



ABYC H-4 July, 2008

Hull Division Standard

**Hull Performance Project Technical
Committee**

The ABYC Standards and Technical Information Reports for Small Craft are the product of a consensus of representatives of government, industry and public sectors. It is intended solely as a guide to aid manufacturers and the marine community in the design, construction, equipage and maintenance of small craft.

ABYC reviews each standard at least every five years at which time it may be reaffirmed, revised, or withdrawn. ABYC welcomes any written comments on the standards and Technical information reports.

ABYC H-4

COCKPIT DRAINAGE SYSTEMS

HULL PERFORMANCE PROJECT TECHNICAL COMMITTEE

John Litjens, Chairman

Po Chang	Don Kueny	Kerry Robison
Richard Clark	Ralph Lambrecht	Eric Skaggs
Fred Cotey	Dale Larsen	G. Medford Smith
David DeHorn	Robert MacNeill	Richard Snyder
John Deurr	Jay McEwen	Augusto Villalon
James Getz	Ned Momany	Ted Wagner
Thomas Hale	Robert Newsome	
Rob Kaidy	Tony Riviezzo	

This list represents the membership at the time the Committee was balloted.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of ABYC or any document developed by the committee on which the member serves.

This standard was developed under procedures accredited as meeting the criteria for American National Standards. The Project Technical Committee that approved the Standard was balanced to ensure that individuals from competent and concerned interests have had an opportunity to participate.

This standard, which is the result of extended and careful consideration of available knowledge and experience on the subject, is intended to provide minimum performance requirements.

ABYC's Project technical committee meetings are open to the public. All contact regarding standards activity, interpretations, or meeting attendance should be directed to the ABYC Technical Department at comments@abycinc.org.

ABYC and its committee's do not "approve", "certify", or "endorse" any item, construction, or proprietary device.

REQUEST FOR INTERPRETATIONS

On written request the Hull Performance PTC will render an interpretation of any requirement of the Standard. The request for interpretation should be clear and unambiguous. Requests should be presented to the PTC in a manner which may be answered in a yes or no fashion.

The committee reserves the right to reconsider any interpretation when or if additional information which might affect it becomes available to the PTC. Persons aggrieved by an interpretation may appeal to the Committee for reinterpretation.

H-4 COCKPIT DRAINAGE SYSTEMS

Table of Contents

4.1	PURPOSE.....	1
4.2	SCOPE.....	1
4.3	REFERENCES.....	1
4.4	DEFINITIONS – For the purposes of this standard, the following definitions apply.....	1
4.5	REQUIREMENTS IN GENERAL	2
4.6	QUICK DRAINING COCKPITS.....	3
4.7	SELF-BAILING COCKPITS	4
4.8	NON-DRAINING COCKPITS.....	4
4.9	COCKPITS THAT ARE DRAINED BY OPERATOR INTERVENTION ONLY	4
4.10	ASSISTED BAILING	4
H-4 APPENDIX		5
FIGURE AP.4.1 EXAMPLES OF COCKPIT DEPTHS		5
AP.4.2 TEST PROCEDURE FOR COCKPIT QUICK DRAIN ASSESSMENTS (DRY LAND)		6
AP.4.3 TEST PROCEDURE FOR COCKPIT QUICK DRAIN ASSESSMENTS (FLOATING BOAT)..		6
AP.4.4 CALCULATION METHOD FOR DETERMINATION OF DRAIN SIZE		7
FIGURE Ap.4.4.1 COCKPIT TO HULL VOLUME RATIO VS. TIME TO DRAIN.....		7
FIGURE Ap.4.4.2 DRAIN AREA VS. FLOW RATE		8
TABLE AP 4.4.1 FLOW REDUCTION FACTORS.....		9
Origin and Development of ABYC H-4, Cockpit Drainage Systems.....		9

H-4 COCKPIT DRAINAGE SYSTEMS

Based on ABYC's assessment of the existing technology, and the problems associated with achieving the goals of this standard, ABYC recommends compliance with this standard for all boats, associated equipment, and systems manufactured and/or installed after July 31, 2009.

4.1 PURPOSE

This standard is a guide for the definition, design, and construction of cockpit drainage systems.

4.2 SCOPE

This standard applies to all boats with cockpits.

4.3 REFERENCES

4.3.1 The following publications form a part of this standard. Unless otherwise noted the latest version of referenced standards shall apply.

4.3.1.1 ABYC - American Boat & Yacht Council, Inc., 613 Third St. Suite 10, Annapolis, MD 21403
Phone: (410) 990-4460 Fax: (410) 990-4466. Website: www.abycinc.org

[ABYC H-3, Windows, Windshields, Exterior Hatches, Doors, Port Lights, and Glazing Materials](#)

[ABYC H-5, Boat Load Capacity](#)

[ABYC H-22, Electric Bilge Pump Systems](#)

[ABYC H-27, Seacocks, Thru-Hull Connections, and Drain Plugs](#)

[ABYC S-30, Outboard Engine and Related Weights](#)

4.4 **DEFINITIONS** – For the purposes of this standard, the following definitions apply.

4.4.1 Assisted Bailing - A cockpit fitted with a drainage system that allows water entering the cockpit to drain to a cavity (i.e. bilge, locker, sump box) within the boat structure and, in turn, is eliminated by a bailing method, i.e. pump (either manual, mechanical, or electrical), or manual scoop.

4.4.2 Bow cockpit - A cockpit forward of the operator that is neither an extension of, nor directly communicates with, the main cockpit.

4.4.3 Boat Weight -

4.4.3.1 Outboard – The boat weight includes heaviest outboard engine for which the boat is rated ([See ABYC S-30, Outboard Engine and Related Weights](#)), full permanent fuel tanks, full permanent water tanks, the heaviest production tolerances, and factory supplied, permanently installed, non-portable appurtenances.

4.4.3.2 Sterndrive and inboard – The boat weight includes sterndrive(s) and engine(s), batteries, full fuel system, full permanent water tanks, the heaviest production tolerances, and factory-supplied, permanently installed, non-portable appurtenances.

4.4.3.3 Manual or sail powered boats not recommended for use with mechanical propulsion – The boat weight includes the heaviest production tolerances, full permanent water tanks, and factory-supplied, permanently installed, non-portable appurtenances.

4.4.4 Cockpit - Any deck area that is lower than the adjacent weather deck of the boat and exposed to the elements.

4.4.5 Cockpit depth -The maximum depth of water that can be contained in the cockpit with the drains closed, [see appendix Fig. AP 4.1](#).

4.4.6 Direct communication -The free flow of water in either direction.