

# Survey performance requirements

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Periodic surveys of propulsion and steering systems



Pursuant to Maritime Rule 44.25(3), and having met the relevant obligations of Maritime Rule 44.25(5) I, Kenneth Crawford, hereby impose the following requirements as to the performance of surveys (survey performance requirements):

Signed at Wellington

This 10th day of June 2024

A handwritten signature in blue ink that reads "K. W. Crawford". The signature is written in a cursive style with a clear, legible font.

Kenneth Crawford

Deputy Chief Executive Technical Advice and Support

Maritime New Zealand

Acting under Delegated Authority

# Survey performance requirements for periodic surveys of propulsion and steering systems

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# 1. Basis in maritime rules

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Survey performance requirements (SPRs) complement maritime rules that require a surveyor to exercise judgement. In the event of any conflict between an SPR and a maritime rule, the rule prevails.

This SPR has its basis in the following rules.

## 1.1 Rule 44.25

Rule 44.25(3) states that: “*the Director may impose requirements as to the performance of a survey*” and rule 44.25(4) states that “*when undertaking any survey, the surveyor must comply with any requirements imposed by the Director as to the performance of a survey*”.

## 1.2 40-series rules

Maritime rules relating to ship propulsion (eg rules 40A.32, 40C.28, and 40D.25) have the effect of requiring that a ship with a propulsion motor of more than 5 kW shaft power must have sufficient astern power to provide for manoeuvrability of the ship under all normal operating conditions and that the main and auxiliary propulsion system must have effective means of control and instrumentation.

Maritime rules relating to steering (eg rule 40A.36, 40C.33, and 40D.26) have the effect of requiring that a ship must be provided with an efficient means of steering that is of adequate strength and sufficient to steer the ship at full speed ahead and astern.

## 1.3 Rule 44.41

Amongst other things, Rule 44.41(2) requires that for a surveyor to issue a certificate of survey for an existing ship, the surveyor must be satisfied that:

- a) the hull, superstructure, decks, and valves of the ship are sound and serviceable
- b) the steering gear and propulsion system of the ship, if applicable, are sound and serviceable
- c) the ship and the ship’s equipment are in all respects fit for their intended use and operating limits and meet all applicable maritime rules and marine protection rules.

## 2. Application

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In combination, the 40-series rules and rule 44.41(2) provide an outcome-based standard for the ship's propulsion systems and steering systems.

These SPRs apply to periodic surveys of propulsion systems and steering systems of all ships.

Recognised surveyors must comply with these SPRs when undertaking such a survey and producing the associated survey report.

The SPRs do not include a detailed specification of each test, but expect the surveyor to be capable of performing the tests indicated.

## 3. Survey performance requirements

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### 3.1 General

When surveying the propulsion or steering system of an existing ship, the surveyor must:

1. Ensure that the survey includes all elements specified as being in-scope of the survey as identified by the survey plan for the ship.
2. For each element covered in the survey, review (as available) the ship's design report, construction report and recent relevant survey reports as references for identifying unapproved changes, and new or unresolved defects.
3. In the event that an unapproved modification<sup>1</sup> is identified, ensure that it is referred for approval to an appropriately recognised surveyor and that the outcome of the referral is recorded in the survey report.
4. When surveying following any modification affecting the design or performance of either the propulsion or steering system, undertake a sea trial or other suitable in-water test of the affected systems.
5. Ensure that the survey plan approved by the surveyor includes an out-of-water survey of the propulsion and steering systems not less frequently than once every five years.
6. Always remain within the bounds of his or her competence, irrespective of the scope of recognition afforded to the surveyor by the Director. Outside those bounds, the surveyor must seek the advice of a recognised expert.

### 3.2 Propulsion system

At each periodic survey of the propulsion system of a ship, the surveyor must:

7. When conducting a sea trial of the propulsion system, test the effectiveness of the system to provide forward and astern manoeuvrability at a range of power levels.
8. Inspect that the any de-rated engine continues to comply with any power limit approved in the ship's design or construction report.
9. For ships with inboard propulsion systems, during out-of-water surveys inspect that the effective diameter of the tail and intermediate shafts continue to comply with the minimum approved in the design or construction report.
10. During out-of-water surveys, inspect each propeller (including bow thrusters where applicable) for damage, corrosion and secureness of attachment to the shaft.
11. Inspect bearings for each shaft for excessive wear and clearances affecting the soundness of the system.
12. Check that the maintenance plan for the ship includes an appropriate service plan for the propulsion system and that the plan is being followed.

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<sup>1</sup> That is, a modification that has been made to the ship or its equipment, which might affect the ship's fitness for its intended use or operating limits, and which has not been approved by an appropriately recognised surveyor.

## Survey performance requirements (continued)

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13. Inspect and test if necessary, the fuel system including tank or tanks and associated piping, fittings and venting arrangements, to ensure the integrity and safety of fuel systems are being maintained and continue to comply with the approved ships design or construction report, where available.

### 3.3 Steering systems

At each periodic survey of the steering system of a ship, the surveyor must:

14. Where applicable, inspect the soundness of the pulleys and wire terminations of any wire steering system and the shafts, bearings and steering boxes of any shaft steering system.
15. When conducting a sea trial of the steering system, test the efficiency of each of the main system and the emergency system at full turn ahead and full turn astern (both to port and starboard for each) at full power.
16. during out-of-water surveys, inspect:
  - rudders for cracking, corrosion, decay and delamination as applicable for the rudder material type, and follow-up with applicable non-destructive testing when the visual inspection indicates the need
  - the rudder stock and pintles for decay or diminution (from whatever cause) that reduces the effective diameter to less than the minimum specified in design approval
  - the rudderstock bearings and rudder pintle bearings for excessive wear and
  - the tiller, quadrant boss, and rudder tubes for corrosion and their fastenings for secureness.

### 3.4 The survey report

In addition to meeting the requirements prescribed in Maritime Rules Part 44, Appendix 2, clause 1.3, the survey report produced from periodic surveys of hull, decks and superstructure must include:

17. Findings from the survey of each survey element referred to in all relevant maritime rule and these SPRs.
18. Confirmation that corrective actions have been completed for all deficiencies (new or historical) recognised during the survey and designated as requiring correction prior to the ship's departure
19. A description of all corrective actions (and timeframe for completion) that must be taken by the operator, but have not prevented the ship's departure.
20. Verification that the survey completed was consistent with the operative survey plan, and that the survey plan for future surveys has the approval of the surveyor.

The requirements in these SPRs complement the standards and requirements specified in the rules. The SPRs do not replace or reduce any responsibility the surveyor has under the rules.