Civil Aviation Authority

CAP1529 Guidance Material

Aircraft Maintenance Type Practical Training (within a UK Part 147 Organisation)

Index

Abbreviations and Terms

CA	Competent Authority
CAA	Civil Aviation Authority
EASA	European Aviation Safety Agency
MTO	Maintenance Training Organisation
MTOE	Maintenance Training Organisation Exposition
NAA	National Aviation Authority
OJT	On the Job Training
PTR	Practical Training Record
PTS	Practical Training Syllabus
PTL	Practical Training Logbook
PTAR	Practical Training Assessment record

"The objective of type practical training is to gain competence in performing safe maintenance....as appropriate for the type of aircraft..."

Part-66, Appendix III

1. Introduction

This guidance material has been produced to assist those involved with Part-147 aircraft maintenance training, by providing guidance to existing Aircraft Maintenance Licensing requirements regarding the **Practical Training** element of type training under changes introduced by Commission Regulation (EU) No.1321/2014.

NOTE: This document is for guidance only and the main reference points; Annex III of Regulation (EC) No. 1321/2014 (Part-66) Appendix III. Para 3.2, its amendments and associated AMC & GM, should always be referred to.

Type Practical training should not be confused with On the Job Training (OJT), which forms part of the first type rating application process.

OJT is carried out by a suitable approved Part 145 organisation and this is dealt with in a separate guidance document: CAP1530 Licensed Engineer OJT Guidance.

2. Practical Training

Practical training is not to be confused or substituted with the practical element of the theory training, (i.e. the aircraft visit). Practical training is a structured training event which consolidates the knowledge gained during the theoretical phase of type training and as such, may be performed after or integrated within the theory training. However, it must not be performed before theoretical training (AMC to section 1 of Appendix III of Part-66 refers).

Practical training should:

- Address the different parts of the aircraft and engines, which are representative of the structure, the systems/components installed and the cabin.
- Include the use of technical manuals, maintenance procedures and the operational interfaces with the aircraft (e.g. FMC, electronic flight bag, etc).
- Include common maintenance and ground handling activities.
- Cover both type specific and generic safety elements of the aircraft's maintenance.
- Develop the student's competence in performing safe maintenance, prior to the practical assessment.

The purpose of Practical training is not to include all the maintenance tasks associated with a particular type, but a representative sample of them that will allow the student to acquire the required knowledge, attitude and skills to safely carry out maintenance on that type.

3. Practical Training Record

A Practical Training Record (PTR) comprises of the Practical Training Logbook (PTL) and will be created by the Part 147, completed by the student and a certified true copy retained by the Part 147 organisation delivering the training. It will chronicle the training activities carried out during the practical training course and the subsequent assessment of trainee competence.

This booklet will be created by the Part 147 organisation and be type specific. The Practical Logbook shall list all of the applicable ATA's as specified within Appendix III Section 3.2 to Part 66 and must be approved by the competent authority. It shall accurately record the training given to each of the students; therefore, if the students are split into separate groups it will be necessary to ensure accurate recording of each student's participation and progress throughout the training. This may be done by using individual PTRs or linking an attendance record sheet with a master PTR.

As a record of type training and student participation, it must be retained in its entirety for audit purposes and will be constructed from the following basic elements:

a) Record Guidance Material.
b) Practical Training Program (PTP) (high level calendar).
c) Practical Training Syllabus (PTS) (detailed training activities).
d) Practical Training Assessment for each student.

4. Record of Guidance Material

Although the Instructor must have received training on the use of the practical training record, it should still contain detailed instructions on how to use it and how to complete the various sections of the document. Furthermore, it should include definitions and the responsibilities of those involved.

5. Practical Training Logbook (PTL)

The PTL is the approved list of training tasks to be accomplished during the practical training phase. It also forms part of the instructor's log for recording the instruction and completion of these tasks. The Practical Training Syllabus (PTS) shall include 100% of the applicable content from the table in Appendix III to Part 66, paragraph 3.2.b (applicable to the aircraft type and licence category).

For course approval purposes, the PTS must contain at least 100% of the applicable content; however, when considering the number of tasks, it should always be remembered that the overall goal of Practical training is to ensure the student attains the competence to perform safe maintenance on that particular aircraft type.

The PTL should include:

- Trainee attendance sheet.
- Course and Instructor's details.
- ATA chapter Number and title.
- AMM or work-pack reference for each training task.
- A list and detailed description of the training tasks.
- Each task must have a method of denoting the training technique (Synthetic, Aircraft registration, Classroom, etc).
- Task type (R/I, LOC, SGH etc).
- Date of each individual task completion.
- Instructor signatures or stamps.
- Spare entries for documenting additional/replacement "ad hoc" training tasks *.

    - **NOTE:** Additional/replacement tasks must be of relevance to those they replace, be of benefit to the training objective and only replace planned tasks in exceptional circumstances.

Example of a student PTL log

Course content

Student attendance and participation

Task No.	ATA reference	Task description	Training location/ A/C Reg	Task type	Date	Instructor ID	Student Signature	Comments
1	AMM 30-21-03/201	Engine ant-ice valve controller	G-DIMB	R/I	03/07/13	2		Student demonstrated good use of AMM and demonstrated a good attitude to safety by ensuring systems were de-activated prior to work
2	AMM 30-xx-xx	Engine anti-ice valve deactivation reactivation	Classroom	MEL	04/07/13	2		Procedure reviewed in class and student evidenced a good familiarity with the AMM
3	AMM 30-xx-xx	Engine anti-ice valve failure indication	Simulator	TS	05/07/13	3		X
4	AMM 30-xx-xx	Engine anti-ice valve operation	Simulator	FOT	05/07/13	3		X
~~5~~	~~AMM 32-xx-xx~~	~~Main wheel removal / fitment~~		~~R/I~~				
5	AMM 32-xx-xx	Port, OTBD wheel brake pack replaced	G-DIMX	R/I	10/07/13	3		X

Brake pack task replaces Main wheel task due to aircraft configuration – aircraft on jacks with wheels removed.

'**Student** ' denotes: individual was present during assessed during this task

'**X**' denotes: instructors comments during task instruction

6. Practical Training Tasks

The PTL should be a list of tasks created by analysing each of the ATA chapters with reference to the aircraft type concerned and should be representative of the complexity and individuality of those systems against the requirements of Part 66, particularly if there are important safety issues that ought to be addressed.

How each task is categorised (LOC, SGH, etc), should be based upon the potential gains for the students' competency or its impact on safety. Availability should not be a reason to omit a pertinent task and consideration should be made to mix 'actual hands on' and 'task simulation' to complete an important or critical learning objective.

All pertinent sub-tasks, associated with the safe completion of each main task, such as Isolating mechanical/electrical systems, opening/closing CBs, locking flight controls, etc, should be included and the applicable aircraft maintenance manuals used.

The process for task selection to fulfil the training objectives should be detailed and available for review by the competent authority.

The suitability of each task should be based upon:

- The relevance to the type.
- The frequency, variety, safety, criticality, novelty, complexity of the maintenance tasks for the type.
- The uniqueness of the components or maintenance task (e.g. NOTAR tail assembly).
- Feedback from in-service experience.
- The use of type specific special tooling.

The task syllabus must:

- Be distributed in order to cover all applicable ATA chapters.
- Include all of the task categories (LOC, FOT, SGH, R/I, MEL, TS) and may include others deemed appropriate to the type (e.g. 'INS'pection, 'ADJ'ustment).
- Include an appropriate number of each task category for the aircraft type's training requirements to be met.
- Be sufficient to cover at least 50% of the crossed tasks in Part-66, Appendix III, para 3.2, subject to the provisions above.

7. Training Methodology

Practical Training involves a combination of different training methodologies to achieve the intended goal. It is important to check that each selected task has the most appropriate methodology to ensure the fulfilment of the training objective.

For example: Task practicing, Practical demonstration, Simulation (Including the use of VR) etc.

Task Practicing:

Task practicing involves the trainee personally performing the entire task or an element of it. A significant portion of the training will be done via this method as this training technique remains an essential step for practicing the use of special tools, the completion of tasks involving human factors or specific difficulties that require physical contact to adequately understand the system or component.

Practical Demonstration:

This is an Instructor led, ‘on aircraft’ exercise during which the student will not perform the task but will witness its completion by the instructor or another student. The students may alternatively carry out elements of the entire task, whilst still allowing an overall appreciation to be gained. This method can be used where there is no value in the repeated completion of the task. The demonstration will include the use of appropriate manuals/documents, access to the component, specialist tooling, potential MEL deferments and the isolation of the affected system.

Simulation (basic):

As the availability of an unserviceable aircraft cannot be guaranteed, simulators provide an opportunity to practice trouble shooting procedures or witness the effects of faults or incorrect maintenance activities. The task is performed in a way that does not result in the physical removal/installation of a component nor the alteration or activation/de-activation of an aircraft system. It does however include the manipulation of real tooling during the operation. i.e the instructor will ask a student to demonstrate a hydraulic pump removal, the student completes all the stages of the task up to the point of physically removing the component, at which point the instructor may decide to terminate that particular task and allow another student the opportunity to ‘refit’ the item going in reverse.
If this is done on a serviceable aircraft then there should be a contract in place with a suitably approved Part 145 organisation, to ensure that an appropriately rated certifier (B1 or B2) is avaible to oversee and certify any work performed.

Simulation (advanced):

As the technology is expanding at such a rate, the organisation may choose for students to use a dedicated interactive maintenance simulator to reproduce the complete task in a virtual environment/reality. The simulator should be able to reproduce the resulting effects of incorrect maintenance actions.

Ideally, simulations should not be used too intensively to mitigate the lack of access to an aircraft; they should be used when the added value of simulators is established. The use of simulators. simulated tasks or virtual reality training must be approved by the competent authority, on a case by case basis and prior to seeking full practical training course approval. It should also be detailed and evidence in the Practical course TNA and Course Approval forms accordingly.

However, it is widely acknowledged by both industry and competent authority alike that it is unrealistic to build in multiple maintenance errors in to the aircraft maintenance environment so where possible basic simulation is generally acceptable in respect to maintenance of systems. The use of virtual reality and flight deck simulators may be used in these circumstances.

Also, the use of Tech logs, MEL's, AMM's and supporting maintenance data is encouraged and some of these sessions may also utilise the classroom, simulator or real aircraft environment.

8. Practical Training Assessment

Each student is to be assessed to a minimum of one assessment. This assessment will verify that the theoretical and practical elements of the training process have been absorbed and understood. It will gauge whether the student has attained a level of competence that enables safe maintenance activities on that aircraft type.

The assessment of a student's competence may be carried out at any time during the practical training phase; however, if the assessment is carried out at the end of the training period, the Training Organisation's processes must cater for student failure and include provisions for re-assessment if required. Note: The entire course must be completed.

The PTA must adhere to the following requirements:

- It must include an element of 1-2-1 interaction.
- It may form part of a group exercise but will further require an element of 1-2-1 interaction to fully determine the individual's competence.
- It may be carried out in one session, as long as it incorporates all the competencies relevant to the aircraft type and its maintenance.
- It should be representative of the aircraft's complexity and in the technical input required to complete the task.
- It should include the assessor's details on the PTA sheet.
- It must assess an actual 'hands on' practical task (i.e. not completed in a classroom or through discussion).
- A student's previous experience or preconceived competence should not be taken into account as it cannot be accurately quantified or evidenced.

Generally, knowledge is evaluated by examination. The purpose of this document is not to describe the examination process but to aid with the evaluation of 'skills' and 'attitude' after training containing practical elements. Nevertheless, the trainee needs to demonstrate to the assessor that they have sufficient knowledge to perform the required tasks.
'Attitude' is indivisible from the 'skill' as this greatly contributes to the safe performance of the tasks.

The assessment should therefore focus on the competencies relevant to the aircraft type and its maintenance such as, but not limited to:

- Environment and situational awareness i.e working outside or at height. (students should be assessed to act safely, apply safety precautions and prevent dangerous situations).
- Systems integration (demonstrate understanding of aircraft systems interaction – identify, describe, explain, plan, execute);
- Knowledge and understanding of areas requiring special emphasis or novelty (areas peculiar to the aircraft type, domains not covered by Part-66 Appendix I, practical training elements that cannot be imparted through simulation devices. i.e use of system lock outs and test upon return to service etc.);
- Using reports and indications i.e post flight reports, flight deck readouts etc (the ability to read and interpret);
- Aircraft documentation finding and handling i.e (identify the appropriate aircraft documentation, navigate, execute and obey the prescribed maintenance procedures and use of the aircraft MEL and CDL for dispatch criteria and also looking at accumulative effect of multiple system defects);
- Perform maintenance actions (demonstrate safe handling of aircraft, engines, components and tools).

As far as feasible, the objectives of the assessment should be associated with the learning objectives and the passing level; it means that observable criteria should be set in order to measure the performance and should remain as objective as possible.

The assessment may be:

- Diagnostic (prior to a course), formative (re-orientate the course on areas where there is a need to reinforce) or summative (partial or final evaluation);
- Performed task-by-task, as a group of tasks or as a final assessment;
- One method might be an initial assessment to be performed by the trainee himself, then discussing areas where the perceptions of the trainee's performance by the assessors differ in order to:
- Develop the self-assessment habits;
- Make the assessment more acceptable and understandable to both parties.

A 'box-ticking' exercise would be pointless. Experience has shown that assessment sheets have largely evolved over time into assessment of groups of 'skills' because in practice such things eventually detracted from the training and assessment that it was intended to serve.

9. Practical Training Assessment Record

The PTAR must be documented and is usually incorporated or attached to the Practical Training Record and is a means by which for the organisation to evidence how the assessment was performed and as to how the competency determinations were made.

As a minimum it should include the following information:

- Course and Student details.
- Assessment Task description.
- Task reference details (e.g. AMM ref).
- Description of the competences assessed with regard to Knowledge (recitation of theory), Skills (use of A/C docs, MEL, tools, etc) and Attitude (safety consciousness), including environmental awareness, system integration, performance of the maintenance and final airworthiness restoration tasks (panel fitment etc.).
- Pass or Fail indicator.
- Provision for multiple assessments to be carried out, I.A.W. MTOE procedure, to ensure full competency has been measured and to accommodate any assessment failures and subsequent re-assessments.
- Assessor's signature box.

10. MTO/145 contracts and sub-contracting

Where no direct company affiliation is present between the Part-147 and the Part-145 organisation where the Practical Training is to take place, the MTO must have a contractual agreement in place which gives full access to the aircraft for the purpose of maintenance training and actual hands on maintenance tasks, sufficient to meet the requirements of Part-66, Appendix III, para 3.2.

The contract must include provisions for CAA representatives to access facilities, personnel and relevant work records during the execution of their oversight.

The contract must be in place prior to the application for remote site training and form part of the application process.

Part-145 Engineering staff may be used to assist or supervise the Instructor during training events and provide an interface between the Part-147 and Part-145 activities (raising Tech log entries, certifying tasks, etc). It may also be possible for Part-145 engineering personnel to be qualified as Instructors or Assessors. They must have undergone a suitably robust qualification process and have attended a Train the Trainer course. Instructor records for these personnel will attract an equal level of scrutiny to those of the permanent Part-147 staff and must evidence the qualifying process and training received to gain competence as instructors.

NOTE: All maintenance activities on live aircraft, including those being carried out by Practical training Instructors and students, during the Practical phase of type training, must be conducted in accordance with the relevant maintenance manuals and regulations in force at the time the training is conducted.

The Part-147 organisation must ensure that their training processes align with the continuing airworthiness responsibilities of the Part-M organisation. And also the maintenance responsibilities of the Part 145.

11. Practical Instructors and Assessors

In the majority of cases, the Practical instructor will be the same as that used for the Theory phase of the type training. They are a logical choice, as they possess an in-depth knowledge of the aircraft's systems and will have developed an understanding of each student's specific academic requirements.

Using the same instructor for both the Theory and Practical phases will often suit the business model of many organisations. In some cases, however, especially where a Part-147 / Part-145 affiliation exists, the organisation may choose to utilise experienced engineers from their own maintenance workforce to deliver the Practical training.

These individuals must be given suitable training on the organisational processes involved, particularly the use of the Practical training record. They must also have attended a train the trainer course, whether delivered by an external or internal source, which should specifically target the training techniques required for Practical training and set the organisation's bench mark for the conduct of this training.

Workforce sourced Instructors will be qualified and managed by the Part-147 organisation. They must be included in the list Instructional staff (1.5 of the MTOE) and be subject to the same Instructor records and update training requirements as the directly employed Instructors.

Practical assessments may be conducted by either the Practical Instructor or a dedicated assessor, who has undergone a similar training and qualification process to that detailed above.

12. Remote site approval

Practical training carried out in locations not listed in the organisation's approved MTOE, must be treated as a remote site and approved as per 147.A.145(c). Sufficient time should be allowed for the establishment of contractual agreements and CAA review/approval prior to the course being started.

An organisation holding remote site approval should have a defined procedure listed in their MTOE section 2.8 and should, where possible consider supplying the following as a guide to support any notification of remote site training. The notification of remote site should be made to apply@caa.co.uk as early as possible to avoid any delays and the email of notification should contain:

- Completed SRG1019
- Copy of supporting Internal audit
- Details of Instructors/Examiners (copy of PAC will suffice)
- Any supporting documents i.e contracts relating to Aircraft for Theory and Practical training.

Once received the email will be processed by the Apply Team and an audit event created for the allocated surveyor to complete (if required). An email will be sent by the Apply team

advising that the training may proceed and the organisation is to retain this email in the course records.

Organisation’s should be aware that when negotiating a contract for such training, the terms of the organisation approval are to ensure that the CAA/EASA are always to be permitted access . Failure to ensure this may result in findings being raised as per 147.A.160 and possible removal of the remote site privilege.

Appendix 1 Sample Practical Training Workbook (including final assessment)

Type Course Practical Training Record.

EASA Part 66 B1/B2

Candidate Name: ..... **Candidate Reference No: …….**

Instructions for Use

This Practical Training Logbook comprises of 4 sections.

Section 1: Candidate and course details.

Attendance Log.
Notes for the completion of the Logbook including an example of 'how to complete'.

Section 2: Practical Task details by ATA chapter.

Section 3: Practical Assessment Record, Results & Comments.

Section 4: Check lists for completion of Logbook by ATA and Task Type. ***Instructor to complete***.

Section 1: **Candidate Details.** It is the responsibility of the student to ensure all personal details are correct. The attendance log must be completed daily and the instructor/Assessor is to stamp the entry daily. It is the candidate's responsibility to ensure all sections of the Logbook are understood and correctly completed.

Section 2: **The Practical Tasks**. These are listed by ATA and the Task Type, this is indicated by the shaded box. This indicates the tasks to be completed by both **B1** & **B2**. Those attending a combined **B1/B2** course must complete and initial both sets of boxes when the task is completed. You are to ensure all tasks are countersigned/stamped by the Instructor/Assessor. The candidate is also responsible for ensuring the ATA & TASK TYPE logs are completed and verified by the Instructor/Assessor.

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg or Eng S/N	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
15	52	**Doors** Locate & Identify the AFT cargo door main components		JS												G-JETZ	13/04/15	John Smith	DPW INST 04
16	23	**Communications** Perform a VHF system operational test									JS					G-JETZ	01/04/15	John Smith	DPW INST 04

This example of completed entries shows a candidate attending a **B1/B2** combined type course.

B1 Only: Carryout & sign only the shaded tasks listed in the B1 column.

B2 Only: Carryout & sign only the shaded tasks listed in the B2 column.

B1/B2 Combined: Carryout & sign the shaded boxes in BOTH B1 & B2 columns.

The candidate is responsible for the correct entry of AMM Reference, A/C Reg or Engine S/N. Date the task was completed and signature confirming all aspects have been covered.

The final column is to be completed by the Instructor/Assessor ONLY.

Section 3: **Practical Assessment.** This section is to be completed by the assessor. The practical task or tasks allocated to the candidate must be completed to the satisfaction of the assessor. The assessment will take into account the following elements:-

- Approach to the task
- Observation of the relevant safety aspects of the task and adhering to company policies
- Correct procedures including correct use of the technical documentation.
- Appropriate demonstration of technical skill and understanding of the aircraft systems

The assessed elements of the task are listed in Section 3 of the Logbook. Should a candidate not achieve a satisfactory level of competence on any allocated task the assessor will discuss the results of the assessment with the candidate. Guidance will be given to highlight the strengths and weaknesses and further assessments may be required to ensure the correct level of knowledge, skill and attitude are being applied.

NOTE:- *Students should be aware that failure to satisfactorily complete the assessment may result in a course failure.*

Assessor Notes: The assessor may liaise with the instructor on deciding which tasks may be most appropriate for the candidate as well as referring to the task completed with the instructor. The allocating of tasks should target subjects where the candidate is less confident and avoid areas where the candidate displayed a higher level of understanding.

Throughout the assessment task the assessor shall verify the ability of the candidate to perform the task in a live aircraft environment. The assessor shall ensure that all aspects of Safety Precautions, Technical Documentation, Aircraft Tooling & Job Setup, Testing and completion of the task are clearly understood and followed as required.

A candidate failing both assessments (**Full Type Course**), or the single assessment (**Differences Course**) will be deemed to have failed the practical assessment. If the assessor feels the candidate displays sufficient knowledge, attitude and ability to justify a further attempt this may be carried out at the assessors discretion and with the permission of the Jet2.com Engineers Development and Training Manager.

Section 4: **Completeness Checklists:** To be completed by the assessor. To ensure all the minimums have been reached or exceeded. Including tasks by ATA and Task Types.

Section 1

Candidates Details

Training Location	
Completion of Training	
Candidate Name	
Candidate Staff No.	
Contact Address	
Date of Birth	
Town & Country of Birth	
Contact Email address	
Contact Telephone Number	

MINIMUM REQUIRED HOURS:- TYPE COURSE 60 DIFFERENCES COURSE 30

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ATTENDANCE LOG		
Instructor/Assessor Details		
Name	**Signature**	**Stamp**

DATE	**HOURS**	**INST/ASS STAMP**
TOTAL HOURS		

Section 2

Practical Tasks (Aircraft Type)

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
1.	05	**Time limits/maintenance checks** Identify and locate aircraft tail strike indicator																	
2.	06	**Dimensions/Area Units** Identify & locate aircraft major zones/sub zones																	
3.	07	**Lifting & Shoring** Identify & locate landing gear jacking points																	
4.	08	**Levelling & Weighing** Identify & locate the aircraft main jacking points																	
5.	08	**Levelling & Weighing** Carry out aircraft levelling procedure																	
6.	09	**Towing & Taxiing** Identify & locate landing gear towing points																	
7.	09	**Towing & Taxiing** Prepare aircraft for Ground Towing																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
8.	10	**Parking/Mooring** Install/Remove Landing Gear Lock Pins																	
9.	10	**Parking/Mooring** Apply the parking brake																	
10.	11	**Placards & Markings** Locate the Placard for MLG Shock Strut servicing																	
11.	12	**Servicing** Locate aircraft grounding points																	
12.	12	**Servicing** Carry out a lubrication of the NLG																	
13.	20	**Standard Practices** Locate the ESDS protective device (wrist strap) in the EE bay																	
14.	21	**Air Conditioning** Locate & Identify the Recirculation Fans																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
15.	21	**Air Conditioning** Locate air conditioning major system controls & indications in the flight deck																	
16.	21	**Air Conditioning** Conduct Operational Test of the Equipment Cooling Supply & Exhaust Low Flow Sensors																	
17.	21	**Air Conditioning** Inspect the Fwd Cabin Temperature sensor filter for condition																	
18.	21	**Air Conditioning** Perform MEL task for deactivation of an air conditioning pack																	
19.	21	**Air Conditioning** Perform troubleshooting procedure for Crew report of failure of FWD Cabin Auto Temperature Control.																	
20.	21	**Air Conditioning – Air Supply** Locate the Air Conditioning Mix Manifold																	
21.	21	**Air Conditioning – Air Supply** Perform the Task to supply conditioned air with a cooling pack																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
22.	21	**Air Conditioning – Pressurisation** Locate Cabin Pressure Controller																	
23.	21	**Air Conditioning - Pressurisation** Perform a troubleshooting procedure for pilot report that Manual Valve Indicator does not move from open position																	
24.	22	**Autoflight** Perform a MEL Procedure for Aircraft dispatch with an Autopilot DFCS U/S																	
25.	22	**Autoflight** Perform an operational test of the Yaw Damper function																	
26.	22	**Autoflight** Perform a Stall Management Yaw Damper (SMYD) BITE test																	
27.	22	**Autoflight** Perform Removal/Installation procedure for a Flight Control Computer																	
28.	22	**Autoflight** Troubleshoot pilot report of 'Autopilot fails to engage' CMD A																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
29.	23	**Communications** Locate all major VHF system components																	
30.	23	**Communications** Perform a VHF system operational test																	
31.	23	**Communications** Locate & Identify the emergency locator transmitter (ELT) components																	
32.	24	**Electrical Power** Apply External Ground Power and confirm values																	
33.	24	**Electrical Power** Perform a MEL procedure for an AC Main IDG failure																	
34.	24	**Electrical Power** Perform the troubleshooting procedure for GCB/APB fault light on APU GCU																	
35.	24	**Electrical Power** Locate & Identify the Transformer Rectifier Units																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
36.	24	**Electrical Power** Remove/Install the Main aircraft battery																	
37.	25	**Equipment & Furnishings** Perform a Functional Test of Crew Seats																	
38.	25	**Equipment & Furnishings** Inspect Fwd Cargo bayside wall panels for damage																	
39.	25	**Equipment & Furnishings** Remove &Install a Passenger Service Unit (PSU)																	
40.	25	**Equipment & Furnishings** Locate Cabin and Flight Deck emergency equipment installations.																	
41.	26	**Fire Protection** Remove &Install a lavatory fire detector unit																	
42.	26	**Fire Protection** Perform a MEL procedure fora faulty lavatory smoke detection component																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
43.	26	**Fire Protection** Perform troubleshooting procedure for a Left Wing/Body OVHT Light does not come on when OVHT/TEST switch is pushed																	
44.	26	**Fire Protection** Locate & Identify the Fwd/Aft Cargo Compartment smoke detector units																	
45.	27	**Flight Controls** Locate the Flap Power Drive Unit and the Slat Power Drive Unit																	
46.	27	**Flight Controls** Perform an Operational Test of the Stabilizer Trim Control System																	
47.	27	**Flight Controls** Perform a Ground Spoiler Deactivation Procedure for Maintenance Purposes																	
48.	27	**Flight Controls** Remove/Install a Flight Spoiler actuator																	
49.	27	**Flight Controls** Perform a Stall Warning System Operational test																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
50.	27	**Flight Controls** Perform troubleshooting procedure for SPEED BRAKE DO NOT ARM Light remains ON																	
51.	27	**Flight Controls** Perform a MEL procedure for a SPEED BRAKE EXTENDED Light Inoperative																	
52.	28	**Fuel System** Locate & identify fuel system controls & indications in the Flight Compartment																	
53.	28	**Fuel System** Check the Fuel Cross Feed Valve operation																	
54.	28	**Fuel System** Remove/Install a FQIS indicator																	
55.	28	**Fuel System** Perform a MEL procedure for dispatch of an aircraft with a faulty Centre Right Fuel Boost Pump																	
56.	28	**Fuel System** Perform troubleshooting procedure for a Refuel Valve failing to open during refuel																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
57.	28	**Fuel Systems** Drain fuel from a wing tank sump drain valve and inspect																	
58.	29	**Hydraulics** Remove & Install a hydraulic system filter																	
59.	29	**Hydraulics** Perform a MEL procedure with Hydraulic System B Low Pressure Light inoperative																	
60.	29	**Hydraulics** Perform troubleshooting procedure for a Ground Fault Detector being activated for System A EMDP																	
61.	29	**Hydraulics Monitoring + Indicating** Locate a hydraulic system pressure transmitter																	
62.	29	**Hydraulics Monitoring + Indicating** Perform a System Test of the hydraulic systems and check for correct flight deck indication																	
63.	29	**Hydraulics Monitoring + Indicating** Remove &Install a hydraulic EDP Pressure switch																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
64.	29	**Hydraulics Monitoring + Indicating** Perform a MEL procedure fora Hydraulic System pressure indication fault																	
65.	30	**Ice & Rain Protection** Locate & Identify the Engine inlet cowl thermal anti-icing components																	
66.	30	**Ice & Rain Protection** Perform a Wing Anti-Ice Operational test																	
67.	30	**Ice & Rain Protection** Perform a MEL procedure for a flight deck No1 Window Heat failure																	
68.	31	**Indicating & Recording** Adjust the time of the flight deck clock																	
69.	31	**Indicating & Recording** Remove &Install an EFIS Control Panel																	
70.	31	**Indicating & Recording** Perform a MEL procedure fora faulty Centre Lower Display Unit (CLDU)																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
71.	31	**Indicating & Recording** Perform troubleshooting procedure for a pilot report of failed Flight Data Acquisition Unit (FDAU)																	
72.	31	**Instrument Systems** Locate the Flight Data Recorder																	
73.	31	**Instrument Systems** Perform a Common Display system (CDS) Operational Test																	
74.	32	**Landing Gear** Remove / Install a Nose landing gear wheel assy.																	
75.	32	**Landing Gear** Perform a MEL procedure for a Nose Landing Gear unlocked indication when a/c is on the ground																	
76.	32	**Landing Gear - Monitoring & Indicating** Locate & identify Main Landing Gear Position Indication Proximity Switches																	
77.	32	**Landing Gear - Monitoring & Indicating** Perform a test of the Proximity Switch Electronics Unit (PSEU)																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
78.	32	**Landing Gear** Carry out a Brake wear inspection																	
79.	32	**Landing Gear** Perform a MEL procedure for a faulty Flight Deck BRAKE PRESS Indicator																	
80.	32	**Landing Gear** Perform a troubleshooting procedure for the 'ANTI SKID INOP' Light illuminated																	
81.	33	**Lights** Locate & Identify Nose Gear Wheel Well Service Lights																	
82.	33	**Lights** Perform an Operational Test of the Passenger compartment lights																	
83.	33	**Lights** Perform a MEL procedure for a failed Wing Tip Strobe Light																	
84.	34	**Navigation** Perform an alignment of the Air Data Inertial Reference System																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
85.	34	**Navigation** Check FMC Navigation Database validity (NDB)																	
86.	34	**Navigation** Remove and install a Multipurpose Control Display Unit (MCDU)																	
87.	34	**Navigation** Perform a MEL procedure fora radio altimeter (RA) fault																	
88.	34	**Navigation** Troubleshoot a failure of the Traffic Alert & Collision Avoidance System (TCAS) fails Operational Test																	
89.	35	**Oxygen** Locate & Identify flight compartment oxygen system components																	
90.	35	**Oxygen** Perform a Function Test a Crew Oxygen Mask																	
91.	36	**Pneumatics** Locate the Engine Bleed Isolation Valve																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
92.	36	**Pneumatics** Perform a System Health Check on the Pressure Regulating and Shut Off Valve and check for correct Flight Deck indication																	
93.	36	**Pneumatics** Connect a ground air supply to the aircraft pneumatic system																	
94.	36	**Pneumatics** Remove and install a duct pressure transducer																	
95.	36	**Pneumatics – Monitoring & Indication** Perform a MEL procedure fora Left duct pressure indication of Zero																	
96.	36	**Pneumatics – Monitoring & Indication** Perform the Fault Isolation Procedure for a pilot report of 'Left BLEED TRIP OFF' Light is ON and cannot be reset																	
97.	38	**Water & Waste** Locate and identify the potable water system main components.																	
98.	38	**Water & Waste** Carry out a drain of the potable water system																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
99.	49	**Auxiliary Power Plant (APU)** Locate and identify the main components of the APU																	
100.	49	**Auxiliary Power Plant (APU)** Carry out an operational test of the APU for correct operation and indications																	
101.	49	**Auxiliary Power Plant (APU)** Perform a trouble shooting procedure for APU fails to start																	
102.	50	**Cargo & Accessory Compartments** Check cargo compartments/doors for sealing and general damage																	
103.	50	**Cargo & Accessory Compartments** Locate Main Cargo Door operating handles and controls																	
104.	52	**Doors** Locate & identify the Aft cargo door components																	
105.	52	**Doors** Perform functional test of main cabin entry doors																	

Task No.	ATA	Task Description	AMM Ref:	B1						B2						A/C Reg	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
106.	52	**Doors** Lubricate passenger entry door hinge & lock mechanism																	
107.	53	**Fuselage** Locate & identify rear cabin pressure bulkhead structure																	
108.	53	**Fuselage** Perform troubleshooting procedure for cabin crew report of Door 1L excessively noisy in flight																	
109.	54	**Nacelles/Pylons** Locate & Identify the pylon pressure relief door components																	
110.	55	**Stabilisers** Locate & Identify the main components of the horizontal stabiliser.																	
111.	56	**Windows** Perform troubleshooting procedure for a Captains sliding window noisy in flight																	
112.	57	**Wings** Locate & Identify wing tank access panel/ inspection covers																	

Section 2

Practical Tasks (Aircraft Type)

Task No.	ATA	CFM 56 Task Description	AMM Ref:	B1						B2						A/C Reg or Eng S/N	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
1.	71	**Power Plant** Opening & Closing of engine fan cowls																	
2.	71	**Power Plant** Locate & Identify engine drains																	
3.	71	**Power Plant** Inspect engine drains forleaks and compare to AMM leak rates																	
4.	71	**Power Plant** Troubleshoot pilot report of Engine 1 EGT over red line and suspected engine surge. Inspection found evidence of bird ingestion																	
5.	71	**Power Plant** Perform an Engine Dry Motor procedure																	
6.	72	**Engine - Construction** Locate & identify Major Engine Sub-Assemblies: Intake, Fan, Compressor, Auxiliary Gearbox and Transfer Gearbox																	
7.	72	**Engine - Turbine** Locate & identify Major Engine Sub-Assemblies: Combustion, HP Turbine, LP Turbine and Exhaust																	

Task No.	ATA	CFM 56 Task Description	AMM Ref:	B1						B2						A/C Reg or Eng S/N	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
8.	73	**Engine Fuel & Control** Locate & Identify the major Engine Fuel Distribution & Controlling components																	
9.	73	**Engine Fuel & Control** Remove &Install the Engine Fuel Flow Transmitter																	
10.	74	**Engine Ignition** Locate & Identify the Ignitor Plugs																	
11.	74	**Engine Ignition** Perform Ignition Audible Test																	
12.	75	**Engine Air** Locate & Identify Air System components																	
13.	75	**Engine Air** Remove and Install the High-Pressure Turbine Active Clearance Control (HPTACC) valve																	
14.	75	**Engine Air** Perform the Troubleshooting procedure for Transient Bleed Valve position signals disagree																	

Task No.	ATA	CFM 56 Task Description	AMM Ref:	B1						B2						A/C Reg or Eng S/N	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
15.	76	**Engine Controls** Locate & Identify main engine flight deck control components																	
16.	76	**Engine Controls** Perform adjustment and check of the Thrust Lever Angle Resolver																	
17.	77	**Engine Indicating** Perform a BITE Test of the Airborne Vibration Monitor Signal Conditioner																	
18.	77	**Engine Indicating** Locate & Identify the Flight Deck Engine Indication Displays																	
19.	77	**Engine Indicating** Trouble shoot a reported No 1 Bearing Vibration Sensor failure																	
20.	77	**Engine Indicating** Perform a MEL dispatch with an EGT Abnormal Start Indication not functioning																	
21.	78	**Engine Exhaust** Perform a MEL procedure with REVERSER (Aft Overhead Panel) Light U/S																	

Task No.	ATA	CFM 56 Task Description	AMM Ref:	B1						B2						A/C Reg or Eng S/N	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
22.	78	**Thrust Reverser System** Locate & Identify Thrust Reverser Major components																	
23.	79	**Engine Oil** Locate & Identify components of the Engine Oil System																	
24.	79	**Engine Oil** Perform an engine oil quantity service																	
25.	79	**Engine Oil** Remove &Install engine Oil Scavenge filter																	
26.	80	**Engine Starting** Locate & Identify engine mounted Starting System components																	
27.	80	**Engine Starting** Perform a manual operation of Engine 2 starter valve																	
28.	80	**Engine Starting** Perform a MEL procedure for Engine 2 Starter Auto Cut-out failure																	

Section 2

Additional Task List

Task No.	ATA	Task Description	AMM Ref	B1						B2						A/C Reg or Eng S/N	Date	Trainee Signature	Instructor Stamp/Sig
				LOC	FOT	SGH	R/I	MEL	TS	LOC	FOT	SGH	R/I	MEL	TS				
1.																			
2.																			
3.																			
4.																			
5.																			
6.																			

Section 3

Practical Assessment Record

ENGINEERING TRAINING		
Task Description.	**Assessor to record the candidate's performance including the capabilities demonstrated and the overall performance. Any failings should also be recorded.**	**Assessment Result Initial & Stamp**
Assessment 1		

ENGINEERING TRAINING		
Task Description.	**Assessor to record the candidate's performance including the capabilities demonstrated and the overall performance. Any failings should also be recorded.**	**Assessment Result Initial & Stamp**
Assessment 2		

Assessor to initial/stamp each block as applicable reference the above tasks		
The Candidate:	**Assessment 1**	**Assessment 2**
Reads available reports and observes associated indications		
Interprets report correctly		
Consults the MEL reference		
Correctly interprets the MEL regarding dispatch of the aircraft		
Finds the correct FIM procedure		
Correctly interprets FIM in relation to the AMM and other related documentation, as required		
Follows the procedure steps, with correct actions		
Takes into account the working environment		
Interprets and follows safety warnings		
Communicates with other team members		
Reacts accordingly with respect to changes during the task		
Analyses consequences on associated systems		
Takes account of the above analyses during their actions		
Restores aircraft back to initial condition		
Correctly completes all required logbook entries using correct referencing as required		

Section 4

Practical Training Record

(Completion Checklist)

Aircraft Type/Engine TASK COMPLETION CHECKLIST BY ATA CHAPTER (Referenced from Commision Regulation 1321/2014)

CANDIDATES ATTENDING B1/B2 COURSES MUST COMPLETE BOTH THE B1 & B2 COLUMNS

ENG				
ATA	TASK MINIMUMS			
	B1		B2	
71	4		1	
72	1		0	
73	2		1	
74	2		1	
75	2		0	
76	2		0	
77	2		2	
78	2		0	
79	2		0	
80	2		0	

A/F				
ATA	TASK MINIMUMS			
	B1		B2	
5	1		1	
6	1		1	
7	1		1	
8	1		1	
9	1		1	
10	1		1	
11	1		1	
12	1		1	
20	1		1	
21	7		7	
22	1		3	
23	2		3	
24	3		3	
25	4		4	
26	3		3	
27	6		3	
28	4		4	

A/F				
ATA	TASK MINIMUMS			
	B1		B2	
29	6		5	
30	3		3	
31	6		6	
32	6		6	
33	2		3	
34	2		5	
35	2		1	
36	6		5	
38	2		1	
49	2		0	
50	1		1	
52	2		1	
53	1		0	
54	1		0	
55	1		0	
56	1		0	
57	1		0	

THE INSTRUCTOR MUST NOT STAMP THIS SECTION UNLESS ALL ATA TASK COMPLETED EQUAL or EXCEED THE MINIMUMS SHOWN AGAINST EACH ATA CHAPTER

INSTRUCTOR NAME

DATE

STAMP

Aircraft Type/Engine TASK COMPLETION CHECKLIST BY ATA CHAPTER (Referenced from Commission Regulation 1321/2014)

CANDIDATES ATTENDING B1/B2 COURSES MUST COMPLETE BOTH THE B1 & B2 COLUMNS

A/F	TASK MINIMUMS			
	B1		B2	
LOC	23		18	
FOT	13		13	
SGH	14		13	
R/I	9		9	
MEL	11		9	
TS	10		8	

ENG	TASK MINIMUMS			
	B1		B2	
LOC	7		3	
FOT	4		2	
SGH	2		1	
R/I	2		0	
MEL	2		1	
TS	2		1	

GLOSSARY	
LOC	Location
FOT	Functional Operational Test
SGH	Service & Ground Handling
R/I	Removal/Installation
MEL	Minimum Equipment List
TS	Trouble Shooting

THE INSTRUCTOR MUST NOT STAMP THIS SECTION UNLESS ALL ATA TASK COMPLETED EQUAL or EXCEED THE MINIMUMS SHOWN AGAINST EACH ATA CHAPTER

INSTRUCTOR NAME

DATE

STAMP