

European Aviation Maintenance Training Committee

Composites training overview

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President



European Aviation Maintenance Training Committee

- A pan-“EASA world” industry Foundation dedicated to maintenance training, registered in the Netherlands
- Main objective:
 - Improve safety through training
 - To represent the training industry with EASA



Other objectives:

- be recognised as the expert in training
- exchange information between members
- cooperate with other training related organisations
- improve training quality and thus its effectiveness
- inform members of new learning technologies
- act as an advisory body to members
- propose amendments towards EASA on behalf of the members
- discuss Notices of Proposed Amendments (NPA's) with EASA

General Assembly

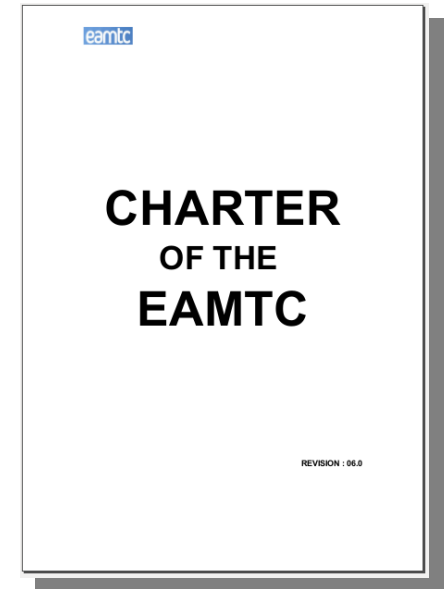
- Members' decision making meeting (2 x p.a.)
 - Instructor seminar (1 x p.a.)

Executive Committee

- Conducts day-to-day business
- Directed, controlled by General Assembly

Issues of concern to Members

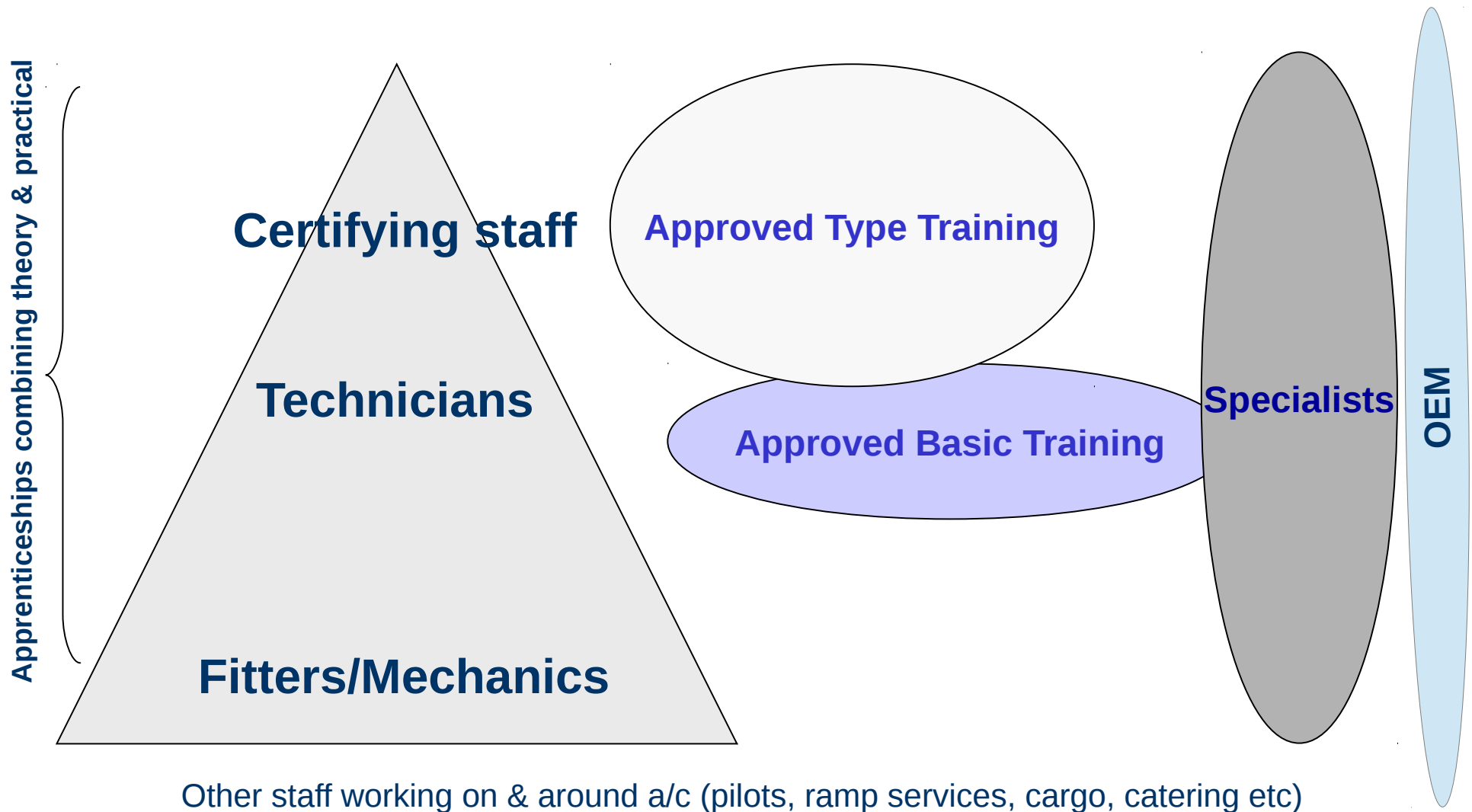
- Working Groups
 - General Assembly formulates the assignment
 - Report at each General Assembly meeting
 - Guidelines & Recommendations
 - Position Paper



- The rapid increase in the use of composites in increasingly critical applications has presented a challenge to the industry and regulators, particularly regarding the availability of an appropriately trained workforce. Therefore, appropriate and efficient training is very important.
- What areas are there for / who needs composites training?
 - General
 - Basic (approved)
 - Type (approved)
 - Specialist



Training areas



- Deals with knowledge training in:

6.3 Aircraft Materials — Composite and Non-Metallic

6.3.1 Composite and non-metallic other than wood and fabric

(a) Characteristics, properties and identification of common composite and non-metallic materials, other than wood, used in aircraft; Sealant and bonding agents;

(b) The detection of defects/deterioration in composite and non-metallic material;

Repair of composite and non-metallic material.

- Deals with:

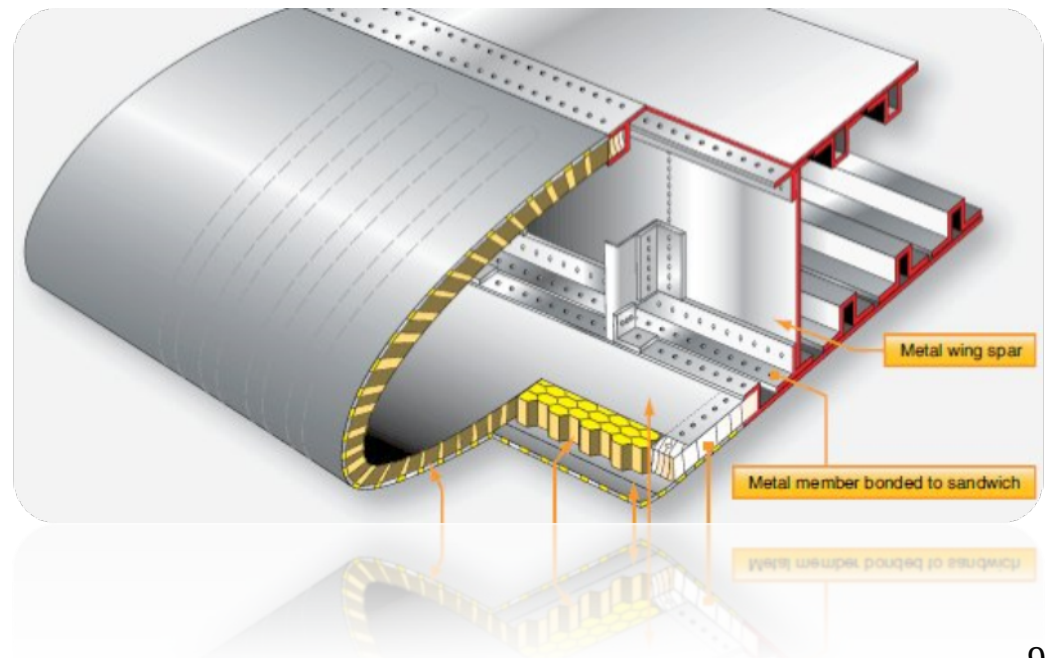
7.14 Material handling

7.14.2 Composite and non-metallic

Bonding practices;

Environmental conditions;

Inspection methods.



- Deals with:

17.2 Propeller Construction

Construction methods and materials used in wooden, composite and metal propellers



- Part 66 Appendix III
- Knowledge
 - Airframe structures 51 Standard Practices and structures (damage classification, assessment and repair)
- Skill (practical training)
 - Airframe structures 51 Standard Practices and Structures (damage classification, assessment and repair)



- Maybe qualified by means of an apprenticeship / vocational training
 - Blend of theory + practical
- Largely “learning by doing”
 - OEM courses (theory + practical)
 - Other composite specialist training providers

Maintenance operational areas

Knowledge:

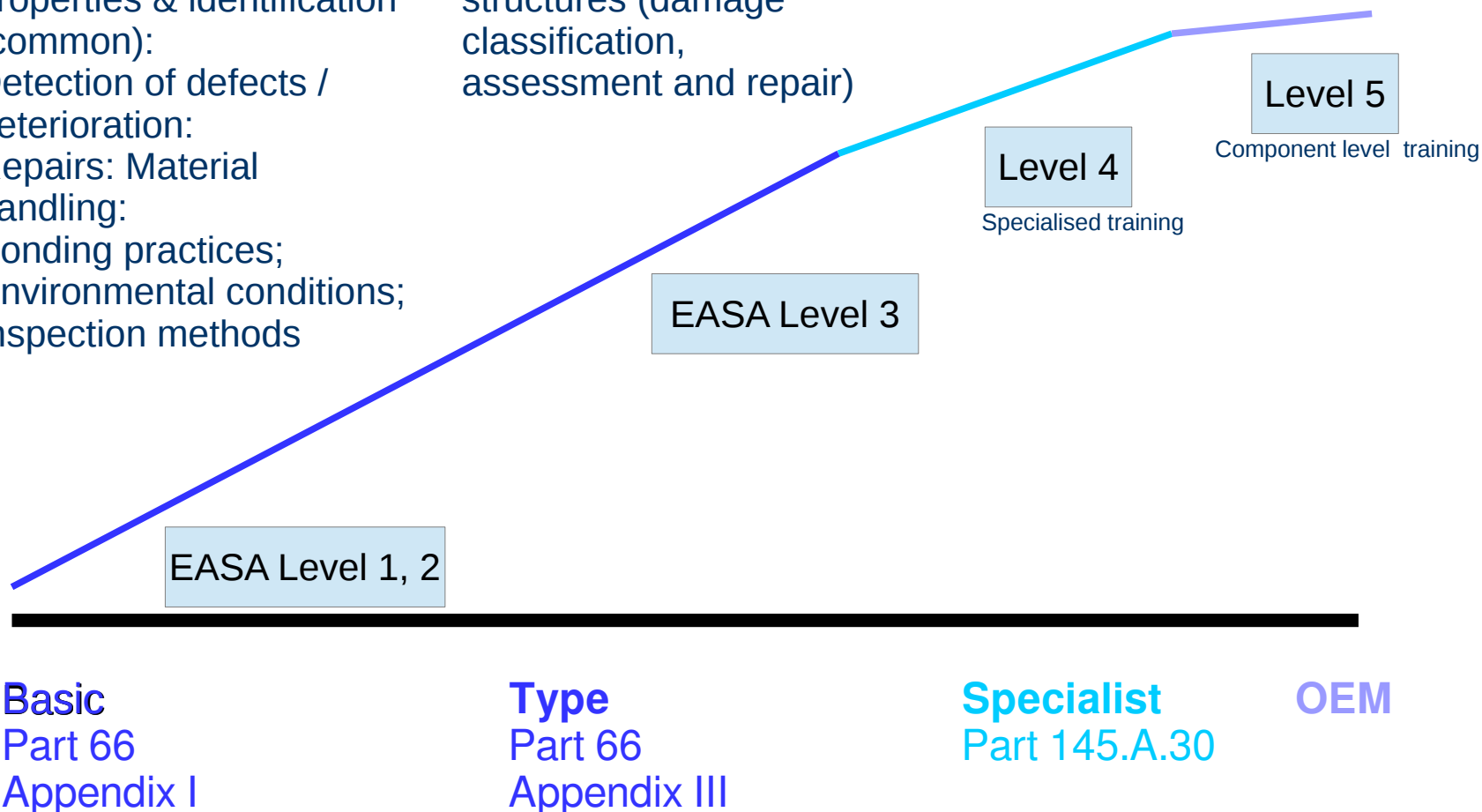
Characteristics,
properties & identification
(common):
Detection of defects /
deterioration:
Repairs: Material
handling:
Bonding practices;
Environmental conditions;
Inspection methods

Knowledge & Skills:

Standard practices and
structures (damage
classification,
assessment and repair)

Knowledge & Skills:

Competence



Survey – 145 AMO

Train: -

66% - Non-technical staff that work around the a/c

55% - All apprentices in composite structures

66% - Apprentices to be composite specialists

55% - All Technical Staff in composite structures

66% - Specialist Staff in composite structures



Survey - 147 AMTO

Basic AMTO:

50% train for knowledge above the regulatory levels

50% skills training by “doing” (as well as by “show / tell / discuss”)

Type AMTO:

28% train for knowledge above the regulatory levels

36% skills training above the regulatory levels

eamtc Survey – reference materials used

1 of 2

Reference material used other than the AMM, SRM, CMM: -

- SAE, AIR4938A, Composite and Bonded Structure Technician/Specialist Training Document
- SAE, AIR5719, Teaching Points for Awareness Class on “Critical Issues in Composite Maintenance and Repair.”
- Annex II - AMC 20-29 (Annex II to ED Decision 2010/003/R of 19/07/2010)
- DOT/FAA/AR-09/3 Regional Laboratory Development Composite Maintenance Education, Including Repair Manual, (Dec. 2009)
- FAA-8083-30CH05 page 31-36

eamtc Survey – reference materials used

2 of 2

- FAA-H-8083-31-AMT-Airframe Vol-1 Chapter 7
- AC 65-33, Development of Training/Qualification Programs for Composite Maintenance Technicians
- AC 20-107B, Composite Aircraft Structure
- AC 43-214, Repairs and Alterations to Composite and Bonded Aircraft Structure



Basic AMTO – comments

- Previous decades:
 - Composite repairs mainly for secondary and tertiary structures of large a/c; primary structures only on some light a/c
 - Trained for fibre glass, carbon fibre, some Kevlar repairs or manufacturing with vacuum bagging, use of small autoclave
- At present the basics for composite repairs are covered



Basic AMTO – comments

- Latest generation a/c
 - beyond the capabilities of a 147 to train or a 145 to repair
 - limited published approved data
 - OEM's role increasing (damage assessment, repairs, primary, secondary structure, developing data for repair on an individual basis)
 - No standard repairs available for the time being



Foreseen, specialists who are trained by the OEM's for specific requirements of each aircraft type

Closing remarks

- Reporting & personnel K,S,A
- Material development
 - In-built integrity sensors
 - Coatings
 - Repair tooling
- Sharing operational, in-service experience
- Adequate course time
- Continuation training – composite awareness

Thank you

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