Title	**Plan a safe coastal passage and navigate a vessel within sight of land**		
Level	**4**	**Credits**	**15**

Purpose	This unit standard is intended for persons studying towards a qualification in vessel operation with the intention of applying for a Maritime New Zealand license. People credited with this unit standard are able to: plan a safe coastal passage, obtain and use maritime navigation safety information, and identify buoys and beacons; calculate tidal information using the Nautical Almanac and charts; and determine and monitor a vessel's position within sight of land.

Classification	Maritime > Navigation and Seamanship

Available grade	Achieved

Guidance Information

1 Legislation relevant to this unit standard includes:
Health and Safety at Work Act 2015.
Maritime Transport Act 1994 and subsequent amendments.
Local bylaws as applicable.

2 References
Land Information New Zealand (LINZ) *NZ 202, New Zealand Chart Catalogue*, 15th Edition. ISSN 0113-5597. Wellington: Land Information New Zealand, 2010. Available at http://www.linz.govt.nz/docs/hydro/charts/catalogue/nz202.pdf.
Land Information New Zealand (LINZ) *NZ 204, New Zealand Nautical Almanac.*
Maritime New Zealand, and *New Zealand's Systems of Buoys and Beacons*. Wellington: Maritime New Zealand, 2008. ISBN 0-478-18815-3.
Maritime Rules and advisory circulars. Available at http://www.maritimenz.govt.nz.
Coastguard Boating Education, Scanlan, Mike. Safety in Small Craft, 3rd edition 2020. ISBM 978-0-473-51208-8.
United Kingdom Hydrographic Office, *Symbols and Abbreviations Used on Admiralty Charts* (Chart NP 5011), 2018 ISBN: 9780707741253.

3 Definition
Accepted industry practice refers to standardised practices and procedures accepted by the wider maritime industry as examples of best practice.
Vessel refers to any form of commercial or military watercraft; sometimes used in maritime circles interchangeably with the word ship.

4 Assessment information
  a Competency may be demonstrated using simulations.
  b All activities and evidence must be in accordance with accepted industry practice.

Outcomes and performance criteria

Outcome 1

Plan a safe coastal passage, obtain and use maritime navigation safety information, and identify buoys and beacons.

Performance criteria

1.1 The principles of Mercator projection as applied to the development of navigational charts are explained and used to measure the distance between two points on a chart.

1.2 A course is plotted between at least two defined points using dividers, plotter and parallel rule and expressed in terms of true and magnetic bearings.

1.3 Chart symbols are identified, and their meanings described in accordance with *Symbols and Abbreviations Used on Admiralty Charts* (Chart NP 5011).

Range rocks and other hazards, chart datum, depth contours, seabed type and submerged features, coastline features, magnetic variation data navigational marks and lights.

1.4 A passage is planned taking into account all identified hazards and conditions.

Range may include but not limited to – hazards to navigation, tidal stream, current, weather, height of tide, times of high and low water, predicted sea state, visibility, vessel characteristics.

1.5 Sources of maritime safety information are identified, and the information supplied by each is explained.

Range radio warnings, Notices to Mariners, safety bulletins and guidance notices, Nautical Almanac, NZ 202, NP 5011.

1.6 Buoys and beacons used in New Zealand are identified by day and night, and appropriate action to take on encountering them is described consistent with New Zealand’s System of Buoys and Beacons.

Outcome 2

Calculate tidal information using the Nautical Almanac and charts.

Performance criteria

2.1 The causes and cycle of tides are described.

2.2 Tide related terminology is defined.

Range spring tides, neap tides, height, range, duration, Mean High Water Spring (MHWS), Mean Low Water Spring (MLWS), Mean High Water Neap (MHWN), Mean Low Water Neap (MLWN), chart datum.

2.3 The times of high and low water for a given primary and secondary New Zealand port are calculated.

Range spring, neap times, and heights in a one-month period.

2.4 The predicted set and rate of the tidal stream is calculated.

Range tidal arrows on the chart, at least two tidal reference points (tidal diamonds), at least three different times over a 12-hour period for each tide diamond.

Outcome 3

Determine and monitor a vessel's position within sight of land.

Performance criteria

3.1 Construction and care of magnetic compasses is described.

3.2 Magnetic variation, to the nearest degree, is obtained and compensated for during navigational calculations of true directions to magnetic directions and vice-versa.

3.3 Causes and effects of magnetic deviation are described.

Range causes – onboard equipment likely to cause deviation, compass safe distances;
effects – table of deviations, compass declaration and how it is obtained, compass adjustment, heeling error, course alteration on the value of deviation.

3.4 Compass course is determined and vessel's estimated time of arrival (ETA) at a given destination is calculated.

Range log speed, ground speed, speed-time-distance calculation.

3.5 Vessel's position is determined and plotted on a paper chart.

Range latitude and longitude, compass bearing and distance from location or charted features, transits, radar ranges, global positioning system (GPS), soundings, dead reckoning.

3.6 Position fixing is undertaken at a frequency which is determined by the vessel speed, closeness of the vessel to land or potential navigational hazards, the approach of darkness, or restrictions in visibility.

3.7 Action is taken to safeguard the vessel if found that the vessel is off track.

3.8 Navigation at night is conducted using appropriate aids to navigation to maintain position and course at a safe distance from known hazards.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 May 1995	31 December 2012
Review	2	30 January 1997	31 December 2012
Review	3	26 May 2003	31 December 2012
Review	4	22 October 2010	31 December 2016
Review	5	15 October 2015	31 December 2022
Review	6	26 November 2020	N/A

Consent and Moderation Requirements (CMR) reference	0054

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

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.