

Review of Part 66 "On the Job Training" (OJT)

It is necessary in support of the First EASA Part 66 Maintenance Engineers Licence for the prospective Licenced Aircraft Maintenance Engineer LAME to complete a period of OJT

The following information is drawn from AMC to Section 6 of Appendix III to Part-66 'Aircraft Type Training and Examination Standard. On-the-Job Training' ED Decision 2015/029/R

With additional comments and observations made by www.sassofia.com & www.sassofia.com office@sassofia.com or online@sassofia.com

EASA States the following - see FAQ

How can I carry out my OJT in a Part-145 approved maintenance organisation (AMO) whose principal place of business is located outside the EASA Member States? Answer The endorsement of the first aircraft type rating, within a given category/sub-category, requires satisfactory completion of the corresponding On-the-Job-Training (ref. 66.A.45.(c)).

The OJT shall be approved by the competent authority who has issued the licence (ref. Part 66, Appendix III, sec. 6).

It shall be carried out in a maintenance organisation approved under Part-145 (or M.A. Subpart F) with A rating and the procedures for OJT should be included in the exposition (MOE chapter 3.15 "OJT procedure") approved by the competent authority of the maintenance organisation.

However, since these procedures are approved by the competent authority of the maintenance organisation, and providing training is not one of the privileges of a maintenance organisation, they can only be used when the licensing authority (competent authority issuing the license) is the same as the competent authority of the maintenance organisation.

In other cases, it is up to the licensing authority to decide whether it accepts such procedures for the purpose of approving the OJT (ref. AMC to Section 6 of Appendix III to Part-66).

For the Part-145 AMOs, whose principal place of business is located outside the EASA Member states, the competent authority of the maintenance organisation is EASA. In such case, the OJT procedures cannot be included in the MOE, due to the fact that EASA is not a licensing authority.

The possibility still exists in this case that a licensing authority may directly approve OJT procedures, which have to be included in a separate document outside (and not being part) of the MOE.

Consequently, personnel working in these AMOs, or the AMOs wishing to support its staff on this matter, should:

Option A: apply directly to the licensing authority who has issued the license for the approval of an OJT (to be proposed in a document outside the MOE). This option should normally be considered by organisations and not by individuals.

Option B: find an agreement to follow an already approved OJT at another organisation, which was approved by the same licensing authority who has issued the license.

Possibility also exists to follow an OJT which was approved by any other licensing

authority, however in such case the final acceptance of this OJT for the purpose of endorsing

the first type rating in the license remains at the sole discretion of the competent authority issuing the license.

It is recommended that prior to starting any OJT, the licensing authority who has issued the license is contacted to verify its acceptance of any possible intended option.

When is OJT Required?

OJT is only required for the initial type in each licence category or sub-category:

For example; if a basic B1/B2 licence is endorsed with the Airbus A320 type in the B1 category and the engineer wishes to add the A320 in the B2 category, he/she will have to complete B2 related OJT representative of that aircraft and its systems.

If the same engineer adds the B1.3 category to the basic licence and wishes to add the first helicopter type, he/she must complete OJT representative of that first helicopter type.

Endorsement of any subsequent types in each of the categories will not require OJT.

On-the-Job Training (OJT) Regulatory Requirement

6. On the Job Training Annex III (Part-66) APPENDICES TO ANNEX III (Part-66) Regulation (EU) No 1321/2014

On the Job Training (OJT) shall be approved by the competent authority who has issued the licence.

It shall be conducted at and under the control of a maintenance organisation appropriately approved for the maintenance of the particular aircraft type and shall be assessed by designated assessors appropriately qualified.

It shall have been started and completed within the 3 years preceding the application for a type rating endorsement.

Completion of OJT is a significant undertaking which has to be given careful consideration to enable the satisfactory completion of the objective of gaining competence and experience required in compliance with this appendix

(a) Objective:

The objective of OJT is to gain the required competence and experience in performing safe maintenance.

(b) Content:

OJT shall cover a cross section of tasks acceptable to the competent authority.

The OJT tasks to be completed shall be representative of the aircraft and systems both in complexity and in the technical input required to complete that task.

While relatively simple tasks may be included, other more complex maintenance tasks shall also be incorporated and undertaken as appropriate to the aircraft type.

Each task shall be signed off by the student and countersigned by a designated supervisor. The tasks listed shall refer to an actual job card/work sheet, etc.

The final assessment of the completed OJT is mandatory and shall be performed by a designated assessor appropriately qualified.

The following data shall be addressed on the OJT worksheets/logbook:

- 1. Name of Trainee;
- 2. Date of Birth;
- 3. Approved Maintenance Organisation;
- 4. Location;
- 5. Name of supervisor(s) and assessor, (including licence number if applicable);



- 6. Date of task completion;
- 7. Description of task and job card/work order/tech log, etc.;
- 8. Aircraft type and aircraft registration;
- 9. Aircraft rating applied for.

In order to facilitate the verification by the competent authority, demonstration of the OJT shall consist of (i) detailed worksheets/logbook and (ii) a compliance report demonstrating how the OJT meets the requirement of this Part.

- 1. 'A maintenance organisation appropriately approved for the maintenance of the particular aircraft type' means a Part-145 or M.A. Subpart F approved maintenance organisation holding an A rating for such aircraft.
- 2. The OJT should include one to one supervision and should involve actual work task performance on aircraft/components, covering line and/or base maintenance tasks.

Note 1 - This Effectively Rules out "Line Maintenance" as the provider of an appropriate environment in which to achieve the required OJT.

The use of simulators for OJT should not be allowed.

Note 2 - This means that it has to be a physically "Real" Environment which again adds to the need for an EASA 145 Base Maintenance Environment to support the OJT.

4. The OJT should cover at least 50% of the tasks contained in Appendix II to AMC to Part-66.

(See below for the complete list of tasks which should be accomplished)

Some tasks should be selected from each paragraph of the Appendix II list.

Tasks should be selected among those applicable to the type of aircraft and licence (sub)category applied for.

Other tasks than those in the Appendix II may be considered as a replacement when they are relevant.

Note 3 – So it is possible to vary the list by the addition or substitution of a more appropriate task The final selection of the tasks is set by the Organisation who is managing the OJT

Typically, in addition to the variety and the complexity, the OJT tasks should be selected because of their frequency, safety, novelty, etc.

5. Up to 50% of the required OJT may be undertaken before the aircraft theoretical type training starts.

Note 4 – This means that 25% of the overall list can be accomplished – however it is important to consider that this needs to be carried out in an "approved environment" – your background outside of EASA is not included in this assessment The contents of the OJT is Derived from the following List

Here is the details of Appendix 2 to Part 66 AMC – Note this list of tasks is the same for Part 66 OJT and Part 66 Practical Training following Type Training



Placards and Markings

Check aircraft for correct placards. Check aircraft for correct markings.

Air Conditioning

Replace combustion heater. Replace flow control valve.

Replace outflow valve.

Replace safety valve.

Replace vapour cycle unit.

Replace air cycle unit.

Replace cabin blower.

Replace heat exchanger.

Replace pressurisation controller.

Clean outflow valves.

Deactivate/reactivate cargo isolation valve.

Deactivate/reactivate avionics ventilation components.

Check operation of air conditioning/heating system.

Check operation of pressurisation system.

Troubleshoot faulty system.

Servicing

Refuel aircraft.

Defuel aircraft.

Carry out tank to tank fuel transfer.

Check/adjust tire pressures.

Check/replenish oil level.

Check/replenish hydraulic fluid level.

Check/replenish accumulator pressure.

Charge pneumatic system.

Grease aircraft.

Connect ground power.

Service toilet/water system

Perform pre-flight/daily check.

Vibration and Noise Analysis

Analyse helicopter vibration problem.

Analyse noise spectrum.

Analyse engine vibration.

Auto flight

Install servos.

Rig bridle cables Replace controller.

Replace amplifier.

Replacement of the auto flight system LRUs in

case of fly-by-wire aircraft.

Check operation of auto-pilot.

Check operation of auto-throttle/auto-thrust.

Check operation of yaw damper.

Check and adjust servo clutch.

Perform autopilot gain adjustments.

Perform mach trim functional check.

Troubleshoot faulty system.

Check autoland system.

Check flight management systems.

Check stability augmentation system.

Communications

Replace VHF com unit.

Replace HF com unit.

Replace existing antenna.

Replace static discharge wicks.

Check operation of radios.

Perform antenna VSWR check.

Perform Selcal operational check.

Perform operational check of passenger address system.

Functionally check audio integrating system.

Repair co-axial cable.

Troubleshoot faulty system.

Electrical Power

Charge lead/acid battery.

Charge Ni-Cad battery.

Check battery capacity.

Deep-cycle Ni-Cad battery.

Replace integrated drive/generator/alternator.

Replace switches.

Replace circuit breakers.

Adjust voltage regulator.

Change voltage regulator.

Amend electrical load analysis report.

Equipment/Furnishings

Replace carpets

Replace crew seats.

Replace passenger seats.

Check inertia reels.

Check seats/belts for security.

Check emergency equipment.

Check ELT for compliance with regulations.

Repair toilet waste container.

Remove and install ceiling and sidewall panels.

Repair upholstery.



Repair/replace electrical feeder cable.

Troubleshoot faulty system.

Perform functional check of integrated

drive/generator/alternator.

Perform functional check of voltage regulator.

Perform functional check of emergency

generation system.

Change cabin configuration.

Replace cargo loading system actuator.

Test cargo loading system.

Replace escape slides/ropes.

Fire protection

Check fire bottle contents.

Check/test operation of fire/smoke detection and warning system.

Check cabin fire extinguisher contents.

Check lavatory smoke detector system.

Check cargo panel sealing.

Install new fire bottle.

Replace fire bottle squib.

Troubleshoot faulty system.

Inspect engine fire wire detection systems.

Flight Controls

Inspect primary flight controls and related components i.a.w. AMM.

Extending/retracting flaps & slats.

Replace horizontal stabiliser.

Replace spoiler/lift damper.

Replace elevator.

Deactivation/reactivation of aileron servo

control.

Replace aileron.

Replace rudder.

Replace trim tabs.

Install control cable and fittings.

Replace slats.

Replace flaps.

Replace powered flying control unit.

Replace flat actuator.

Rig primary flight controls.

Adjust trim tab.

Adjust control cable tension.

Check control range and direction of movement.

Check for correct assembly and locking.

Troubleshoot faulty system.

Functional test of primary flight controls.

Functional test of flap system.

Operational test of the side stick assembly.

Operational test of the THS.

THS system wear check.

Fuel

Water drain system (operation).

Replace booster pump.

Replace fuel selector.

Replace fuel tank cells.

Replace/test fuel control valves.

Replace magnetic fuel level indicators.

Replace water drain valve.

Check/calculate fuel contents manually.

Check filters.

Flow check system.

Check calibration of fuel quantity gauges.

Check operation feed/selectors.

Check operation of fuel dump/jettison system.

Hydraulics

Replace engine driven pump.

Check/replace case drain filter.

Replace standby pump.

Replace hydraulic motor pump/generator.

Replace accumulator.

Check operation of shut off valve.

Check filters/clog indicators.

Check indicating systems.

Perform functional checks.

Pressurisation/depressurisation of the hydraulic

svstem.

Power Transfer Unit (PTU) operation.

Replacement of PTU.



Fuel transfer between tanks.

Pressure defuel.

Pressure refuel (manual control).

Deactivation/reactivation of the fuel valves (transfer defuel, X-feed, refuel).

Troubleshoot faulty system.

Troubleshoot faulty system.

Ice and rain protection

Replace pump.

Replace timer.

Inspect repair propeller deice boot.

Test propeller de-icing system.

Inspect/test wing leading edge de-icer boot.

Replace anti-ice/deice valve.

Install wiper motor.

Check operation of systems.

Operational test of the pitot-probe ice protection.

Operational test of the TAT ice protection.

Operational test of the wing ice protection system.

Assistance to the operational test of the engine air-intake ice protection (with engines operating).

Troubleshoot faulty system.

Indicating/recording systems

Replace flight data recorder.

Replace cockpit voice recorder.

Replace clock.

Replace master caution unit.

Replace FDR.

Perform FDR data retrieval.

Troubleshoot faulty system.

Implement ESDS procedures.

Inspect for HIRF requirements.

Start/stop EIS procedure.

Bite test of the CFDIU.

Ground scanning of the central warning system.

Landing Gear

Build up wheel.

Replace main wheel.

Replace nose wheel.

Replace steering actuator.

Replace truck tilt actuator.

Replace gear retraction actuator.

Replace uplock/downlock assembly.

Replace shimmy damper.

Rig nose wheel steering.

Functional test of the nose wheel steering system.

Replace shock strut seals.

Replace brake unit.

Replace brake control valve.

Bleed brakes.

Replace brake fan.

Test anti-skid unit.

Test gear retraction.

Change bungees.

Adjust micro switches/sensors.

Charge struts with oil and air.

Troubleshoot faulty system.

Test auto-brake system.

Replace rotorcraft skids.

Replace rotorcraft skid shoes.

Lights

Repair/replace rotating beacon.

Repair/replace landing lights.

Repair/replace navigation lights.

Repair/replace interior lights.

Replace ice inspection lights.

Repair/replace logo lights.

Repair/replace emergency lighting system.

Perform emergency lighting system checks.

Troubleshoot faulty system

Navigation

Calibrate magnetic direction indicator.

Replace airspeed indicator.

Replace altimeter.

Replace air data computer.

Replace VOR unit.

Replace ADI.

Replace HSI.

Check pitot static system for leaks.

Check operation of directional gyro.

Functional check weather radar.

Functional check doppler.

Functional check TCAS.

Functional check DME.

Functional check ATC Transponder



Pack and check floats.

Flotation equipment.

Check/test emergency blowdown (emergency landing gear extension).

Operational test of the landing gear doors.

Oxygen

Inspect on board oxygen equipment.

Purge and recharge oxygen system.

Replace regulator.

Replace oxygen generator.

Test crew oxygen system.

Perform auto oxygen system deployment check.

Troubleshoot faulty system.

Functional check flight director system.

Functional check inertial nav system.

Complete quadrantal error correction of ADF

system.

Update flight management system database.

Check calibration of pitot static instruments.

Check calibration of pressure altitude reporting

Troubleshoot faulty system.

Check marker systems.

Compass replacement direct/indirect.

Check Satcom.

Check GPS.

Test AVM.

Pneumatic systems

Replace filter.

Replace air shut off valve.

Replace pressure regulating valve.

Replace compressor.

Recharge dessicator.

Adjust regulator.

Check for leaks.

Troubleshoot faulty system.

Water/Waste

Replace water pump.

Replace tap.

Replace toilet pump.

Perform water heater functional check.

Troubleshoot faulty system.

Inspect waste bin flap closure.

Vacuum systems

Inspect the vacuum system i.a.w. AMM.

Replace vacuum pump.

Check/replace filters.

Adjust regulator.

Troubleshoot faulty system.

Central Maintenance System

Retrieve data from CMU.

Replace CMU.

Perform Bite check.

Troubleshoot faulty system.

Airborne Auxiliary power

Install APU.

Inspect hot section.

Troubleshoot faulty system.

Structures

Assessment of damage.

Sheet metal repair.

Fibre glass repair.

Wooden repair. Fabric repair.

Recover fabric control surface.

Treat corrosion.

Apply protective treatment.

Windows

Replace windshield.

Replace direct vision window.

Replace cabin window.

Repair transparency.

Doors

Inspect passenger door i.a.w. AMM.

Rig/adjust locking mechanism.

Adjust air stair system.

Check operation of emergency exits.

Test door warning system.

Troubleshoot faulty system.

Remove and install passenger door i.a.w. AMM.

Remove and install emergency exit i.a.w. AMM.

Inspect cargo door i.a.w. AMM.

Wings

Skin repair.

Recover fabric wing.

Replace tip.

Replace rib.

Replace integral fuel tank panel.

Check incidence/rig.



Propeller

Assemble prop after transportation.

Replace propeller.

Replace governor.

Adjust governor.

Perform static functional checks.

Check operation during ground run.

Check track.

Check setting of micro switches.

Assessment of blade damage i.a.w. AMM.

Dynamically balance prop.

Troubleshoot faulty system.

Rotor Drive

Replace mast.

Replace drive coupling.

Replace clutch/freewheel unit

Replace drive belt.

Install main gearbox.

Overhaul main gearbox.

Check gearbox chip detectors.

Main Rotors

Install rotor assembly.

Replace blades.

Replace damper assembly.

Check track.

Check static balance.

Check dynamic balance.

Troubleshoot.

Tail Rotors

Install rotor assembly.

Replace blades.

Troubleshoot.

Tail Rotor Drive

Replace bevel gearbox.

Replace universal joints.

Overhaul bevel gearbox.

Install drive assembly.

Check chip detectors.

Check/install bearings and hangers.

Check/service/assemble flexible couplings.

Check alignment of drive shafts.

Install and rig drive shafts.

Rotorcraft flight controls

Install swash plate.

Install mixing box.

Adjust pitch links.

Rig collective system.

Rig cyclic system.

Rig anti-torque system.

Check controls for assembly and locking.

Check controls for operation and sense.

Troubleshoot faulty system.

Piston Engines

Remove/install reduction gear.

Check crankshaft run-out.

Check tappet clearance.

Check compression.

Extract broken stud.

Install helicoil.

Perform ground run.

Establish/check reference RPM.

Troubleshoot.

Power Plant

Build up ECU.

Replace engine.

Repair cooling baffles.

Repair cowling.

Adjust cowl flaps.

Repair faulty wiring.

Troubleshoot.

Assist in dry motoring check.

Assist in wet motoring check.

Assist in engine start (manual mode).

Turbine Engines

Replace module.

Replace fan blade.

Hot section inspection/boroscope check.

Carry out engine/compressor wash.

Carry out engine dry cycle.

Engine ground run.

Establish reference power.

Trend monitoring/gas path analysis.

Troubleshoot.

Fuel and control, piston

Replace engine driven pump.

Adjust AMC.

Adjust ABC.



Install carburettor/injector.
Adjust carburettor/injector.
Clean injector nozzles.
Replace primer line.
Check carburettor float setting.
Troubleshoot faulty system.

Fuel and control, turbine

Replace FCU.

Replace Engine Electronic Control Unit (FADEC).

Replace Fuel Metering Unit (FADEC).

Replace engine driven pump.

Clean/test fuel nozzles.

Clean/replace filters.

Adjust FCU.

Troubleshoot faulty system.

Functional test of FADEC.

Ignition systems, piston

Change magneto.

Change ignition vibrator.

Change plugs.

Test plugs.

Check H.T. leads.

Install new leads.

Check timing.

Check system bonding.

Troubleshoot faulty system.

Ignition systems, turbine

Perform functional test of the ignition system.

Check glow plugs/ignitors.

Check H.T. leads.

Check ignition unit.

Replace ignition unit.

Troubleshoot faulty system.

Engine Controls

Rig thrust lever.

Rig RPM control.

Rig mixture HP cock lever.

Rig power lever.

Exhaust, piston

Check control sync (multi-eng).

Check controls for correct assembly and locking.

Check controls for range and direction of movement.

Adjust pedestal micro-switches.

Pressure check cabin heater muff.

Troubleshoot faulty system.

Replace exhaust gasket. Inspect welded repair.

Engine Indicating

Replace engine instruments(s).

Replace oil temperature bulb.

Replace thermocouples.

Check calibration.

Troubleshoot faulty system.

Exhaust, turbine

Change jet pipe.

Change shroud assembly.

Install trimmers.

Inspect/replace thrust reverser.

Replace thrust reverser component.

Deactivate/reactivate thrust reverser.

Operational test of the thrust reverser system.

Oil

Change oil.

Check filter(s).

Adjust pressure relief valve.

Troubleshoot faulty system.

Replace oil tank.

Replace oil pump.

Replace oil cooler.

Replace firewall shut off valve.

Perform oil dilution test.

Troubleshoot faulty system.

Starting

Replace starter.

Replace start relay.

Replace start control valve.

Check cranking speed.

Troubleshoot faulty system.



Turbines, piston engines

Replace PRT.

Replace turbo-blower.

Replace heat shields.

Replace waste gate.

Adjust density controller.

Accessory gear boxes

Replace gearbox.

Replace drive shaft.

Inspect magnetic chip detector.

Engine water injection

Replace water/methanol pump.

Flow check water/methanol system.

Adjust water/methanol control unit.

Check fluid for quality.

Troubleshoot faulty system

APU

Removal/installation of the APU.

Removal/installation of the inlet guide-vane actuator.

Operational test of the APU emergency shut-

down test.

Operational test of the APU.

6. The organisation providing the on-the-job training should provide trainees a schedule or plan indicating the list of tasks to be performed under supervision.

Note 5 – The OJT needs to be structured, managed and controlled to enable the delegate to receive the necessary exposure

A record of the tasks completed should be entered into a logbook which should be designed such that each task or group of tasks is countersigned by the corresponding supervisor. The logbook format and its use should be clearly defined.

7. Regarding the day-to-day supervision of the OJT programme in the approved maintenance organisation and the role of the supervisor(s), the following should be considered:

It is sufficient that the completion of individual OJT tasks is confirmed by the direct supervisor(s), without being necessary the direct evaluation of the assessor.

During the day-to-day OJT performance, the supervision aims at overseeing the complete process, including task completion, use of manuals and procedures, observance of safety measures, warnings and recommendations and adequate behaviour in the maintenance environment.

Competency Requirements of the Supervisor Include the Following

The supervisor(s) should personally observe the work being performed to ensure the safe completeness and should be readily available for consultation, if needed during the OJT performance.

The supervisor(s) should countersign the tasks and release the maintenance tasks as the trainee is still not qualified to do so.

The supervisor(s) should therefore:

have certifying staff or support staff privileges relevant to the OJT tasks;

Be competent for the selected tasks;



Be safety-orientated;

Be capable to coach (setting objectives, giving training, performing supervision, evaluating, handling trainee's reactions and cultural issues, managing objectively and positively debriefing sessions, determining the need for extra training or re orientate the training, reporting, etc.);

Be designated by the approved maintenance organisation to carry out the supervision.

Note 6 The Supervisor needs to be assessed by the organisation and to be personally nominated by the organisation to be authorised to perform the role of OJT "In Charge"

8. Regarding the assessor, the following should be considered:

The function of the assessor, as described in Section 6 of Appendix III to Part-66, is to conduct the final assessment of the completed OJT.

This assessment should include confirmation of the completion of the required diversity and quantity of OJT and should be based on the supervisor(s) reports and feedback.

In Section 6 of Appendix III to Part-66, the term 'designated assessor appropriately qualified' means that the assessor should demonstrate training and experience on the assessment process being undertaken and should be authorised to do so by the organisation.

The Assessor needs

Further guidance about the assessment and the designated assessors is provided in Appendix III to AMC to Part-66.

9. The procedures for OJT should be included into the Exposition Manual of the approved maintenance organisation (chapter 3.15, as indicated in AMC 145.A.70(a)).

However, since these procedures in the Exposition Manual are approved by the competent authority of the maintenance organisation, and providing training is not one of the privileges of a maintenance organisation, they can only be used when the licensing authority is the same as the competent authority of the maintenance organisation.

In other cases, it is up to the licensing authority to decide whether it accepts such procedures for the purpose of approving the OJT (refer to AMC 66.B.115).

AMC 66.B.115 Procedure for the change of an aircraft maintenance licence to include an aircraft rating or to remove limitations ED Decision 2015/029/R

(c) For the acceptance of the OJT programme described in Section 6 of Appendix III to Part-66, the licensing competent authority should develop adequate procedures which may be similar to the procedure described in AMC 66.B.130 for the 'direct approval of aircraft type training'.

In the case where the licensing competent authority is different from the competent authority of the maintenance organisation which provides the OJT, the licensing authority may take into consideration the fact that the maintenance organisation may already have the OJT programme accepted by their own competent authority (through chapter 3.15 of the MOE, as described in AMC 145.A.70(a)).