

# Amendments of the Rules / Guidance

(External Review)

Rule Pt. 9 Additional Installations

Guidance Pt. 1 Classification and Surveys



2023. 06

Hull Rule Development Team

# Background and main contents of the amendments

## 1. Background of amendments

(1) Integrate additional installation notation, HMS and HMS1(Hull Monitoring System) into HMS

- Reorganized the requirements to integrate the additional Installation notations HMS/HMS1 (hull monitoring system) and add qualifiers for each detailed requirement.

## 2. Main Contents: Refer to the amendments

## Pt. 9 Additional Installations

Present	Amendment	Note
<p style="text-align: center;"><b>〈Rules〉</b></p> <p style="text-align: center;"><b>Ch. 6 HULL MONITORING SYSTEMS</b></p> <p style="text-align: center;"><b>Section 1 General</b></p> <p>101. Definition   〈omit〉</p> <p>102. General</p> <p>1. Application:</p> <p>The requirements in this Chapter apply for a ship that the class notations assigned to the hull monitoring system to be classed or intended to be classed with the Society.</p> <p>2. Class notations:</p> <p><u>Ships complying with this Chapter may be assigned with one of the following class notations:</u></p> <p>HMS : This notation will be assigned when the ship has been provided with a basic hull stress monitoring system in accordance with <b>Sec 2, 201.</b> and <b>202.</b></p> <p>HMS1 : This notation will be assigned when the ship has been provided with the <b>Sec 2, 203.</b> in addition to HMS.</p>	<p style="text-align: center;"><b>〈Rules〉</b></p> <p style="text-align: center;"><b>Ch. 6 HULL MONITORING SYSTEMS</b></p> <p style="text-align: center;"><b>Section 1 General</b></p> <p>101. Definition   〈same as current〉</p> <p>102. General</p> <p>1. Application:</p> <p>The requirements in this Chapter apply for a ship that the class notations assigned to the hull monitoring system to be classed or intended to be classed with the Society.</p> <p>2. Class notations, HMS:</p> <p><u>Ships equipped with monitoring systems in <b>Sec. 2 202.</b> are designated with HMS notation. If sensors and/or functional devices of <b>Sec. 2 203.</b> are added to the HMS system, the qualifiers specified in Table 6.1.1 should be added. (Ex. HMS(G,W, SD, ...)</u></p>	<p>– combine HMS and HMS1</p>

Present	Amendment	Note
<p>3. Liability:            &lt;omit&gt;</p> <p>103. Information and Plans   &lt;omit&gt;</p> <p style="text-align: center;"><b>Section 2   System Requirements</b></p> <p>201. General            &lt;omit&gt;</p> <p>202. <u>System Requirements</u></p> <p>    1. <b>Sensors</b></p> <p>        (1) Long based strain gauge                    (A) ~ (E)   &lt;omit&gt;                    (F) Thermal loads due to cargo temperatures are to be considered separately. Consideration as to whether or not the thermal loads should be included in the still water or water loads are to be determined when taking into account the type of vessel and cargo and the approved ship's scantlings and their conditions of approval. (The data of calculation were to be submitted of the Society.)</p> <p>        (2) Accelerometer                    &lt;omit&gt;</p> <p>        (3) Pressure Transducer                    &lt;omit&gt;</p> <p>        (4) Clinometer                    &lt;omit&gt;</p> <p>    2. <b>Date Processing and Output Display</b></p> <p>        (1) Display and alarm devices                    &lt;omit&gt;</p> <p>        (2) Signal processing                    &lt;omit&gt;</p>	<p>3. Liability:            &lt;same as current&gt;</p> <p>103. Information and Plans   &lt;same as current&gt;</p> <p style="text-align: center;"><b>Section 2   System Requirements</b></p> <p>201. General            &lt;same as current&gt;</p> <p>202. <u>Requirements for HMS</u></p> <p>    1. <b>Sensors</b></p> <p>        (1) Long based strain gauge                    (A) ~ (E)   &lt;same as current&gt;</p> <p>        (2) ~ (4) &lt;same as current&gt;</p> <p>        (5) Thermal loads due to cargo temperatures are to be considered separately. Consideration as to whether or not the thermal loads should be included in the still water or water loads are to be determined when taking into account the type of vessel and cargo and the approved ship's scantlings and their conditions of approval. (The data of calculation were to be submitted of the Society.)</p> <p>    2. <b>Date Processing and Output Display</b>                &lt;same as current&gt;</p>	<p>- 202.1(1)(F) →          202.1.(5)</p>

Present	Amendment	Note
<p><b>3. Storage device</b></p> <p>(1) <u>General</u></p> <p>(A) For the purpose of verifying that all sensors are working under sea-going conditions the system is to have a minimum recording capability. This requires that a semi-permanent data storage medium is to be used to record, at least once per month and the following information processed over a period of 5 minutes.</p> <ul style="list-style-type: none"> <li>- maximum peak to peak value of stress/acceleration</li> <li>- mean value of stress/acceleration</li> <li>- standard deviation of stress/acceleration</li> <li>- average zero crossing period of stress/acceleration</li> <li>- time reference</li> </ul> <p>(B) Automatic post-processing of data on-board or ashore is to be available on shore or on the vessel to enable the data to be evaluated. Proposals will be considered for recording to be replaced by sending the data ashore via satellite on a regular basis.</p> <p>(C) Where manual input, for example via a computer keyboard, is used, the input procedures are to be included in the operating manual and are to be submitted for review. This data is to be checked regularly against the criteria described in the checking procedure.</p> <p><b>4. Electrical and mechanical equipment</b></p> <p>(1) <u>Flame proof</u></p> <p>All electrical and mechanical equipments associated with the hull monitoring system located in hazardous areas is to be in accordance with the requirements in <b>Pt 7, Ch 1, Ch 5 and Ch 6.</b></p> <p>(2) <u>Uninterruptible Power Supply (UPS)</u></p> <p>(A) The monitoring system is to be powered through an Uninterruptible Power Supply (UPS).</p> <p>(B) In case of failure of the main input voltage the battery capacity is to be sufficient to maintain normal operation of the monitoring system for at least 10 minutes. Failure of any power supply to the system is to initiate an audible and visual alarm.</p> <p>(C) In the case of power failure the system software and recorded data is stored safely. The system is to be able to return automatically to normal operating condition when the power is restored.</p>	<p><b>3. Storage device</b></p> <p>(1) &lt;same as current&gt;</p> <p>(2) <u>Automatic post-processing of data on-board or ashore is to be available on shore or on the vessel to enable the data to be evaluated. Proposals will be considered for recording to be replaced by sending the data ashore via satellite on a regular basis. Recorded data and evaluated result are to be regularly submitted to the Society every year.</u></p> <p>(3) &lt;same as current&gt;</p>	<p>(1)(A), (B), (C) → (1), (2), (3)</p> <p>- 202.4 → 204.</p>

Present	Amendment	Note
<p><b>203. Additional Requirement for Hull Monitoring System(HMS1)</b></p> <p><b>1. General :</b></p> <p>Ship assigned with the class notation of HMS1 is to be complying with the sea environment and voyage data in accordance with the term <b>203. 2</b> in addition to <b>201.</b> and <b>202.</b> The necessary information suitable for this additional requirement is to be displayed and stored:</p> <p><b>2. Additional requirement</b></p> <p>(1) <u>Ship position</u> The ship position is to be informed by Global Position System(GPS).</p> <p>(2) <u>Wind speed and direction</u> The system is to indicate the wind speed and direction provided by wind speed indicator and anemoscope.</p> <p>(3) <u>Ship speed and direction</u> The system is to indicate the real-time information of ship speed and direction provided by GPS and speed and distance indicator onboard.</p>	<p><b>203. Additional requirement for HMS</b></p> <p><u>The equipment that measures the following information should be connected to the monitoring device to output and store the information.</u></p> <p><b>1. <u>Navigational information</u></b></p> <p><u>The system should be possible to acquire information from GPS (ship position, route and speed), record of speed through specific sea area and gyro-compass information for heading and motions like roll and pitch angle, etc.</u></p> <p><b>2. ~ 3.</b>            <b>&lt;same as current&gt;</b></p> <p><b>4. <u>Sea state</u></b></p> <p><u>The system should be possible to obtain sea state information using x-band navigational radar or sensors.</u></p> <p><b>5. <u>Engine output</u></b></p> <p><u>As a ship with UMA notation, it should be possible to monitor various information in the machinery space, such as the output/rpm of the propulsion shaft, from the bridge.</u></p> <p><b>6. <u>Local hull strain</u></b></p> <p><u>The system should be possible to monitor local hull strains.</u></p>	<p>- 203.2(1)~(3) → 203.1~3.</p>

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<div>Section 3 ~ Section 4 〈omit〉</div>	<div>Table 6.1.1 Additional qualifiers for HMS</div> <table><tr><th>Item</th><th>Description</th></tr><tr><td>G</td><td>Sensor for location tracking (GPS) (203.1)</td></tr><tr><td>W</td><td>Sensor for monitoring wind speed and wind heading (203.2)</td></tr><tr><td>SD</td><td>Sensor for monitoring ship speed and direction (203.3)</td></tr><tr><td>S</td><td>System for acquiring sea state information (203.4)</td></tr><tr><td>U</td><td>As a ship with UMA notation, system for monitoring information in the machinery space, such as the output/rpm of the propulsion shaft (203.5)</td></tr><tr><td>LS</td><td>Sensors for monitoring local hull strain (203.6)</td></tr></table>	Item	Description	G	Sensor for location tracking (GPS) (203.1)	W	Sensor for monitoring wind speed and wind heading (203.2)	SD	Sensor for monitoring ship speed and direction (203.3)	S	System for acquiring sea state information (203.4)	U	As a ship with UMA notation, system for monitoring information in the machinery space, such as the output/rpm of the propulsion shaft (203.5)	LS	Sensors for monitoring local hull strain (203.6)	
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	<div>204. Electrical and mechanical equipment</div> <div>1. Flame proof</div> <div>All electrical and mechanical ~ 〈same as current〉</div> <div>2. Uninterruptible Power Supply (UPS)</div> <div>(1) The monitoring system is ~ 〈same as current〉</div> <div>(2) In case of failure of the main ~ 〈same as current〉</div> <div>(3) In the case of power failure ~ 〈same as current〉</div>	<div>- 202.4 → 204.</div>														
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## Pt. 1 Classification and Surveys

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<p style="color: blue; font-weight: bold;">〈Guidance〉</p> <p style="text-align: center;"><b>Annex 1–1 Character of Classifications</b></p> <p><b>1. Class Notation</b></p> <p><b>1.1 Ship Type and Special Feature Notations</b></p> <p><b>1.2 Additional Installations Notations</b></p> <p>The following Additional Installations Notations may be appended to ships complying with the relevant requirements.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th><th style="width: 20%;">Additional Installations Notations</th><th style="width: 70%;">Relevant Requirements</th></tr> </thead> <tbody> <tr> <td rowspan="8" style="text-align: center; vertical-align: middle;">Hull Items</td><td style="text-align: center;">HMS, HMS1</td><td>to ships where the Hull Monitoring System specified in <b>Pt 9, Ch 6</b> of the Rules is provided on board.</td></tr> <tr> <td style="text-align: center;">LG</td><td>to ships where the Cargo Handling Appliance specified in <b>Pt 9, Ch 2</b> of the Rules are provided on board.</td></tr> <tr> <td style="text-align: center;">PA</td><td>〈omit〉</td></tr> <tr> <td style="text-align: center;">LI</td><td>〈omit〉</td></tr> <tr> <td style="text-align: center;">EQ-SPM</td><td>〈omit〉</td></tr> <tr> <td style="text-align: center;">PKS</td><td>〈omit〉</td></tr> <tr> <td style="text-align: center;">SUR, BOU, SAT</td><td>〈omit〉</td></tr> <tr> <td style="text-align: center;">ADUW</td><td>〈omit〉</td></tr> <tr> <td style="text-align: center;">Machinery Items</td><td style="text-align: center;">〈omit〉</td><td>〈omit〉</td></tr> </tbody> </table>		Additional Installations Notations	Relevant Requirements	Hull Items	HMS, HMS1	to ships where the Hull Monitoring System specified in <b>Pt 9, Ch 6</b> of the Rules is provided on board.	LG	to ships where the Cargo Handling Appliance specified in <b>Pt 9, Ch 2</b> of the Rules are provided on board.	PA	〈omit〉	LI	〈omit〉	EQ-SPM	〈omit〉	PKS	〈omit〉	SUR, BOU, SAT	〈omit〉	ADUW	〈omit〉	Machinery Items	〈omit〉	〈omit〉	<p style="color: blue; font-weight: bold;">〈Guidance〉</p> <p style="text-align: center;"><b>Annex 1–1 Character of Classifications</b></p> <p><b>1. Class Notation</b></p> <p><b>1.1 Ship Type and Special Feature Notations</b></p> <p><b>1.2 Additional Installations Notations</b></p> <p>The following Additional Installations Notations may be appended to ships complying with the relevant requirements.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th><th style="width: 20%;">Additional Installations Notations</th><th style="width: 70%;">Relevant Requirements</th></tr> </thead> <tbody> <tr> <td rowspan="8" style="text-align: center; vertical-align: middle;">Hull Items</td><td style="text-align: center;">HMS (G,W,SD, S,U,LS)</td><td>to ships where the Hull Monitoring System specified in <b>Pt 9, Ch 6</b> of the Rules is provided on board.</td></tr> <tr> <td style="text-align: center;">LG</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">PA</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">LI</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">EQ-SPM</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">PKS</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">SUR, BOU, SAT</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">ADUW</td><td>〈same as current〉</td></tr> <tr> <td style="text-align: center;">Machinery Items</td><td colspan="2" style="text-align: center;">〈same as current〉</td></tr> </tbody> </table>		Additional Installations Notations	Relevant Requirements	Hull Items	HMS (G,W,SD, S,U,LS)	to ships where the Hull Monitoring System specified in <b>Pt 9, Ch 6</b> of the Rules is provided on board.	LG	〈same as current〉	PA	〈same as current〉	LI	〈same as current〉	EQ-SPM	〈same as current〉	PKS	〈same as current〉	SUR, BOU, SAT	〈same as current〉	ADUW	〈same as current〉	Machinery Items	〈same as current〉		
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# Rules for the Classification of Steel Ships

(Development Review : For external opinion inquiry)

## Part 9 Additional Installations

2023. 9.



Machinery Rule Development Team

Effective Date : 1 July 2023

(The contract date for ship construction)

Present	Amendment	Remark
<p style="text-align: center;"><b>CHAPTER 4 DYNAMIC POSITIONING SYSTEMS</b></p> <p style="text-align: center;">Section 1 &lt;same as the present Rules&gt;</p> <p style="text-align: center;">Section 2 Requirements of Dynamic Positioning Systems</p> <p>201. &lt;same as the present Rules&gt;</p> <p>202. Requirements of dynamic positioning systems</p> <p>1. Power system</p> <p>(1) – (2) &lt;same as the present Rules&gt;</p> <p>(3) <u>Electrical supply for actuating mechanism</u></p> <p style="padding-left: 20px;">(A) <u>Steerable thrusters are to be provided with two or more independent supplies of motive power to the pitch and direction actuating mechanisms.</u></p> <p style="padding-left: 20px;">(B) <u>Thrusters having variable pitch propellers are to be provided with two or more independent supplies of motive power to the pitch actuating mechanisms.</u></p> <p>(4) – (6) &lt;same as the present Rules&gt;</p> <p>2. – 4. Power system</p> <p>203. Additional requirements for DP systems</p> <p>1. &lt;same as the present Rules&gt;</p> <p>2. DPS(2)</p> <p>(1) – (5) &lt;same as the present Rules&gt;</p> <p>(6) For electrically driven thruster units, the following requirements are to be complied with: (2019)</p> <p style="padding-left: 20px;">(A) – (B) &lt;same as the present Rules&gt;</p>	<p style="text-align: center;"><b>CHAPTER 4 DYNAMIC POSITIONING SYSTEMS</b></p> <p style="text-align: center;">Section 1 &lt;same as the present Rules&gt;</p> <p style="text-align: center;">Section 2 Requirements of Dynamic Positioning Systems</p> <p>201. &lt;same as the present Rules&gt;</p> <p>202. Requirements of dynamic positioning systems</p> <p>1. Power system</p> <p>(1) – (2) &lt;same as the present Rules&gt;</p> <p>(3) <del>Electrical supply for actuating mechanism</del></p> <p style="padding-left: 20px;"><del>(A) Steerable thrusters are to be provided with two or more independent supplies of motive power to the pitch and direction actuating mechanisms.</del></p> <p style="padding-left: 20px;"><del>(B) Thrusters having variable pitch propellers are to be provided with two or more independent supplies of motive power to the pitch actuating mechanisms.</del></p> <p>(4) – (6) &lt;same as the present Rules&gt;</p> <p>2. – 4. Power system</p> <p>203. Additional requirements for DP systems</p> <p>1. &lt;same as the present Rules&gt;</p> <p>2. DPS(2)</p> <p>(1) – (5) &lt;same as the present Rules&gt;</p> <p>(6) For electrically driven thruster units, the following requirements are to be complied with: (2019)</p> <p style="padding-left: 20px;">(A) – (B) &lt;same as the present Rules&gt;</p>	<p>(Deleted)</p> <p>– According to the present rules, each thruster is to be provided with two or more independent supplies of motive power even if two or more thrusters are installed so they have been deleted.</p>

Present	Amendment	Remark
<p>(C) In relation to (A) and (B), in order not to loss of position, provision is to be made for automatic starting synchronization and load sharing of a non-running generator before the load reaches the alarm level required by <b>202. 2 (6)</b>.</p> <p><b>3. &lt;same as the present Rules&gt;</b></p> <p><b>Section 3 &lt;same as the present Rules&gt;</b></p>	<p>(C) In relation to (A) and (B), in order not to loss of position, provision is to be made for automatic starting synchronization and load sharing of a non-running generator before the load reaches the alarm level required by <b>202. 21 (5)</b>.</p> <p><b>3. &lt;same as the present Rules&gt;</b></p> <p><b>Section 3 &lt;same as the present Rules&gt;</b></p>	<p>(Amended)</p> <p>- 202. 2 (6) -&gt; 202. 1 (6)</p>

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<p style="text-align: center;"><b>CHAPTER 5 NAVIGATION BRIDGE SYSTEMS</b></p> <p style="text-align: center;">Section 1 – 2 &lt;same as the present Rules&gt;</p> <p style="text-align: center;">Section 3 Bridge Layouts and Bridge Working Environments</p> <p>301. General</p> <p>1. &lt;same as the present Rules&gt;</p> <p>2. General</p> <p>(1) – (5) &lt;same as the present Rules&gt;</p> <p>(6) The navigation bridge visibility of the ship is to be as follows.</p> <p>(A) – (B) &lt;same as the present Rules&gt;</p> <p>(C) It is to be possible to observe all objects necessary for navigation, such as ships and lighthouses, in any direction from inside the wheelhouse.</p> <p>(a) There is to be a field of view around the vessel of 360° obtained by an observer moving within the confines of the wheelhouse. (See <b>Fig 9.5.2</b>)</p> <p>(b) &lt;newly added&gt;</p> <p>(D) – (E) &lt;same as the present Rules&gt;</p> <p>302. &lt;same as the present Rules&gt;</p> <p style="text-align: center;">Section 4 – 6 &lt;same as the present Rules&gt;</p>	<p style="text-align: center;"><b>CHAPTER 5 NAVIGATION BRIDGE SYSTEMS</b></p> <p style="text-align: center;">Section 1 – 2 &lt;same as the present Rules&gt;</p> <p style="text-align: center;">Section 3 Bridge Layouts and Bridge Working Environments</p> <p>301. General</p> <p>1. &lt;same as the present Rules&gt;</p> <p>2. General</p> <p>(1) – (5) &lt;same as the present Rules&gt;</p> <p>(6) The navigation bridge visibility of the ship is to be as follows.</p> <p>(A) – (B) &lt;same as the present Rules&gt;</p> <p>(C) It is to be possible to observe all objects necessary for navigation, such as ships and lighthouses, in any direction from inside the wheelhouse.</p> <p>(a) There is to be a field of view around the vessel of 360° obtained by an observer moving within the confines of the wheelhouse. (See <b>Fig 9.5.2</b>)</p> <p>(b) <u>An alternative equivalent means may be acceptable such as cameras covering any obstructed views or blind sectors.</u></p> <p>(D) – (E) &lt;same as the present Rules&gt;</p> <p>302. &lt;same as the present Rules&gt;</p> <p style="text-align: center;">Section 4 – 6 &lt;same as the present Rules&gt;</p>	<p>(newly added)</p> <p>– It has been clarified that alternative means may be acceptable to cover any obstructed views or area where securing a 360° view is difficult due to an obstruction, such as a stack or a stern.</p>