Pennant

BASIC HELICOPTER MAINTENANCE TRAINER

(BHMT)

PRODUCT OVERVIEW

INTRODUCTION

The Basic Helicopter Maintenance Trainer (BHMT) 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 BHMT 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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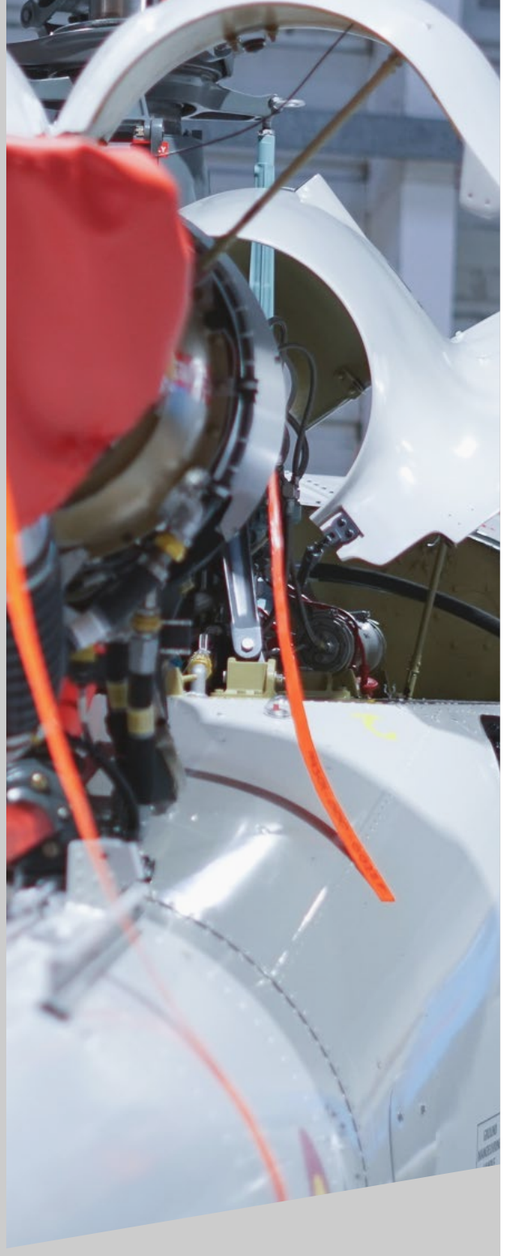

KEY FEATURES

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

PHYSICAL SPECIFICATIONS

PARTICULAR	VALUE	UNIT
AIRFRAME		
Length	12000	mm
Width	2100 Note 1	mm
Height	3200	mm
Weight	1000	Kg
INSTRUCTOR OPERATING STATION		
Length	1650	mm
Width	1028	mm
Height	1594	mm
Weight	230	Kg
Note [1] : 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
(00) AIR VEHICLE GENERAL	1. Inspect Flying Control System.	No Faults
(07) LIFTING, SHORING, RECOVERING & TRANSPORTING	1. Jack Aircraft.	No Faults
(09) TOWING AND TAXIING	1. Ground handling equipment Remove and Install.	No Faults
(12) SERVICING	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
(24) ELECTRICAL POWER	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
(25) EQUIPMENT AND FURNISHINGS	1. Pilot seat Remove and Install; 2. Heating duct and cover Remove and Install;	No Faults

SUPPORTED TRAINING

SYSTEM	PRACTICAL TASK	SIMULATED FAULTS
(27) FLIGHT CONTROLS	1. Tail Rotor servo Remove and Install.	No Faults
(28) FUEL	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
(29) HYDRAULIC POWER	1. Tail Rotor controls adjust; 2. Basic rigging check.	1. Hydraulic pump fails to operate
(43) TACTICAL COMMUNICATIONS	1. ARC 340 homer aerials Remove and Install.	No Faults
(52) DOORS	1. Cabin door Remove and Install; 2. Main Rotor Gearbox Cowling Remove and Install; 3. Engine cowling Remove and Install.	No Faults
(62) MAIN ROTORS	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
(63) MAIN ROTOR DRIVES	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
(64) TAIL ROTOR	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
(65) TAIL ROTOR DRIVE	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
(67) ROTORS FLIGHT CONTROL	1. Tail Rotor controls adjust; 2. Basic rigging check.	No Faults
(70) STANDARD PRACTICES - ENGINE	1. Engine Remove and Install.	No Faults
(71) POWER PLANT	1. Ground Run (Simulated).	No Faults

OPTIONAL ACCESSORIES

Spares Kit

ORDERING INFORMATION

99310-000-0001A	Basic Maintenance Helicopter Trainer
99310-3021	Spares Kit