TECHNICAL GUIDANCE MATERIAL
for
THE DEVELOPMENT OF A MAINTENANCE PROGRAMME

SUBJECT: **TECHNICAL GUIDANCE MATERIAL FOR THE DEVELOPMENT OF A MAINTENANCE PROGRAMME.**

EFFECTIVE DATE: 26 AUGUST 2025

1. APPLICABILITY

SA-CAR 101.01.1 states that:

(1) Subject to subregulation (3) this Part applies to aspects relating to operation of Classes 1 and 2 UAS, unless otherwise determined by the Director.

(2) For the purposes of this Part, a UAS may be operated for—

(i) commercial operations;
(ii) corporate operations;
(iii) non-profit operations; and
(iv) private operations.

(3) This Part does not apply to—

(i) an autonomous unmanned aircraft and its operation;
(ii) an unmanned free balloon and its operations;
(iii) a type of aircraft which cannot be managed on a real-time basis during flight;
(iv) an aircraft operated in terms of Part 94;
(v) a model aircraft; and
(vi) toy aircraft.

Furthermore, SA-CAR 101.06.1 continues that:

Continued system maintenance

(1) A UAS shall be maintained in compliance with its manufacturer's instructions for continued equipment maintenance through actions or inspections.

(2) An owner or operator of a UAS shall submit to the Director for approval, a maintenance programme for such UAS.

2. PURPOSE

This document establishes the minimum requirements for the development of the operator's maintenance programme as per Civil Aviation Regulations Part 101, Subpart 6. This process, if followed, will lead to successful compliance with the SA-CAR and SA-CATS

3. REQUIREMENTS

The UAS should only be maintained to one approved maintenance programme at any given point.

Every UAS shall be maintained in accordance with a maintenance programme approved by the SACAA, which shall be periodically reviewed and amended accordingly.

The maintenance programme and any subsequent amendments shall be approved by the SACAA.

The maintenance programme must establish compliance with:

i. Instructions for continued system maintenance issued by the Original Equipment Manufacturer (OEM).
ii. Instructions issued by the Director, if they differ from subparagraph (i).

The maintenance programme shall contain details, including the frequency of all maintenance to be carried out, including any specific tasks linked to specific operations.

4. REFERENCE:

During the development process the following reference material should be used

i. SA-CAR 101.06.1
ii. OEM Maintenance Manuals (where applicable)
iii. The below Maintenance Programme Template Annexure A

5. LIST OF DEFINITIONS AND ABBREVIATIONS USED IN THIS DOCUMENT

5.1. Definitions

TERMINOLOGY	DESCRIPTION
maintenance programme	The term "maintenance programme" is intended to include scheduled maintenance tasks, associated procedures and standard maintenance practices.
maintenance schedule	The term "maintenance schedule" is intended to embrace the scheduled maintenance tasks alone.

5.2. Abbreviations

ABBREVIATION	MEANING

DCA	Director of Civil Aviation
E: ASO	E: Air Safety Operations
MP	Maintenance Programme
UAS	Unmanned Aircraft System
UASOC	Unmanned Aircraft System Operating Certificate
UASLA	Unmanned Aircraft System Letter of Approval
SACAA	South African Civil Aviation Authority
SACAR	South African Civil Aviation Regulations
SACATS	South African Civil Aviation Technical Standards
SB	Service Bulletin
SLA	Service Level Agreement
TGM	Technical Guidance Material
UASMT	Unmanned Aircraft System Maintenance

6. GENERAL

6.1 Content of the Maintenance Programme

The maintenance programme should contain the following basic information:

(i) The type/model of the UAS, and where applicable, propellers and engines.
(ii) Contents list, list of effective pages (LEP) and the revision status of the document.
(iii) Provision to record the date and reference of approved amendments/revisions incorporated in the maintenance programme.
(iv) Check periods, which reflect the anticipated utilization of the UAS.
(v) Details of the pre-flight / post flight maintenance tasks that are to be accomplished by maintenance staff.
(vi) The tasks and the periods (intervals/frequencies) at which each part of the UAS, engine(s), propellers, components, accessories, equipment, instruments, electrical and radio apparatus, together with the associated systems and installations should be inspected. This should include the type and degree of inspection required.
(vii) The periods at which components should be checked, cleaned lubricated, replenished, adjusted and tested, if applicable.
(viii) The periods at which overhauls and/or replacements by new or overhauled components should be made, if applicable.
(ix) Procedure for the escalation of established check/inspection periods, where applicable and acceptable to the SACAA.

6.2 WHEN NO PROGRAMME IS PROVIDED BY THE MANUFACTURER

In instances where the OEM did not supply or provide any maintenance programme or instructions pertaining to the UAS, the following should be taken into consideration by the owner/operator when compiling the programme:

(i) Provisions as stipulated in 6.1 above from (i) to (iii).
(ii) Remove or open all necessary inspection panels, access doors, fairings and cowlings and thoroughly clean the UAS, engine, rotors and propellers.

(iii) Inspect the metal, composite for all deterioration, distortion, cracks, corrosion and other evidence of failure and defective or insecure attachments.

(iv) Inspect the interior of the fuselage hull, empennage, center section, wings, control surfaces, arms for deterioration, distortion, cracks, corrosion and other evidence of failure and defective or insecure attachments.

(v) Batteries:
  (a) Check battery state – compared to previous records and check for signs of degradation.
  (b) Check connectors – replace if necessary.
  (c) Complete a battery cycle and balance record.

(vi) Inspect fuel tanks for condition, leaks and corrosion on the tanks and inside the tank's bays.

(vii) Inspect registration, fireproof plate and other markings for conformity.

(viii) Inspect instruments for condition, mounting, marking, placarding, and proper operation where applicable.

(ix) Check altimeters and airspeed indicators for accuracy, Carry out a pitot static check with calibrated test equipment. (Note that this inspection is carried out annually).

(x) Parachute assembly:
  (a) Check canopy, risers and pull cords for condition,
  (b) Check that loops are secure and inspect for fraying and cuts.

(xi) Engines:
  (a) Check engine and mounts for condition.

(xii) Propellers and Rotors:
  (a) Check propellers and rotors for cracks, chips and general condition.
  (b) Check rotors for condition and abnormal sounds.

7. APPROVAL OF MAINTENANCE PROGRAMME

The following part describes the procedures for the approval of the operator's initial aircraft maintenance programme, and its subsequent amendments.

7.1 APPLICATION FOR INITIAL APPROVAL OF THE MAINTENANCE PROGRAMME

The following documents shall be submitted to the Authority:

i) The proposed maintenance programme.
ii) A completed application form CA 101-33, with operator's / owner's details.
iii) Source documents, or original manufacturer's manual (if available)
iv) The completed maintenance programme shall be submitted to the Authority after being reviewed by the operator's quality person or person responsible for quality. This is to minimize back and forth and to expedite the approval process.
v) The initial maintenance programme can be submitted to the SACAA by mail, at masekoa@caa.co.za and an airworthiness inspector will be assigned to review the document.
vi) When the operator submits an MP, SACAA will review and return findings to the operator within 30 working days as per the SLA.

vii) If there are deficiencies or non-conformances identified during the MP review, the inspector will compile and consolidate a report. If the need arises the document will be discussed with the operator prior to returning the package.
viii) If the MP is found acceptable for approval, the operator will be issued an internal invoice at an hourly rate for the man hours spent on the review of the MP as prescribed in the SA-CAR Part 187.
ix) Prior to approval, the inspector will ensure that the operator has paid the invoice, and that the payment has been verified by the SACAA Finance Department.
x) A copy of the accepted MP will be placed in the Technical Library, and all relevant documentation will be placed in the relevant Aircraft file / SharePoint / EMPIC System.

7.2 APPLICATION FOR AN AMENDMENT OF THE MAINTENANCE PROGRAMME

The operator shall nominate a person who shall be responsible for the upkeep or control of the maintenance programme, including ensuring that the programme is suitably amended or revised, where applicable following the regular review. A revision to the maintenance programme may include:

i) Additions of tasks.
ii) Deletions of tasks.
iii) Modifications of tasks.
iv) Changes in tasks frequencies.
v) Changes to the list of aircraft subject to the maintenance programme.

8. Maintenance Programme Template Annexure A

The below Annexure A can be used when developing an MP to meet and comply with the minimum requirements, and more information can be added to ensure all operational requirements are achieved.

8.1.1 Statement of Compliance Introduction

This Maintenance Programme, developed by _____. (hereinafter referred to as "_____" or "the organisation"), is designed to provide guidance for the repair and Maintenance of UAS.

This manual is applicable to all UAS listed on the Approved Operations Specifications and addresses the continued maintenance requirements for these UAS, ensuring their safe and efficient operation.

The MP is aligned with the manufacturer's instructions for continued equipment maintenance, industry best practices, and regulatory requirements set by the SACAA.

The MP becomes effective on the date specified by the Director of SACAA as per the approved signature block, amendment record sheet/s and supersedes any previously approved maintenance programme for the UAS concerned.

8.1.2 Purpose of the Manual

The primary purpose of the MP is to maintain the UAS in accordance with the established maintenance framework, reflecting commitment to operational safety and regulatory compliance. The manual incorporates tasks based on a review of specific UAS and UAS operation, compared against the manufacturers' original specification.

The approval of this manual does not preclude the necessity to comply with mandatory instructions issued by the SACAA. The MP will be reviewed at least annually to ensure its relevance and effectiveness, considering factors such as published maintenance data, modifications and repairs, mandatory requirements, operational patterns, defect occurrences, and aircraft storage periods.

Additionally, compliance with the MP alone does not discharge the Responsible Person Aircraft and the Operator from the responsibility of ensuring that the manual reflects the maintenance needs of the UAS, thereby assuring continued safe operation.

SACAA reserves the right to suspend or cancel the approval of the maintenance programme if it is found that the requirements are not met or if the standards of adequate continued maintenance are not being maintained.

This MP is fully compliant with the provisions set out in the following acts, regulations, and technical standards:
Civil Aviation Act, 2009 (Act No. 13 of 2009)
Civil Aviation Regulations, 2011, PART 1 and PART 101
Civil Aviation Technical Standards, 2011, PART 1 and PART 101

8.1.3 Commitment by

Signature:	
Responsible Person: Aircraft	
Date:	

8.1.4 Approved by

Signature:	
Director of Civil Aviation:	
Date:	

8.1.5 Distribution List

The Responsible Person: Aircraft is responsible for the distribution of all controlled copies of this MP.

8.1.6 The following entities/persons shall be formal copy holders of this UAS MP

Copy #	Distribution Organisation	Copy
01	SACAA & (Operator)	Complete Copy

8.1.7 Amendment Record Sheet

Revision	Date of Incorporation	Reason for Revision	Revised by

8.1.8 List of Effective Pages

Rev. No.	Effective Date	Page
Original/Initial		

8.1.9 Table of Contents

8.1.10 Abbreviations

ABBREVIATION	MEANING

8.1.11 Definitions

TERMINOLOGY	DESCRIPTION

8.1.12 Maintenance responsibilities and roles

The Approved Maintenances Programme assigns specific responsibilities to ensure effective continued system maintenance of the aircraft:

8.1.13 Responsible Person: Aircraft

8.1.14 Oversees maintenance activities and conducts annual reviews of the programme.

Addresses reported defects related to programme deficiencies

8.1.15 Maintenance Procedures

8.1.16 Scheduled Maintenance Procedures

Note: *Multiple Aircraft can be listed below in table form to ensure that one Maintenance Programme is submitted to SACAA, inclusive of any differences of Aircraft Types.*

8.1.17 Pre-flight inspection procedures

8.1.18 Post-flight inspection procedures

8.1.19 Battery maintenance guidelines

8.1.20 General

8.1.21 Battery Life and Health Monitoring

8.1.22 Firmware updates

8.1.23 Sensor Calibration and Functional Checks

8.1.24 Unscheduled Maintenance

8.1.25 Response to malfunctions and emergencies

8.1.26 Rectification of unsatisfactory items

8.1.27 Troubleshooting procedures

8.1.28 Maintenance Schedules

8.1.29 General

8.1.30 Specific Schedules for each Specific UAS Model

8.1.31 Documentation and Records

8.1.32 Maintenance records

8.1.33 Recording and Reporting of Defects

8.1.34 Recurrent Defect Control

8.1.35 Training and Competency

8.1.36 Training requirements for maintenance personnel

8.1.37 UAS Maintenance Technician (Class 3 and above UAS)

8.1.38 Remote Pilot (Class 1 and 2 UAS)

8.1.39 Competency assessment procedures

8.1.40 Personal Logbook

8.1.41 Source Documents

8.1.42 Maintenance Schedule

Maintenance Description	Interval	Performed by	Margin	Applicability (Aircraft Type)

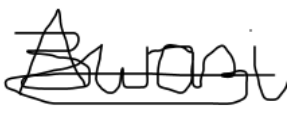
8.1.43 Scheduled Maintenance Checklist

8.1.44 Pre- and Post-Flight Checklist

8.1.45 Certificate of Release to Service

UNMANNED AIRCRAFT SYSTEM Certificate of Release to Service	
Certificate Number	
UA Registration	
UA type	
UA serial number	
I hereby certify that I am satisfied that the above-mentioned aircraft and all its equipment are in every way serviceable for flight and that all maintenance has been carried out in accordance with the Civil Aviation Regulations, 2011, PART 101 and the aircraft's approved maintenance programme.	
Maintenance Check	
Data used/ Scheduled/ Unscheduled	
This certificate lapses at a total of (Flight Hours or Date)	
Current flight time Hours on	
Date of next services	
Signature of UASMT/Pilot	
Name in Block Letters	
Date of issue	
Time of Issue	

9. AUTHORISATION

DEVELOPED BY:		
	**Ayalamaswazi Maseko**	**26 August 2025**
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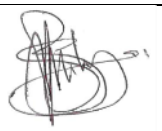	**Siphamandla Mhlanga**	**26 August 2025**
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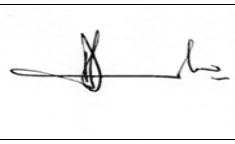	**Dean Khumalo**	**26 August 2025**
SIGNATURE OF E: ASO	**NAME IN BLOCK LETTERS**	**DATE**