Title	**Explain power boat propeller operation, types, and servicing**		
Level	**3**	**Credits**	**4**

Purpose	People credited with this unit standard are able to: explain propeller operation in the water; propeller types and parts; and propeller servicing.

Classification	Motor Industry > Trailer Boat Systems

Available grade	Achieved

Guidance Information

1 This unit standard is a pre-requisite for unit 15465, *Check and determine the suitability of a propeller for a power boat*.

2 Legislation, regulations, references and/or industry standards relevant to this unit standard include but are not limited to the:

- Health and Safety at Work Act 2015
- Land Transport Act 1998
- Resource Management Act 1991

Any new, amended or replacement Acts, regulations, rules, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

3 Assessment information
Evidence presented for assessment against this unit standard must be in accordance with manufacturers' specifications, workplace policies and procedures and relevant legislation.

4 Definitions
Manufacturers' specifications refer to technical information of a boat or product detailing: operation; installation and servicing procedures; technical terms and descriptions; or illustrations. Manufacturers' specifications must be followed to ensure compliance with manufacturer warranty, safe operation, and operation that meets manufacturer performance claims.
Workplace policies and procedures refer to the documented procedures and policies providing guidelines for the tasks and activities carried out in the workplace. This typically includes relevant health and safety requirements to eliminate hazards and/or risks in the workplace.

Outcomes and performance criteria

Outcome 1

Explain power boat propeller operation in the water.

Performance criteria

1.1 The operation of a power boat propeller in the water is explained in terms of water flow past the blades, negative and positive pressure creating thrust.

Outcome 2

Explain propeller types and parts for a power boat.

Performance criteria

2.1 Parts of a propeller are described in terms of blade face, ribs, leading edge, hub, and bush types.

2.2 Types of blades are explained in terms of constant and progressive pitch.

2.3 The purpose of cupped blades is explained in terms of their advantages.

2.4 The differences between left- and right-hand propellers are described in terms of rotation and blade position.

2.5 The propeller rake is described in terms of purpose and uses.

Range zero, flat, progressive.

2.6 Diffuser, diverging, and converging ring are explained in terms of operation.

2.7 Propeller venting system is explained in terms of its purpose and application.

2.8 Application of types of propellers are described in terms of blade shape, number and type of materials used.

Outcome 3

Explain propeller servicing on a power boat.

Performance criteria

3.1 Limitations for repairs of propellers are explained.

3.2 Procedures to measure a propeller are described.

Range diameter, pitch.

3.3 Detrimental effects of water flow past a propeller are explained in terms of ventilation and cavitation.

3.4 Procedures to repair propeller assemblies are described.

Range blades, hub.

Planned review date	31 December 2030

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 February 1999	31 December 2022
Revision	2	16 April 2003	31 December 2022
Review	3	21 September 2007	31 December 2022
Rollover and Revision	4	20 July 2017	31 December 2022
Review	5	27 August 2020	31 December 2027
Review	6	29 May 2025	N/A

Consent and Moderation Requirements (CMR) reference	0136

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Hanga-Aro-Rau Engineering, Manufacturing and Logistics Workforce Development Council at qualifications@hangaarorau.nz if you wish to suggest changes to this skill standard.