



RULES FOR

SURVEY AFTER CONSTRUCTION 2018

PART 7

(Updated February 2018 – see next page)

**American Bureau of Shipping
Incorporated by Act of Legislature of
the State of New York 1862**

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Updates

February 2017 consolidation includes:

- January 2017 version plus Notice No. 1 and Corrigenda/Editorials

Rule Change Notice (2018)

The effective date of each technical change since 1993 is shown in parenthesis at the end of the subsection/paragraph titles within the text of each Part. Unless a particular date and month are shown, the years in parentheses refer to the following effective dates:

(2000) and after	1 January 2000 (and subsequent years)	(1996)	9 May 1996
(1999)	12 May 1999	(1995)	15 May 1995
(1998)	13 May 1998	(1994)	9 May 1994
(1997)	19 May 1997	(1993)	11 May 1993

Listing by Effective Dates of Changes from the 2017 Rules

The reference date which is indicated in the parentheses following the title of the requirement in this Part is the date that the requirement becomes effective [e.g., 7-3-2/3.19.3(a)i) “Ballast Tanks” (1 July 2017) is to apply for vessels undergoing survey on or after 1 July 2017].

Notice No. 1 (effective on 1 July 2017) to the 2017 Rules, which is incorporated in the 2018 Rules, is summarized below.

EFFECTIVE DATE 1 July 2017 – shown as (1 July 2017)

Part/Para. No.	Title/Subject	Status/Remarks
7-3-2/1.1.2(j)	<No Title>	To require sounding tube closures to be included in the Annual Survey. (Incorporates Notice No. 1)
7-3-2/3.19.3(a)i)	Ballast Tanks	To align the requirements with the latest IACS UR Z10.3 requirements. (Incorporates Notice No. 1)
7-6-2/1.1.8(e) (New)	Harmonic Distortion	To introduce requirements for survey of harmonic filters and harmonic distortion levels, in line with IACS UR E24 June 2016. (Incorporates Notice No. 1)
7-A-11/17.12	Cladding on Taper	To address the early multiple failures of tail shafts related to defects in cladding at transition region. (Incorporates Notice No. 1)
7-A-11/17.15	Final Examination	To address the early multiple failures of tail shafts related to defects in cladding at transition region. (Incorporates Notice No. 1)
7-A-14/1.1	Survey and Maintenance Intervals	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/1.2iv) (New)	Reliability Based Maintenance (RBM)	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/1.2v) (New)	Design for Reliability (DFR)	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/1.3	Optional Notation	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/Table 1 (New)	Program Definitions, Notations and References	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/3.3	Surveys	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/5.1	General	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
7-A-14/5.3	Implementation Surveys	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/5.5	Machinery Status Indicators	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/9 (Title)	Annual Surveys and Reporting – Planned Maintenance and Condition Monitoring	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/9.5ii)	<No Title>	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/11 (Title)	Onboard Documentation – Planned Maintenance and Condition Monitoring	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/15	Condition Monitoring	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/ 15.5.1(a)vi)	Baseline Data	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/ 15.5.2(a)ii)	<No Title>	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/ 15.5.2(a)iii)	<No Title>	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/17	Reliability Based (RBM) or Reliability Centered Maintenance (RCM)	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/18.3	Optional Notation	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)
7-A-14/18.5iii)	<No Title>	To align Appendix 7-A-14 with the <i>Guide for Surveys Based on Machinery Reliability and Maintenance Techniques</i> . (Incorporates Notice No. 1)

EFFECTIVE DATE 1 January 2018 – shown as (2018)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
7-2-4 (Deleted)	Survey After Ocean Transit Tow	To remove redundant requirements (covered in Part 7 of the ABS <i>MODU Rules</i>).
7-3-2/3.1.8 (New)	Vessels other than Liquefied Gas Carriers Utilizing Gas or other Low Flash Point Fuels	To align ABS rules with IACS and to further align ABS rules with the IGF Code and industry standards.
7-3-2/5.23.1	Containment Systems	To account for limited access due to the configuration of the containment system, that for CNG, the cargo containment system is not insulated, for higher pressures, that on CNG carriers are no interbarrier spaces, and that there could be large numbers of pressurized containers.
7-3-2/11.7.2	<No Title>	To align the requirements with the latest IACS UR Z10.2, Rev.33/6.4.2, UR Z10.4, Rev.14/6.4.2, UR Z10.5, Rev.16/6.4.2.

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
7-6-2/1.7	Vessels other than Liquefied Gas Carriers Utilizing Gas or other Low Flash Point Fuels	To align ABS rules with IACS and to further align ABS rules with the IGF Code and industry standards.
7-6-2/1.9 (Deleted)	Vessels with Single or Dual Fuel Engines	To align ABS rules with IACS and to further align ABS rules with the IGF Code and industry standards.
7-6-2/3.7	Vessels other than Liquefied Gas Carriers Utilizing Gas or other Low Flash Point Fuels	To align ABS rules with IACS and to further align ABS rules with the IGF Code and industry standards.
7-6-2/3.9 (Deleted)	Vessels with Single or Dual Fuel Engines	To align ABS rules with IACS and to further align ABS rules with the IGF Code and industry standards.
7-9-24 (New)	Hull Inspection and Maintenance Program	To incorporate the HIMP Survey Requirements in the <i>Rules for Survey After Construction (Part 7)</i> .
7-9-25 (New)	Lithium Batteries	To incorporate Survey requirements from the <i>ABS Guide for Use of Lithium Batteries in the Marine and Offshore Industries</i> in the <i>Rules for Survey After Construction (Part 7)</i> .
7-A-4/9	Thickness Measurement Company Approval Requirements	To improve consistency of certification of hull thickness measurement firms and remove the reservation against IACS UR Z17.
7-A-4/Table 1A	Individual Wastage Allowances, Non-CSR Tankers 90 M and Over Built to ABS Class	To align with current practice for liquefied gas carriers and Rule change for bulkers and ore carriers in line with refinement of Rule requirements for oil carrier in 1 July 2005.
7-A-4/Table 1B (New)	Individual Wastage Allowances, Liquefied Gas Carriers 90 M and Over Built to ABS Class	To align with current practice for liquefied gas carriers and Rule change for bulkers and ore carriers in line with refinement of Rule requirements for oil carrier in 1 July 2005.
7-A-4/Table 1C (New)	Individual Wastage Allowances, Other Conventional Vessels 90 M and Over Built to ABS Class	To align with current practice for liquefied gas carriers and Rule change for bulkers and ore carriers in line with refinement of Rule requirements for oil carrier in 1 July 2005.
7-A-5/1	Thickness Measurement Company Approval Requirements	To improve consistency of certification of hull thickness measurement firms and remove the reservation against IACS UR Z17.
7-A-14/21 (Deleted)	ABS Offices Responsible for PMP and RCM	To be consistent with other ABS Rules.

Listing by Effective Dates of Changes from the 2018 Rules

Notice No. 1 (effective on 1 February 2018) to the 2018 Rules is summarized below.

EFFECTIVE DATE 1 February 2018 – shown as (1 February 2018)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
7-3-2/1.1.17 (New)	Cargo Space Fire Dampers and Ventilation Trunks/Ducts	To require cargo space fire dampers to be included in the Annual Survey. (Incorporates Notice No. 1)
7-3-2/5.1.1	Survey Planning Meeting – ESDC and Non-ESP Vessels	To require a written survey program, which is already required for ESP and ESDC vessels, in order to document the requirements and planned execution of the special survey. (Incorporates Notice No. 1)
7-3-2/5.1.7(a)	Spaces	To require internal examination of structural ventilation ducts and structural downflooding ducts, in line with IACS Rec. 111. (Incorporates Notice No. 1)
7-3-2/5.1.18 (New)	Cargo Space Fire Dampers	To require cargo space fire dampers to be included in the Special Periodical Survey. (Incorporates Notice No. 1)
7-3-2/5.15.1 (Deleted)	Survey Planning	To remove unnecessary requirement due to revision to 7-3-2/5.1.1 where all Non-ESP vessels are required to develop a written survey program. (Incorporates Notice No. 1)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
7-3-2/10	Preparations for Surveys of ESDC and Non ESP Vessels	To include all Non ESP vessels in addition to ESDC vessels. (Incorporates Notice No. 1)
7-A-8/2 (New)	Sample Survey Plan for Special Surveys for Non ESP and Non ESDC Vessels	To include all Non ESP vessels in addition to ESDC vessels. (Incorporates Notice No. 1)

PART 7

Foreword (2001)

In an effort to facilitate usage and better maintain survey after construction Rules, ABS has consolidated twenty-two (22) ABS Rules and Guides into this “Rules for Survey after Construction” booklet for 2001. These requirements apply to and supersede all survey after construction Rules required by the ABS Rules and Guides listed in Chapter 1, Section 1, Subsection 1 “Application” (7-1-1/1) of these Rules. These Rules do not apply to any other ABS Rules or Guide containing survey after construction requirements unless a particular Rule or Guide references any of the survey requirements of the ABS Rules or Guides listed in 7-1-1/1.

Chapters 1 through 8 contains survey Rules that have common requirements for different vessel types and geographical service areas. Where survey requirements differ according to the vessel’s geographical limitation in these Rules, the chapter has been sectioned into Unrestricted Service, Great Lakes Service, and Rivers and Intracoastal Waterways Services.

Where survey requirements are common to different vessel types, each survey type will contain requirements applicable to all vessels. When additional requirements are applicable to a specific vessel type, or are in lieu of the common requirement, they will be listed after the requirements for all vessels. The requirements for vessels in the Enhanced Survey Program (ESP) have been incorporated into each survey type.

Chapter 9 contains survey requirements to maintain a Class Notation for an additional system or service.

Chapters 10 through 12 contain unique survey Rules for Floating Drydocks, Underwater Vehicles and Sailing Yachts not Receiving **AMS** Notation. The survey interval and survey requirements noted in these chapters only apply to these vessel types.

The Appendix includes several ABS Guides relating to survey after construction and also contains planning, reporting and certification of thickness measurement firms required by the Enhanced Survey Program.

In order to further explain the new formatting contained in these Rules, sample vessels and their applicable survey requirements are illustrated in the table on the following page.

Examples:

Sample Vessels:

- **✕ A1 Bulk Carrier, ⑤, ✕ AMS, ✕ ACCU (ESP)**
- **✕ A1 Oil Carrier, ⑤, ✕ AMS (ESP)**
- **A1 Container Carrier, AMS, ACCU, OMBO**
- **✕ A1 Barge, River, Bay and Sound Service**

Survey Type	Bulk Carrier	Oil Carrier	Container Carrier	Barge
Annual Survey Hull				
All Vessel Requirements	7-3-2/1.1	7-3-2/1.1	7-3-2/1.1	7-3-2/1.1
Specific Vessel requirements	7-3-2/1.7	7-3-2/1.13		7-3-2/1.5
Intermediate Survey Hull				
All Vessel Requirements	7-3-2/3.1	7-3-2/3.1	7-3-2/3.1	7-3-2/3.1
Specific Vessel requirements	7-3-2/3.7	7-3-2/3.17		7-3-2/3.5
Special Periodical Survey Hull				
All Vessel Requirements	7-3-2/5.1	7-3-2/5.1	7-3-2/5.1	7-3-2/5.1
Specific Vessel requirements	7-3-2/5.7	7-3-2/5.13		7-3-2/5.5
Thickness Measurement requirements	7-3-2/5.7.3	7-3-2/5.13.4	7-3-2/5.1.14(c)	7-3-4/1 7-3-4/1.3
Drydocking Survey	7-4-1/1	7-4-1/1	7-4-1/1	7-4-1/1
Tailshaft Survey	7-5-1/1	7-5-1/1	7-5-1/1	Not applicable
Annual Survey Machinery				
All Vessel Requirements	7-6-2/1.1	7-6-2/1.1	7-6-2/1.1	7-6-2/1.1
Specific Vessel requirements		7-6-2/1.3		
OMBO notation			7-9-3/1.1	
Special Periodical Survey Machinery				
All Vessel Requirements	7-6-2/3.1	7-6-2/3.1	7-6-2/3.1	7-6-2/3.1
Specific Vessel requirements		7-6-2/3.3		
Boiler Survey	7-7-1	7-7-1	7-7-1	Not applicable
Annual Survey Automation	7-8-1	7-8-1	7-8-1	Not applicable
Special Periodical Survey Automation	7-8-2	7-8-2	7-8-2	Not applicable

Rules for Survey After Construction

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PART 7

CHAPTER 1 Conditions for Survey After Construction

SECTION 1 General Information

1 Application (2002)

1.1 Chapters 1 through 9 (2013)

The requirements for Survey After Construction contained in Part 7, Chapters 1 through 9 apply to the following ABS Rules and Guides:

- *Rules for Building and Classing Steel Vessels*
- *Rules for Building and Classing Steel Vessels Under 90 Meters in Length*
- *Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways*
- *Rules for Building and Classing Bulk Carriers for Service on the Great Lakes*
- *Rules for Building and Classing Steel Barges*
- *Guide for Building and Classing Accommodation Barges*
- *Rules for Building and Classing High Speed Craft*
- *Rules for Building and Classing Offshore Support Vessels*
- *Rules for Building and Classing High-Speed Naval Craft*
- *Guide for Building and Classing International Naval Ships*
- *Guide for Building and Classing Yachts*
- *Guide for Building and Classing Integrated Tug-Barge (ITB) Combinations Intended to Operate on the Great Lakes*
- *Guide for the Environmental Protection Notation for Vessels*
- *Guide for the Environmental Protection Notation for Offshore Units, Floating Installations, and Liftboats*
- *Guide for Hull Condition Monitoring Systems*
- *Guide for One Man Bridge Operated (OMBO) Ships*
- *Guide for Automatic or Remote Control and Monitoring Systems for Vessels in Port*
- *Guide for Bridge Design and Navigational Equipment/Systems*

1.3 Chapters 1 and 10 through 12 (2005)

The requirements for Survey After Construction contained in Part 7, Chapters 1 and 10 through 12 apply to the following ABS Rules and Guides:

- *Rules for Building and Classing Steel Floating Drydocks*
- *Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities*
- *Guide for Building and Classing Yachts*

1.5 Appendix (2013)

Additionally, the following Appendices are contained in Part 7:

- *Underwater Inspection in Lieu of Drydocking*
- *Survey of Voyage Repairs to Hull Structure*
- *Lay-up and for Reactivation of Laid-up Ships*
- *Hull Thickness Measurement*
- *Bronze and Stainless Steel Propeller Castings*
- *Repair and Cladding of Shafts*
- *Ultrasonic Examination of Carbon Steel Forgings for Tail Shafts*
- *Preventative Maintenance Techniques*

Note: SVR references in these Survey After Construction Rules refer to the *Rules for Building and Classing Steel Vessels*.

1.7 Enhanced Survey Program (ESP) Notations (2005)

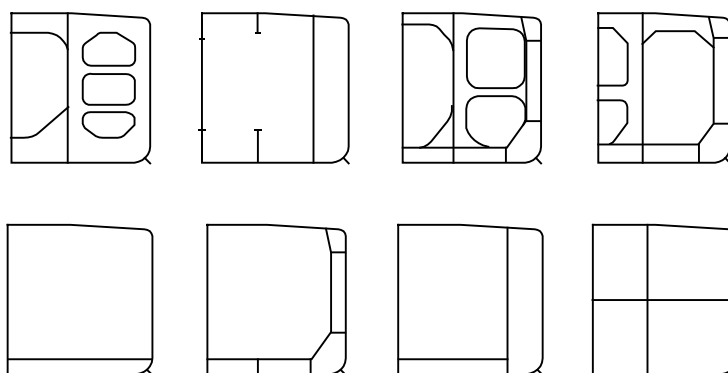
Oil carriers including combination carriers, bulk carriers and chemical carriers, as defined in 7-1-1/3, are subject to an Enhanced Survey Program and will be identified in the *Record* by the notation, **ESP**. These vessels are to comply with the requirements identified in this Part as **ESP** vessels (e.g., Bulk Carriers ESP, etc.).

1.7.1 Ship Type and Enhanced Survey Program (ESP) Notations

1.7.1(a) *Oil Carrier (1 July 2012)*. The ship type notation **Oil Carrier**, or equivalent (e.g., **Fuel Oil Carrier**), and the notation, **ESP** is to be assigned to seagoing self-propelled ships which are constructed generally with integral tanks and intended primarily to carry oil in bulk. Refer to definition of oil as noted in 7-1-1/3.39. This type notation is to be assigned to tankers of both single and double hull construction, as well as tankers with alternative structural arrangements, e.g., mid-deck designs. Typical midship sections are given in 7-1-1/Figure 1.

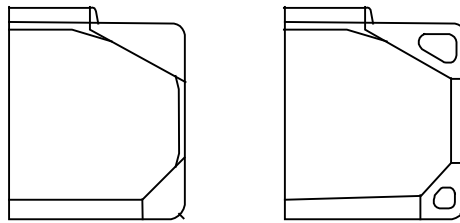
Note: Oil Tankers that do not comply with MARPOL I/19 may be subject to International and/or National Regulations requiring phase out under MARPOL I/20 and/or MARPOL I/21.

FIGURE 1



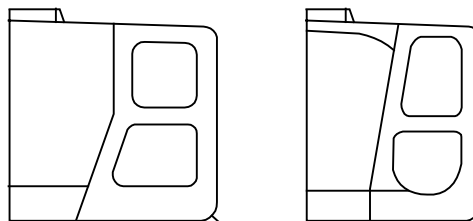
1.7.1(b) *Bulk Carrier (2017)*. The ship type notation **Bulk Carrier**, or equivalent, including those with self-unloading features, and the notation, **ESP** is to be assigned to seagoing self-propelled ships which are constructed generally with single deck, double bottom, hopper side tanks and topside tanks and with single or double side skin construction in cargo length area and intended primarily to carry dry cargoes in bulk. Typical midship sections are given in 7-1-1/Figure 2.

FIGURE 2



1.7.1(c) *Ore Carrier (2017)*. The ship type notation **Ore Carrier**, or equivalent, including those with self-unloading features, and the notation, **ESP** is to be assigned to seagoing self-propelled ships which are constructed generally with single deck, two longitudinal bulkheads and a double bottom throughout the cargo length area and intended primarily to carry ore cargoes in the center holds only. Typical midship sections are given in 7-1-1/Figure 3.

FIGURE 3

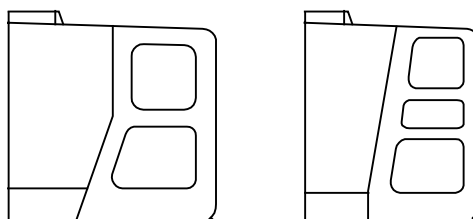


1.7.1(d) *Combination Carrier (1 July 2012)*. “Combination carrier” is a general term applied to ships intended for the carriage of both oil and dry cargoes in bulk; these cargoes are not carried simultaneously, with the exception of oily mixture retained in slop tanks. The ship types defined in i) and ii) below are to be considered to be combination carriers.

- i) The ship type notation **Ore/Oil Carrier**, or equivalent, and the notation, **ESP** is to be assigned to seagoing self-propelled ships which are constructed generally with single deck, two longitudinal bulkheads and a double bottom throughout the cargo length area and intended primarily to carry ore cargoes in the center holds or of oil cargoes in center holds and wing tanks. Typical midship sections are given in 7-1-1/Figure 4.

Note: Ore/Oil carriers that do not comply with MARPOL I/19 may be subject to International and/or National Regulations requiring phase out.

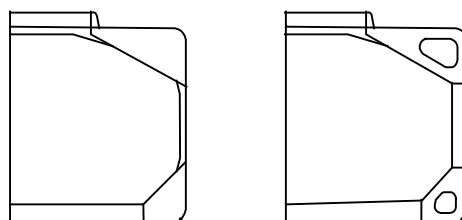
FIGURE 4



- ii) The ship type notation **Oil/Bulk/Ore (OBO) Carrier**, or equivalent, and the notation, **ESP** is to be assigned to seagoing self-propelled ships which are constructed generally with single deck, double bottom, hopper side tanks and topside tanks, and with single or double side skin construction in the cargo length area, and intended primarily to carry oil or dry cargoes, including ore, in bulk. Typical midship sections are given in 7-1-1/Figure 5.

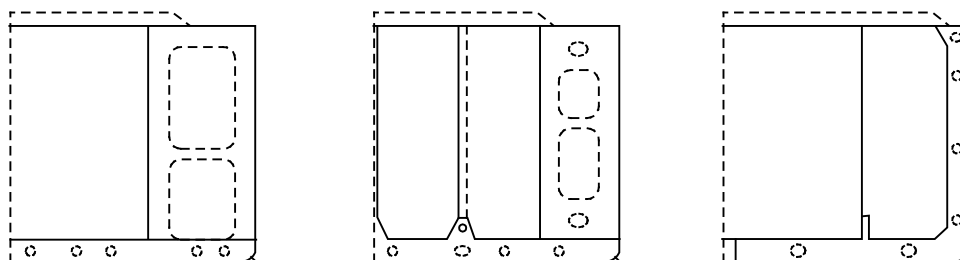
Note: Oil/Bulk/Ore carriers that do not comply with MARPOL I/19 may be subject to International and/or National Regulations requiring phase out.

FIGURE 5



1.7.1(e) *Chemical Carrier*. The ship type notation **Chemical Carrier**, or equivalent, and the notation, **ESP** is to be assigned to seagoing self-propelled ships which are constructed generally with integral tanks and intended primarily to carry chemicals in bulk. This type notation is to be assigned to tankers of both single or double hull construction, as well as tankers with alternative structural arrangements. Typical midship sections are given in 7-1-1/Figure 6.

FIGURE 6



1.9 Expanded Survey (ESDC) Notations (2005)

General Dry Cargo Vessels as defined by 7-1-1/3.33 are subject to an Expanded Survey and will be identified in the *Record* by the notation **ESDC**. These vessels are to comply with the requirements identified in this Part as “General Dry Cargo Vessels (ESDC)”.

3 Definitions (1999)

3.1 Active Corrosion

Active Corrosion means loose scale and evidence of moisture penetration to the steel.

3.2 Air Pipe Head (1 July 2006)

Air Pipe Heads installed on the exposed decks are those extending above the freeboard deck or superstructure decks.

3.3 Allowable Corrosion or Wastage Limit

Allowable Corrosion or *Wastage Limit* is the acceptable corrosion limit for the vessel’s structure in a given area. Also known as *Allowable Limit*.

3.5 Bay

Bay is the area between adjacent transverse frames from longitudinal bulkhead to longitudinal bulkhead (or side shell).

3.7 Ballast Tank – All Vessels (1 July 2006)

A *Ballast Tank* is a tank which is used primarily for the carriage of salt water ballast.

3.9 Ballast Tank – Tankers ESP (1 July 2006)

A *Ballast Tank* is a tank which is used solely for the carriage of salt water ballast.

3.11 Ballast Tank – Bulk Carriers ESP (1 July 2006)

A *Ballast Tank* is a tank which is used solely for salt water ballast, or where applicable, a space which is used for both cargo and salt water ballast will be treated as a ballast tank when substantial corrosion has been found in that space. A double side tank is to be considered as a separate tank even if it is in connection to either the topside tank or the hopper side tank.

3.13 Bulk Carrier (1 July 2013)

A *Bulk Carrier* is a ship which is constructed generally with single deck, double bottom, topside tanks and hopper side tanks in cargo spaces, and is intended primarily to carry dry cargo in bulk. Combination Carriers are included. Ore and combination carriers are not subject to the IACS Common Structural Rules.

3.14 Bulk Carrier – Double Skin (1 July 2006)

A *Double Skin Bulk Carrier* is a ship which is constructed generally with single deck, topside tanks and hopper side tanks in cargo spaces, and is intended primarily to carry dry cargo in bulk, including such types as Ore Carrier and Combination Carrier, in which all cargo holds are bounded by a double-side skin (regardless of the width of the wing space).

3.15 Cargo Area – Tankers (1 July 2006)

Cargo Area is that part of the ship that contains cargo tanks, slop tanks and cargo/ballast pump rooms, cofferdams, ballast tanks, fuel tanks and void spaces adjacent to cargo tanks or slop tanks; and also deck areas throughout the entire length and breadth of the part of the ship over the above-mentioned spaces. Where independent tanks are installed in hold spaces, cofferdams, ballast or void spaces at the after end of the aftermost hold space or at the forward end of the forwardmost hold space are excluded from the cargo area.

3.16 Cargo Length Area – All Vessels (1 July 2006)

Cargo Length Area is that part of the vessel which contains cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces.

3.17 Chemical Carrier

A *Chemical Carrier* is a ship which is constructed or adapted and used for the carriage in bulk of any liquid product listed in the SVR Section 5C-9-17.

3.19 Close-up Survey

A *Close-up Survey* is a survey where the details of structural components are within the close visual inspection range of the Surveyor, i.e., normally within hand's reach.

3.21 Coating Condition (1 July 2006)

Coating Condition of hard coatings is defined as follows:

GOOD is a condition with only minor spot rusting.

FAIR is a condition with local breakdown at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for *POOR* condition.

POOR is a condition with general breakdown of coating over 20% or more of areas, or hard scale at 10% or more of areas under consideration.

Reference is made to IACS Recommendation No.87 "Guidelines for Coating Maintenance & Repairs for Ballast Tanks and Combined Cargo / Ballast Tanks on Oil Tankers".

3.23 Combined Cargo/Ballast Tank – All Vessels (1 July 2011)

A *Combined Cargo/Ballast Tank* is a tank which is used for the carriage of cargo or ballast water as a routine part of the vessel's operation and will be treated as a ballast tank. Cargo tanks in which water ballast might be carried only in exceptional cases per MARPOL I/18(3) are to be treated as cargo tanks.

3.25 Corrosion Prevention System (2010)

A *Corrosion Prevention System* is normally considered a full hard protective coating. Hard Protective Coating is usually to be epoxy coating or equivalent. Other coating systems, which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives, provided that they are applied and maintained in compliance with the manufacturer's specification.

3.27 Critical Structural Areas

Critical Structural Areas are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships to be sensitive to cracking, buckling or corrosion that could impair the structural integrity of the ship.

3.28 Edge Corrosion (1 July 2013)

Edge Corrosion is defined as local corrosion at the free edges of plates, stiffeners, primary support members and around openings. An example of edge corrosion is shown in 7-A-4/Figure 3.

3.29 Excessive Corrosion

Excessive Corrosion is corrosion that exceeds the allowable limit.

3.31 Extensive Area of Corrosion

Extensive Area of Corrosion is corrosion of hard and/or loose scale, including pitting, over 70% or more of the plating surface in question, accompanied by evidence of thinning.

3.33 General Dry Cargo Vessel (ESDC) (1 July 2014)

A *General Dry Cargo Vessel (ESDC)* is a vessel carrying solid cargoes other than:

- Bulk carriers, Double Skin or Non-Double Skin, subject to ESP
- Dedicated container carriers
- Ro-ro cargo vessels
- Refrigerated cargo vessels
- Dedicated wood chip carriers
- Dedicated cement carriers
- Livestock carriers
- Deck cargo ships (A deck cargo ship is a ship that is designed to carry cargo exclusively above deck without any access for cargo below deck.)
- (1 July 2012) General dry cargo ships of double side-skin construction, with double side-skin extending for the entire length of the cargo area, and for the entire height of the cargo hold to the upper deck.

3.35 Grooving Corrosion (1 July 2013)

Grooving Corrosion is typically local material loss adjacent to weld joints along abutting stiffeners and at stiffener or plate butts or seams. An example of groove corrosion is shown in the appendix 7-A-4/Figure 4.

3.36 Lightering Service (1 July 2004)

Lightering Service is defined as the side-by-side mooring of two vessels, either while underway or stationary, for the purpose of transferring petroleum cargo, excluding bunkers, from a ship to be lightered to a service vessel. Both the lightered vessel and the service vessel are to be considered in lightering service.

3.37 Localized Corrosion

Localized Corrosion is by name local in nature and may be caused by a local breakdown in coating from contact damage, insufficient preparation or at areas of stress concentration.

3.39 Oil

Oil, for the purpose of the Rules, means petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products other than petrochemicals which are subject to the provisions of Annex II of MARPOL 73/78.

3.41 Oil Carrier

An *Oil Carrier* is a ship which is constructed primarily to carry oil in bulk and includes a ship of similar types such as a Combination Carrier (Ore/Oil), etc.

3.43 Oil Carrier – Double Hull (2004)

An *Oil Carrier – Double Hull* is a ship which is constructed primarily to carry oil in bulk and includes similar types of ships such as a Combination Carrier (Ore/Oil), etc., which have the cargo tanks protected by a double hull which extends for the entire length of the cargo area, consisting of double sides and double bottom spaces for the carriage of water ballast or void spaces.

3.45 Overall Corrosion

Overall Corrosion appears as a non-protective rust which can uniformly occur on tank internal surfaces that are uncoated, or where coating has totally deteriorated. The rust scale continues to break off, exposing fresh metal to corrosive attack. Thickness cannot be judged visually until excessive loss has occurred.

3.47 Overall Survey

An *Overall Survey* is a survey intended to report on the overall condition of the hull structure and to determine the extent of additional Close-up Surveys.

3.49 Panel

Panel is the area between adjacent transverse frames from longitudinal stiffener to longitudinal stiffener.

3.51 Pitting Corrosion (1 July 2013)

Pitting Corrosion is defined as scattered corrosion spots/areas with local material reductions which are greater than the general corrosion in the surrounding area. Pitting intensity is defined in 7-A-4/Figure 5.

3.53 Prompt and Thorough Repair

A *Prompt and Thorough Repair* is defined as a permanent repair completed at the time of the survey to the satisfaction of the Surveyor.

3.54 Renewal Thickness (1 July 2013)

Renewal Thickness (t_{ren}) is the minimum allowable thickness, in mm, below which renewal of structural members is to be carried out.

3.55 Representative Spaces/Tanks (1 July 2006)

Representative Spaces/Tanks are those which are expected to reflect the condition of other spaces of similar type and service and with similar corrosion prevention systems. When selecting representative spaces, account should be taken of the service and repair history onboard and identifiable Critical Structural Areas and/or Suspect Areas.

3.56 Ro-Ro Definitions (2012)

3.56.1 Ro-Ro Ship

A ship which utilizes a loading ramp to enable wheeled vehicles to be rolled-on and rolled-off the ship.

3.56.2 Ro-Ro Passenger Ship(Ro-Pax)

A passenger ship with Ro-Ro spaces or special category spaces.

3.56.3 Ro-Ro Spaces

Spaces not normally sub-divided in any way and normally extending to either a substantial length or the entire length of the ship, in which motor vehicles with fuel in their tanks for their own propulsion and/or goods (packaged or in bulk, in or on rail or road cars, vehicles (including road or rail tankers), trailers, containers, pallets, demountable tanks or in or on similar stowage units or, other receptacles) can be loaded and unloaded normally in a horizontal direction.

3.56.4 Special Category Spaces

Those enclosed vehicle spaces above or below the bulkhead deck, into and from which vehicles can be driven and to which passengers have access. Special category spaces may be accommodated on more than one deck provided that the total overall clear height for vehicles does not exceed 10 m.

3.56.5 Securing Device

A device used to keep the door closed by preventing it from rotating about its hinges.

3.56.6 Supporting Device

A device used to transmit external or internal loads from the door to a securing device and from the securing device to the ship's structure, or a device other than a securing device, such as a hinge, stopper or other fixed device, that transmits loads from the door to the ship's structure.

3.56.7 Locking Device

A device that locks a securing device in the closed position.

3.57 Serious/Significant Corrosion

Serious/Significant Corrosion means more than 30% corrosion, and active scale is present. Active scale that is loose or has fallen off the structure.

3.59 Spaces (1 July 2008)

Spaces are separate compartments including holds, tanks, cofferdams, and void spaces bounding cargo holds, decks, and the outer hulls.

3.60 Special Consideration (1 July 2006)

Special Consideration or *Specially Considered* (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are to be taken to confirm the actual average condition of the structure under the coating.

3.61 Substantial Corrosion

Substantial Corrosion is an extent of corrosion such that assessment of the corrosion pattern indicates a wastage in excess of 75% of the allowable margins, but within the acceptable limits.

Note: Wastage allowances may be found in 7-A-4/Tables 1A through 1C and 7-A-4/Table 2.

(1 July 2013) For vessels built under the IACS Common Structural Rules, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a measured thickness between $t_{ren} + 0.5 \text{ mm}$ and t_{ren} .

3.63 Superstructure Deck

For gauging purposes, a *Superstructure Deck* is a deck over an enclosed superstructure i.e., the first tier deck.

3.65 Suspect Areas

Suspect Areas are locations showing substantial corrosion and/or are considered by the Surveyor to be prone to rapid wastage.

3.67 Tanker

A *Tanker* is a ship which is constructed primarily to carry liquid cargo in bulk. Oil Carriers, Combination Carriers, Chemical Carriers and Liquefied Gas Carriers are included in this category.

3.68 Topside Ballast Tanks (2005)

Topside Ballast Tanks are ballast tanks in bulk carriers that normally extend along the length of the vessel's side and occupy the upper corners of the cargo hold.

3.69 Transverse Section (Girth Belt/Belt) (1 July 2006)

A *Transverse Section* includes all longitudinal members such as plating, longitudinals and girders at the deck, sides, bottom, inner bottom, longitudinal bulkheads, hopper sides, inner sides and bottoms of topside tanks. For transversely framed vessels, a transverse section includes adjacent frames and their end connections in way of transverse sections.

3.71 Weld Metal Corrosion

Weld Metal Corrosion is defined as preferential corrosion of the weld deposit. The most likely reason for this attack is galvanic action with the base metal which may start as pitting and often occurs on hand welds as opposed to machine welds.

3.73 Wind and Water Strakes

Wind and Water Strakes are the two (2) strakes located in the vicinity of the load waterline. Due to vessel's trim, the strakes may vary over the length of the vessel.

5 Notification and Availability for Survey

The Surveyors are to have access to classed vessels at all reasonable times. The Owners or their representatives are to notify the Surveyors on all occasions when a vessel can be examined in dry dock or on a slipway.

The Surveyors are to undertake all surveys on classed vessels upon request, with adequate notification, of the Owners or their representatives and are to report thereon to the Committee. Should the Surveyors find occasion during any survey to recommend repairs or further examination, notification is to be given immediately to the Owners or their representatives in order that appropriate action may be taken. The Surveyors are to avail themselves of every convenient opportunity for carrying out periodical surveys in conjunction with surveys of damages and repairs in order to avoid duplication of work. See also 1-1-8/5 of the *ABS Rules for Conditions of Classification (Part 1)*.

7 Damage, Failure and Repair

7.1 Examination and Repair

7.1.1

Damage, failure, deterioration or repair to hull, machinery or equipment, which affects or may affect classification, is to be submitted by the Owners or their representatives for examination by a Surveyor at first opportunity. All repairs found necessary by the Surveyor are to be carried out to the Surveyor's satisfaction.

7.1.2

Where repairs to hull, machinery or equipment, which affect or may affect classification, are planned in advance to be carried out, a complete repair procedure including the extent of proposed repair and the need for Surveyor's attendance is to be submitted to and agreed upon by ABS reasonably in advance.

Note: The above paragraph applies also to repairs during voyage. See Appendix 7-A-2.

The above paragraph is not intended to include maintenance and overhaul to hull, machinery and equipment in accordance with the manufacturer's recommended procedures and established marine practice and which does not require ABS approval; however, any repair as a result of such maintenance and overhauls which affects or may affect classification is to be noted in the ship's log and submitted to the Surveyor, as required by 7-1-1/7.1.

Material, components and equipment used in the course of a repair for which the Rules require certification are to be provided with the required certificates. For internal combustion engines with bores 300 mm (11.8 inches) or less, certification of the connecting rods is at the owner's discretion unless the Surveyor has a concern about the source of the connecting rods based on the condition of the replacement parts. Refer to 7-1-1/9 and 7-1-1/11.

7.1.3 (1 July 2012)

When deemed necessary by the Surveyor, testing as a result of damage, failure, deterioration or repair to the hull, machinery or equipment may be required. Tests are to be carried out in the presence of the Surveyor, and are to be in accordance with Section 3-7-1 of the Rules, as well as the *Guide for Nondestructive Inspection of Hull Welds*, where applicable.

7.3 Suspension of Classification

Failure to submit a damage, failure, deterioration or repair governed by 7-1-1/7.1.1 to a Surveyor for examination at first opportunity, or failure to notify ABS in advance of the repairs contemplated by 7-1-1/7.1.2, may result in suspension of the vessel's classification from the date of arrival at the first port of call after the initial damage, failure, deterioration or repair until such time as the damage, failure or deterioration is repaired to the Surveyor's satisfaction, or the repair is redone or evidence is submitted to satisfy the Surveyor that the repair was properly carried out.

7.5 Prompt and Thorough Repairs (1 July 2012)

Notwithstanding 7-1-1/7.1 and 7-1-1/7.3, any damage in association with wastage over the allowable limits (including buckling, detachment or fracture), or extensive areas of wastage over the allowable limits, which affects or may affect the vessel's structural, watertight or weathertight integrity, is to be promptly and thoroughly repaired. Areas to be considered include:

- Side shell frames, their end attachments and adjacent shell plating
- Deck structure and deck plating
- Bottom structure and bottom plating
- Inner bottom structure and inner bottom plating
- Watertight and oiltight bulkheads
- Hatch covers and hatch coamings, where fitted
- Weld connection between air pipes and deck plating
- Air pipe heads installed on the exposed decks
- Ventilators including closing devices, if any
- Bunker and vent piping systems

For double hull tankers and double skin bulk carriers subject to the Enhanced Survey Program, the following additional areas are to be considered:

- Side structure and side plating
- Inner side structure and inner side plating
- Longitudinal bulkhead(s) structure and longitudinal bulkhead(s) plating, where fitted
- Transverse watertight or oiltight bulkheads structure and transverse watertight or oiltight bulkheads plating

For locations where adequate repair facilities are not available, consideration may be given to allow the vessel to proceed directly to a repair facility. This may require discharging the cargo and/or temporary repairs for the intended voyage.

Additionally, when a survey results in the identification of structural defects or corrosion, either of which, in the opinion of the Surveyor, will impair the vessel's fitness for continued service, remedial measures are to be implemented before the ship continues in service.

Where damage found on structure is isolated and of a localized nature which does not affect the ship's structural integrity, consideration may be given by the Surveyor to allow an appropriate temporary repair to restore watertight or weather tight integrity and impose a Recommendation with a specific time limit.

7.7 Representation

Nothing contained in this section or in a rule or regulation of any government or other administration, or the issuance of any report or certificate pursuant to this section or such a rule or regulation, is to be deemed to enlarge upon the representations expressed in 1-1-1/1 through 1-1-1/7 of the *ABS Rules for Conditions of Classification (Part 1)* and the issuance and use of any such reports or certificates are to be governed in all respects by 1-1-1/1 through 1-1-1/7 of the above-referenced Part 1.

9 Alterations (1999)

No alterations which affect or may affect classification or the assignment of load lines, including substitutions of steel differing from that originally installed, alteration of original structural configuration, or change from riveted to welded joint, are to be made to a classed vessel unless plans of the proposed alterations are submitted and approved by an ABS Technical Office before the work of alteration is commenced. Such work, when approved, is to be carried out to the satisfaction of the Surveyor. Nothing contained in this section or in a rule or regulation of any government or other administration, or the issuance of any report or certificate pursuant to this section or such a rule or regulation, is to be deemed to enlarge upon the representations expressed in 1-1-1/1 through 1-1-1/7 of the *ABS Rules for Conditions of Classification (Part 1)* and the issuance and use of any such reports or certificates are to in all respects be governed by 1-1-1/1 through 1-1-1/7 of the above-referenced Part 1.

11 Welding and Replacement of Materials (1999)

11.1 Ordinary and Higher Strength Structural Steels

Welding or other fabrication performed on the structural steels listed in 2-1-2/Table 5 and 2-1-3/Table 5 of the *Rules for Materials and Welding (Part 2)* is to be in accordance with the requirements of Chapter 4 of the *Rules for Materials and Welding (Part 2)*.

11.3 Special Materials

11.3.1 Steel

Welding or other fabrication performed on other steels of special characteristics or repairs or renewals of such steel or adjacent to such steel is to be accomplished with procedures approved for the special materials involved. The procedures are to take into account the information provided under SVR 3-1-2/1 and be in accordance with requirements of Chapter 4 of the *Rules for Materials and Welding (Part 2)*.

11.3.2 Aluminum (2014)

Welding is not to be performed on aluminum alloys of the hull structure nor repairs or renewals commenced on such plating or adjacent to such plating without thorough and careful reference to the recommendations contained in Chapter 5 of the *ABS Rules for Materials and Welding (Part 2) – Aluminum and Fiber Reinforced Plastics (FRP)*. Substitution of aluminum alloys differing from those originally installed is not to be undertaken without approval.

13 Incomplete Surveys

When a survey is not completed, the Surveyor is to report immediately upon the work done in order that the Owners and the Committee may be advised of the parts still to be surveyed.

15 Vessels Confined to a Specific Location

For vessels confined to a specific location, such as a storage or a production vessel, the extent of the classification surveys will be specially considered.

17 Lay-up and Reactivation

17.1 Vessels for Unrestricted Service and in Rivers and Intracoastal Waterways Services

ABS is to be notified by the Owner that a vessel has been laid-up. This status will be noted in the *Record*, and surveys falling due during lay-up will then be held in abeyance until the vessel is reactivated. Lay-up procedures and arrangements for maintenance of conditions during lay-up may be submitted to ABS for review and confirmation by survey (See Appendix 7-A-3).

In the case of vessels which have been laid up for an extended period (i.e., six months or more), the requirements for surveys on reactivation are to be specially considered in each case, with due regard being given to the status of surveys at the time of the commencement of the lay-up period, the length of the period and the conditions under which the vessel had been maintained during that period.

Where the lay-up preparations and procedures have been submitted to ABS for review and confirmed by Annual Lay-up Surveys, consideration may be given to deducting part or all of the time in lay-up from the progression of survey intervals. This consideration is not applicable to vessels in the Enhanced Survey Program (ESP).

For vessels returning to active service, regardless of whether ABS has been informed previously that the vessel has been in lay-up, a Reactivation Survey is required.

17.3 Vessels in Great Lakes Service

Where the lay-up preparations and procedures have been submitted to ABS for review and verified by Annual Lay-up Surveys, consideration may be given to deducting part or all of the time in lay-up from the progression of survey intervals.

When applying for deductions, Owners are to provide details of out of service intervals since last credited surveys which do not include the normal winter lay-up months of January, February, and March.

19 Vessels in Lightering Service (1 July 2004)

ABS is to be notified by the Owner when a vessel has been put into lightering service. For a vessel engaged in lightering service, at each Annual, Intermediate and Special Periodical Survey, the additional requirements as contained in 7-3-2/1.1.15, 7-3-2/3.1.5 and 7-3-2/5.1.16 are to be complied with. Once the vessel has been removed from lightering service, these requirements will remain in effect through the completion of the next scheduled Intermediate or Special Periodical Survey, whichever occurs first.

21 Vessels Utilized in Support of Military Operations (1 July 2006)

Special consideration may be given in application of relevant sections of the *ABS Rules for Survey After Construction (Part 7)* to commercial vessels owned or full-time chartered by Governments, for use in support of military operations or non-commercial service.

PART 7

CHAPTER 2 Survey Intervals (2018)

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PART

7

CHAPTER 2 Survey Intervals

SECTION 1 Vessels for Unrestricted Service

1 Annual Surveys

Annual Surveys are to be made within three months before or after each anniversary date of the crediting of the previous Special Periodical Survey or original construction date. For vessels on Continuous Survey, all Continuous Survey requirements for those parts (items) due are generally to be completed each year. The Annual Survey will not be credited and the Certificate of Classification will not be endorsed unless Continuous Survey items which are due or overdue at the time of the Annual Survey are either completed or granted an extension.

Special Annual Survey (2011) – When **Annual Survey** is part of a vessel's Hull Classification notation, all of the requirements of Special Periodical Survey – Hull, except for tank testing, are required each year for the first four years of each five-year cycle. At the fifth year, a complete Special Periodical Survey – Hull, including tank testing is required. The drydocking survey in conjunction with the Special Annual Survey shall be carried out within the survey interval window of the Special Annual Survey.

LASH Barges – For steel barges carried aboard ship, and without Load Line Certificate, an Annual Survey will not be required, provided that in addition to the regular Special Periodical Survey at five (5) year intervals, a Special Intermediate Survey, equivalent to a Special Periodical Survey, is carried out about midway between Special Periodical Surveys.

3 Intermediate Surveys (1 July 2004)

Intermediate Surveys, where required by 7-3-2/3, are to be carried out either at or between the second and third Annual Surveys after Special Periodical Survey No. 1 and subsequent Special Periodical Surveys.

(1 July 2006) Those items which are additional to the requirements of the Annual Surveys may be surveyed either at or between the second and third Annual Surveys.

(1 July 2008) Concurrent crediting to both Intermediate Survey and Special Periodical Survey for surveys and thickness measurements of spaces is not acceptable.

5 Special Periodical Surveys

A Special Periodical Survey is to be completed within five years after the date of build or after the crediting date of the previous Special Periodical Survey. The fifth Annual Survey must be credited as a requirement of the Special Periodical Survey. The interval between Special Periodical Surveys may be reduced by the Committee.

(1 July 2008) Concurrent crediting to both Intermediate Survey and Special Periodical Survey for surveys and thickness measurements of spaces is not acceptable.

5.1 Commencement (1998)

A Special Periodical Survey may be commenced at the fourth Annual Survey and be continued with completion by the fifth anniversary date. Where the Special Periodical Survey is commenced prior to the fourth Annual Survey, the entire survey is to be completed within 15 months if such work is to be credited to the Special Periodical Survey.

5.3 Credited Date

A Special Periodical Survey will be credited as of the completion date of the survey but not later than five years from date of build or from the date recorded for the previous Special Periodical Survey. If the Special Periodical Survey is completed within three months prior to the due date, the Special Periodical Survey will be credited to agree with the effective due date.

5.5 Unusual Cases

Special consideration may be given to Special Periodical Survey requirements in the case of vessels of unusual design, in lay-up or in unusual circumstances.

(2016) In cases where the vessel has been laid up or has been out of service for a considerable period because of a major repair or modification and the owner elects only to carry out the overdue surveys, the next period of class will start from the expiry date of the previous due special survey. If the owner elects to carry out the next due special survey, the period of class will start from the survey completion date.

(1 July 2006) Consideration may be given for an extension of class of three (3) months maximum beyond the 5th year under exceptional circumstances. In this case, the next period of class will start from the expiry date of the Special Periodical Survey before the extension was granted.

7 Continuous Surveys (1998)

(1 July 2005) At the request of the Owner, and upon approval of the proposed arrangements, a system of Continuous Surveys may be undertaken, whereby the Special Periodical Survey requirements are carried out in regular rotation to complete all of the requirements of the particular Special Periodical Survey within a five-year period. The proposed arrangements are to provide for survey of approximately 20% of the total number of survey items during each year of the five-year period. Reasonable alternative arrangements may be considered.

(1 July 2006) Vessels on the Continuous Survey System are not exempt from other periodical surveys.

(1 July 2005) Continuous Surveys – Hull may not be undertaken of oil tankers, bulk carriers and combination carriers (such as ore/oil, etc.) and chemical tankers subject to the Enhanced Survey Program (ESP) and of general dry cargo vessels with the **ESDC** notation.

Each part (item) surveyed becomes due again for survey approximately five years from the date of the survey and the due parts (items) are generally to be completed each year. The Annual Survey will not be credited and the Certificate of Classification will not be endorsed unless Continuous Survey items which are due or overdue at the time of the Annual Survey are either completed or granted an extension. For Continuous Surveys, a suitable notation will be entered in the *Record* and the date of the completion of the cycle published.

Out of water drydocking, as required by 7-3-2/5.1.2, may be carried out at any time during the cycle, provided all requirements of Section 7-4-1 are met and thickness measurements, as required by 7-3-2/5.1.9, are carried out when the vessel is surveyed in drydock.

(1 July 2006) For vessels more than 10 years of age, the ballast tanks are to be internally examined twice in each five-year class period, i.e., once within the scope of the intermediate survey and once within the scope of the continuous system for the hull special periodical survey. The interval between any two such examinations should not exceed 36 months.

(1 July 2006) The Surveyor may extend the inspection at his/her discretion, to other items if the inspections carried out revealed any defects.

ABS may withdraw its approval for Continuous Survey if the Surveyor's recommendations are not complied with.

9 In-line Surveys

All items required to undergo Special Periodical Surveys, including but not limited to hull, machinery, automation and cargo refrigeration, are to be carried out at the same time and interval in order that they are recorded with the same crediting date. In cases where damage has necessitated extensive repairs and examination, the survey thereon may, where approved by the Committee, be accepted as equivalent to Special Periodical Survey.

11 Drydocking Surveys

11.1 All Vessels

(2011) There is to be a minimum of two examinations of the outside of a vessel's bottom and related items during each five-year special survey period. One such examination is to be carried out in conjunction with the Special Periodical Survey. In all cases, the interval between any two such examinations is not to exceed 36 months. See also 7-3-2/5.1.2. For vessels not subject to SOLAS operating solely in fresh water, the maximum interval is not to exceed five years.

(1 July 2004) Examinations of the outside of a vessel's bottom and related items is normally to be carried out with the vessel in drydock. However, consideration may be given to an alternative examination while the vessel is afloat by an approved underwater inspection, equivalent to a Drydocking Survey, subject to provisions of Appendix 7-A-1. This alternative will not be available for Drydocking Surveys concurrent with the Special Periodical Survey – Hull referred to in 7-3-2/5.1.2. Vessels 15 years of age or over will be subject to special consideration based on the vessel's survey status before being permitted to have such inspections. For vessels on Continuous Surveys – Hull, refer to 7-2-1/7.

(1 July 2005) For vessels 15 years of age or over subject to the Enhanced Survey Program (ESP), Underwater Inspections in Lieu of Drydocking (UWILD) will not be permitted at alternate Drydocking Surveys. Accordingly, all Rule-required Drydocking Surveys are to be carried out with the vessel on dry dock.

(1 July 2004) Compliance with 7-2-1/11.1 does not absolve the Owner from compliance with the requirements of SOLAS as amended, especially when shorter intervals between examination of the vessel's bottom for certain types of vessels are required.

(1 July 2004) For ESP Oil Tankers, ESP Combination Carriers, ESP Bulk Carriers, ESP Chemical Tankers, ESP Oil Tankers – Double Hull, ESP Bulk Carriers – Double Side Skin, and General Dry Cargo Vessels ESDC, reference should be made to the applicable Paragraphs of 7-3-2/5.

(1 July 2005) An extension of examination of a vessel's bottom of three (3) months beyond the due date may be granted in exceptional circumstances ⁽¹⁾. An underwater inspection by a diver may be required for such extensions.

Note 1 'Exceptional circumstances' means unavailability of dry-docking facilities; unavailability of repair facilities; unavailability of essential materials, equipment or spare parts; or delays incurred by action taken to avoid severe weather conditions. [See also 1-1-2/7.9iii) of the ABS Rules for Conditions of Classification (Part 1).]

(1 July 2005) These requirements are also applicable to vessels with geographical limitations except those vessels referred to in 7-2-2/13 and 7-2-3/7.

11.3 Accommodation Barges (2011)

In lieu of the requirements of 7-2-1/11.1, for barges classed as Accommodation Barges, prior to Special Periodical Survey No. 3, drydocking for survey will not be required and an approved underwater inspection in lieu of drydocking is allowed. However, the underwater inspection in lieu of drydocking shall be carried out at least two times in any five-year period with an interval not exceeding three years.

Commencing at Special Periodical Survey No. 3, there is to be a minimum of two examinations of the outside of a vessel's bottom and related items during each five-year special survey period. One such examination is to be carried out in conjunction with the Special Periodical Survey. In all such cases, the interval between any two such examinations is not to exceed 36 months. See also 7-3-2/5.1.2.

Consideration may be given to special circumstances which may justify an extension of the interval.

11.5 Barges and Yachts

In addition to the requirements of 7-2-1/11.1, for Barges and Yachts operating in salt water for less than six months each year, the maximum interval is not to exceed three years. For barges operating solely in fresh water, the maximum interval is not to exceed five years.

An approved underwater inspection by diver equivalent to a Drydocking Survey will be considered at alternate Drydocking Survey dates.

11.7 Passenger Vessels and High Speed Craft (2005)

In addition to the requirements in 7-2-1/11.1, a Drydocking Survey is to be carried out annually for passenger vessels subject to SOLAS and for High Speed Craft (HSC) vessels subject to the IMO HSC Code.

For passenger vessels and high speed craft, Drydocking Surveys are to be made within three months before or after the date of each annual anniversary date.

For passenger vessels, an approved underwater inspection by a diver (See Section 7-A-1), equivalent to a Drydocking Survey, may be considered at Drydocking Surveys not associated with the Special Periodical Survey – Hull referred to in 7-3-2/5.1.2. Vessels 15 years of age or over will be subject to special consideration based on the vessel's survey status before being permitted to have such inspections.

For vessels on Continuous Surveys – Hull, refer to 7-2-1/7.

13 Tailshaft Surveys (2016)

For surveys completed not more than 3 months in advance of the Survey Due Date, the crediting date will be the date of the Survey Due Date

13.1 Intervals

13.1.1 Oil-Lubricated Bearings

13.1.1(a) Every five (5) years

- A survey in accordance with Method 1, 2 or 3 and;

13.1.1(b) Every fifteen (15) years

- For shafts with keyed or keyless connection, a survey in accordance with Method 1 or Method 2.
- For shafts with a Flanged Propeller Connection a survey in accordance with Method 1, 2 or 3.

13.1.1(c) For vessels with **TCM** notation, refer to Section 7-9-20.

13.1.2 Closed Loop System Fresh Water Lubricated Shafts

13.1.2(a) Every five (5) years

- A survey in accordance with Method 1, 2 or 3 and;

13.1.2(b) Every fifteen (15) years

- A survey in accordance with Method 1

13.1.3 Water-Lubricated Bearings (Open Systems)

13.1.3(a) Every five (5) years, a survey in accordance with Method 4 for;

- Single shaft operating in fresh water only
- Single shaft provided with adequate means of protection against corrosion or fabricated from corrosion resistant material.
- Multiple shafts

13.1.3(b) Every three (3) years, a survey in accordance with Method 4 for single shaft configurations other than those listed in 7-2-1/13.1.3(a).

13.3 Extensions

Extension Surveys should normally be carried out within 1 month of the shaft survey due date and the extension counts from the shaft survey due date. If the extension survey is carried out more than 1 month prior to the shaft survey due date, then the period of extension counts from the date the extension survey was completed.

13.3.1 Oil-Lubricated Bearings or Closed Loop System Fresh Water Lubricated Shafts

For Closed Loop System Fresh Water Lubricated Shafts, the maximum interval between two surveys carried out according to Method 1 shall not exceed 15 years. An extension of not more than three months can be granted.

13.3.1(a) Extension up to Three (3) Months (2017). An extension up to three (3) months may be granted by the Surveyor, when requested by the Owner, provided a survey is carried out in accordance with 7-5-1/5.3.3. In the event an additional extension is requested, the requirements of the “one year extension” or “two-and-a-half year extension” are to be carried out and the shaft survey due date, prior to the previous extension, is extended for one year or a maximum of two-and-a-half years, respectively.

13.3.1(b) Extension up to One (1) Year (2017). An extension up to one (1) year may be granted by the Surveyor, when requested by the Owner, provided a survey is carried out in accordance with 7-5-1/5.3.2. No more than two (2) consecutive “one year” extensions may be granted. In the event “a two-and-a-half-year” extension is requested, the requirements in 7-5-1/5.3.1 are to be carried out and the shaft survey due date, prior to the previous extension(s), shall be extended for a maximum of 2.5 years.

13.3.1(c) Extension up to Two-and-a-half (2.5) Years. An extension of up to two-and-a-half (2.5) years may be granted by the Surveyor, when requested by the Owner, provided a survey is carried out in accordance with 7-5-1/5.3.1. No more than one extension can be granted. No further extension, of any other type, can be granted.

13.3.2 Water-Lubricated Bearings

For all types of propeller connections, the interval between two consecutive surveys may be extended after the execution of extension survey as follows:

13.3.2(a) Extension up to Three (3) Months. An extension up to three (3) months may be granted by the Surveyor, when requested by the Owner, provided a survey is carried out in accordance with 7-5-1/7.3.2.

13.3.2(b) Extension up to One (1) Year. An extension up to one (1) year may be granted by the Surveyor, when requested by the Owner, provided a survey is carried out in accordance with 7-5-1/7.3.1.

15 Tube Shaft Surveys

Tube shafts, if fitted, are to be examined at the same interval as tail shafts.

17 Boiler Surveys

17.1 Water-tube Boilers for Propulsion (1998)

17.1.1 Multiple Boilers (2007)

For vessels fitted with more than one boiler, a minimum of two surveys is to be carried out during each 5-year Special Periodical Survey period. One such survey is to be carried out in conjunction with the Special Periodical Survey. In all cases, the interval between any two such surveys is not to exceed 36 months. An extension of the survey up to three (3) months may be granted by the Surveyor in exceptional circumstances⁽¹⁾, provided a survey is carried out in accordance with 7-7-1/11.

(1 July 2009) For vessels on continuous survey of hull, two surveys are to be carried out during each 5 year cycle and may be aligned with the dry dock survey dates as long as the interval between surveys does not exceed 36 months.

In addition, annual examinations are to be carried out in accordance with 7-7-1/13.

Note: 1 "Exceptional circumstances" means, e.g., unavailability of repair facilities, unavailability of essential materials, equipment or spare parts, or delays incurred by action taken to avoid severe weather conditions.

17.1.2 Single Boiler (2007)

For vessels fitted with one boiler, the interval between surveys is not to exceed 2½ years for the first 7½ years. Thereafter, the boiler is to be surveyed annually. An extension of the survey not exceeding 6 months may be granted by the Surveyor provided a survey is carried out in accordance with 7-7-1/11, and provided the boiler is surveyed twice in every 5-year period for the first 7½ years.

In addition, annual examinations are to be carried out in accordance with 7-7-1/13 for the first 7½ years.

17.3 Fire-tube Boilers for Propulsion (2007)

A minimum of two surveys are to be carried out during first 5-year special periodical survey period. Thereafter, boilers are to be surveyed annually. The interval between any two surveys is not to exceed 36 months.

In addition, annual examinations are to be carried out in accordance with 7-7-1/13 for the first 5-year Special Periodical Survey period.

17.5 Auxiliary Boiler (1 July 2008)

Waste-heat or fired auxiliary boilers intended for working pressures above 3.4 bar (3.5 kgf/cm², 50 psi), a minimum of two surveys are to be carried out during each 5-year Special Periodical Survey period. One such survey is to be carried out in conjunction with the Special Periodical Survey. In all cases, the interval between any two such surveys is not to exceed 36 months. An extension of the survey up to three (3) months may be granted by the Surveyor in exceptional circumstances⁽¹⁾, provided a survey is carried out in accordance with 7-7-1/11.

In addition, annual examinations are to be carried out in accordance with 7-7-1/13.

For vessels on continuous survey of hull, the two surveys are to be carried out during each 5 year cycle and may be aligned with the dry dock survey dates as long as the interval between surveys does not exceed 36 months.

Note: 1 "Exceptional circumstances" means, e.g., unavailability of repair facilities, unavailability of essential materials, equipment or spare parts, or delays incurred by action taken to avoid severe weather conditions.

PART

7

CHAPTER 2 Survey Intervals

SECTION 2 Vessels in Great Lakes Service

1 General Conditions

Except as noted below, the requirements of Part 7, Chapters 1 through 12 apply to Great Lakes Service. Special consideration may be given where justified by special circumstances. Enhanced Survey Program requirements are not applicable to vessels classed Great Lakes Service.

Note: Owners should be cautioned that Load Line Certificate validity period may limit application of extended class survey interval.

Surveys falling due during January, February and March, when the vessel is in normal winter lay-up, may be considered deferred but must be completed before the vessel returns to operation.

3 Annual Surveys

Annual Surveys are to be made during each year of service.

5 Intermediate Surveys

Intermediate Surveys are to be carried out either at or between the second and third Annual Surveys after Special Periodical Survey No. 1 and subsequent Special Periodical Surveys.

7 Special Periodical Surveys

The first Special Periodical Survey becomes due five years after the date of build. Subsequent Special Periodical Surveys are due five years after the crediting date of the previous Special Periodical Survey. If a Special Periodical Survey is not completed at one time, it will be credited as of the completion date of the survey but no later than six years from date of build or from the date recorded for the previous Special Periodical Survey. The Special Periodical Survey – Hull credit date will be the last day of the month when the vessel was last visited on drydock for crediting Special Periodical Survey Drydocking as long as no item for Special Periodical Survey – Hull is overdue. The Load Line Certificate validity date will be the actual day of the month when the vessel was last visited on drydock.

9 Continuous Surveys

At the request of the Owner, and upon approval of the proposed arrangements, a system of Continuous Surveys may be undertaken, whereby the Special Periodical Survey requirements are carried out in regular rotation to complete all of the requirements of the particular Special Periodical Survey within a five-year period. Each part (item) surveyed becomes due again for survey approximately five years from the date of the survey and the due parts (items) are generally to be completed each year. The Annual Survey will not be credited and the Certificate of Classification will not be endorsed unless Continuous Survey items which are due or overdue at the time of the Annual Survey are either completed or granted an extension.

For Continuous Surveys, a suitable notation will be entered in the *Record* and the date of the completion of the cycle published. If any defects are found during the survey, they are to be dealt with to the satisfaction of the Surveyor. The Continuous Survey credit date and date for renewal of the Load Line Certificate will be the last day of the month when the vessel was last visited on drydock for credited Special Periodical Survey Drydocking as long as no item for Continuous Survey – Hull is overdue.

At a survey approximately two to three years after entering service and after each subsequent Continuous Survey – Hull has been credited, vessels will require the equivalent of an Intermediate Survey. Vessels on the Continuous Survey – Hull Program where 20% of the ballast tanks and cargo holds are examined and reported satisfactory each year would not be required to carry out the Intermediate Survey.

11 Year of Grace

To be eligible for the Year of Grace to complete the Special Periodical Survey within one year after the due date, the vessel is to be presented for survey up to a maximum of three months prior to the Special Periodical Survey due date. The survey may be commenced earlier than the above specified three months, provided it is commenced while the vessel is in continuous lay-up that extends to the date of the maximum 3 month limit.

If the Year of Grace Survey is satisfactory, the completion of the Special Periodical Survey may be deferred for a period not exceeding twelve months, provided the whole Special Periodical Survey is satisfactorily completed within six years from date of build or from the date recorded for the previous Special Periodical Survey.

13 Drydocking Surveys

For vessels classed Great Lakes Service, operating solely within the recognized boundaries for Great Lakes voyages, the regular interval for Drydocking Survey is five years. Consideration may be given to any special circumstances justifying an extension of the regular interval. When a satisfactory Year of Grace Survey has been carried out, including additional examinations afloat as may be deemed necessary by the attending Surveyor, this regular interval can be extended to a maximum of six years. See Note under 7-2-2/1.

15 Tailshaft Surveys

The regular interval for Tailshaft Surveys is five years and is intended to coincide with the Special Periodical Survey, including Year of Grace when recommended, subject to such additional examinations afloat as deemed necessary by the attending Surveyor.

The intervals for Tailshaft Surveys are to be the same as that required for Special Periodical Surveys.

17 Boiler Surveys (*1 July 2007*)

For vessels classed Great Lakes Service, operating solely within the recognized boundaries for Great Lakes voyages, the regular interval for Boiler Survey may be extended for up to one (1) year, when a satisfactory Year of Grace Survey has been carried out in conjunction with the Boiler Extension Survey.

PART

7

CHAPTER 2 Survey Intervals

SECTION 3 Vessels in Rivers and Intracoastal Waterway Service

1 General Conditions

Unless otherwise specified below, surveys after construction are to be in accordance with Part 7, Chapters 1 through 12. Annual Surveys are to be made during each year of service. Enhanced Survey Program requirements are not applicable to vessels classed Rivers and Intracoastal Waterways Service.

3 Intermediate Surveys

Intermediate Surveys are to be carried out either at or between the third and fourth Annual Surveys after Special Periodical Survey No. 1 and subsequent Special Periodical Surveys.

5 Special Periodical Surveys

A Special Periodical Survey is to be completed within six (6) years after the date of build or after the crediting date of the previous Special Periodical Survey. The sixth Annual Survey must be credited as a requirement of the Special Periodical Survey. The interval between Special Periodical Surveys may be reduced by the Committee.

7 Drydocking Surveys

7.1 General

The interval between Drydocking Surveys is not to exceed the maximum intervals given below with associated notes for types, services and operation:

Vessels/barges operating in salt water for a period of up to one (1) month per annum: single skin tank vessels, 3-year interval (note 1), double skin tank vessels, 6-year interval (note 2), all other vessels, 5-year interval (note 1 & 3).

All vessels/barges operating in salt water for a period of more than one (1) month and up to six (6) months per annum, 3-year interval.

All vessels/barges operating in salt water for a period of more than six (6) months per annum, drydocking is to be carried out two times in any 5-year period with an interval not exceeding three (3) years between drydockings. Consideration may be given to special circumstances which may justify an extension of the interval.

Notes:

- 1 The first Drydocking Survey after the date of build may be waived if after general examination afloat the Surveyor finds no indication of wastage or damage which would necessitate examination on drydock.
- 2 Internal surveys afloat are to be carried out at about three (3) years after the date of build or previous drydocking and the Surveyor is to be satisfied that there are no indications of wastage or damage which would necessitate examination on drydock.
- 3 Twelve (12) months maximum extension may be granted, provided after survey afloat the Surveyor is satisfied that there are no indications of wastage or damages which would necessitate examination on drydock. Vessels which have loadline certificates are to be drydocked within 60 months of the issuance of the loadline certificate.

7.3 Salt Water Operation

It is incumbent upon the Owner to advise ABS in writing of a vessel's period of operation in salt water.

7.5 Unscheduled Salt Water Operation

Where a vessel intended for fresh water operation is engaged in salt water operation for a period of time, intervals may be reduced accordingly.

PART 7

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PART

7

CHAPTER 3 Hull Surveys

SECTION 1 Requirements for Internal Examinations of All Vessels

1 General (2005)

The following apply to all internal examinations of any spaces such as tanks, holds, voids or machinery spaces:

- (1 July 2006) Where soft or semi-hard coatings have been applied, safe access is to be provided for the Surveyor to verify the effectiveness of the coatings and to carry out an assessment of the condition of internal structures, which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating is to be removed. Should the soft or semi-hard coating be found no longer effective, sufficient cleaning, as required by the following Rules below, shall be carried out prior to survey.
- Based on conditions found, thickness measurements and means of access to the upper part of the tank or space should be required. Where extensive areas of wastage or structural damage are found, the extent of the overall examination may be expanded to other spaces.
- Casings, ceilings or linings, and loose insulation, where fitted, are to be removed, as required by the Surveyor, for examination of plating and framing.
- Compositions on plating are to be examined and sounded, but need not be disturbed if found adhering satisfactorily to the plating.
- (1 July 2012) In refrigerated cargo spaces the condition of the coating behind the insulation is to be examined at representative locations. The examination may be limited to verification that the protective coating remains effective and that there are no visible structural defects. Where POOR coating condition is found, the examination is to be extended as deemed necessary by the Surveyor. The condition of the coating is to be reported. If indents, scratches, etc., are detected during surveys of shell plating from the outside, insulations in way are to be removed as required by the Surveyor, for further examination of the plating and adjacent frames.

3 Preparations for Survey (2004)

3.1

The Owner is to provide the necessary facilities for a safe execution of the survey.

3.3

Tanks and spaces are to be safe for access, i.e., gas freed, ventilated, illuminated, etc.

3.5 (1 July 2006)

In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces are to be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces are to be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages or other structural deterioration. However, those areas of structure whose renewal has already been decided by the Owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

3.7 (2005)

Sufficient illumination is to be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration.

5 Access to Structures (1 July 2014)

5.1

For surveys, means are to be provided to enable the Surveyor to examine the hull structure in a safe and practical way. It is to be confirmed as far as practicable that means of access to all spaces are in good condition when examining internal spaces.

Walking on bulk cargo is not considered an acceptable means of access for carrying out close up surveys of cargo holds.

5.3

For surveys in cargo holds and ballast tanks, one or more of the following means for access, acceptable to the Surveyor, is to be provided:

- Permanent staging and passages through structures.
- Temporary staging and passages through structures.
- Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms. Single person hoists/lifts are not acceptable means for access
- Portable ladders
- Boats or rafts.
- Other equivalent means.

5.5 Close-up Survey on Bulk Carriers – Non Double Skin and Bulk Carriers Features of Combination Carriers – Non Double Skin

In lieu of the requirements of 7-3-1/5.3, the following requirements also apply.

5.5.1 Hull Structure other than Cargo Hold Shell Frames

For close-up surveys of the hull structure, other than cargo hold shell frames, one or more of the following means for access, acceptable to the Surveyor, is to be provided:

- Permanent staging and passages through structures
- Temporary staging and passages through structures
- Lifts and moveable platforms
- Boats or rafts
- Other equivalent means

5.5.2 Cargo Hold Shell Frames of Bulk Carriers less than 100,000 DWT

For close-up surveys of the cargo hold shell frames of bulk carriers less than 100,000 DWT, one or more of the following means for access, acceptable to the Surveyor, is to be provided:

- Permanent staging and passages through structures
- Temporary staging and passages through structures
- Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms
- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water
- Other equivalent means

5.5.3 Cargo Hold Shell Frames of Bulk Carriers 100,000 DWT and Above

For close-up surveys of the cargo hold shell frames of bulk carriers 100,000 DWT and above, the requirements of 7-3-1/5.5.2 apply.

In addition, for vessels 10 years of age and over, the following also apply for Intermediate Surveys and Special Periodical Surveys.

- Either permanent or temporary staging and passage through structures for close-up survey of at least the upper part of hold frames
- Hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle part of shell frames as alternative to staging

7 Equipment for Survey (2004)

7.1 (2008)

Thickness measurement is normally to be carried out by means of ultrasonic test equipment. The accuracy of the equipment is to be proven to the Surveyor, as required. Thickness measurements are to be carried out by a firm certified by ABS in accordance with Appendix 7-A-5.

The certification of the firm is not required with respect to thickness measurements of [vessels with a service limitation of "River Service"](#).

7.3

One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic examination.
- Ultrasonic examination.
- Magnetic particle examination.
- Dye penetrant examination.

7.5 Rescue and Emergency Response Equipment (1 July 2014)

If breathing apparatus and/or other equipment is to be used as 'Rescue and Emergency Response Equipment' then the equipment is to be suitable for the configuration of the space being surveyed.

9 Survey at Sea or at Anchorage (1 July 2004)

9.1

Survey at sea or at anchorage may be accepted, provided the Surveyor is given the necessary assistance from the personnel onboard. Necessary precautions and procedures for carrying out the survey are to be in accordance with 7-3-1/3, 7-3-1/5, 7-3-1/7 and additionally for ESP vessels, 7-3-2/9.1.

9.3 (1 July 2006)

A communication system is to be arranged between the survey party in the tank or space under examination and the responsible officer on deck. This system is also to include the personnel in charge of ballast pump handling if boats or rafts are used.

9.5

Explosimeter, oxygen-meter, breathing apparatus, life line and whistles are to be at hand during the survey.

9.7

When boats or rafts are used, appropriate life jackets are to be available for all persons onboard. Boats or rafts are to have satisfactory residual buoyancy and stability, even if one chamber is ruptured. A safety checklist is to be provided.

9.9 (1 July 2008)

Surveys of tanks or applicable holds by means of boats or rafts may only be undertaken with the agreement of the Surveyor, who is to take into account the safety arrangements provided, including weather forecasting and ship response under foreseeable conditions and provided the expected rise of water within the tank does not exceed 0.25 m and the water level is stationary.

Reference is made to the IACS Recommendation 39 - Guidelines for use of Boats or Rafts for Close-up Surveys.

11 Thickness Measurements and Close-up Surveys (2007)

The required thickness measurements are to be witnessed by a Surveyor. The Surveyor is to be onboard to the extent necessary to control the process.

The thickness measurement company's representative is to be part of the survey planning meeting to be held prior to commencing the survey.

In any kind of survey, i.e., Special Periodical, Intermediate, Annual or other surveys having the scope of the foregoing ones, thickness measurements of structures in areas where Close-up Surveys are required are to be carried out simultaneously with Close-up Surveys.

13 Vessels with the SH, SHCM or CSR, AB-CM Notation (1 July 2016)

For vessels with the **SH**, **SHCM** or **CSR**, **AB-CM** notation, an approved copy of the Construction Monitoring Plan shall be available onboard. When a critical area is being surveyed, the extent and scope of the survey shall be in accordance with the approved copy of the Construction Monitoring Plan.

During annual, intermediate, and special survey attention is to be given to the critical areas identified in the SHCM or CSR, AB-CM plan. Any identified areas in the SHCM or CSR, AB-CM plan, in the location surveyed, must be visually examined.

PART

7

CHAPTER 3 Hull Surveys

SECTION 2 Vessels for Unrestricted Service

1 Annual Surveys

1.1 All Vessels

(1 July 2011) The Master is to confirm that to the best of their knowledge the vessel has had no damages, failures, deteriorations, or repairs (including temporary repairs) to hull, machinery, or equipment which affected or may have affected classification since the last annual survey.

At each Annual Survey, the weather decks, hull plating and their closing appliances together with watertight penetrations are to be generally examined as far as practicable and placed in satisfactory condition. The survey is to include the following:

1.1.1 Protection of Cargo Hatch Openings

1.1.1(a) (1999) Confirmation that no unapproved changes have been made to the hatch covers, hatch coamings and their securing and sealing devices since the last survey. Exposed hatch covers are to be examined to confirm the structural integrity and capability of maintaining weathertightness. Where extensive areas of wastage of steel hatch covers are found, thickness measurements are to be carried out, and renewals or repairs made where wastage exceeds allowable margins. Where substantial corrosion is found, additional thickness measurements in accordance with 7-3-2/7 are to be taken to confirm the extent of substantial corrosion.

1.1.1(b) (1 July 2003) Where mechanically operated steel covers are fitted, examination of:

- Hatch covers; including plating and stiffeners and Close-up Survey of hatch cover plating
- Tightness devices of longitudinal, transverse and intermediate cross junction (gaskets, gasket lips, compression bars, drainage channels, drains, and non return valves, if fitted)
- Steel-to-steel contact between cover and coaming, support pads, cleats (including cross joint bolts and/or wedges)
- Clamping devices, retaining bars, cleating
- Chain or rope pulleys
- Guides
- Guide rails and track wheels
- Stoppers, etc.
- Wires, chains, gypsies, tensioning devices
- Hydraulic system essential to closing and securing
- Safety locks and retaining devices

1.1.1(c) (1 July 2003) Where wooden covers on portable beams or steel pontoon covers are fitted, examination of:

- Wooden covers and portable beams, carriers or sockets for the portable beams, and their securing devices
- *(1 July 2004)* Steel pontoons
- Tarpaulins

- Cleats, battens and wedges
- Hatch securing bars and their securing devices
- Loading pads/bars and the side plate edge
- Guide plates and chocks
- Compression bars, drainage channels and drain pipes (if any)

1.1.1(d) (1999) Examination, including Close-up Survey, of hatch coaming plating including deck connection, stiffeners, stays, pads, chocks and brackets. Where extensive areas of wastage are found, thickness measurements are to be carried out, and renewals or repairs made where wastage exceeds allowable margins. Where substantial corrosion is found, additional thickness measurements in accordance with 7-3-2/7 are to be taken to confirm the extent of substantial corrosion.

1.1.1(e) (2005) Random checking of the satisfactory operation of mechanically-operated hatch covers is to be made, including:

- Stowage and securing in open condition.
- Proper fit and efficiency of sealing in closed condition.
- Operational testing of hydraulic and power components, wires, chains and link drives.

1.1.1(f) Where the omission of gaskets has been approved, in accordance with SVR 3-2-15/11.1, the satisfactory condition of specially approved details such as labyrinths is to be confirmed in addition to 7-3-2/1.1.1(b).

1.1.2 Protection of Other Openings

1.1.2(a) Hatchways, manholes and scuttles in freeboard and superstructure decks.

1.1.2(b) Machinery casings, fiddley covers, funnel annular spaces, skylights, companionways and deckhouses protecting openings in freeboard or enclosed superstructure decks.

1.1.2(c) (2011) Portlights together with deadcovers, means of attachment, securing devices and gaskets.

1.1.2(d) (2011) Windows together with deadcovers, means of attachment, securing devices and gaskets or storm covers together with means of securing, as applicable.

1.1.2(e) (2011) Cargo ports, bow or stern access, chutes and similar openings in vessel's sides or ends below the freeboard deck or in way of enclosed superstructures.

1.1.2(f) (1 July 2006) Ventilators including closing devices where fitted, air pipes together with flame screens and weld connections to deck plating. All air pipe "closure devices" installed on the exposed decks are to be externally examined, randomly opened out and their condition verified. Scuppers, inlets and overboard discharges are to be externally examined as accessible including their attachment to shell and valves.

1.1.2(g) (2012) Watertight bulkheads, collision bulkheads, bulkhead penetrations, end bulkheads of enclosed superstructures and the operation of any doors in same.

(2007) In addition, for vessels fitted with self-unloading system, watertight conveyor belt doors are to be examined and operationally tested as far as practicable.

1.1.2(h) Weathertight doors and closing appliances for all of the above including stiffening, dogs, hinges and gaskets. Proper operation of weathertight doors and closing appliances to be confirmed.

1.1.2(i) (2012) Means provided to minimize water ingress through the spurling pipes and chain lockers.

1.1.2(j) (1 July 2017) Closures for sounding tubes and attached securing devices.

1.1.3 Freeing Ports and Drainage (2012)

1.1.3(a) Freeing ports, together with bars, shutters and hinges.

1.1.3(b) Confirmation of satisfactory drainage from enclosed cargo spaces situated on the freeboard deck.

1.1.4 Protection of Crew

Guard rails, lifelines, gangways and deck houses accommodating crew.

1.1.5 Loading and Stability Information (2005)

Confirmation of loading guidance, stability data and damage control plans, as applicable. Loading instruments accepted for classification or approved stability computers installed to supplement the Trim and Stability booklet are to be confirmed in working order by use of the approved check conditions, as applicable. The user's instruction manual for the loading instrument or the stability computer is to be confirmed onboard. Additionally, for High Speed Craft, the operation manual is to be verified on board.

1.1.6 Load Line (2012)

Confirmation that no alterations have been made to the hull or superstructures which would affect the calculation determining the position of the load lines. Record of Conditions of Assignment is to be available onboard for reference. The Load Line marks are to be sighted, position checked, found plainly visible, and recut and/or painted, as required.

1.1.7 Anchoring Systems and Mooring Equipment (2012)

Anchors and chain cables, anchor windlass including foundation, prime mover, shafting, wildcats, brakes, controls and chain stoppers are to be examined, as far as possible.

Mooring and towing equipment is to be examined as far as possible and to be confirmed properly marked as applicable with any restriction associated with its safe operation.

(2006) Each windlass is to be operated, as far as possible, for braking, clutch functioning, lowering and hoisting of chain cable and anchor, proper riding of the chain over the wildcat, proper transit of the chain through the hawse pipe and chain pipe, and effecting proper stowage of the chain and anchor.

1.1.8 Structural Fire Protection (1 July 2015)

Verification that no changes have been made to the arrangement of structural fire protection, verification of the operation of manual and/or automatic fire doors, if fitted, random visual examination and operational testing of interior fire dampers, and verification that the means for escape from the accommodations, machinery spaces and other spaces are satisfactory.

1.1.9 Suspect Areas (1 July 2006)

Suspect areas of the hull are to be overall examined, including an overall and Close-up Survey of those suspect areas which were identified at the previous surveys.

Areas of substantial corrosion identified at previous surveys are to have thickness measurements taken.

Where extensive areas of corrosion are found or when considered necessary by the Surveyor, thickness measurements are to be carried out and renewals and/or repairs made when wastage exceeds allowable margins.

Where substantial corrosion is found, additional thickness measurements in accordance with 7-3-2/7 are to be taken to confirm the extent of substantial corrosion. These extended thickness measurements are to be carried out before the survey is credited as completed.

Note: The above requirements for suspect areas, including substantial corrosion, are not applicable to cargo tanks of oil and chemical carriers.

Where reduced scantlings on the basis of effective corrosion control have been adopted, the results of any measurements are to be evaluated based on the scantlings before reduction.

(1 July 2013) For vessels built under the IACS Common Structural Rules, the annual thickness gauging of ballast tanks may be omitted where a protective coating has been applied in accordance with the coating manufacturer's requirements and is maintained in GOOD condition.

1.1.10 Ballast Tanks and Combined Cargo/Ballast Tanks (1 July 2006)

1.1.10(a) *Vessels over 5 years of age (2010).* Examination of the following tanks is to be carried out.

- i) Ballast tanks and combined cargo/ballast tanks other than double bottom tanks, where the following conditions have been identified at previous surveys.
 - A hard protective coating was found in POOR condition, or
 - A soft or semi-hard coating has been applied, or
 - A hard protective coating has not been applied from the time of construction.
- ii) Double bottom ballast tanks, where substantial corrosion was found within the tank, and the following conditions have been identified at previous surveys.
 - A hard protective coating was found in POOR condition, or
 - A soft or semi-hard coating has been applied, or
 - A hard protective coating has not been applied from the time of construction.

1.1.10(b) *Vessels over 15 years of age.* In addition to the requirements of 7-3-2/1.1.10(a), the following tanks are also to be examined.

- i) Ballast tanks and combined cargo/ballast tanks other than double bottom tanks in way of spaces designated for the carriage of cargo, where FAIR coating conditions were identified at previous surveys, a minimum of three (3) so identified tanks, i.e., one (1) forward, one (1) midship and one (1) aft.
- ii) Peak tanks, where FAIR coating conditions were identified at previous surveys.

Where extensive areas of corrosion are found or when considered necessary by the Surveyor, thickness measurements are to be carried out and renewals and/or repairs made when wastage exceeds allowable margins.

Where substantial corrosion is found, additional thickness measurements in accordance with 7-3-2/7 are to be taken to confirm the extent of substantial corrosion. These extended thickness measurements are to be carried out before the survey is credited as completed.

Where reduced scantlings on the basis of effective corrosion control have been adopted, the results of any measurements are to be evaluated based on the scantlings before reduction.

1.1.11 Helicopter Deck (1 July 2006)

Where areas of the vessel are designated for helicopter operations, the helicopter deck, deck supporting structure, deck surface, deck drainage, tie downs, markings, lighting, wind indicator, securing arrangements where fitted safety netting or equivalent, access arrangements including emergency escape, and access for fire fighting and rescue personnel, are to be examined.

1.1.12 Vessels Constructed of Aluminum Alloys (1 July 2013)

In addition to the applicable requirements of 7-3-2/1.1, the Annual Survey – Hull is to include the following:

All parts liable to rapid deterioration, particularly areas adjacent to dissimilar metals which are in close proximity.

In lieu of 7-3-2/1.1.10, internal structure of a randomly selected cargo space, dry or liquid, together with any other space deemed necessary by the Surveyor, with particular attention to be given to bilges and drain wells.

1.1.13 Vessels Constructed of Reinforced Plastic

In addition to the applicable requirements of 7-3-2/1.1, the Annual Survey – Hull is to include the following:

1.1.13(a) All accessible parts particularly liable to rapid deterioration.

1.1.13(b) The deck-to-hull connection, and superstructure and deckhouse connections to the deck.

1.1.14 Special Load Lines

Where vessels have timber, tanker or special load lines, the structural arrangements, fitting and appliances upon which such load lines are conditional, are to be examined and placed in satisfactory condition.

1.1.15 Vessels in Lightering Service (1 July 2004)

In addition to the applicable requirements of 7-3-2/1.1, the Annual Survey – Hull is also to include an external examination of hull structures where fenders for lightering operation were located. Where extensive areas of wastage are found, or when considered necessary by the Surveyor, thickness measurements and internal examination, including Close-up Survey, may be required.

1.1.16 Non Self Propelled Vessels (2005)

Machinery items installed consistent with the services of the vessel are subject to a general examination and are to be placed in satisfactory condition.

1.1.17 Cargo Space Fire Dampers and Ventilation Trunks/Ducts (1 February 2018)

All cargo space fire dampers are to be visually examined to the satisfaction of the attending Surveyor, including operational testing and confirmation that screens are clean. Alternatively, where the number of cargo space fire dampers exceeds twenty (20), the Surveyor may visually examine and operationally test a representative amount consisting of not less than 20 percent of the fire dampers in various cargo spaces, provided all cargo space fire dampers are included in the vessel's maintenance program and a review of the records for examination and testing are confirmed to be up to date. When considered necessary by the Surveyor, or where examinations and testing of a representative amount of fire dampers is unsatisfactory, the Surveyor is to extend the amount of examinations and operational testing to all fire dampers.

Ventilation trunks and ducts are to be visually examined where accessible.

1.3 Accommodation Barges

In addition to the applicable requirements of 7-3-2/1.1, the Annual Survey – Hull is to include the following:

- The exposed parts of the hull, the deck, deck structures attached to the deck, including supporting structure, accessible internal spaces and equipment, which are to be generally examined and placed in satisfactory condition, as found necessary.
- Fire extinguishing apparatus, as outlined in Section 3 of the *ABS Guide for Building and Classing Accommodation Barges*.
- Lifesaving appliances and equipment, as outlined in Section 4 of the *ABS Guide for Building and Classing Accommodation Barges*.
- Radio communication, as outlined in the Section 5 of the *ABS Guide for Building and Classing Accommodation Barges*.

1.5 Barges

In addition to the applicable requirements of 7-3-2/1.1, the Annual Survey is to include the following:

1.5.1 Barges Engaged in Dry Bulk Cargo Trade

For barges engaged in the dry bulk cargo trade, at each Annual Survey after Special Periodical Survey No. 3, the holds, with particular attention being paid to tank tops, underside of main deck and side shell plating, framing and attachments. Thickness measurements may be required and access is to be provided for inaccessible areas, as considered necessary by attending Surveyor.

1.5.2 Manned Barges

For manned barges, the Annual Survey is to include the following:

- Fire safety measures.
- Fire extinguishers.