

WORLDSKILLS SINGAPORE 2025
TECHNICAL DESCRIPTION
AIRCRAFT MAINTENANCE



Skill Competition

- 1 This competition covers a broad range of tasks dealing with 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 Conducted as an individual event, competitors are given 18 hours over 2.5 days to complete the 5 test projects for this competition.

Scope of Work

- 4 Competitors will be required to acknowledge and 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
 - 5.2. Composite Structure Repair
 - 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 Proper use of reference manuals eg, Boeing SWPM, and 21-99 Aircraft Wiring and Bonding.
 - 6.2 Following procedures as per instructions in Aircraft Maintenance Manuals.

Assessment

- 7 Competitors will be assessed based on measurement markings.
- 8 The assessment criteria and relative weighting of marks are as follows:

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Criterion		Marks
A	Aircraft Structure Repair	20
B	Composite Structure Repair	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

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

- 9.1. Aircraft Maintenance manual
- 9.2. Adhesives
- 9.3. Bending machine
- 9.4. Bench grinder
- 9.5. Bleeder cloth
- 9.6. Breather cloth
- 9.7. Cutting machine
- 9.8. Composite panel
- 9.9. Composite SRM repair manual
- 9.10. Connectors
- 9.11. Dust cap
- 9.12. Drill bits
- 9.13. Fasteners
- 9.14. Fibre glass
- 9.15. Hot bonder
- 9.16. Heat blanket
- 9.17. Heat shrink sleeves
- 9.18. Hexagon Bit Allen Key Socket
- 9.19. Parting film
- 9.20. Pneumatic drill and rivet guns
- 9.21. Peel ply
- 9.22. Potting compound
- 9.23. Radius gauge
- 9.24. Rivets
- 9.25. Sander
- 9.26. Sanding discs
- 9.27. Sealant tape
- 9.28. Switches
- 9.29. Screwdriver
- 9.30. Spanner
- 9.31. Sandpaper
- 9.32. Sanders
- 9.33. Twist drill
- 9.34. Ties

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- 9.35. Tags
- 9.36. Thermocouple
- 9.37. UHH technical manuals
- 9.38. Vacuum bagging film=
- 9.39. Vacuum cleaner
- 9.40. Vernier calliper
- 9.41. Wires

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Appendix I

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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 as required.
- 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 Competitor working on the machine.
- Floors and passages must be kept free of unnecessary clutter, wires and rubbish.
- Work areas must be cleaned.