

Australian Transport Council

National Standard
for
Commercial Vessels

PART F
SPECIAL VESSELS

SECTION 1
FAST CRAFT

SUBSECTION 1A
GENERAL REQUIREMENTS FOR FAST CRAFT

Edition 1

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FOREWORD

This Section of the National Standard for Commercial Vessels was prepared as part of the review of the Uniform Shipping Laws Code. It is additional to the content in the Uniform Shipping Laws Code, standards for vessels travelling at speed not being addressed within that document.

In drafting this Section, consideration was given to a number of factors including:

- a) Technological developments that have occurred in the performance of vessels engaged in domestic operations in Australia.
- b) The development of the IMO Code of Safety for High Speed Craft applicable to vessels engaged in international operations.
- c) The integration of aspects of the HSC Code into the high speed and light craft rules of most Classification Societies.
- d) The adoption of the HSC Code by Commonwealth legislation for domestic vessels engaged in interstate operations.
- e) The fact that some State and Territory jurisdictions already require compliance with parts of the HSC Code by administrative means to certain domestic vessels engaged in intrastate operations.

This Subsection of the NSCV is intended to be read in conjunction with Part A—Safety Obligations and Part B—General Requirements of the NSCV.

The NMSC Secretariat drafted this Subsection with the assistance of a reference group comprising representatives from industry, State and Territory marine Authorities, and the Australian Marine Safety Authority (AMSA). A workshop on Fast Craft was hosted by the NMSC in May 2000 with the purpose of reviewing safety issues to be addressed by the Standard.

A draft of this Subsection, along with a Regulatory Impact Statement, was released for public comment on 1 July 2001. A reference group met in September 2001 to review and assess the public comment and to provide recommendations on the document to the NMSC. The NMSC accepted the recommendations of the reference group on 14 November 2001 and the draft Subsection and RIS were revised accordingly.

The office of Regulation Review provided an assessment of the final RIS in March 2002. NMSC approved this version of the Subsection in February 2002, with the Australian Transport Council (ATC) endorsing the document for publication in July 2002.

This standard was first published in August 2002 on CD, and again in April 2005 on CD. There were no amendments between the first and second publication.

CONTENTS

CHAPTER 1	PRELIMINARY	8
1.1	Scope	8
1.2	Application	8
1.3	Objective.....	8
1.4	Referenced documents	8
1.5	Definitions.....	9
CHAPTER 2	CATEGORIES OF FAST CRAFT	11
2.1	Scope	11
2.2	Application	11
2.3	Objective.....	11
2.4	Categories of fast craft	11

INTRODUCTION TO PART F SECTION 1

Parts C to E of the National Standard for Commercial Vessels, which pertain to conventional vessels, were developed having in mind the manner in which conventional vessels are constructed and operated.

Technological change has seen the recent widespread introduction of vessels that travel at comparatively high speeds. Standards that were originally developed for vessels travelling at conventional speeds are unable to address the additional risks that may arise when a vessel operates at high speed. Additional measures are required in order to achieve an equivalent level of safety to that specified for conventional vessels.

The traditional solutions for controlling risk on domestic vessels are but one means of providing an appropriate level of safety. Often, the safety solutions developed for conventional vessels may not be practicable or efficient on vessels that travel at high speed. In particular, weight is a critical factor in achieving fast and competitive sea transportation.

Risk is a function of the probability of an event happening and the consequences that arise from that event. Thus risk can be reduced to acceptable levels by—

- a) reducing the probability of occurrence;
- b) reducing the consequences of occurrence; or
- c) a combination of both.

To accommodate the special needs of craft that operate at speed, alternative approaches that vary the balance between technical and operational controls may need to be considered. Thus, in addition to the normal requirements (including life-saving appliances, evacuation facilities, etc.) provided to reduce the consequences in the event of an accident occurring, greater emphasis is placed on reducing the probability that hazardous situations will arise.

Part F Section 1 (Fast Craft) of the NSCV has been derived from the International Code of Safety for High Speed Craft 2000 (HSC Code) published by the IMO¹. The HSC Code is based on the principle that safety levels can be significantly enhanced by operational measures and the infrastructure associated with a regular service on a particular route. This is unlike the conventional vessel safety philosophy that relies on the vessel being self-sustaining with all necessary emergency equipment being carried on board. The HSC Code provides a balance between technical and operational controls to produce a safety system, which is both appropriate and practical for controlling the risks on vessels within the scope of the Code.

¹ The International Code of Safety for High Speed Craft 2000 entered into force for vessels engaged in international operations on 1 July 2002.

Two principles of protection and rescue were embodied in the HSC Code. The first of these recognises craft where rescue assistance is readily available and the total number of passengers is limited, for which a reduction in passive and active protection relative to conventional requirements in SOLAS may be permitted. Such craft form the basis for Category A Passenger Craft under the HSC Code. The second concept recognises craft where rescue assistance is not readily available or the number of passengers is unlimited, for which additional passive and active safety precautions are required. These additional requirements provide for an area of safe refuge on board, redundancy of vital systems, increased watertight and structural integrity and full fire-extinguishing capacity. Such craft form the basis for Category B Passenger Craft under the HSC Code.

The HSC Code is intended for vessels engaged on international voyages. While, theoretically, the HSC Code can be applied to vessels of any size, in practice the HSC Code is more likely to be applied to vessels of a size which correspond to the larger end of the Australian domestic market. Moreover, vessels engaged on international voyages are likely to operate in coastal rather than sheltered water regions. The Australian domestic fleet includes vessels which are of relatively small size, or which operate exclusively on sheltered waters. Thus, the solutions specified for controlling risk in the HSC Code may not always fully take into account factors that are relevant to smaller fast craft, or fast craft that operate exclusively on sheltered waters.

The safety philosophy of this Standard is based on the active management and reduction of risk as well as the traditional philosophy of passive protection in the event of an accident. Management of risk through accommodation design, active safety systems, restricted operation, quality management and human factors engineering are essential for providing safety for high speed craft equivalent to conventional vessels that meet Parts C to E of this National Standard. Application of quantitative or qualitative risk management techniques is encouraged to assess risk and determine the validity of safety solutions.

A system of grading Fast Craft according to geographical limits, speed and equivalent length has been adopted in Part F Section 1 of the NSCV. This system aims to—

- a) differentiate between conventional vessels which can be adequately served by Parts C to E of this National Standard, and fast craft for which the standards specified in Part F Section 1 (Fast Craft) should be applied; and
- b) grade the solutions to account for differences in the nature of hazards and levels of risk associated with various fast craft so as to provide requirements that are both appropriate and practical for a particular vessel and its operation.

The risk factors associated with Category F1 Fast Craft under this National Standard are considered to be comparable to those for Category A and B Craft, and Cargo Craft under the HSC Code. Hence, the HSC

Code is applied to Category F1 Fast Craft without substantive modification.

The risk factors for some Category F2 Fast Craft differ from those envisaged under the HSC Code. The application of the HSC Code in its entirety may or may not be appropriate for such craft. A key risk parameter matrix approach is adopted for Category F2 Fast Craft. The HSC Code provisions are modified in accordance with key risk parameters matrices that grade requirements based on relevant risk factors. Modified requirements to achieve equivalent safety outcomes to those contained in the HSC Code have been developed for such craft.

As is the case in other parts of the Standard, the requirements contained in this Section are in terms of Required Outcomes, which may be satisfied by deemed-to-satisfy solutions or equivalent solutions. The concepts explained in Part B—General Requirements of this National Standard apply to Part F Section 1 (General Requirements for Fast Craft). Thus, new technology or designs can be accommodated provided equivalent safety is maintained. However, the onus of proving that equivalent safety lies with the applicant.

It is important to ensure that all the relevant Required Outcomes contained within the various clauses of this Standard are achieved and maintained in the initial design and construction and the subsequent operation, repairs and alteration, if any, of the vessel. Otherwise, non-compliance with any part could result in an imbalance that would adversely affect the safety of persons, be they passengers and crew or third parties not on board the vessel.

CHAPTER 1 PRELIMINARY

1.1 SCOPE

Part F Section 1 of the NSCV specifies requirements for the design, construction and operation of fast craft engaged in domestic operations in Australia. It shall be read in conjunction with NSCV Part B: General Requirements. Fast craft that operate at speeds in excess of 60 knots shall, in addition to meeting the requirements of this Section, also meet the requirements of Part F Section 3 (Novel craft) of the NSCV.

1.2 APPLICATION

This Section shall apply to—

- a) new fast craft; and
- b) existing fast craft subject to—
 - i) initial survey; or
 - ii) upgrade in survey.

This Section shall also apply to existing fast craft that have been altered and existing fast craft without change in survey status to the extent required by applicable legislation.

1.3 OBJECTIVE

The objective of Part F Section 1 is to provide vessels that operate at speed with levels of safety at least equivalent to those of conventional vessels operating in a similar environment, which have been constructed and operated in accordance with Parts B to E of this National Standard.

NOTES:

1. Special hazards that may arise with the operation of vessels at speed include: reduced capacity to forgive human error, instability at speed, high accelerations at speed, increased noise, reduced redundancy of structure, reduced time for corrective action for navigational errors due to speed, reduced time for evacuation, reduced reliability because of complexity, increased fatigue on operators.
2. Consequences likely to arise from these hazards include: foundering of the vessel, loss of control, personal injury caused by excessive accelerations that arise through operation or collision, structural failure through overloading or fatigue, loss of vessel in fire, entrapment of persons due to fire, injury during evacuation, capsize, increased occurrence of human error.

1.4 REFERENCED DOCUMENTS

The following documents are referred to in this Section:

Any document referred to in this Section should be considered to be the latest revision of the document including amendments.

NATIONAL MARINE SAFETY COMMITTEE

National Standard for Commercial Vessels

Part A—Safety Obligations

Part B—General Requirements

Part C—Design and Construction

Part D—Crewing

Part E—Operations

Part F—Special Craft

Section 1: Fast Craft

Subsection 1B—Category F1 Fast Craft

Subsection 1C—Category F2 Fast Craft

Section 3: Novel Craft

AUSTRALIAN MARITIME SAFETY AUTHORITY

Marine Orders Part 28 & 29

Ship-Helicopter Transfers—Australian code of safe practice

INTERNATIONAL MARITIME ORGANIZATION

International Safety Management Code Resolution A.741(18)

International Code of Safety for High Speed Craft 2000

International Convention for the Safety of Life at Sea 1974, as amended (SOLAS)

1.5 DEFINITIONS

For the purposes of Part F Section 1 of the National Standard for Commercial Vessels—

- a) the definitions given in Part B of the NSCV, in addition to those in this Clause, shall apply; and
- b) where there is any duplication in the terms defined between this Clause and Part B, the definition in this clause shall apply.

conventional vessel—

a vessel that is not of a type subject to the requirements of Part F—Special Vessels of the NSCV.

craft—

a fast craft.

crew—

all personnel who have duties and responsibilities in the emergency plan and may include hospitality staff.

equivalent length—

a length calculated as follows:

$$L_e = c_d L_m$$

where

- L_e = equivalent length, in metres.
- c_d = a coefficient determined from Table 1.
- L_m = measured length of the craft; in metres.

Table 1 — Values of coefficient c_d

	Value of $L_m/\nabla^{0.33}$		
	≤ 7.5	>7.5 and <9.0	≥ 9.0
Coefficient c_d	1	$2 - \left(\frac{L_m}{7.5 \nabla^{0.33}} \right)$	0.8

LEGEND

∇ = volume of displacement of the craft when fully laden, in cubic metres (m³)

NOTE: Equivalent length can provide a basis of an equivalent solution as a substitute for measured length in criteria determined by measured length provided equivalent safety is maintained.

fast craft—

a vessel capable of maximum speed equal to or exceeding 25 knots.

HSC Code—

the International Code of Safety for High-Speed Craft 2000.

officer—

a crew member who is required to hold a Certificate of Competency under this National Standard.

Operating compartment—

the enclosed area from which the navigation and control of the craft is exercised.

safety system—

an integrated system of safety elements which, when operating together, act to control risk to acceptable levels. The principal elements of the safety system are:

- a) Vessel standards
- b) Management standards ashore and on board
- c) Crew standards

CHAPTER 2 CATEGORIES OF FAST CRAFT

2.1 SCOPE

This Chapter provides a method for categorising vessels in relation to relative risk.

2.2 APPLICATION

This Chapter applies to all vessels that satisfy the definition of a fast craft specified in Clause 1.5.

2.3 OBJECTIVE

The objective of this Chapter is to categorise fast craft for the application of the safety standards contained in the NSCV Part F Section 1 Fast Craft.

2.4 CATEGORIES OF FAST CRAFT

2.4.1 Category F1 Fast Craft

A fast craft that meets all of the following conditions shall be defined as a Category F1 Fast Craft:

- a) Class 1 or Class 2 vessel.
- b) Greater than 35 m in equivalent length.
- c) Is either a Class A, B or C vessel in terms of its operational limits.

Figure 1 illustrates a flowchart summarising the criteria for determining Category F1 Fast Craft.

A Category F1 Fast Craft shall be subject to the requirements specified in Part F Subsection 1B (Category F1 Fast Craft) of the NSCV.

2.4.2 Category F2 Fast Craft

A fast craft that meets all of the following conditions shall be defined as a Category F2 Fast Craft:

- i) Class 1 vessel (i.e. carries more than 12 passengers).
- ii) Not a Category F1 Fast Craft.

Figure 1 illustrates a flowchart summarising the criteria for determining Category F2 Fast Craft.

A Category F2 Fast Craft shall be subject to the requirements specified in Part F Subsection 1C (Category F2 Fast Craft) of the NSCV.

2.4.3 Fast craft that are neither Category F1 nor F2 Fast Craft

Unless otherwise specified within this Section of the NSCV, fast craft that are neither Category F1 nor F2 Fast Craft shall either—

- a) meet the requirements for conventional vessels given in Parts C to E of the NSCV where the vessel has a maximum speed of less than 30 knots; or

- b) meet the requirements for conventional vessels, modified as appropriate by application of risk management techniques, where the vessel has a maximum speed of 30 knots or more.

NOTES:

1. Persons have safety obligations that go beyond the minimum requirements specified within this National Standard, see Part A for guidance. For Fast Craft under Clause 2.4.3, the standards for Category F2 Fast Craft contained within Part F Subsection 1C (Category F2 Fast Craft) of the NMSC may be useful for fulfilling these broader safety obligations.
2. For Fast Craft under Clause 2.4.3 b):
 - (A) Part F Section 3 (Novel Craft) of the NSCV provides techniques for risk analysis and risk management.
 - (B) The requirements for Category F2 Fast Craft in Subsection 1C may provide guidance for required outcomes and potential solutions to manage the risks.

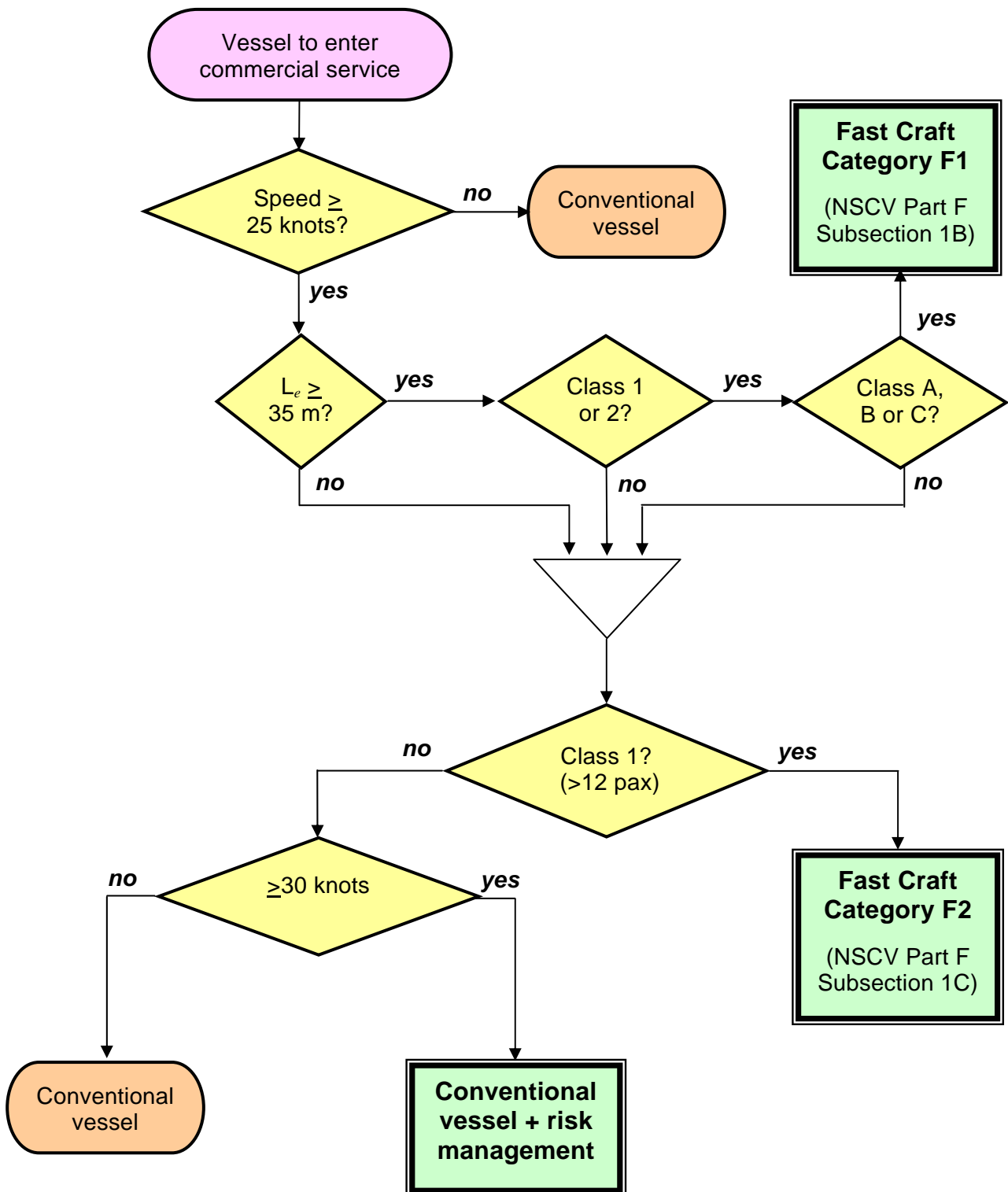


Figure 1 — Flowchart for determining the category of Fast Craft