

# PROPOSAL TO INSERT SA-CATS 55 TO BE ISSUED UNDER THE CIVIL AVIATION REGULATIONS, 2011

## PROPOSER

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## PROPOSER'S INTEREST

Recreation Aviation Administration South Africa (RAASA) is designated by the Director for Civil Aviation in terms of the Civil Aviation Act 2009 and Regulation 149 of the Civil Aviation Regulations to establish standards relating to recreational aviation and oversight over such activities.

RAASA is a member of the Civil Aviation Regulation Committee which includes various sub-committees. This proposal is a subject of these sub-committees as RAASA relies on consultative processes in executing its functions.

## GENERAL EXPLANATORY NOTE

The addition of this submission is to make provision for technical standards to accompany the new Part 55 for NTCA maintenance facilities. No provision has previously been made for SA-CATS for NTCA maintenance facilities which solely maintain NTCA as this is a new part.

For ease of understanding the proposal please note the following in line with the CARCom standards.

Words in **[bold and solid square bracket]** indicate deletions from the existing regulations.

Words underlined with a solid line indicate insertions in the existing regulations.

## PROPOSAL TO INSERT TECHNICAL STANDARDS 55

## **SA-CATS 55: NTCA MAINTENANCE FACILITY**

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### **55.01.6 CATEGORIES OF AIRCRAFT**

(1) A NTCA maintenance facility approval may be issued in respect of any of the following categories of non-type certificated aircraft:

- (a) aeroplanes;
- (b) helicopters;
- (c) gyroplanes including gyro gliders;
- (d) microlight aeroplanes, including weight shift microlights
- (e) gliders including self-launching gliders;
- (f) touring motor or powered gliders
- (g) manned captive and manned free balloons;
- (h) powered-paragliders, powered parachutes and powered-para trikes as well as powered hang-gliders or any other powered derivative thereof.
- (i) all other non-type certified aircraft not listed above.

### **GROUP ENDORSEMENTS**

(1) A NTCA maintenance facility approval may be issued in respect of any of the following groups:

1. Group A: Airframe maintenance, excluding overhauls and modifications.

- 2. Group B: Engine maintenance, excluding overhauls and modifications.
- 3. Group C: Airframe maintenance, including overhauls and modifications.
- 4. Group D: Engine maintenance, including overhauls and modifications
- 3. Group W: Equipment, avionics, electrical, instrument, pitot and static systems
- 4. Group X: Equipment, compasses, ignition, instruments, electrical, automatic pilots, avionics, pitot and static systems
- 5. Group P: Propellers and constant speed units.
- 6. Group E: Rotors and Rotor hub assemblies.
- 7. Group S: Welding.

### **SUBGROUPS, CLASS, SUB-CLASS ENDORSEMENTS**

(1) A NTCA maintenance facility approval may be issued in respect of any of the subgroups, classes, sub-classes, makes and types for non-type certified aircraft as follows:

(2) The approvals referred to in sub-regulation (1) may be endorsed in one or more of the following subgroups:

(a) Airframe group endorsements are divided into the following subgroups:

- (i) 1 A– aeroplanes of fabric-covered wooden construction, with a MTOW of 5 700 kilograms or less;
- (ii) 1 B– aeroplanes of fabric-covered wooden construction, with a MTOW of 1200 kilograms or less,
- (iii) 1 C – aeroplanes of fabric-covered wooden construction, with a MTOW of 600 kilograms or less;
- (iv) 2 A – aeroplanes constructed of composites, with a MTOW of 5 700 kilograms or less;
- (v) 2 B – aeroplanes constructed of composites, with a MTOW of 1200 kilograms or less;
- (vi) 2 C - aeroplanes constructed of composites, with a MTOW of 600 kilograms or less;
- (vii) 3 A – aeroplanes of fabric-covered tubular-metal construction, with a MTOW of 5 700 kilograms or less;
- (viii) 3 B – aeroplanes of fabric-covered tubular-metal construction, with a MTOW of 1200 kilograms or less;
- (ix) 3 C – aeroplanes of fabric-covered tubular-metal construction, with a MTOW of 600 kilograms or less;

- (x) 4 A – unpressurised aeroplanes of all-metal construction, with a MTOW of 5 700 kilograms or less;
- (xi) 4 B – unpressurised aeroplanes of all-metal construction, with a MTOW of 1200 kilograms or less;
- (xii) 4 C – unpressurised aeroplanes of all-metal construction, with a MTOW of 600 kilograms or less;
- (xiii) 5 – unpressurised aeroplanes of all-metal construction, with a MTOW exceeding 5 700 kilograms;
- (xiv) 6 – pressurised aeroplanes of all-metal construction, with a MTOW of 5 700 kilograms or less;
- (xv) 7 – pressurised aeroplanes of all-metal construction, with a MTOW exceeding 5 700 kilograms;
- (xvi) 8 – aeroplanes constructed of composites, with a MTOW exceeding 5 700 kilograms;
- (xvii) 9 A – helicopters, powered by piston engines, with a MTOW of 3175 kilograms or less;
- (xviii) 9 B – helicopters, powered by turbine jet engines with a MTOW of 3175 kilograms or less;
- (ixx) 9 C – helicopters, with a MTOW exceeding 3175 kilograms;
- (xx) 10 – balloons;
- (xxi) 11 – gyro-copters and gyro gliders with an MTOW of 2000Kg or less;
- (xxii) 12 – microlight aeroplanes including weight shift trikes with a MTOW not exceeding 450kg;
- (xxiii) 13 A Gliders of Wooden, tube and fabric construction;
- (xxiv) 13 B Gliders of Composite construction;
- (xxv) 13 C Gliders of Metal construction.
- (xxvi) 14 - touring motor gliders;
- (xxvii) 15 – powered hang-gliders, powered paragliders, powered parachutes and powered paratrikes or any other powered derivative thereof;
- (xxviii) 16 - fabric coverings in accordance with endorsements listed in Groups 1 and 3 above and as specified on the TAP certificate.
- (xxix) 17 - all other non-type certificated aircraft not specified in this part, excluding parachutes;

(b) Engine group endorsements are divided into the following subgroups:

- (i) 01 A – previously certified horizontally opposed normally- aspirated piston engines with a power endorsement not exceeding 200HP;
- (ii) 01 B – previously certified horizontally opposed normally- aspirated piston engines with a power endorsement exceeding 200HP;
- (iii) 01 C – all NTC horizontally opposed normally aspirated piston engines;
- (iv) 02 A– previously certified horizontally opposed turbo-normalised, turbo-charged and supercharged piston engines with a power endorsement not exceeding 200HP;
- (v) 02 B– previously certified horizontally opposed turbo-normalised, turbo-charged and supercharged piston engines with a power endorsement exceeding 200HP;
- (vi) 02 C – all NTC horizontally opposed turbo-normalised, turbo-charged and supercharged piston engines;
- (vii) 03 A – previously certified in-line piston engines;
- (viii) 03 B – all NTC in-line piston engines;
- (ix) 04 A – previously certified radial engines;
- (x) 04 B – all NTC radial engines;
- (xi) 05 A – previously certified turbine jet engines;
- (xii) 05 B – all NTC turbine jet engines;
- (xiii) 06 – other engines not listed above, including automotive and non-aviation engines;
- (xiv) 07 – two stroke engines;
- (xv) 08 – diesel and turbo diesel engines;
- (xvi) 09 – electrical engines;
- (xvii) 10 – sustainer and self-launch engines for gliders.

(c) Endorsements relating to equipment and components installed in non-type certified aircraft are divided in the following groups and subgroups:

- (i) Group W Endorsement- equipment

- (aa) subgroup W1 = removal, refitting and inspections, holders of a TAP1, or
  - (bb) subgroup W2 = removal and refitting, holders of a TAP 2.
  - (cc) The , equipment and components to which sub- group W1 and sub- group W2 apply, are classified as follows:
    - (i) class A: avionic equipment;
    - (ii) class E: electrical equipment;
    - (iii) class I: instrument equipment;
    - (iv) class PS: pitot & static systems
- (a) Group X Endorsement - instruments, avionics and equipment are endorsed in the following subgroups and classes:
- (aa) subgroup X1 = removal, refitting, installation, repair, overhaul and inspections, holders of a TAP1 with Group B and D endorsements, or
  - (bb) subgroup X2 = removal refitting, installation and inspections, holders of a TAP1 with Group A and C endorsement, or
  - (cc) subgroup X3 = removal and refitting, holders of a TAP2 with an Group A and C endorsement.
  - (dd) The instruments, avionics and equipment to which sub- groups: X1, X2 and X3 apply, are classified as follows:
    - (i) class 1: compasses;
    - (ii) class 2: engine ignition equipment;
    - (iii) class 3: all instruments, including electrically operated instruments;
    - (iv) class 4: electrical equipment;
    - (v) class 5: automatic pilots; or
    - (vi) class 6: all avionic equipment, including equipment employing pulse techniques
    - (vii) class 7: pitot and static systems
- (b) Group P endorsement- propellers and constant speed units
- (aa) subgroup P1= removal, refitting, installation, repair, overhaul and inspections, holders of a TAP1 with Group B and D endorsement, or
  - (bb) subgroup P2= removal, refitting and inspections, holders of a TAP1 with A and C endorsement
  - (dd) subgroup P3= removal and refitting, holders of a TAP2 with an A and C endorsement.
  - (ee) The propellers to which sub- groups: P1, P2 and P3 apply, are classified as follows:
    - (i) Class A: fixed pitch propellers of metal construction
    - (ii) Class B: fixed pitch propellers of composite construction
    - (iii) Class C; fixed pitch propellers of wooden construction

- (iv) Class D; variable pitch ground adjustable propellers of metal construction
- (v) Class E; variable pitch ground adjustable propellers of composite construction
- (vi) Class F; variable pitch ground adjustable propellers of wooden construction
- (vii) Class G; all in flight adjustable variable pitch propellers
- (viii) Class H: all constant speed propellers and constant speed units

(c) Group E endorsement- Rotors and Rotor hub assemblies

- (aa) subgroup E1= removal, refitting, installation, repair, overhaul and inspections, holders of a TAP1 with Group B and D endorsement, or
- (bb) subgroup E2= removal, refitting and inspections, holders of a TAP1 with A and C endorsement, or
- (cc) subgroup E3= removal and refitting, holders of a TAP 2 with an A and C endorsement.
- (ee) The Rotors and Rotor hub assemblies to which subgroups: E1, E2 and E3 apply, are classified as follows:
  - (i) Class G1: Gyrocopter
  - (ii) Class H1: Helicopter

(d) Group S endorsement- welding

- (aa) subgroup S1 = welding and inspections on welding as listed in sub paragraph (cc), holders of a TAP1.
- (bb) subgroup S2 = welding as listed in sub paragraph (cc), holders of a TAP 2.
- (cc) The kinds of welding and inspections on welding to which subgroups: S1, and S2 apply, are classified as follows
  - (i) Class A: Gas Metal Arc Welding (GMAW) MIG / MAG - CO2 welding
  - (ii) Class B: Gas Tungsten Arc Welding (GTAW) TIG welding - Argon welding
  - (iii) Class C: Flux cored welding (FCAW)
  - (iv) Class D: Shielded Metal Arc Welding (SMAW)
- (dd) Endorsed as applicable in the following sub classes of materials
  - (a) sub-class 1: Aluminium frames or structures, or
  - (b) sub-class 2: Steel frames or structures, or
  - (c) sub-class 3: Magnesium castings or structures, or

(d) sub-class 4: Titanium frames of structures.

(2) A NTCA maintenance facility approval shall in accordance with the categories, groups, subgroups, classes, sub-classes, makes or types as applicable be endorsed on the NTCA-maintenance facility operations specification.

## **55.01.10 TRAINING AND CHECKING**

### **1. Initial training**

(1) Aviation technical approved persons in the employ of the holder of an NTCA maintenance facility approval, issued in terms of Part 55 of the CAR, shall have successfully completed the training prescribed in Part 56 for the appropriate certificate and endorsement or endorsements if such personnel are to be in direct charge of any maintenance or inspection performed on behalf of the facility, or are authorised to issue on behalf of the facility certificates of release to service and certificates relating to the maintenance of an aircraft.

(2) All other aviation technical approved persons in his or her employ shall have successfully completed basic training in maintenance practices as relevant to their particular responsibilities.

### **2. Continuous learning and recurrent training**

(1) All aviation technical approved persons in the employ of the holder of an NTCA maintenance facility approval, issued in terms of Part 55 of the CAR, shall receive continuous learning and recurrent training in accordance with the facility's approved training programme.

(2) Continuous learning should be aimed at expanding the employee's knowledge, skills and experience and should provide for new aircraft and their components that are introduced.

(3) Recurrent training should be aimed at refreshing existing knowledge and skills, and ensuring that technical approved persons remain current with evolving new technologies and maintenance techniques, as well as with changing legislation, to the extent applicable to the facility's aviation maintenance approval.

## **55.02.1 MANUAL OF PROCEDURE**

### **1. Information to be contained in manual of procedure**

(1) The information referred to in this part, which must be contained in the manual of procedure of the applicant shall include the following:

#### **(a) Management**

(i) Management commitment



A statement containing the commitment of the accountable manager and personnel of the facility to comply with the airworthiness requirements contained in the applicable SACARS and CATS.

(ii) Management personnel

In the case where a NTCA maintenance facility employs or contracts persons other than the accountable manager, a list of the key management personnel and their positions.

(iii) Duties and responsibilities of the management personnel

A statement containing the duties and responsibilities of each management position mentioned in (ii). For clarity, additional positions may be added.

(iv) Management facility chart

The chart must show all line management positions down to supervisory level.

(v) List of certifying personnel

A list of all certifying personnel authorised to release aircraft on behalf of the facility, with a scope of their authority and with signatures and stamps must be provided.

A separate document may be referenced.

(vi) Human resources

A statement identifying the human resources employed by the facility.

(vii) General description of facilities at each address intended to be approved

A description of the facilities and layout is required.

(viii) Facility's intended scope of work

A statement of the scope of work being applied for.

(ix) Notification procedure to the appropriate administrative authority regarding changes in the facility's activities/approval/location/personnel

A statement indicating who is responsible for notifying the appropriate administrative authority regarding changes, and what changes are subject to notification.

(x) Manual of procedure amendment procedures

A statement regarding the responsibility and procedure for amendment of the manual of procedure, as well as the associated documents referred to in the manual of procedure.

**(b) Maintenance procedures**

(i) Acceptance/inspection of aircraft components from outside contractors

A description of, or reference to, a procedure for the documented control of verification, storage and maintenance of aircraft components from outside contractors.

(ii) Storage, tagging and release of aircraft components and material to aircraft maintenance

A description of, or reference to, a procedure for handling, storage, packaging (tagging), preservation of aircraft components and materials related to aircraft maintenance.

(iii) Acceptance of tools and equipment

A description of, or reference to, a procedure for acceptance of tools and equipment by the facility for use in the maintenance of aircraft.

(iv) Calibration of tools and equipment where applicable

A description of, or reference to, a procedure for the calibration of measuring and testing tools and equipment used on aircraft systems and equipment.

(v) Use of special tools and equipment by personnel

A description of, or reference to, a procedure for the methods in which special tools and equipment are used.

(vi) Cleanliness standards of maintenance facility

A statement regarding the standard of cleanliness to be maintained.

(vii) Repair procedure

A description of, or reference to, the procedures for the repair of aircraft components.

(viii) Maintenance, structural repair and parts manuals

A description of, or reference to, a procedure for the updating and availability to personnel of the relevant maintenance, structural repair and parts manuals for the aircraft to be maintained.

(ix) Aircraft maintenance programme, AD procedures, modification procedures and technical record control

A description of, or reference to, a procedure indicating compliance with the aircraft maintenance programme, AD procedures, modification procedures and technical record control.

(x) Maintenance documentation

A description of, or reference to, a procedure of the relevant work packs to be used and instructions for the completion thereof.

(xi) Rectification of defects

A description of, or reference to, a procedure for the methods to be employed for the rectification of defects arising during base maintenance.

(xii) Release to service

A description of, or reference to, a procedure for the manner in which an aircraft is to be released to service after base maintenance.

(xiii) Records for the operator

A description of, or reference to, a procedure for the records to be kept and the manner in which they are to be given to the operator.

(xiv) Defective aircraft components

A description of, or reference to, a procedure for the return of defective aircraft components to the store and the method to be employed for routing the defective aircraft components to outside contractors and the return thereof.

(xv) Special maintenance procedures

A description of, or reference to, a procedure for the manner in which specific maintenance procedures that may be required, such as –

(aa) engine running;

(bb) aircraft towing and others,

are to be employed.

**(c) Line maintenance**

(i) Line maintenance control

A description of, or reference to, a procedure for the control of aircraft components, tools, equipment etc. used during line maintenance.

(ii) Servicing, fuelling, etc. during line maintenance

A description of, or reference to, a procedure for the servicing, fuelling, etc. done during line maintenance.

(iii) Control of defects and repetitive defects

A description of, or reference to, a procedure for the manner in which defects and repetitive defects are to be controlled.

(iv) Completion of technical log

A description of, or reference to, a procedure for the completion of aircraft technical log during line maintenance.

(v) Return of defective parts removed from aircraft

A description of, or reference to, a procedure for the return to the stores of defective aircraft parts removed from the aircraft during line maintenance.

(2) The manual of procedure must contain the information to demonstrate that the facility has the management, resources and procedures to comply with the requirements of the CARs Part 55.

(3) The manual of procedure may either be a self-contained document, or it may refer to other documents referred to in the manual of procedure which will be considered to be equally binding on the facility.

## **55.02.2 QUALITY SYSTEM**

### **1. Minimum standards for a quality system**

(1) The objectives of the quality system referred to in CAR 55.02.2(2) are –

(a) to monitor and report the level of compliance with the facility's manual of procedure and airworthiness requirements;

(b) to correct any non-compliance identified and to implement actions to prevent the recurrence of such non-compliance; and

(c) to present to management for the purpose of review and implementing further corrective or preventive action, quality indicators such as audit reports, accidents, incidents, occurrences, customer complaints and personnel reports.

(2) The quality system must include –

(a) Quality audit of the facility

A description of, or reference to, a procedure for the quality audits to be performed on the facility.

(b) Quality audit of aircraft

A description of, or reference to, a procedure for the quality audits to be done on the aircraft during maintenance work.

(c) Quality audit remedial action

A description of, or reference to, a procedure of remedial actions to be taken after quality audits.

(d) Management analyses and overview

A description of, or reference to, a procedure for bringing to the attention of management quality indicators (such as audit reports, progress on corrective action, accidents, incidents, occurrences, customer complaints and personnel reports) and documenting the appropriate action decided and implemented to maintain an adequate level of conformance to airworthiness requirements.

(e) Certifying personnel competence and training

A description of, or reference to, a procedure for the competence required of certifying personnel and the programme of training and recurrent training of certifying personnel.

(f) Certifying personnel records

A description of, or reference to, a procedure of the methods to be used for keeping technical records of certifying personnel.

(g) Quality audit personnel

A chart or a list indicating the qualifications of quality audit personnel.

(h) Qualifying inspectors and mechanics

A description of, or reference to a procedure for the competence required of technical approved persons, and a programme of training and recurrent training of personnel.

(i) Exemption/concession control

A description of, or reference to, a procedure to be used when permission is required to deviate from the requirements of the facility's manual of procedures, or to deviate from specified aircraft/aircraft component maintenance tasks.

(j) Specialised activities

A description of, or reference to, a procedure for applying specialised activities such as welding, Non Destructive Testing. etc.

(3) Measures must be taken to ensure that the system is understood, implemented and complied with at all levels.

(4) The quality system must be documented in the manual of procedure referred to in CAR 55.02.1.

**55.02.15 Maintenance Records**

(1) All maintenance records shall be recorded in the format prescribed in Appendix 56.01;

## **MOTIVATION**

The current SACAA regulations does not provide support for the new Part 55 in terms of the technical standards to which the new part 55 refers.