



TRAINING NEEDS ANALYSIS

Embraer EMB-135/145 (RR Corp AE3007A)
T1+T2 Combined / Theoretical / Initial



Embraer EMB-135/145 / (RR Corp AE3007A) / T1+T2 Theoretical / Initial

TITLE	NAME / POSITION	DATE	SIGNATURE:	DISTRIBUTION
Author, Developed by:	Laurent LEFRANCOIS <i>Training Manager</i>	10.AUG.2018		Authority Accountable Manager Training / Examination Manager Quality Manager
Validated by:	Aleksandar ZOVIC <i>Quality Manager</i>	10.AUG.2018		
Approved by:	Laurent LEFRANCOIS <i>Accountable Manager</i>	27.AUG.2018		

REVISION STATUS

REV	DATE	DETAILS OF REVISION
00	15.MAY.2017	Initial development
01	04.NOV.2017	Maximum allowable student participation excluded from items 1.6 and 2.6. References are given in MTOE 2.1.1.
02	01.MAR.2018	Practical Tasks divided on Airframe / Engine-Propeller / Avionics as per new form F-52-02-2, index A. Aircraft / Simulator / Classroom provision added to LOC task items. Number of practical tasks assigned and minimum tasks to be performed added to each practical ATA table. Theoretical schedule ATAs reorganized per each week and consequently minimum MCQ number per exam phase recalculated of total of 172.
03	10.AUG.2018	1.5 Total days/hours of (theoretical) course duration revised to 22 days / 132 hours, and ATA chapter to be taught reorganized to comply with student needs, number of minimum MCQ recalculated accordingly (minimum: 148), and 2.5 Total days (practical) course duration revised to optimum 9 days.



Embraer EMB-135/145 / (RR Corp AE3007A) / T1+T2 Theoretical / Initial

1. THEORETICAL ELEMENTS

1.1 LEARNING OBJECTIVES	<p>On completion of a theoretical training course the student shall be able to demonstrate, to the levels identified in this TNA in accordance with EASA Part-66, Appendix III syllabus), the detailed theoretical knowledge of the aircraft's applicable systems, structure, operations, maintenance, repair, and troubleshooting according to approved maintenance data. The student shall be able to demonstrate the use of manuals and approved procedures, including the knowledge of relevant inspections and limitations.</p>
1.2 COURSE CODE	IT-yy-mm-E45-xxx
1.3 COURSE CATEGORY	B1+B2 Combined / Theoretical / Initial
1.4 AIRCRAFT TYPE	Embraer EMB-135/145 (RR Corp AE3007A)
1.5 COURSE DURATION	<p>► 22 days / 132 hours (Technical instruction).</p> <p>The maximum training hours per day for the theoretical element of type training is not more than 6 hours. A training hour means 60 minutes of tuition excluding any breaks, examination, revision, preparation and aircraft visit.</p>
1.6 COURSE PARTICIPATION	<p>The minimum participation time for the student to meet the objectives of the course should not be less than 90% of the tuition hours of the theoretical training course. Additional training may be provided by AGT in order to meet the minimum participation time. If the minimum participation defined for this course is not met, a certificate of recognition will not be issued.</p> <p>Initial standard required to attending the course is a recognized aeronautical degree, an approved apprenticeship or Category A license.</p>



Embraer EMB-135/145 / (RR Corp AE3007A) / T1+T2 Theoretical / Initial

1.7 TNA DEFINITION

This TNA includes the TNA details and requirements, TNA weekly plan, Schedule of training, ATA reference, ATA Subjects, Level of training for CAT B1 and B2, duration of subject, total duration and Notes.

This TNA provides hours for classroom instruction only. Each hour listed, represents one (1) complete hour of instruction.

This TNA will become part of the course records held in each course folder as listed in AGT MTOE sections 1.9, 2.1, 2.2, 2.5, 2.7, 2.9, and 2.15.

1.8 TRAINING EQUIPMENT

The theoretical training material is included in Maintenance Training Manual (**MTM**), specially developed for each Aircraft and Engine type and additionally configured to each type of training courses (e.g. Initial, Differences), containing all necessary A/C data, schematics, diagrams, pictures, figures, TC and STC holder document samples etc.

Wall charts, Cockpit layouts, Manufacturer manuals are also considered part of Theoretical and Practical training material.

The Maintenance Training documentation/material will be delivered to each student at beginning of each training course.

Reference MTM for this TNA: **AGT-MTM-E45 - Maintenance Training Manual**

1.9 THEORETICAL ELEMENTS EXAMINATION STANDARD

The theoretical training examination will be performed by knowledge examiner(s) at the end of each Training phase as detailed in training schedule table.

The exam format is Multiple Choice Question (MCQ) offering 3 answers to each question. (MTOE 2.9, 2.10, 2.11, 2.12).

The number of questions is calculated as 1 question per hour of instruction. The number of questions for each chapter and level are proportionate to the effective training hours spent teaching at that chapter and level, and the course learning objectives as given in this training needs analysis.

A weekly examination will be held as detailed in 3. COURSE SCHEDULE and the student pass mark is **75%** and above for each weekly stage.

1.10 CERTIFICATE of RECOGNITION

Embraer EMB-135/145 (RR Corp AE3007A)
B1+B2 Combined / Theoretical Elements



Embraer EMB-135/145 / (RR Corp AE3007A) / T1+T2 Theoretical / Initial

THEORETICAL COURSE SCHEDULE

D	Week 1		Week 2		Week 3		Week 4		Week 5		
	ATA (Hrs.)	H	ATA (Hrs.)	H	ATA (Hrs.)	H	ATA (Hrs.)	H	ATA (Hrs.)	H	
1	Introduction (1) a/c general (1) 51-57 a/c Zone identification & Structures (2) 56 (1) 25 (1)	6	34 (6)	6	72 (1) 77 (1) 76 (1) 73 (3)	6	21 (3) 30 (3)	6	27 (6)	6	
											Phase 1
2	31 (6)	6	22 (6)	6	75 (1) 79 (2) 78 (3)	6	30 (2) 38 (1) 35 (3)	6	32 (6)	6	
	Phase 1 - EXAM		24		Phase 3 - EXAM		30		Phase 5 - EXAM		30
3	24 (6)	6	23 (2) 45 (4)	6	74 (1) 80 (1) 26 (4)	6	29 (6)	6			
	Phase 2 - EXAM		24		Phase 3 - EXAM		30				
4	24 (3) 33 (3)	6	28 (6)	6	36 (5) 21 (1)	6	52 (4) 27 (2)	6			
	Phase 1 - EXAM		24		Phase 4		Phase 5				
5	34 (6)	6	49 (5) 71 (1)	6	21 (6)	6	27 (6)	6			
Total (Hrs.) = 132											



2. PRACTICAL ELEMENTS

2.1 TRAINING OBJECTIVES

The objective of practical training is to gain the required competence in performing safe maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks as appropriate for the type of aircraft, for example troubleshooting, repairs, adjustments, replacements, rigging and functional checks. It includes the awareness of the use of all technical literature and documentation for the aircraft, the use of specialist/special tooling and test equipment for performing removal and replacement of components and modules unique to type, including any on-wing maintenance activity.

2.2 COURSE CODE

IP-yy-mm-E45-xxx

2.3 COURSE CATEGORY

B1+B2 Combined / Practical / initial

2.4 AIRCRAFT TYPE

Embraer EMB-135/145 (RR Corp AE3007A)

2.5 COURSE DURATION

► **09** days (Optimum time to complete the Practical tasks + Assessment)

Duration to complete at least 50% of all assigned practical tasks depends on accessibility to the aircraft type example, availability and access to Maintenance documentation and GSE (Ground Support Equipment), etc. The maximum training hours per day for the practical tasks is not more than **6 hours**.

2.6 COURSE PARTICIPATION

The minimum participation time for the trainee to meet the objectives of the course should not be less than **90%** of the tuition hours of the practical training course.

At least **50 %** of the Practical Training Program tasks (see Practical Handbook), covering all ATA chapters, shall be completed as part of the practical training.

Initial standard required to attending the course is a successfully completed theoretical course for the a/c type concerned.



Embraer EMB-135/145 / (RR Corp AE3007A) / T1+T2 Theoretical / Initial

2.7 TRAINING EQUIPMENT

The major part of the Practical Training will be conducted in real maintenance environment, on exact type of aircraft as specified in this TNA. Some practical tasks may be conducted in classroom (e.g. MEL items) and/or simulator (e.g. functional tests,).

Type Certificate holder manuals (AMM, IPC, WDM, SRM, FIM, etc), Component Maintenance Manuals (CMM), Minimum Equipment List (MEL), Dent & Buckle charts are the main training material for successful completion of Practical Training.

The Training Program Practical (**TPP**) is included in Practical Handbook, containing all mandatory tasks, in accordance with EASA Part-66, Appendix III syllabus 3.2 for each Aircraft and Engine type and additionally configured to each type of training courses (e.g. Initial, Differences).

The Practical Handbook serves as logbook where completed tasks are recorded and each task or group of tasks will be countersigned by the student and designated assessor, respectively.

The Practical Handbook also includes the set of Practical Assessments, Review sheet and final Validation statement of successful completion by Practical Assessor.

The Practical Handbook will be delivered to each student at beginning of each Practical training course.

Reference TPP for this TNA: **AGT-TPP-E45 - Practical Handbook**

2.8 PRACTICAL ELEMENT ASSESSMENT STANDARD

Qualified Practical Assessor will perform the practical training assessment, after completion of at least **50%** of the assigned mandatory type training tasks, as detailed in Training Program Practical (TPP) - Practical Handbook. (MTOE 2.13)

The Assessment is divided in 3 different scenarios (Engine/Propeller, Airframe and Avionics), where the assessor will mark the student's passed or failed status. The Practical Assessor will evaluate the student competences and skills in accordance with Assessment Review sheet table. In case the student failed one of assessment scenarios or failed any of competence/skill items, the re-assessment comment will be entered in provided table.

The Practical Handbook remains in possession of the student until completion of the practical program established by the instructor.

After completion of all assigned assessment, Practical Assessor has to perform final student Assessment review, indicating Pass or fail marks.

Upon successful completion of Assessment Review, Practical Assessor has to validate Practical Assessment, signing the Practical Training and Assessment Validation page.

2.9 CERTIFICATE of RECOGNITION

Embraer EMB-135/145 (RR Corp AE3007A)
B1+B2 Combined / Practical Elements



Embraer EMB-135/145 / (RR Corp AE3007A) / T1+T2 Theoretical / Initial

(reference: [AGT-TPP-E45 - Practical Handbook](#))

TASK TYPE		TRAINING EQUIPMENT	NO. OF TASKS		
			AIRFRAME	ENGINE	AVIONICS
LOC	Location	Aircraft	158	47	35
FOT	Functional / Operational Test	Aircraft / Simulator / Classroom	57	18	23
SGH	Service & Ground Handling	Aircraft / Simulator / Classroom	46	9	10
R/I	Removal / Installation	Aircraft / Simulator / Classroom	36	4	17
MEL	Minimum Equipment List	MEL	14	3	7
TS	Trouble Shooting	Aircraft / Simulator / Classroom	18	8	6
		TOTAL	329	89	98
REF: A - Aircraft S - Simulator C - Classroom		TOTAL	516		

ASSESSMENTS			PRACTICAL TRAINING DURATION
Assessment 1 - Engine / Propeller	Assessment 2 - Airframe	Assessment 3 - Avionics	Optimum time: 9 days
Assessment Review			

LOC	Location	will result in the identification of the position of the item concerned.
FOT	Functional / Operational Test	must be carried out in an airplane or simulator or STD in accordance with the applicable procedures.
SGH	Service & Ground Handling	will result in the implementation of the task for maintenance and ground handling.
R/I	Removal / Installation	will result in locating the item concerned and the access, a presentation of the removal and installation technics..
MEL	Minimum Equipment List	associated with different subjects will be treated as follows: use of the MEL, the DDG, CDL and comments.
TS	Trouble Shooting	will result in the implementation of the task of the Trouble Shooting Manual, FIM and comments.