Number **	SIGNATURE
SEX: DOB:	
 Has Successfully Completed the Remote Pilot Requirements Section 3 Series X Part 1 Certificate number: IND-(ZONE-N/S/E/W)-(FTO A UNIQUE SERIAL NUMBER (ISSUED BY FTO) Date of issue: 	
(Accountable Manager)	(RPA Trainer)

** List of Photo IDs acceptable are:

- a. Aadhar Card
- b. Passport
- c. Driving License

SAMPLE TRAINING CERTIFICATE



OPP. SAFDARJUNG AIRPORT NEW DELHI-110003

NAME:

Ms. / Mr. /Capt. XYZ

ADDRESS:

HOUSE NUMBER ABC, STREET DEF, NEW DELHI-11003

Photo ID Number:

XXXX XXXX XXXX

SEX: **MALE** DOB: **01-01-1985**

1. Has Successfully Completed the Remote Pilot Training Capsule as per Civil Aviation Requirements Section 3 Series X Part 1

2. Certificate number: IND-N-XXX-001

3. Date of issue: 01-01-2019

Sample sign

Mr. ABC

(Accountable Manager)

Sample sign

Mr. XYZ (RPA Trainer)

Flight Log Book

(To be maintained by FTO as a training Record)

Date	Trainees Name	Trainers Name	Name of the Exercise (Flight training /Simulator/Ground Training/ De briefing/ Test)	Duration	Signature	Remarks
	_					

Battery Charging Log Book / Log Card

(To be filled at the time of battery charging or cannibalization from one RPA to the other)

Date	Battery Number	Starting battery Voltage (V)	Final Battery Voltage (v)	After Charging (mAH)	UID of RPA	REMARKS

Annexure-6 Line Replaceable Units (LRUs) cannibalization Record

S/NO	NAME AND ID OF THE LRU REMOVED	UID OF RPA FROM WHICH LRU WAS REMOVED	UID OF RPA TO WHICH LRU WAS INSTALLED	PURPOSE AND REMARKS

Firmware/Software Version Records

S/NO	UID of RPA	LRU Name and ID on which firmware/Software is installed	Version or Checksum/CRC	Remarks