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**AUSTRALIAN NAVAL CLASSIFICATION AUTHORITY
MANUAL (VOLUME 2)**

DIVISION 5: REMOTE AND AUTONOMOUS SYSTEMS

SECTION 4: LARGE UNCREWED SURFACE VESSELS

CHAPTER 12: HABITABILITY

PART 1: ANC RULES



This document is issued for use by Defence and Defence Industry personnel and is effective forthwith.

A handwritten signature in black ink, appearing to read 'CN Dagg, CSC'.

CN Dagg, CSC
Assistant Secretary
Australian Naval Classification Authority
Department of Defence
CANBERRA ACT 2600
May 2024 Edition

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Division 5: Remote and Autonomous Systems, Section 4: Large Uncrewed Surface Vessels, Chapter 12: Habitability, Part 1: ANC Rules, May 2024 Edition

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¹ <https://www.legislation.gov.au/Series/C1968A00063>

² <https://www.legislation.gov.au/Series/C2004A04868>

³ <https://www.legislation.gov.au/Series/C2004A03712>

⁴ <http://drnet/AssociateSecretary/security/policy/Pages/dspf.aspx>

AUSTRALIAN NAVAL CLASSIFICATION RULES

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⁵ <https://www.defence.gov.au/business-industry/industry-governance/australian-naval-classification-authority/australian-naval-classification-rules>

AMENDMENTS

Proposals for amendments to the ANCA Manual (Volume 2) may be sent to:

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Division 5: Remote and Autonomous Systems (RAS) Rules
Section 4: Large Uncrewed Surface Vessel (L-USV)
Part 1: ANC Rules

Chapter 12: Habitability

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Australian Naval Classification Rules

Rule 0. Goal

- 0.1 The Large Uncrewed Surface Vessel (L-USV) arrangements and systems that support the habitability of embarked persons, when onboard the vessel in accordance with the L-USV Operating and Support Intent (OSI), shall be designed, constructed, and maintained to:
 - 0.1.1 Ensure habitable conditions in all crewed spaces on board;
 - 0.1.2 Provide accommodation and recreational facilities designed to optimise the health, safety, and comfort of embarked persons while 'off watch', in all operational environments specified in the OSI; and
 - 0.1.3 Provide catering facilities capable of efficiently and hygienically preparing and/or delivering hot and cold food and beverages in sufficient quantity to all embarked persons, in all operational environments and for the length of time between replenishments as specified in the OSI.

Rule 1. General

Functional Objective

- 1.1 The purpose of this Rule is to outline the principles and framework of Chapter 12 *Habitability* and its application.

Scope

- 1.2 The Rules of this chapter apply to all habitable spaces on a L-USV with embarked persons.
- 1.3 Division 2 *General Requirements* Chapter 01 *Core Design Rules* applies to all chapters of this division, as applicable to the design. In order to meet the Chapter 12 *Habitability* goal, the requirements of both this chapter and Division 2 *General Requirements* Chapter 01 *Core Design Rules* shall be met.
- 1.4 Division 3 *Ship Rules* Chapter 12 *Habitability* goal applies to all Naval Vessels greater than 24m length overall that carry persons. Therefore, to meet the Chapter 12 *Habitability* goal, a L-USV that requires embarked persons shall meet the requirements of both this chapter and the requirements of Division 3 *Ship Rules* Chapter 12 *Habitability* as applicable to the design.
 - 1.4.1 The Rules listed in this Chapter are based on those in the corresponding Chapter within Division 3 *Ship Rules* and have been adapted for L-USV. When referring to Division 2 or 3, the following terms may be interchanged.
 - 1.4.1.1 'Ship' as 'L-USV';
 - 1.4.1.2 'Crew' or 'Operator' or 'Embarked Person' as 'End User'; and
 - 1.4.1.3 'Primary, Main or Damage Control Station' as 'Remote Command Unit (RCU)'.
- 1.5 The Habitability arrangements of the L-USV with embarked persons shall match its RAS Maturity Level to allow End Users to safely operate the L-USV to achieve missions listed in the OSI.

Performance Requirements

- 1.6 Designers shall refer to the OSI to determine the numbers and types of embarked persons and the operational conditions and durations for which they are to be accommodated on the L-USV to meet the requirements of this Chapter.

Rule 2. Not Used

Rule 3. Not Used

Rule 4. Not Used

Rule 5. Not Used

Rule 6. Not Used

Rule 7. Not Used

Rule 8. Not Used

Rule 9. Not Used

Rule 10. Not Used

Rule 11. Remote Monitoring

Functional Objective

- 11.1 The L-USV shall have Remote Monitoring capabilities to ensure habitability.

Scope

- 11.2 This rule is applicable for L-USV with a Remote Monitoring level requirement of RM1 or greater, and with a requirement to support embarked persons whilst the L-USV is at sea.

Performance Requirements

- 11.3 The L-USV system is required to support embarked persons and has a remote monitoring level of RM1 or greater it shall have the ability to monitor systems critical to ensuring habitability.

Rule 12. Remote Control

Functional Objective

- 12.1 The L-USV shall have Remote Control capabilities to ensure habitability.

Scope

- 12.2 This rule is applicable for L-USV with a Remote Control level of RC3 or greater, and with a requirement to support embarked persons whilst the L-USV is at sea.

Performance Requirements

- 12.3 The L-USV system with a Remote Control level of RC3 or greater shall have the ability to control systems critical to ensuring habitability.

Rule 13. Autonomy

Functional Objective

- 13.1 The L-USV shall have autonomy control and decision-making capabilities to ensure the habitability.

Scope

- 13.2 This rule is applicable for L-USV with an Autonomy level of A1 or greater, and with a requirement to support embarked persons whilst the L-USV is at sea.

Performance Requirements

- 13.3 The L-USV with an Autonomy level of A1 or greater shall have the ability to autonomously control and sustain systems required for habitability.