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Section 4 **AIRFRAME WOODEN/METAL TUBE AND FABRIC**

THIS MODULE CONTAINS A BASIC KNOWLEDGE SELF STUDY GIUDE AND SUGGESTED MAINTENANCE TASKS

Module 4L – AIRFRAME WOODEN/METAL TUBE AND FABRIC BASIC THEORETICAL KNOWLEDGE (self study guide)

See Section 1 Instructions for use

Module 4L.1 Airframe wooden/combination of metal tube and fabric (Level 2)	Completed,
Timber, plywood, adhesives, preservation, power line, properties, machining Covering (covering materials, adhesives and finishing, natural and synthetic covering materials and adhesives) Paint, assembly and repair process Recognition of damage from overstressing of wooden/metal-tube and fabric structures Deterioration of wood components and coverings and recognising the reason for suitable storage Crack test (optical procedure e.g. magnifying glass) of metal components. Corrosion and preventative methods. Health and safety protections Appreciation of limitations of basic crack testing and availability other forms of Non Destructive Testing (NDT)	

Module 4L.2 Material (Level 2)	Completed,
Types of wood, stability and machining properties Steel and light alloy tubes and fittings, fracture inspections of welded joints Plastics (overview, understanding of the properties) Paints and paint removal recognition of different paint schemes, processes and limitations Glues, adhesives recognition of different glue types and limitations including life span. Awareness of glue failure Covering materials and technologies (natural and synthetic polymers) awareness of differing weights processes and applications	

Module 4L.3 identifying damage (Level 3)	Completed,
Overstressing of wood / metal-tubing and fabric structures Identifying various types of damage to wooden structures and metal-tube structures Identifying wood deterioration, causes and prevention Load transfers Fatigue strength and crack testing, understanding of fatigue life of various materials	

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Module 4L.4 Performance of practical activities (Level 2)	Completed,
Locking of pins, screws, castellated nuts and turnbuckles Thimble splice Nicopress and Talurit repairs Repair of coverings Repair of transparencies Repair exercises (plywood, stringer, handrails, skins) Understanding aircraft rigging. Calculation of control surface mass balance and range of movement of the control surface, measurement of operating force and free play check. Reasons for positive control checks and duplicate/independent inspections Understanding the requirement and performance of 50hr, 100hr/annual inspections on a wood or combination of metal-tube and fabric airframe	

Module 4L – AIRFRAME WOODEN/METAL TUBE AND FABRIC SUGGESTED MAINTENANCE TASKS		
Registration & date	Maintenance task performed	Confirmed by Licence No.
General activities		
	Inspection/testing for damage. Inspection of ribs, wing, stabiliser, fin and control surface spars and structure	
	Inspections following flight or landing incident including opening up for access and close up and reinstatement	
Wood and Repairs		
	Fuselage rib structure repair	
	Wing rib structure repair (may tie up with D box repair) to maintain correct profile and strength	
	Flying control rib structure repair	
	Wood selection for various repairs	
	Wood glue selection and application method	
	Plywood skin repair to fuselage or aerodynamic surface	
	Ply D box repair using the correct ply orientation and scarf joints. Application of glue and holding methods. Inspection following repair.	

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Fabric covering and finishing		
	Recover or repair structure with fabric. Preparation for recover, ensuring correct environment and temperature, material selection. Repair application and tightening	
	Selection of dopes, application, and properties of each type	
	Protective coating and finishing, selection of paint and finishes for metal and wood structures.	
	Install patch on fabric material, cut inspection access hole. Prepare for patch repair and material selection. Apply patch and restore finish.	
	Repair of fairings, damage assessment and verification of no underlying damage	
	Apply registration marks using mask and paint method	
Metal tube and repairs		
	Metal tube inspection and damage assessment	
	Metal tube repair or replacement	
	Prepare metal tube repair splice	
	Bent metal tube assessment and straightening	
	Prepare metal tube structural bracket or fitting	
	Inspect metal tube weld repair	
	Apply corrosion protection to metal tube structure	
	Metal tube internal protection application	
Module 4L AIRFRAME WOODEN/METAL TUBE AND FABRIC ADDITIONAL MAINTENANCE TASKS CARRIED OUT		

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Add additional pages as necessary