



Australian Government

Assessment Requirements for AURRTD001 Diagnose and repair marine steering systems

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in two of the following marine steering systems:
 - mechanical cable
 - hydraulic steering
 - electrohydraulic steering.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing marine steering systems, including:
 - procedures for avoiding pinch points when operating steering systems
 - procedures for working with high hydraulic oil pressures
 - methods for determining safe working loads of ropes, chains and cables
- operating principles of marine steering systems and associated components, including:
 - rudders and the principle of unequal water pressures
 - propwash
- application, purpose and operation of marine steering systems and components, including:
 - rope, cable and chain systems
 - inboard steering systems, including:
 - steering gear
 - balanced and unbalanced rudders
 - electrohydraulic steering

- outboard engine steering, including:
 - mechanical cable
 - hydraulic steering
 - electrohydraulic steering
- stern drive steering, including:
 - power steering
 - electrohydraulic steering
- bow and stern thrusters, including:
 - electric systems
 - hydraulic systems
- diagnostic testing procedures for marine steering systems, including:
 - rudder wear down
 - mechanical cable testing, including:
 - helm evaluation, including backlash
 - draglink wear
 - hydraulic system testing, including:
 - pressure testing
 - testing system for air
 - draglink wear
 - electrohydraulic system testing, including:
 - pressure testing
 - component electrical testing
- repair procedures for marine steering systems, including procedures for:
 - selecting steering system appropriate to vessel
 - dismantling, repairing and lubricating steering system components
 - replacing components
 - replacing helm and ram seal
 - identifying and measuring cables
- post-repair testing procedures for marine steering systems, including procedures for testing for smooth operation and full range of movement.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the marine steering systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- marine repair workplace or simulated workplace
- workplace instructions
- manufacturer steering system specifications
- marine vessels with faults in the steering systems specified in the performance evidence
- diagnostic equipment for marine steering systems
- tools, equipment and materials appropriate for repairing and adjusting marine steering systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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