



Generic Hand Skills Trainer



Introduction

The Generic Hand Skills Trainer (GenSkill) is a free standing physical prerepresentation of a typical Flying Control Run. The GenSkill provides an ideal platform for students to practise rigging procedures, including wire-locking, whilst removing and installing typical aircraft components in a confined space. The training aid is in service with schools, academies and defence colleges around the world and is regularly used as a test piece at the WorldSkills finals.

Using basic hand tools students can practise and develop the skills required for aircraft maintenance activities, including:

- Wirelocking
- Split Pinning
- Component Removal / Refit
- Control Rod Rigging
- Lubrication
- Electrical Continuity Checks

The electrical avionic modification component builds and enhances on the training capability of the standard GenSkill training device by introducing a functioning low voltage aircraft circuit as a fabrication and modification embodiment to extend training to avionic skills. The electrical and mechanical modification, henceforth known as the Test Piece. A Test Box (GSE) will be required to enable the Test Piece to be electrically checked.

The electrical avionic mod kit has been designed to enable the student to perform the following additional electrical tasks on the rig:

- Crimping
- Soldering
- Contact insertion/extraction and
- Techniques associated with protective sleeving



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Key Features

- Fuselage shaped shell containing access panels secured with a range of aircraft fasteners;
- Internal components typical of aircraft systems:
 - Control system (Control rods, pivot blocks, pivot arm. Torque tube);
 - Hydraulic components (PFCU, Rigid Pipes, Manifolds and Valves);
 - Avionic LRU (Cable, Connectors, Mounting Tray with aircraft tie-downs, LRU).
- Aircraft Component Recognition;
- Safetying by lock wire, Safe-T-Cable, split pin and torquing;
- Fastener recognition / identification;
- Control Linkage Rigging;
- Does not require expensive aircraft parts;
- Designed to allow the observation of repetitive tasks in training;
- Covers knowledge and learning tasks involved with the following standards & qualifications. EASA/EMAR pt66, FAA, City & Guilds and CASA MEA Units.

With the addition of the electrical modification component:

- Introduction of a functioning low voltage aircraft circuit;
- Carry out a service bulletin which incorporates embodiment of an avionic modification;
- Electrical harness fabrication;
- Sheet metal fabrication;
- Testing of the system with a portable test set;
- Instructor controlled fault harness replaces the student harness with in-built faults;
- Interactive Electronic Technical Publication, S1000D laid out in ATA2200 format with performance support material.



Aviation Regulations Alignment Standard Genskill (Items in RED additional Mod Kit)

EASA/EMAR PT 66	FAA	CITY & GUILDS	CASA MEA UNITS
Module 6 Materials & hardware	ATA 27 Flight Controls	2675-01 City & Guilds Level 2 Certificate in Aircraft Maintenance (Military Aircraft) Units 104 & 109	Common core units MEA151, 153, 155, 157, 158, 159 & MEA118
Module 7 Maintenance practices	ATA 29 Hydraulic Power	2675-02, 23 Level 2 Diploma in Aircraft Engineering:- Unit 102	MEA201 Remove and install miscellaneous aircraft electrical hardware /components
Module 10 Aviation legislation	ATA 51 Standard Practices & Structures	2675-05 Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Mechanical):- Unit 204, 205 & 206	MEA223 Inspect aircraft electrical systems and components
Module 11 Aeroplane, aerodynamics, structures and systems		4608-50 Level 2 Diploma in Aerospace and Aviation Engineering (Military Foundation Competence):- Unit 201 & 202 & 203	MEA227 Test and troubleshoot aircraft electrical systems and components
Module 12 Helicopter aerodynamics, structures and systems		4608-60 Level 3 Diploma in Aviation Maintenance (Military Development Competence):- Units 301, 302, 304 & 455	MEA238 Perform routine removal and installation of miscellaneous aircraft electrical hardware / components
Module 13 Aircraft structures and systems		4708-30 Level 3 Diploma in aircraft maintenance Military:- Units 306, 308, 310 & 312	MEA239 Fabricate aircraft electrical looms & harnesses
			MEA240 Use electrical test equipment to perform basic electrical tests
			MEA296 Use Electrical Test Equipment in aviation maintenance activities
			MEA305 Remove and install aircraft fixed wing flight control system components
			MEA318 Inspect aircraft hydro-mechanical, mechanical, gaseous and landing gear systems and components
			MEA321 Test and troubleshoot aircraft fixed wing flight control systems and components
			MEA398 Remove and install aircraft hydro-mechanical and landing gear system components

Supported Training

The students perform practical maintenance tasks, through the access panels. The flying control tasks include:

- Inspect Flying Control System
- Lubricate Flying Control Torque Tube & Lubricate Pivot Arm Assemblies
- Remove, Install & Examine Torque Tube Assembly & Outer Bell Crank
- Remove & Install Powered Flying Control Unit, PFCU Control Rods, Pivot Arm Assemblies & Torque Tube Lever Assembly
- Rigging of PFCU and Control Linkage

The hydraulic practical tasks include inspect hydraulic system, remove and install the follow:

4 port manifold, 6 port manifold, 3 way depress valve, pressure transducer, rigid pipework and flexible pipework.

The electrical avionic mod kit provides students with the opportunity to carry out and inspect electrical compartment LRU, remove and install line replaceable unit (LRU), carry out electrical harness continuity checks, troubleshoot/fault tree analysis, sheet metal fabrication and harness fabrication, as part of the avionics practical tasks.

On task completion the instructor/supervisor can open the hinged, shell top to inspect and debrief the student on their resultant standard of work.

Physical Specifications

PARTICULAR	VALUE	UNIT
Length	1110	mm
Width	1575 ^{Note 1}	mm
Height	1565 ^{Note 1}	mm
Weight	120	Kg
Note¹ : Lid Open		





Supplied Documentation

Integrated Electronic Technical Publication (IETP)

Optional Accessories

	GENSKILL	MOD KIT
Spares Pack (Scaled at 1-5 Genskills)	✓	✓
Consumables Starter Kit	✓	✓
GenSkill Joining Kit (Join two single GenSkills together end to end)	✓	✓
Additional Test Set	✓	✓
Additional Fault Harness	✓	✓
Student Toolkit	✓	✗





