

WORLDSKILLS SINGAPORE 2023

TECHNICAL DESCRIPTION

AIRCRAFT MAINTENANCE

Skill Competition

- 1 This competition covers a broad range of tasks involving inspecting, servicing, troubleshooting, removing, installing and repairing aircraft systems.
- 2 The competition will require good skills and knowledge in airframe, engine and propeller which include the mechanical, hydraulic, pneumatic, avionic and electrical equipment in an aircraft.
- 3 The competition is conducted as an individual event and competitors are given 18 hours over 2.5 days to complete the 5 Test Projects.

Scope of Work

- 4 Competitors will be required to follow the safety instructions at Appendix I when working with tools and equipment involved in Aircraft Maintenance modules. Competitors are encouraged to view all incidents as preventable.
- 5 Competitors must be able to demonstrate competencies in the following areas:
 - 5.1 Aircraft Structure Repair (non-ferrous)
 - 5.2 Composite Structure Inspection
 - 5.3 Initial Scheduled Aircraft Acceptance Check
 - 5.4 Line Replacement Unit (LRU) Mechanical
 - 5.5 Line Replacement Unit (LRU) Electrical
- 6 The theoretical knowledge required includes:
 - 6.1 Interpretation and use of reference manuals ie. Aircraft Standards Practices (AC 43–13), Standard Wiring Practices Manual (SWPM); and
 - 6.2 Following procedure as per instructions in Aircraft Maintenance Manuals

Assessment

- 7 The assessment criteria and relative weighting of marks are as follows:

Criterion		Marks
A	Aircraft Structure Repair (non-ferrous)	20
B	Composite Structure Inspection	20
C	Initial Scheduled Aircraft Acceptance Check	20
D	Line Replacement Unit (LRU) Mechanical	20
E	Line Replacement Unit (LRU) Electrical	20

Major Tools & Materials

8 The following tools and materials will be used in the competition:

- 8.1. Aircraft or helicopter, with manuals
- 8.2. Adhesives
- 8.3. Aluminum sheet metal plate
- 8.4. Breather cloth
- 8.5. Bleeder cloth
- 8.6. Crimping tools
- 8.7. Connectors
- 8.8. Cutting nippers
- 8.9. Drill bits
- 8.10. Electrical boards
- 8.11. Fasteners
- 8.12. Feeler gauge imperial
- 8.13. Hot bonder
- 8.14. Hammer ball pein
- 8.15. Heat blanket
- 8.16. Heat gun
- 8.17. Long nose pliers
- 8.18. Lamps
- 8.19. Pneumatic drill gun c/w chuck key
- 8.20. Pneumatic rivet gun and accessories
- 8.21. Rivets
- 8.22. Ratchet handle
- 8.23. Sander
- 8.24. Sealant tape
- 8.25. Sandpapers
- 8.26. Sheet metal shearing machine
- 8.27. Sheet metal bending machine
- 8.28. Switches
- 8.29. Split pins
- 8.30. Tap tester
- 8.31. Terminals
- 8.32. Tie wrap gun
- 8.33. Thermo couple
- 8.34. Task card, CRS template, technical logbook
- 8.35. Vernier caliper 12-inch
- 8.36. Vacuum bagging film
- 8.37. Weighing machine
- 8.38. Wires

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Safety Regulations for Aircraft Maintenance

The following safety instructions should be followed when working on equipment of Aircraft Maintenance.

Personal Protective Equipment

- All competitors must wear personal protective equipment such as ear muffs, ear plugs, safety shoes (reinforced toe), suitable mask and work specific clothing.
- All competitors must use safety glasses when using any hand, power or machine tools or equipment likely to cause or create chips or fragments that may injure the eyes.
- All competitors must use headlights / torchlight when working with simulator.
- All competitors must use suitable gloves when using any hand, power or machine tools or equipment likely to cause injury to hands.

Housekeeping

- When working in your own competition area, make sure that no working material interferes with the adjacent competitor's area, and that your actions do not hinder his or her work.
- When shared machines are used, leave ample space for the person working on the machine.
- Floors and passages must be kept free of unnecessary clutter, wires and rubbish.
- Work areas must be cleaned.