Title	**Explain trailer boat drive train layout and servicing procedures**		
Level	**3**	**Credits**	**10**

Purpose	People credited with this unit standard are able to explain layout of trailer boat drive train components and servicing procedures for trailer boat drive trains.

Classification	Motor Industry > Trailer Boat Systems

Available grade	Achieved

Guidance information

Definition
Service information refers to technical information of a boat or product detailing: operation; installation and servicing procedures; manufacturer instructions and specifications; technical terms and descriptions; and illustrations.

Outcomes and performance criteria

Outcome 1

Explain trailer boat drive train layout.

Performance criteria

1.1 Types of gears are explained in terms of application in relation to the layout.

Range type of gears include – bevel gears (straight, spiral), helical cut spur gears, straight cut spur gears.

1.2 Types of bearings found in marine transmissions are explained in terms of application in relation to the layout.

Range bearings – ball, roller, needle, solid.

1.3 Gear thrust is explained in terms of bearing preload principles in relation to the layout.

1.4 Types of drive train configurations are explained.

Range evidence of three different types is required.

1.5 Oil seal O-ring and lip types are explained in terms of applications in accordance with service information.

1.6 Components and layout of trailer boat drive trains are explained in terms of functions and applications.

Range trailer boat drive trains components include – clutches (dog, cone), shift mechanisms (cable, hydraulic), marine hydraulic transmissions, hydrostatic drives, sail drives, sterndrives and outdrives, surface piercing drives, water jets, outboard gearcase, inboard propeller shaft assemblies, couplings.

Outcome 2

Explain trailer boat drive train servicing procedures.

Performance criteria

2.1 Inspection procedures of drive train components is explained in accordance with service information.

Range components include – bearing preload, backlash, runout.

2.2 Lubricants and sealants used to drive train components are explained in terms of types and grades.

2.3 Servicing procedures for drive trains are explained in accordance with service information.

Planned review date	31 December 2022

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 February 1999	31 December 2018
Revision	2	16 April 2003	31 December 2018
Review	3	21 September 2007	31 December 2018
Review	4	28 September 2017	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 the NZ Marine and Composites Industry Training Organisation training@nzmarine.com if you wish to suggest changes to the content of this unit standard.