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GENERAL

LEGISLATION MATTERS

REQUIREMENTS FOR QUALITY ASSURANCE PERSONNEL

1. PURPOSE

- 1.1 This AIC seeks to provide guidance and clarity to Quality Assurance Personnel charged with the implementation of the Total Quality Management System (TQMS) thus providing confidence that airmen, airlines, aircraft, manufacturers, and a host of others who are engaged in aviation perform their functions safely and responsibly.
- 1.2 The AIC further seeks to highlight the key differences between Quality Assurance (QA) and Quality Control (QC), the responsibilities and duties to be undertaken by the QA and the QC personnel respectively.
- 1.3 The AIC further clarifies the criteria and training requirements for Quality Assurance personnel.

2. SCOPE

The contents of this AIC are applicable to Aircraft Maintenance Organization (AMO's), Aviation Training Organization (ATO), Aircraft Operating Certificate (AOC), Maintenance Organization (MORG), Design Organizations (DOA), Aviation Recreation Organization (ARO), Maintenance personnel, Pilots and all civil aviation activities that require Total Quality Management System (TQMS) in terms of Regulations - **Civil Aviation Regulation 2011** - CAR 139.03.5 (1) b; CAR 141.02.4 (1) (b); CAR 145.02.4 (1); CAR 145.02.7 (b); CAR 145.02.1 (5) (b); CAR 147.02.4 (1) (b); CAR 148.02.4; CAR 149.02.4 (1) (b); CAR 172.03.3(1) (b); CAR 173.01.8; CAR 175.02.3 (1) (b).

3. REGULATORY REFERENCE

- 3.1 **The Quality (Assurance) Manager** as per **SA-CATS-OPS 121.04.2-2.1.4 -(6 d)** should-
 - (i) be suitably qualified and experienced;
 - (ii) have direct access to the Accountable Manager;
- 3.2 **Quality Assurance and Quality Control function** as per **CAR 145.02.4 (1)** reads thus: An applicant for an aircraft maintenance approval shall, subject to sub-regulation (3), engage, employ or contract –
 - (b) a senior person or group of senior persons who are responsible for ensuring that the applicant complies with the requirements of this Part; such nominated person or persons shall be accountable to the chief executive or accountable manager for the following functions –
 - (i) Maintenance control;
 - (ii) Personnel authorizations;
 - (iii) Internal quality assurance (**QUALITY ASSURANCE**); and
 - (c) Sufficient personnel to plan, perform, supervise, inspect and certify the maintenance activities listed in the applicant's manual of procedure. (**QUALITY CONTROL**).

4. **BACKGROUND**

- 4.1 *The Regulations require internal audits to be carried out by suitably trained and qualified Quality Assurance Auditors (Personnel) to determine the effectiveness of an organization and its performance, and to monitor compliance.*
- 4.2 *Where audits are carried out by Quality personnel who are not adequately trained or qualified, serious risks arise, which may include, amongst others, the following:*
- 4.2.1 *Poor audit function leading to a decline in maintenance standards and/or operation;*
- 4.2.2 *Serious findings resulting in the SACAA imposing heavy fines, suspension of licenses and/or company closures;*
- 4.2.3 *Compromise of safety which may lead to injury to personnel, aircraft accidents or incidents.*
- 4.3 *It is therefore critical that proper audits be undertaken in line with recognized auditing principles, practices and procedures and with due regard to the provisions of the applicable Regulations. It has further emerged that there is confusion amongst the industry in respect of the distinction between the functions of Quality Assurance and Quality Control.*
- 4.4 *There are numerous existing Quality Management Systems that have been designed and customized to fit the aviation system context. SACAA has adopted the ISO Standard guidance, Aerospace standard (AS 9100) and other related international standards to apply to the aviation quality system.*

5. **DIFFERENCES BETWEEN QA AND QC, AND WHO IS ACCOUNTABLE THEREAFTER**

5.1 **Quality Control (QC)**

- 5.1.1 **Definition:** *Quality Control is a system of routine technical activities designed to measure and control the quality of the tasks/product, process or service as it is being developed. The QC system is designed to provide routine and consistent checks to ensure integrity, correctness, and completeness to certain minimum level of quality.*
- 5.1.2 *QC is product oriented (Re-active)*
- 5.1.3 **Regulatory Reference:** *CAR 145.02.4 (1) (c)*
- 5.1.4 **Person who can undertake QC functions:** *Supervisor, Accountable manager, Quality controller or Chief Engineer.*

5.2 **Quality Assurance (QA)**

- 5.2.1 **Definition:** *Quality Assurance means all those planned and systematic actions necessary to provide adequate confidence that operational and maintenance practices satisfy prescribed requirements.*
- 5.2.2 *QA is process oriented (Pro-active)*
- 5.2.3 **Regulatory Reference:** *CAR 145.02.4 (1) (b).*
- 5.2.4 **Person who can undertake QA functions:** *Quality Assurance Manager, Quality Assurance Surveyor and Quality Assurance Inspector.*

6. **OVERALL RESPONSIBILITY FOR TOTAL QUALITY SYSTEM MONITORING**

- 6.1 **In terms of Regulation - CAR 145.02.4 (1) (a) the Accountable Manager** *will have overall responsibility for the total quality system monitoring the frequency, format and structure of the internal management evaluation activities and closing of findings.*
- 6.2 *The Accountable Manager shall keep Qualification records of the Quality Assurance Personnel utilized within the organization for 5 (five) years.*

7. **COMPLIANCE REQUIREMENTS**

- 7.1 *Quality Assurance personnel are required to satisfy predetermined qualification criteria as detailed in this section in order to undertake their duties .The QA personnel /Manager shall have completed:*
- 7.1.1 *An Accredited Course in Civil Aviation CATS and CAR's.*
- 7.1.2 *A minimum of three (03) years experience in the aviation industry to include expertise in one of the following areas (related to his/her field): aircraft operations, airworthiness of aircraft, aircraft accident and incident investigation, aircraft /aircraft products, maintenance /manufacturing or commercial/ ATPL pilot's license or aircraft/component design, etc.*
- 7.1.3 *A recognized Certificate of Competency in QMS, Internal Auditing or Third party Auditing issued by an approved ATO or any accredited institution, or*
- 7.1.4 *Any aviation related course whose contents include a comprehensive QMS training, and*
- 7.1.5 *Human Factor course.*
- 7.2 **Note: Requirements for Quality Assurance personnel differs in certain circumstances from Part to Part.**

8. **AUDIT FUNCTIONS IN SOUTH AFRICA AND INTERNATIONALLY**

- 8.1 *In exceptional cases where there are warzones, civil wars, difficult to reach or risky areas, Auditors may delegate the responsibility to suitably qualified foreign QA auditors (with foreign qualification), based in that foreign country, to carry out the audit on their behalf. This authorization shall be issued and documented by the AM/QA subsequent to obtaining authorization from the SACAA.*
- 8.2 *Audits outside of the South Africa shall be carried out by a suitably qualified Quality Assurance auditor.*
- 8.3 *Where Organizations are interrelated, e.g. AOC and AMO or ATO and AMO etc., The Quality Management System may be combined; this proposal should be submitted to the Authority for acceptance.*
- 8.4 *SA-CATS-OPS 121.04.2-2.1.4 (8) c- Auditors should preferably not have any day-to-day involvement in the area of the operation and/or maintenance activity which is to be audited.*
- 8.5 *An operator whose structure and size does not justify the establishment of full-time auditors may undertake the audit function by the use of part-time personnel from within his own organization or from an external source under the terms of an agreement acceptable to the Director of Civil Aviation. In all cases, the operator should develop suitable procedures to ensure that persons directly responsible for the activities to be audited are not selected as part of the auditing team.*

9. **IMPLICATIONS**

- 9.1 *These measures are adopted in the interest of promoting uniformity in the application of auditing standards relating to the Total Quality Management System.*


DIRECTOR OF CIVIL AVIATION