

# Helicopter Maintenance Trainer

# Introduction

The Helicopter Maintenance Trainer is a freestanding helicopter trainer enabling students to carry out practical training by performing standard maintenance procedures associated with rotary wing aircraft. There are a multitude of systems which the students can carry out functional testing, fault diagnosis and remove/install procedures.

The Helicopter Maintenance Trainer uses an optimum mix of high-fidelity replica and real aircraft components installed in a refurbished airframe representative of a generic rotary wing aircraft. The equipment enhances the training given by allowing the instructor to demonstrate at ground level, operation of systems e.g. cockpit layout, instrumentation, Gas Turbine Engine remove and install, flying controls etc. thereby underpinning the students' knowledge of these systems.



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# Key Features

- Airframe structure with easily visible cockpit area
- Gas Turbine Engine
- Main Rotor and Tail Rotor Transmission
- Rotors flight control system, with collective, cyclic and yaw channels visible during operation
- Hydraulic power supply providing flight control via hydraulic assisted servo actuators
- Electrical supplies
- Generic glass cockpit featuring electronic flight instrument display
- Replicated stand by analogue flight instruments
- Students perform practical tasks using aircraft manuals, standard tools and test equipment
- Instructor operating station provides overall control, monitors activity and input of faults during simulated engine and rotor start training tasks
- Includes Ground Support Equipment and Specialist tools



# Aviation Regulations Alignment

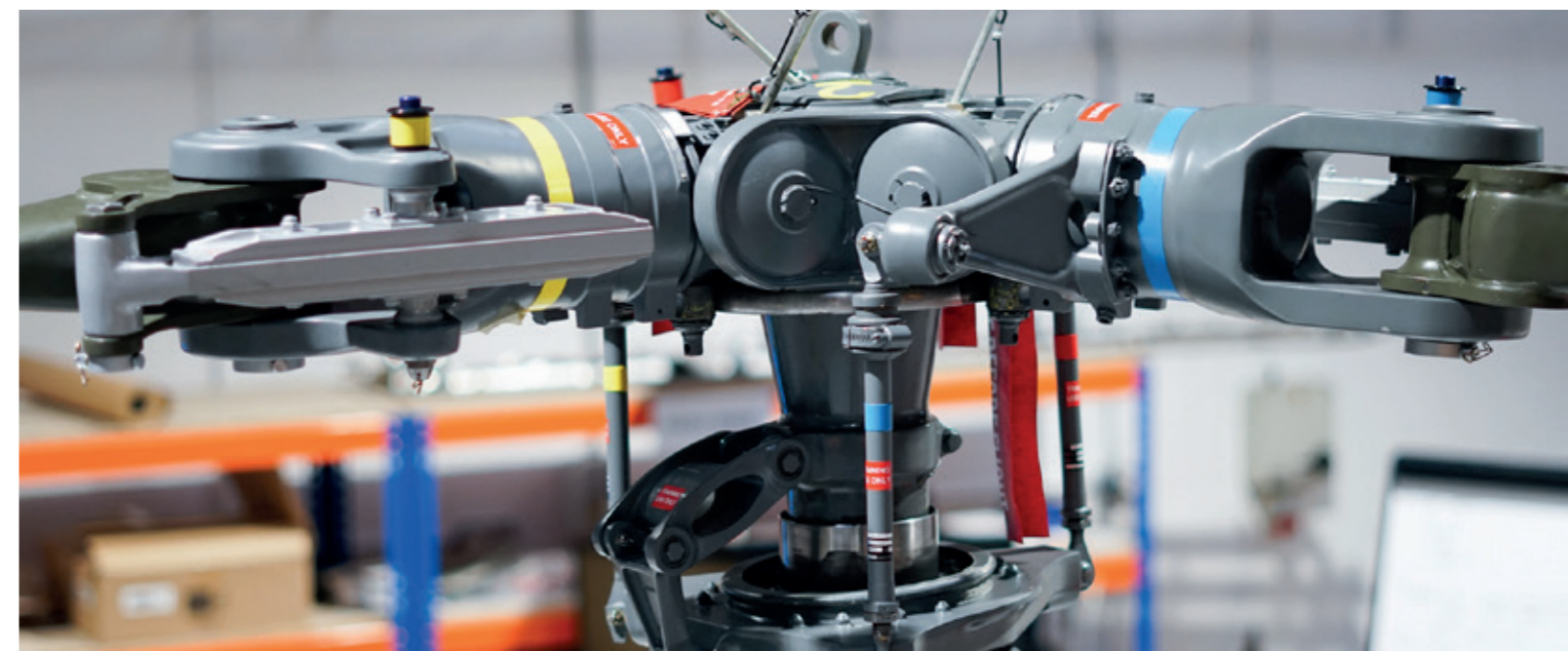
EASA/EMAR PT 66	FAA	City & Guilds	MEA UNITS
<b>Module 6</b> Materials & hardware	<b>ATA 05</b> Periodic Inspections	<b>2675-01</b> City & Guilds Level 2 Certificate in Aircraft Maintenance (Military Aircraft) Units 104, 105, 106	<b>Common core units</b> MEA103, 107, 118, 151, 155 & 157
<b>Module 7</b> Maintenance practices	<b>ATA 07</b> Lifting & shoring		<b>MEA202</b> Remove and install basic aircraft electrical system components
<b>Module 10</b> Aviation legislation	<b>ATA 09</b> Towing and Taxiing	<b>2675-02, 23</b> Level 2 Diploma in Aircraft Engineering: Unit 003, 102	<b>MEA203</b> Remove and install advanced aircraft electrical system components
<b>Module 11</b> Aeroplane, aerodynamics, structures and systems	<b>ATA 12</b> Servicing Routine Maintenance	<b>2675-03</b> Level 3 Diploma in Aircraft Maintenance (Military/Civil) Aircraft Mechanical/Avionics: Units 202, 204, 205, 206, 210, 216, 217	<b>MEA206</b> Remove and install aircraft basic radio communication and navigation system components
<b>Module 12</b> Helicopter aerodynamics, structures and systems	<b>ATA 24</b> Electrical power		<b>MEA210</b> Inspect, test and troubleshoot basic aircraft electrical systems and components
<b>Module 13</b> Aircraft aerodynamics, structures and systems	<b>ATA 25</b> Equipment / Furnishings	<b>2675-05</b> Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Mechanical): Units 204, 205, 206, 216 & 217	<b>MEA223</b> Inspect aircraft electrical systems and components
<b>Module 14</b> Propulsion systems	<b>ATA 27</b> Flight controls		<b>MEA227</b> Test and troubleshoot aircraft electrical systems and components
<b>Module 15</b> Gas turbine engine	<b>ATA 28</b> Fuel	<b>4608-50</b> Level 2 Diploma in Aerospace and Aviation Engineering (Military Foundation Competence): Units 201, 202, 203 & 240, 258, 266 & 267	<b>MEA301</b> Perform aircraft flight servicing
	<b>ATA 29</b> Hydraulic Power		<b>MEA304</b> Remove and install non-pressurised aircraft structural and non-structural components
	<b>ATA 43</b> Tactical Communications	<b>4608-60</b> Level 3 Diploma in Aviation Maintenance (Military Development Competence) Core Units 301, 302, 304 455 Plus – 357, 360, 368, 379, 381, 385, 386, 389, 390, 391, 392 & 395	<b>MEA306</b> Remove and install engines and engine system components
	<b>ATA 52</b> Doors		<b>MEA308</b> Remove and install rotary wing rotor and flight control system components
	<b>ATA 62</b> Main Rotor(s)		<b>MEA316</b> Inspect, test and troubleshoot rotary wing rotor and control systems and components
	<b>ATA 63</b> Main Rotor drive(s)		<b>MEA319</b> Inspect gas turbine engine systems and components
	<b>ATA 64</b> Tail rotor		<b>MEA330</b> Maintain aircraft non-primary structural removable components or parts and internal fittings
	<b>ATA 65</b> Tail rotor drive		<b>MEA346</b> Perform scheduled line maintenance activities on gas turbine engine rotary wing aircraft
	<b>ATA 67</b> Rotors flight control		<b>MEA352</b> Maintain basic rotary wing aircraft systems
	<b>ATA 70</b> Standard practices - Engine		<b>MEA398</b> Remove and install aircraft hydro-mechanical and landing gear system components
	<b>ATA 71</b> Power plant		
	<b>ATA 77</b> Engine Indicating		

# Physical Specifications

PARTICULAR	VALUE	UNIT
<b>AIRFRAME</b>		
Length	12000	mm
Width	2100 <sup>Note 1</sup>	mm
Height	3200	mm
Weight	1000	Kg
<b>INSTRUCTOR OPERATING STATION</b>		
Length	1650	mm
Width	1028	mm
Height	1594	mm
Weight	230	Kg
<b>Note 1</b> : Main airframe, not including blades or access staging (10500mm rotor disc diameter)		

# Supplied Documentation

Operational Manual
Maintenance Manual
Student Manual (Technical Publications)



# Supported Training

SYSTEM	PRACTICAL TASK	SIMULATED FAULTS
<b>(00) AIR VEHICLE GENERAL</b>	1. Inspect Flying Control System	No Faults
<b>(07) LIFTING, SHORING, RECOVERING &amp; TRANSPORTING</b>	1. Jack Aircraft	No Faults
<b>(09) TOWING AND TAXIING</b>	1. Ground handling equipment Remove and Install	No Faults
<b>(12) SERVICING</b>	1. Zonal Inspections (Zone 1) 2. Defuel Aircraft (Simulated) 3. Zonal Inspections (Zone 2) 4. Refuel Aircraft (Simulated) 5. Zonal Inspections (Zone 3) 6. Hydraulic Ground Power Unit connect / disconnect 7. Hydraulic system replenishment 8. Zonal Inspections (Zone 4) 9. Zonal Inspections (Zone 5)	No Faults
<b>(24) ELECTRICAL POWER</b>	1. Battery Remove and Install 2. External ground power connect / disconnect (Simulated) 3. Alternator Remove and Install 4. Starter generator Remove and Install	1. Battery contactor, relay not energised; 2. Generator failure, no output voltage; 3. Alternator failure, no voltage output
<b>(25) EQUIPMENT AND FURNISHINGS</b>	1. Pilot seat Remove and Install 2. Heating duct and cover Remove and Install	No Faults



# Supported Training

SYSTEM	PRACTICAL TASK	SIMULATED FAULTS
<b>(27) FLIGHT CONTROLS</b>	1. Tail Rotor servo Remove and Install	No Faults
<b>(28) FUEL</b>	1. Fuel Pump Remove and Install 2. Fuel cut off valve control Remove and Install 3. Fuel filter baffle Remove and Install 4. Fuel filter element Remove and Install	1. Boost pump failure; 2. Partial filter blockage; 3. Complete filter blockage, bypass valve operated
<b>(29) HYDRAULIC POWER</b>	1. Tail Rotor controls adjust 2. Basic rigging check	1. Hydraulic pump fails to operate
<b>(43) TACTICAL COMMUNICATIONS</b>	1. ARC 340 homer aerials Remove and Install	No Faults
<b>(52) DOORS</b>	1. Cabin door Remove and Install 2. Main Rotor Gearbox Cowling Remove and Install 3. Engine cowling Remove and Install	No Faults
<b>(62) MAIN ROTORS</b>	1. Main rotor blade examination 2. Main rotor blade Remove and Install 3. Damper Remove and Install 4. Main Rotor Head examination 5. Main Rotor Head Remove and Install 6. Pitch Change Link Remove and Install 7. Non-rotating scissor check Torque	No Faults
<b>(63) MAIN ROTOR DRIVES</b>	1. Clutch and freewheel assembly Remove and Install 2. Main Rotor Gearbox examination 3. Torque transmitter Remove and Install 4. Main Rotor Gearbox Remove and Install 5. Main Rotor Gearbox and Main Rotor Head Remove and Install 6. Magnetic Plug inspection 7. Rotor brake adjustment 8. Rotor brake examination	1. Torque liaison sensor Detection Failure; 2. Clutch Failure
<b>(64) TAIL ROTOR</b>	1. Tail Rotor Head Remove and Install 2. Tail Rotor Gearbox Remove and Install 3. Tail Rotor Head and gearbox examination 4. Tail Rotor Head Remove and Install	No Faults
<b>(65) TAIL ROTOR DRIVE</b>	1. Tail Rotor Drives and Intermediate Gearbox Examination 2. Inclined drive shaft Remove and Install 3. Horizontal drive shaft Remove and Install 4. Connecting shaft Remove and Install 5. Intermediate gearbox Remove and Install	No Faults
<b>(67) ROTORS FLIGHT CONTROL</b>	1. Tail Rotor controls adjust 2. Basic rigging check	No Faults
<b>(70) STANDARD PRACTICES - ENGINE</b>	1. Engine Remove and Install	No Faults
<b>(71) POWER PLANT</b>	1. Ground Run (Simulated)	No Faults



# Optional Accessories

Spares Kit

# Ordering Information

99301-000-0001A	Basic Maintenance Helicopter Trainer
99301-3021	Spares Kit

