KENYA AIRCRAFT MAINTENANCE TRAINING ORGANIZATIONS (KAMTO) MANUAL

CAA-M-PEL076

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FOREWORD

The purpose of this Kenya Aircraft Maintenance Training Organizations (KAMTO) Manual is to provide technical guidance to Approved Maintenance Training Organizations, Aircraft Maintenance Training Organizations, Approved Maintenance Organizations (AMO) and Aircraft Maintenance Personnel (AMP) - engineers, technicians and mechanics.

The procedures outlined in this Manual provide guidance on compliance with the Civil Aviation (Approved Training Organizations) Regulations and all applicable civil aviation requirements. All applicants seeking approval and certification as Maintenance Training Organizations by the Authority shall adhere to the provisions of this Manual, which must be read in conjunction with the Kenya Aircraft Maintenance Engineers' Licence Manual (KAMEL), Reference No. CAA-M-PEL0050.

Changes in aviation technology, Civil Aviation Act or specific operating regulations within the industry may necessitate changes to the requirements in this Manual. Therefore, the document may be amended from time to time. This Manual includes references to regulations and relevant technical guidance materials

All comments and recommendations for revision/amendment action to this publication should be forwarded to:

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Civil Aviation Authority

APPLICABILITY

The requirements contained in this Manual are applicable to;

1. Approved Aircraft Maintenance Training Organizations.
2. Aircraft Maintenance Training Organizations.
3. Approved Maintenance Organizations.
4. Aircraft Maintenance Personnel.

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1.0   CHAPTER 1 – GENERAL

1.1   Scope

This manual establishes the requirements to be met by organisations seeking approval to conduct Aircraft Maintenance Engineers' training and examination as specified in the Civil Aviation (Approved Training Organizations) Regulations, 2018.

1.2   Definitions

Within the scope of the Civil Aviation (Personnel Licencing) Regulations, the following definitions shall apply:

"Aeroplane" means a power-driven heavier-than- air aircraft deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

"Aircraft" means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface;

"Aircraft — type of" means all aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics;

"Aircraft maintenance personnel"- "Certifying staff" means personnel responsible for the release of an aircraft, an engine or a component after maintenance;

"Approved Training Organization" means an organization approved by the Authority to perform approved training as specified in these Regulations and operating under the supervision of the Authority;

"Authority" means the Kenya Civil Aviation Authority;

"Component" means any engine, propeller, part or appliance;

"Continuing airworthiness" means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation;

"Contracting State" means a State that is signatory to the Convention on International Civil Aviation Organization (Chicago Convention);

"Competency" A dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes.

"Examination controlled environment" means an environment where the following can be established and verified: (a) the identity of the students; (b) the proper conduct of the examination process; (c) the integrity of the examination and (d) the security of the examination material.

"Finding" A finding is a conclusion by the operator's or by the CAA's audit personnel that demonstrates either non-compliance with a regulation or non-conformity with a specific standard.

"Foreign ATO" An ATO located outside of the State or outside of the territory of the States of the Regional Safety Oversight Organization.

"Large aircraft" means an aircraft, classified as an aeroplane with a maximum take-off mass of more than 5700 kg, or a multi-engined helicopter;

Complex motor-powered aircraft (CMPA) means:
1. An aeroplane: − with a maximum certificated take-off mass exceeding 5 700 kg, or − certificated for a maximum passenger seating configuration of more than nineteen, or − certificated for operation with a minimum crew of at least two pilots, or − equipped with (a) turbojet engine(s) or more than one turboprop engine, or

2. A helicopter certificated: − for a maximum take-off mass exceeding 3 175 kg, or − for a maximum passenger seating configuration of more than nine, or − for operation with a minimum crew of at least two pilots, or

3. A tilt rotor aircraft;

"Maintenance" means the performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair;

"Pre-flight inspection" means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight.

"Quality" The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

"Quality audit" A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

"Quality inspection" That part of quality management involving quality control. In other words, inspections accomplished to review a document or observe events/actions, etc., in order to verify whether established operational procedures and requirements are being fulfilled during the accomplishment of the event or action, and whether the required standard is being achieved.

Note:
Student stage checks and skill tests are quality inspections, and they are also quality control functions.

"Safety Management System (SMS)" A systematic approach to managing safety, including the necessary organizational structures, accountabilities, responsibilities, policies and procedures.

Note 1:
A safety management system, consisting of documented policies, processes and procedures designed to manage risks, integrates operations and technical systems with the management of financial and human resources to ensure aviation safety and the safety of the public.

Note 2:
The requirement to adopt SMS practices is restricted to only those entities whose activities directly impact upon the safe operation of aircraft.

1.3   Abbreviations and Codes

ATO	Approved Training Organisation
AMC	Alternate means of Compliance
AMM	Aircraft Maintenance Manual
ATA	Air Transport Association
CBT	Computer-Based Training
CBTA	Competency Based Training and Assessment
HF	Human Factors
ICAO	International Civil Aviation Organization
IPC	Illustrated Parts Catalogue
KAMEL	Kenyan Aircraft Maintenance Engineers Licence
KCAA	Kenya Civil Aviation Authority
MBT	Multimedia-Based Training
MSTDs	Maintenance Simulation Training Devices
MTO	Maintenance Training Organisation
OEM	Original Equipment Manufacturer
PASI	Pre-Application Statement of Intent
SRM	Structural Repair Manual
TPM	Training Procedures Manual

1.4   Application

Applications for the issuance, renewal or amendment of an existing approval must be submitted using the Pre-Assessment Statement of Intent (PASI) Form AC-PEL070B as amended.

2.0   CHAPTER 2 - ORGANISATIONAL REQUIREMENTS

2.1   Facility requirements

(a) The training environment shall be maintained such that students are able to concentrate on their studies or examination as appropriate, without undue distraction or discomfort.

(b)   In the case of the size and structure of facilities shall ensure protection from the prevailing weather elements and proper operation of all planned training and examination on any particular day.

(c) Fully enclosed, appropriate accommodation, separate from other facilities, shall be provided for the delivery of the theoretical training and the conduct of knowledge examinations.

(d) Basic training course, basic training workshops and/or maintenance facilities separate from training classrooms shall be provided for practical instruction appropriate to the planned training course. If, however, the organisation is unable to provide such facilities, arrangements may be made with another organisation to provide such workshops and/or maintenance facilities, in which case a written agreement shall be made with such organisation specifying the conditions of access and use thereof. The Authority shall be granted access to any such contracted organisation, and the written agreement shall specify this access.

(e)   In the case of an aircraft type/task training course, the ATO shall have access to appropriate facilities and specific aircraft type.

(f) The maximum number of students undergoing practical training during any training course shall not exceed 15 per instructor or assessor. However, the number of students undergoing training is expected to be adequate to the nature and the conditions of the training in order to ensure proper interaction between the instructor and the students, taking into account pedagogical and human factors principles.

(g) Office accommodation shall be provided for management personnel, instructors, knowledge examiners and practical assessors of a standard to ensure that they can prepare for their duties without undue distraction or discomfort.

(h) Secure storage facilities shall be provided for examination and training records. The storage environment shall be such that documents remain in good condition for the retention period as specified in the Civil Aviation (Approved Training Organizations) Regulations, as amended. The storage facilities and office accommodation may be combined, subject to adequate security.

(i) A library shall be provided containing all technical material appropriate to the scope and level of training undertaken. The ATO is expected to have access to all regulations, applicable guidance material and OEM publications.

(j)   In the case of distance learning performed at a location where the approved organisation has no control over the environment where the student is located, the organisation shall brief the students and raise their awareness regarding the suitability of their learning location. This applies only to distance learning and not to the corresponding examination and/or assessment.

2.2   Personnel requirements

(a)   The organisation shall appoint management personnel as per the requirements of the Civil Aviation (Approved Training Organization) Regulations including but not limited to;
   (i)   Accountable Manager,
   (ii)   Head of Quality,
   (iii)   Head of Training and
   (iv)   Chief Aircraft Maintenance Engineering Instructor

(b)   The maintenance training organisation shall contract with sufficient staff to plan/perform theoretical and practical training, conduct knowledge examinations and practical assessments in accordance with the approval.

(c)   Notwithstanding point (b), when another organisation is used to provide practical training and assessments, such other organisation's staff may be nominated to carry out practical training and assessments.

(d)   Person(s) performing the roles of instructor, examiner and assessor shall meet the experience and qualifications specified by the Authority.

(e)   The knowledge examiners and practical assessors shall be specified in the organisation Training and Procedures manual for the acceptance of such staff.

(f)   Instructors and knowledge examiners shall undergo updating training at least every 24 months relevant to current technology, practical skills, human factors and the latest training techniques appropriate to the knowledge being trained or examined.

(g)   The aircraft maintenance training organisation should have a nucleus of permanently employed staff to undertake the minimum amount of maintenance training proposed but may contract, on a part-time basis, instructors for subjects which are only taught on an occasional basis.

(h)   The instructors, examiners and assessors shall be trained in instructional techniques acceptable by the Authority. Further, they should demonstrate a clear understanding of KAMEL requirements and have a responsible attitude towards the conduct of examinations such that the highest integrity is ensured.

(i) The instructor that uses new training technologies (e.g. e-tutor, tele-tutor, tele-trainer) should be trained in using these technologies, as well as in the coaching, guiding and assisting of e-learning students. It is important that the instructor understands the electronically based distance-learning process, has the competence to remotely evaluate the learning behaviour of e-learning students and is able to proactively support their learning process. The following structure provides an example of such an instructor training, as applicable:

    (i)   Changes and tendencies of today's training;
    (ii)   Fundamentals of methodology and didactics;
    (iii)   Basics and theory of e-learning and tele-tutoring;
    (iv)   Communication in virtual environments;
    (v)   The changed role of students and instructors;
    (vi)   Competence profile of a tele-tutor;
    (vii)   Practical guide to support learning processes;
    (viii)   Assessment of students' performance;
    (ix)   The learning management system.

2.3 Maintenance Training Material

Maintenance training course material shall be provided to the student and cover as applicable:

    (i)   The basic knowledge syllabus specified in KAMEL Appendix I for the relevant aircraft maintenance licence category or subcategory and,

    (ii)   The type course content required by KAMEL Appendix III Chapter 3 for the relevant aircraft type and aircraft maintenance licence category or subcategory.

(a) Students shall have access to maintenance documentation and technical information of the library appropriate to the scope and level of training undertaken.

(b) Access to the maintenance training material relevant to basic or type training courses may be provided as a hard copy or by electronic means provided that the student has the appropriate means to access such material at any given time during the entire duration of the course.

(c) Training course notes, diagrams and any other instructional material should be accurate. Where an amendment service is not provided, a written warning to this effect should be given.

2.4   Instructional Equipment

(a)   Each classroom shall have appropriate presentation equipment of a standard that ensures that students can easily read presentation text, drawings, diagrams and figures from any position in the classroom. For virtual training environments, the training content shall be designed in such a way to assist students in their understanding of the particular subject matter, ensuring that students can easily read presentation text, drawings, diagrams and figures.

The presentation equipment may include representative maintenance simulation training devices (MSTDs) to assist students in their understanding of the particular subject matter where such devices are considered beneficial for such purposes.

(b)   The basic training workshops and/or maintenance facilities must have all tools and equipment, appropriate selection of aircraft, engines, aircraft parts and avionic equipment necessary to perform the approved scope of training.

(c)   The aircraft type training organisation must have access to the appropriate aircraft type.

(d)   If the maintenance training organisation transfers knowledge through a virtually controlled environment (e.g. distance learning, computer-based training (CBT) or multimedia-based training (MBT)), the organisation should ensure that:
(i)   The computer system requirements are made known to the end user;
(ii)   The students' activities are traceable, documented and recorded; and
(iii)   The computer system requirements of any third-party provider are covered by a written agreement concluded between the two parties and includes the terms of delivery, data security and data integrity.

NOTE:
(i)   *An appropriate selection of aircraft parts means appropriate in relation to the particular subject module or sub-module of KAMEL being instructed. For example, the turbine engine module should require the provision of sufficient parts from different types of turbine engine to show what such parts look like, what the critical areas are from a maintenance viewpoint and to enable disassembly/assembly exercises to be completed.*

(ii)   *Appropriate aircraft, engines, aircraft parts and avionics equipment means appropriate in relation to the particular subject module or sub-module of KAMEL being instructed. For example, category B2 avionic training should require amongst other equipment, access to at least one type of installed autopilot and flight director system such that maintenance and system functioning can be observed and therefore more fully understood by the student in the working environment.*

(iii)   *The facility/tools/equipment contract and/or agreement must be between the ATO, and an entity approved by the Authority to access such parts, etc.*

2.5   Course Plans

(a)   An MTO must have a course plan for each maintenance training course that it delivers.

(b)   An MTO must include in the course plan all of the following information:
   (i)   The course content;
   (ii)   Any prerequisites for the course;
   (iii)   The qualifications of the instructor of the course;
   (iv)   If the course is practical training — the student numbers for the training;
   (v)   If the course is aircraft type training — how the course will meet the KAMEL training standards
   (vi)   The duration of the course and the delivery timetable for the course;
   (vii)   An outline of training materials for the course;
   (viii) Details of the training tool(s) and method(s) for the course;
   (ix)   Details of the proposed assessment for the course, including its duration;

2.6   Examinations
(a)   The examination staff shall ensure the security of all questions.

(b)   Examinations may be computer- or hard-copy-based or a combination of both.

(c)   The actual questions to be used in a particular examination should be determined by the examiners in compliance with KAMEL. All exams must be moderated before being administered.

(d)   The examination shall be performed in a controlled environment by an approved training organisation and described in its Training Procedures Manual (TPM).

(e)   Any student found during a knowledge examination to be cheating or in possession of material pertaining to the examination subject other than the examination papers and associated authorised documentation shall be disqualified from taking the examination and may not take any examination for at least 12 months after the date of the incident. The Authority shall be informed of any such incident together with the details of any enquiry within one calendar month.

(f)   Any examiner found during a knowledge examination to be providing question answers to any student being examined shall be disqualified from acting as an examiner and the examination declared void. The Authority must be informed of any such occurrence within one calendar month. The Authority will determine when or if the disqualified examiner may be reinstated.

2.7   Training procedures and quality system

(a) The organisation shall establish procedures acceptable to the Authority to ensure proper training standards and compliance with all relevant requirements of the Civil Aviation (Approved Training Organizations) Regulations.

(b) The organisation shall establish a quality system including:
   (i) An independent audit function to monitor training standards, the integrity of knowledge examinations and practical assessments, compliance with and adequacy of the procedures, and

   (ii) A feedback system of audit findings to the person(s) and ultimately to the accountable manager to ensure, as necessary, corrective action.

(c) An ATO may use different training tools, training methods or a combination of both, to ensure that aircraft maintenance training has been conducted to acceptable training standards.

(d) The independent audit procedure should ensure that all aspects of the ATO compliance should be checked at least once every 12 months and may be carried out as one complete single exercise or subdivided over a 12-month period in accordance with a scheduled plan.

(e) Where the maintenance training organisation is also an approved entity under another regulation by the Authority requiring a quality system, then such quality systems may be combined.

(f) The independence of the audit system should be established by always ensuring that audits are carried out by personnel not responsible for the function or procedure being checked.

2.8   Findings

All audit findings and corrective actions shall be addressed as prescribed by the Authority.

2.9   Records of instructors, examiners and assessors

(a) The organisation shall maintain a record of all instructors, knowledge examiners, and practical assessors. These records shall reflect the experience and qualification, training history, and any subsequent training undertaken.

(b) Terms of reference shall be drawn up for all instructors, knowledge examiners, and practical assessors.

(c) The following minimum information relevant to the scope of approval should be kept for all management personnel, instructor, knowledge examiner and practical assessor:
   (i) Name
   (ii) Date of Birth
   (iii) Personnel Number
   (iv) Experience
   (v) Qualifications
   (vi) Training history (before entry)

(vii)   Subsequent Training

(viii) Scope of activity

(ix)   Starting date of employment/contract

(x)   If appropriate – ending date of employment/contract.

(d) The records in (c) above, shall be controlled by the ATO's quality department.

(e) The list of instructors, knowledge examiners and practical assessors shall be included in the ATO Training Procedures Manual and shall be kept current and available for review by the Authority when requested.

(f) The number of persons authorised to access the records system shall be limited to minimize the possibility of records being altered in an unauthorised manner and to limit confidential records from becoming accessible to unauthorised persons.

(g) The Authority may investigate the records system for initial and continued approval or when the Authority has cause to doubt the competence of a particular person.

2.10   Records

The organisation shall keep all student training, examination and assessment records for an unlimited period.

2.11   Training Procedures Manual (TPM)

(a) The organisation shall provide a Training Procedures Manual for use by the organisation describing the organisation and its procedures and containing the following information:

(i)   A statement signed by the accountable manager confirming that the Training Procedures Manual and any associated manuals define the maintenance training organisation's compliance to all applicable civil aviation regulations and shall be complied with at all times.

(ii)   The title(s) and name(s) of the nominated and approved management personnel as applicable.

(iii) Qualifications, duties and responsibilities of the person(s) specified above, including matters on which they may deal directly with the Authority on behalf of the maintenance training organisation.

(iv)   A maintenance training organisation chart showing associated chains of responsibility of the person(s) specified.

(v)   Notification procedures to the Authority,

(vi)   A list of the training instructors, knowledge examiners and practical assessors.

(vii) A general description of the training and examination facilities located at each address specified in the maintenance training organisation's approval certificate, and if appropriate any other locations.

(viii) A list of the maintenance training courses which form the extent of the approval.

(ix) The Training Procedures Manual amendment procedure.

(x) The ATO's training and examination procedures,

(xi) ATO Quality Management Systems

(xii) A list of satellite locations (if any)

(xiii) The maintenance training organisation's control procedure, when authorised to conduct training, examination and assessments in locations different from those specified.

(b) The Training Procedures Manual and any subsequent amendments shall be approved by the Authority.

(c) A recommended format of the Training Procedures Manual is included in Appendix I.

2.12   Privileges of the maintenance training organisation

(a) The maintenance training organisation may carry out the following as permitted by and in accordance with the Training Procedures Manual:

(i) Basic training courses to the KAMEL Appendix I syllabus, or part thereof;

(ii) Aircraft type/task training courses in accordance with KAMEL Appendix III;

(iii) The examination of students who attended the basic or aircraft type training course at the maintenance training organisation provided that the examination is conducted at one of the locations identified in the approval certificate, or as may be approved by the Authority.

(iv) The issue of certificates in accordance with Appendix III and IV - Certificate of Recognition sample following successful completion of the approved basic or aircraft type training courses and examinations

(v) Theoretical training, knowledge examinations, practical training and practical assessments may be carried out only at the locations identified in the approval certificate as specified in the TPM or as maybe approved by the Authority.

(vi) An organisation may not be approved to conduct examinations unless approved to conduct the corresponding training.

2.13   Changes to the maintenance training organisation

(a) The maintenance training organisation shall notify the Authority of any proposed changes to the organisation that will affect the approval before any such change takes place, in order to enable the Authority to determine continued compliance and to amend if necessary, the maintenance training organisation approval certificate.

(b) The Authority may prescribe the conditions under which the maintenance training organisation may operate during such changes unless the Authority determines that the maintenance training organisation approval must be suspended.

(c) Failure to inform the Authority of such changes may result in suspension or revocation of the maintenance training organisation approval certificate backdated to the actual date of the changes.

2.14   Continued validity

(a) An approval shall be issued for the period specified in the Civil Aviation (Approved Training Organizations) Regulations. It shall remain valid subject to:

(i) The organisation remaining in compliance with the Civil Aviation (Approved Training Organizations) Regulations.

(ii) The Authority being granted access to the organisation to determine continued compliance with all applicable regulations and

(iii) The certificate not being surrendered or revoked.

(b) Upon surrender or revocation, the approval shall be returned to the Authority.

3.0   CHAPTER 3 — APPROVED BASIC TRAINING COURSE

3.1   Approved basic training course

(a)   The approved basic training course shall consist of knowledge training, knowledge examination, practical training, and a practical assessment.

(b)   The knowledge training element shall cover the subject matter for a category or subcategory aircraft maintenance licence as specified in KAMEL.

(c)   The knowledge examination element shall cover a representative cross section of subject matter from the training element.

(d)   The practical training element shall cover the practical use of common tooling/equipment, the disassembly/assembly of a representative selection of aircraft parts and the participation in representative maintenance activities being carried out relevant to the particular licence category.

(e)   The practical assessment element shall cover the practical training and determine whether the student is competent at using tools and equipment and working in accordance with maintenance manuals.

(f)   The duration of basic training courses shall be in accordance with Appendix VI — Basic training course duration.

(g)   The duration of conversion courses between licence (sub)categories shall be determined through an assessment of the basic training syllabus and the related practical training needs. Typical examples of the conversion duration is provided in Appendix VII.

(h)   Each licence category or subcategory basic training course may be subdivided into modules or sub-modules of knowledge and may be intermixed with the practical training elements subject to the required time elements being satisfied.

(i)   At least 30% of the practical training element should be carried out in an actual maintenance working environment.

3.2   Training hours

(a)   To follow pedagogical and human factors principles, the maximum number of training hours per day for theoretical training should not be more than 6 hours. A training hour means 60 minutes of tuition excluding any breaks, examination, revision, preparation and aircraft visits.

(b) The minimum participation criteria for the trainee to meet the objectives of the basic training course should not be less than 90% of the tuition hours or 95% completion of the content for student-centered methods in a theoretical training course. Additional training may be provided by the training organisation for the trainee to meet the minimum participation criteria. If the minimum participation that is defined for the basic training course is not met, a certificate of recognition should not be issued.

3.3 Basic knowledge examinations

Basic knowledge examinations shall:

(a) Be in accordance with the standard defined by KAMEL.

(b) Be conducted without the use of training notes.

(c) Cover a representative cross section of subjects from the module of training completed in accordance with KAMEL.

3.4 Basic practical assessment

(a) This is applicable to modules where a practical element is required. Tasks or activities that require the application of theory learnt in a classroom environment may also be considered a practical task.

(b) The training is divided into tasks which take place after the completion of the theoretical knowledge (classroom) training or intermixed with the classroom element.

(c) Basic practical assessments shall be carried out during the basic maintenance training course by the nominated practical assessors at the completion of each applicable subject, sub-module, and module.

(d) The student shall achieve an assessed pass covering the practical training to determine competence at using tools and equipment and working in accordance with maintenance manuals.

(e) The assigned practical instructor/assessor must brief the students of any precautions and safety issues associated to a given practical assignment before starting any task.

(f) The ATO must ensure that practical instructors and assessors provide students with the required PPE, deliver task-specific guidance, remain observant and available for queries or assistance during execution, and inspect completed tasks to advise on any faults or deviations from the required standards.
(g) Aircraft Maintenance Engineer Logbook (KCAA (L) 85A) shall be used to document the basic practical training assessment.

Aircraft Maintenance Engineers Logbook (KCAA (L) 85A)

Students shall use the logbook to record both workshop practical skill training and actual aircraft maintenance environment practical training for submission to the Authority. The assigned practical assessor must sign and stamp the logbook immediately upon successful completion of each task, ensuring that the recorded date corresponds with the date of task execution. Additional guidelines for practical assessors are provided in Section 1 of the logbook.

3.5   Practical Training Structure and Assessment Alignment

Purpose and Regulatory Intent

This section provides regulatory guidance to approved and prospective Maintenance Training Organisations (MTOs) on the structuring, delivery, and assessment of practical training in accordance with the Kenya Civil Aviation Regulations (Personnel Licensing), the Fourth Schedule, and ICAO Doc 10098 (Competency-Based Training and Assessment – CBTA).

The objective of practical training is to ensure that theoretical knowledge prescribed in the Fourth Schedule is translated into demonstrable, assessable, and documented aircraft maintenance competence sufficient to support licence issue, validation, and progression under KCAA oversight.

Practical Training Structure

All Approved Maintenance Training Organizations shall be required to map all applicable maintenance tasks against the knowledge curriculum stipulated in the KAMEL with specific emphasis on tasks requiring a practical competency element.

Furthermore, each MTO shall establish and implement a structured practical skill training programme comprising two complementary components, designed to ensure effective competence development, regulatory compliance, and traceability of skills acquisition. These components shall collectively provide documented evidence of both supervised hands-on experience and formal competency assessment, in alignment with KCAA requirements and applicable standards. The two complementary components are:

(a) Basic Practical Training
(b) Practical Training in Aircraft Maintenance Environment

Basic Practical Training (Foundation and Systems Phase)

Regulatory Purpose

Basic Practical Training is intended to develop foundational and system-specific skills in controlled environments before exposure to live aircraft maintenance activities.

Training Environment

Basic Practical Training shall be conducted in KCAA-approved controlled environments, including:

(a)   Workshops
(b)   Hangars
(c)   Training rigs or simulators

Regulatory Expectations

MTOs shall ensure that Basic Practical Training is mapped to Fourth Schedule theory subjects, delivered under the supervision of approved instructors/assessor, and documented through structured task records and instructor sign-off.

Practical Training in aircraft Maintenance Environment (Integration and Performance Phase)

Regulatory Purpose

This phase confirms that trainees can apply knowledge, skills, and judgement in realistic operational conditions consistent with the scope of the applicable licence category.

Training Environment

Training shall be conducted in approved aircraft maintenance environments, including serviceable aircraft, approved hangars, and maintenance workshops.

Regulatory Expectations

KCAA expects this phase to constitute a significant portion of total practical training, normally not less than 30%, and to provide Level 2 and Level 3 competency evidence.

3.6   Initial Training Requirements

Regulatory Basis

Initial training for each license category such as B1 and B2 shall be aligned to the Fourth Schedule of the Civil Aviation (Personnel Licensing) Regulations and reflect the distinct scope of mechanical and avionic privileges.

Table 1 - Initial Practical Training Mapping

Fourth Schedule Subject Area	B1 – Practical Competence	B2 – Practical Competence	Assessment Levels	Required Evidence
Maintenance Practices	Mechanical tool use, torquing, safety locking	Tool use with ESD precautions, documentation control	L1–L2	Task records
Airframe Structures & Materials	Structural inspection and installation	Awareness of structure affecting avionics	L2–L3	Inspection reports
Powerplant	Engine inspection and servicing	Engine indication and sensor systems	L2–L3	Logbook entries
Electrical Fundamentals	System interface awareness	Continuity, insulation, circuit protection	L1–L2	Test results
Avionic Systems	Interface awareness	Testing, troubleshooting, verification	L2–L3	Fault reports

Examples of Level 1 – Knowledge and Understanding Assessment Evidence

Table 2 - Examples of Level 1 – Knowledge and Understanding Assessment Evidence

No.	Theory Area (Fourth Schedule)	Example Assessment Activity	What Competence Is Being Verified	Acceptable Evidence
1.	Maintenance Practices	Oral questioning before a task	Understanding of procedures, tools, and safety requirements	Oral assessment record; instructor notes
2.	Maintenance Data	Open-book exercise using AMM/SRM	Ability to locate, interpret, and explain approved data	Completed worksheet; data reference noted
3.	Human Factors	Scenario discussion on error causes	Understanding of HF concepts and error prevention	Instructor assessment notes
4.	Safety Management Systems	Hazard identification exercise (classroom-based)	Knowledge of hazard reporting and risk awareness	Completed hazard identification form
5.	Electrical Fundamentals	Diagram interpretation exercise	Understanding of circuit logic and protection	Marked exercise; instructor sign-off
6.	Structures	SRM limits explanation	Knowledge of allowable damage limits	Oral questioning record
7.	Powerplant	Engine system description	Understanding of system operation and limitations	Written or oral assessment record
8.	Aviation Legislation	Certification privilege discussion	Understanding of regulatory responsibilities	Instructor questioning record
9.	Tools & Equipment	Tool selection justification	Knowledge of correct tool use and consequences	Oral assessment notes
10.	Documentation	Maintenance record completion exercise	Understanding of documentation requirements	Sample completed document

Regulatory Note (Level 1)

Level 1 assessment confirms readiness for practical skill demonstration. Knowledge alone does not constitute competence and must be followed by Level 2 and Level 3 assessment.

Table 3 - Examples of Level 2 – Practical Skill Demonstration Assessment Evidence

No.	Practical Task Example	Skill Being Demonstrated	Assessment Context	Acceptable Evidence
1.	Torquing and safety locking a fastener	Correct procedure and tool use	Workshop or hangar	Task card; assessor checklist
2.	Continuity and insulation testing	Correct use of test equipment	Laboratory or workshop	Test results; assessor observation
3.	Component removal and installation	Procedural accuracy and safety	Workshop or aircraft	Signed task record
4.	Engine oil servicing	Correct servicing procedure	Hangar or training rig	Completed task card; supervisor sign-off
5.	Wiring inspection and loom installation	Installation accuracy and workmanship	Workshop	Inspection checklist
6.	Use of maintenance manuals during task	Correct data application	Controlled environment	Task record referencing AMM
7.	Functional check after maintenance	Verification of task outcome	Hangar or simulator	Functional check sheet
8.	Corrosion inspection exercise	Identification and reporting	Workshop or aircraft	Inspection report
9.	Avionic component replacement	Correct handling and testing	Workshop	Task card; test report
10.	Application of HF principles during task	Safe working behavior	Supervised task	Assessor observation notes

Regulatory Note (Level 2)

Level 2 assessment verifies that the trainee can perform defined maintenance tasks correctly under supervision. Performance may still require guidance and does not yet confirm independent competence.

Table 4 - Examples of Level 3 – Integrated Competency Evidence

No.	Integrated Maintenance Scenario	Competence Integrated (Knowledge, Skills, Attitude)	Assessment Context (Level 3)	Acceptable Evidence
1.	End-to-end defect rectification (e.g. brake or flight control defect)	Task planning, correct data use, safe execution,	Live aircraft / realistic	Scenario assessment report; AMM reference;

No.	Integrated Maintenance Scenario	Competence Integrated (Knowledge, Skills, Attitude)	Assessment Context (Level 3)	Acceptable Evidence
		documentation, communication	maintenance environment	completed task card; assessor sign-off
2.	Troubleshooting under operational time pressure	Logical fault isolation, judgement, safety-based decision-making	Hangar or aircraft-based scenario	Fault-finding report; wiring/manual references; assessor observation notes
3.	Structural damage assessment	Application of SRM limits, measurement, judgement, escalation awareness	Aircraft or representative structure	Inspection report; SRM reference; measurement record; assessor sign-off
4.	Integrated mechanical–electrical task (e.g. sensor replacement)	System isolation, cross-discipline awareness, testing, documentation	Aircraft or approved training environment	Task card (AMM + wiring manual); test results; assessor checklist
5.	Application of Human Factors during maintenance	Communication, teamwork, situational awareness, error management	Live or simulated maintenance activity	Assessor HF observation notes; debrief record
6.	SMS application during task execution	Hazard identification, risk mitigation, safety reporting	Operational or simulated environment	Hazard/occurrence report; risk assessment worksheet
7.	Shift handover and task continuation	Clear communication, documentation accuracy, HF awareness	Simulated or live shift handover	Completed handover checklist; assessor notes
8.	Decision-making within trainee authority	Recognition of limits, regulatory compliance, escalation	Scenario-based assessment	Written justification; assessor endorsement
9.	Repeated performance of similar tasks over time	Consistency, safe behaviour, professional judgement	Multiple tasks across different dates	Multiple signed task records; assessor summary

No.	Integrated Maintenance Scenario	Competence Integrated (Knowledge, Skills, Attitude)	Assessment Context (Level 3)	Acceptable Evidence
10.	Independent task completion (within licence scope)	Safe, consistent, independent performance	Workplace or hangar-based	Final Level 3 competency recommendation; assessor sign-off

Regulatory Note (Recommended for the Manual)

Level 3 Integrated Competency evidence shall demonstrate consistent, safe, and independent performance in realistic maintenance environments. Evidence based on a single task, workshop-only activities, or theoretical assessment alone is not acceptable.

Table 5 - Relationship Between Levels 1, 2, and 3 (For Manual Clarity)

Assessment Level	Primary Focus	Typical Environment	Outcome
Level 1	Knowledge and understanding	Classroom / briefing	Readiness for practice
Level 2	Task performance	Workshop / hangar	Procedural competence
Level 3	Integrated performance	Operational environment	Independent competence

3.7 General Guidance

Guidance to Maintenance Training Organizations on Evidence Preparation

Level 3 Integrated Competency Evidence

Maintenance Training Organisations shall ensure that Level 3 Integrated Competency evidence is available for each trainee prior to licence recommendation or progression. Such evidence shall demonstrate the trainee's ability to integrate knowledge, practical skills, and professional attitudes to perform maintenance tasks safely and consistently in a realistic operational environment.

Acceptable evidence includes scenario-based assessment reports, workplace or hangar-based task evaluations, decision-making records under operational constraints, correct use of approved maintenance data, and assessor sign-off confirming independent performance. Level 3 competency decisions shall not be based on a single task or event.

Approved Instructors and Assessors

MTOs shall maintain current and auditable records of all KCAA approved instructors and assessors involved in practical training and assessment. Documentation shall include formal approval, evidence of technical qualifications and licence scope, CBTA training, role definitions, and currency records. These records shall be readily available for KCAA inspection.

Approved Maintenance Data

All practical training and assessment activities shall be conducted using approved and current maintenance data appropriate to the task. MTOs shall demonstrate availability, revision control, correct trainee use of AMM, SRM, IPC, wiring manuals, and task cards, and task records referencing the data used. Use of non-approved or outdated data constitutes a compliance finding.

Practical Evidence Traceability

All practical training and assessment records shall be signed, dated, and traceable to the trainee, task, instructor, and assessor. Records shall include task identifiers, applicable Fourth Schedule subject references, training environment identification, and be retained in accordance with the Aircraft Maintenance Engineers Logbook (KCAA (L) 85A) and other applicable KCAA requirements.

Competency Decisions Based on Multiple Observations

Competency decisions shall be based on multiple observations of consistent performance over time. MTOs shall retain evidence of repeated task performance, assessor notes, and justification where competency is confirmed. Decisions based on isolated performance are considered insufficient.

Human Factors and Safety Management Systems Application

Human Factors and SMS principles shall be actively integrated into practical training and assessment. MTOs shall demonstrate application through hazard identification, communication and teamwork assessment, scenario-based decision-making exercises, occurrence reporting simulations, and assessor observations of HF and SMS behaviours during task execution.

4.0   CHAPTER 4 — AIRCRAFT TYPE/TASK TRAINING

4.1   Aircraft type/task training

(a) A maintenance training organisation shall be approved to carry out aircraft type and/or task training in compliance with the standard specified KAMEL Appendix III.

(b) Aircraft type training may be sub-divided into airframe and/or powerplant and/or avionics systems type training courses. A maintenance training organisation approved under the Civil Aviation (Approved Training Organizations) Regulations may be approved to conduct airframe type training only, powerplant type training only, avionics systems type training only or any combination thereof.

   (i)   Airframe type training course means a type training course including all relevant aircraft structure and electrical and mechanical systems excluding the powerplant.

   (ii) Powerplant type training course means a type of training course on the bare engine, including the build-up to a quick engine change unit.

   (iii) The interface of the engine/airframe systems should be addressed by either airframe or powerplant type training. In some cases, such as general aviation, it may be more appropriate to cover the interface during the airframe course due to the large variety of aircraft that can have the same engine type installed.

   (iv) Avionics/electrical systems type training course means type training on all avionics systems and the interface of the specific engine or airframe.

(c) Aircraft visit(s) during theoretical training sessions does NOT comprise the practical elements of the aircraft type training.

4.2   Aircraft type evaluation and task assessment

A maintenance training organisation approved to conduct aircraft type/task training shall conduct the aircraft type evaluation or aircraft task assessment subject to compliance with the aircraft type and/or task standard specified in KAMEL.

Appendices to AMC - Appendix IV of KAMEL provides criteria for the competence assessment performed by the designated assessors and their qualifications.

5.0   CHAPTER 5 – SAFETY MANAGEMENT SYSTEM

In accordance with Regulation 9 of the Civil Aviation (Safety Management) Regulations and consistent with the principles of ICAO Annex 19 Safety Management, all maintenance training organizations approved under the Civil Aviation (Approved Training Organizations) Regulations shall establish, implement, and maintain a Safety Management System (SMS) appropriate to the size, nature, and complexity of their operations.

Given their exposure to safety risks arising from aircraft maintenance activities, practical training, human factors, and operational interfaces, approved maintenance training organizations are required to proactively manage safety through a structured SMS framework.

Each organization shall therefore develop and maintain an SMS Manual in compliance with the Second Schedule to the Civil Aviation (Safety Management) Regulations. The SMS Manual shall, as a minimum, document the following four components:

a) Safety policy and objectives, including management commitment and safety accountability;
b) SMS requirements, encompassing hazard identification and safety risk management processes;
c) SMS processes and procedures, including safety assurance, safety performance monitoring, occurrence reporting, and continuous improvement mechanisms; and
d) Defined accountability, responsibilities, and authorities for SMS implementation at all organizational levels.

The SMS shall be integrated into the organization's management system and shall support a just culture, promote safety reporting, and ensure continuous improvement through data-driven safety performance evaluation.

6.0 CHAPTER 6 – CERTICATION OF APPROVED TRAINING ORGANISATION

6.1 Introduction

The certification process is established to ensure that an applicant holding a Foreign Approved Training Organization (ATO) certificate fully understands and complies with the requirements of the Kenya Civil Aviation (Approved Training Organization) and the Kenya Civil Aviation (Personnel Licensing) Regulations. Upon satisfactory completion of the approval process, the applicant is demonstrated to be capable of meeting all applicable regulatory requirements, as well as the relevant international standards and recommended practices.

The process provides assurance that the foreign ATO approval is fully compliant with applicable national regulatory requirements, while, to the greatest extent practicable, relying on and leveraging the existing approval issued by the foreign Civil Aviation Authority.

The certification process is normally structured into five (5) distinct phases. Each phase groups related, sequential activities that collectively support a specific regulatory and oversight function. This phased, gate-based approach requires that defined acceptance (gate) criteria be satisfactorily met and formally closed before progression to the subsequent phase of the approval process. The five (5) phases are as follows:

(a) Pre-application.
(b) Formal Application;
(c) Application Evaluation;
(d) Demonstration and Validation; and
(e) Certification

6.2 Local ATO Approval

The certification of a local maintenance training organization will follow the typical five phase approval process as described in Advisory Circular: CAA-AC-PEL070D as amended.

6.3 Foreign ATO Approval

The certification of a foreign maintenance training organization will follow the typical five phase approval process as described in Advisory Circular: CAA-AC-PEL082A as amended.

7.0   APPENDICES

7.1   Appendix I — Training Procedures Manual Format

The following contents form the basis of the TPM required by Section 2.9. While an ATO must develop the TPM in this prescribed format, reference must be made to the Second Schedule of the Civil Aviation (Approved Training Organization) Regulations, for more details regarding the contents. Any additional documents deemed necessary for the conduct of basic or aircraft type training must be properly always referenced and kept up to date.

GENERAL

Foreword
Table of contents
List of effective pages
Records of amendment
Manual key change highlights
Manual Approval Table
Distribution list
Abbreviations and acronyms
Definitions
Document Review Record
Document Accuracy & Validity Manual
Organization
Document Amendment Record

1.0 PART 1 – M A N A G E M E N T

1.1   Corporate commitment
1.2   Management personnel
1.3   Duties and responsibilities
    1.3.1   Accountable Manager
    1.3.2   Head of Training
    1.3.3   Head of Quality
    1.3.4   Chief Aircraft Maintenance Engineering Instructor
    1.3.5   Knowledge examiner
    1.3.6   Basic theoretical training instructor
    1.3.7   Basic practical training instructor/assessor
    1.3.8   Type theoretical training instructor
    1.3.9   Type practical training instructor/assessor
1.4   Management organization chart
1.5   List of instructional & examination staff
1.6   List of approved location and addresses (base and satellite)
1.7   List of sub-contractors

1.8   General description of facility, (base and satellite)

1.9   Specific list of courses approved by the authority

1.10   Notification procedure regarding changes to organization

1.11   TPM & associated manuals amendment procedure

2.0 PART 2 – TRAINING AND EXAMINATION PROCEDURES

2.1   Course Plan

    2.1.1   Objectives and learning outcomes;

    2.1.2   Pre-entry requirements.

    2.1.3   A list showing each subject and the topics covered in the subject;

    2.1.4   A description of the examination or assessment methods and the examination or assessment criteria;

    2.1.5   A description of—
        (a)   methods in which training is conducted (for example: lecture, computer-based training, simulators or practical training); and
        (b)   available equipment and data necessary for training;

    2.1.6   A description of the facilities including classroom, laboratory and workshop necessary to deliver the training;

    2.1.7   A list showing the prerequisites, if any, for each subject;

    2.1.8   Credits for previous experience: to be obtained from the Authority before training begins;

    2.1.9   A statement showing the number of hours of training that are necessary for each topic and for the whole course;

    2.1.10 The minimum and maximum student attendance requirements for each subject and description of the way in which students' attendance is checked and recorded.

    2.1.11 For each subject, a copy of—
        (a) the course notes that are to be given to student;
        (b) any examination paper or examinations question bank that is to be used;

    2.1.12 A list showing the units of competency that must be completed for each course

2.2   Training

    2.2.1   Organization of courses

    2.2.2   Preparation of course materials and the procedures used to develop or acquire documents for training.
        2.2.2.1   Training needs analysis (TNA)
        2.2.2.2   Training needs analysis approval process
        2.2.2.3   Type training material
        2.2.2.4   Basic training material
        2.2.2.5   Basic/type training material updating and annual review

    2.2.3   Preparation of classrooms and equipment

    2.2.4   Preparation of workshops/maintenance facilities and equipment

    2.2.5   Conduct of theoretical training & practical training (during basic knowledge training and type/task training)

    2.2.6   Records of training carried out

    2.2.7   Storage, retention and security of training records

7.2   Appendix II — Individual Module Results Slip

[ATO NAME AND LOGO]

AIRCRAFT MAINTENANCE ENGINEERS' TRAINING RESULTS' SLIP

CANDIDATE'S NAME:

COURSE:

COURSE ID:

MODULE	SUBJECT	SCORE
M1		
M2		
M3		
M4		
M5		
M6		
M7		
M8		
M9		
M10		
M11		
M12		

M10

CERTIFICATE OF RECOGNITION

[Logo]

Certificate Number: *ATO Approval Number* [XXXX]

The certificate of recognition is issued to:

[NAME]

[DATE and PLACE OF BIRTH]

By:

[ATO NAME AND ADDRESS]

ATO Approval Number: [XXXX]

A maintenance training organisation approved to provide training and conduct examinations within its Training Specifications and in accordance with the Civil Aviation (Approved Training Organizations) Regulations.

This certificate attests that the above-named person has successfully attended and passed the approved basic training course(s) and the basic examination(s) stated below in compliance with the Civil Aviation (Approved Training Organizations) Regulations.

[BASIC TRAINING COURSE(S] and [BASIC EXAMINATION(S]

[LIST OF MODULES/LOCATION AND DATE OF EXAMINATION PASSED]

[START and END DATES] & [LOCATION]

Date: .... Signed: ....

Accountable Manager

[ATO SEAL}

CERTIFICATE OF RECOGNITION

[Logo]

Certificate Number: *ATO Approval Number.* [XXXX]

The certificate of recognition is issued to:

[NAME]

[DATE and PLACE OF BIRTH]

By:

[ATO NAME AND ADDRESS]

ATO Approval Number: [XXXX]

A maintenance training organisation approved to provide training and conduct examinations within its Training Specifications and in accordance with the Civil Aviation (Approved Training Organizations) Regulations.

This certificate attests that the above-named person has successfully passed the theoretical (**) and/or the practical elements (**) of the approved aircraft type training course stated below in compliance with the Civil Aviation (Approved Training Organizations) Regulations.

AIRCRAFT TYPE TRAINING COURSE *(Airframe and Specific Engine Type)*

LICENCE CATEGORY

[START and END DATES] & [LOCATION]

[SPECIFY THE THEORETICAL/PRACTICAL ELEMENTS]

[END DATE]/[LOCATION]

Date:...

Signed:..

[ATO SEAL]

NOTE:

(**) Delete as appropriate. Possible cases:

   i.   *Completely attended and passed the theoretical elements (training & examination) and the practical elements (practical & assessment) of the type training course; or*
  ii.   *Completely attended and passed only the theoretical elements; or*
 iii.   *Positively assessed on the practical elements.*

7.5   Appendix V — Sample Certificate of Attendance

CERTIFICATE OF ATTENDANCE

[Logo]

AIRCRAFT TYPE TRAINING COURSE

This certificate of attendance is issued to:

[NAME]

[DATE and PLACE OF BIRTH]

BY: [ATO NAME AND ADDRESS]

A KENYAN APPROVED TRAINING ORGANIZATION

This certificate confirms that the above-named person attended an aircraft type training course on the aircraft type stated below:

AIRCRAFT TYPE TRAINING COURSE *(Airframe and Specific Engine Type)*

[START and END DATES] & [LOCATION]

DATE COMPLETED

[XXXX]

Date: ....

Signed: ....

CERTIFICATE NUMBER: XXXX

<u>NOTE:</u>

Issued to applicants who have completed the full course in accordance with training standards but did not successfully pass the required examination.

7.6   Appendix VI — Basic training course duration

The minimum duration of a complete basic training course shall be as follows:

Table 6 - Minimum Training Duration

Basic Course	Duration (in hours)	Theoretical Training Ratio (in %)
A1	800	30–35
A2	650	30–35
A3	800	30–35
A4	800	30–35
B1.1	2 400	50–60
B1.2	2 000	50–60
B1.3	2 400	50–60
B1.4	2 400	50–60
B2	2 400	50–60
B3	1 000	50–60

7.7   Appendix VII — Typical example of the conversion duration

Typical conversion durations are given below:

(a) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory A1 to subcategory B1.1 or B2 should not be less than 1600 hours and for conversion from holding a Part-66 aircraft maintenance licence in subcategory A1 to subcategory B1.1 combined with B2 should not be less than 2200 hours. The course should include between 60% and 70% knowledge training.

(b) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory B1.1 to B2 or category B2 to B1.1 should not be less than 600 hours and should include between 80% and 85% knowledge training.

(c) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory B1.2 to subcategory B1.1 should not be less than 400 hours and should include between 50% and 60% knowledge training.

(d) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in one subcategory A to another subcategory A should not be less than 70 hours and should include between 30% and 40% knowledge training.

(e) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in any subcategory A to category B2L (with any system rating) should not be less than 800 hours and should include between 60 and 70 % of knowledge training.