



CIRCULAR LETTER

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dated 20.05.2014

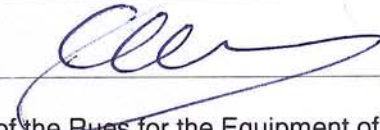
Re:
Implementation of IMO resolutions MSC.333(90) "Adoption of Revised Performance Standards for Shipborne Voyage Data Recorders (VDRs)", MSC.334(90) "Adoption of Amendments to the Performance Standards for Devices to Measure and Indicate Speed and Distance (Resolution MSC.96(72))", IACS Unified Interpretation SC261 (May, 2013) "Interpretation of Performance Standards for Voyage Data Recorders (VDRs) (Resolution MSC.333(90))" into the Rules for the Equipment of Sea-Going Ships, 2014.

Item of technical supervision:

voyage data recorders (VDRs), devices to measure and indicate speed and distance (logs)

Implementation	01.07.2014	
Valid: till	--	
Validity period extended till	--	
Cancels/amends/adds Circular Letter No.	--	dated --
Number of pages:	1+7	
Appendices:	Amendments to Part V "Navigational Equipment" of the Rules for the Equipment of Sea-Going Ships, 2014.	

Technical Director –Head of Classification Directorate



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Amends Part V "Navigational Equipment" of the Rules for the Equipment of Sea-Going Ships, 2014, (ND No. 2-020101-078-E)

We hereby inform that since 1 July 2014 the following documents come into force:

- IMO resolution MSC.333(90) "Adoption of Revised Performance Standards for Shipborne Voyage Data Recorders (VDRs)";
- IMO resolution MSC.334(90) "Adoption of Amendments to the Performance Standards for Devices to Measure and Indicate Speed and Distance (Resolution MSC.96(72))";
- IACS Unified Interpretation (UI) SC261 (May, 2013) "Interpretation of Performance Standards for Voyage Data Recorders (VDRs) (Resolution MSC.333(90))".

To implement applicable provisions of the above mentioned documents into the RS practice, the amendments given in Appendix to the Circular Letter shall be introduced into Part V "Navigational Equipment" of the Rules for the Equipment of Sea-Going Ships at their re-publication in 2015.

The original of IACS UI SC261 is posted on the RS internal website in Section External Normative Documents / ND No. 1-0221-261-E.

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, interested organizations and shipowners within the area of the RS Branch Offices' activity.
2. Apply in the RS practice the amendments to the Rules for the Equipment of Sea-Going Ships given in Appendix to the Circular Letter since 1 July 2014.

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Amendments to Part V "Navigational Equipment" of the Rules for the Equipment of Sea-Going Ships, 2014, ND No. 2-020101-078-E

1.1 SCOPE OF APPLICATION

1.1.2 The reference to "1.1.3 – 1.1.8" shall be replaced with the reference to "1.1.3 to 1.1.5".

1.1.5 In the first paragraph after the words "voyage data recorder" the abbreviation "(VDR)" shall be added, and the rest remains as it stands.

This para shall be supplemented with the following text:

"VDRs installed on or after 1 July 2014 shall comply with the performance standards specified in 5.20 of the present Part of the Rules.

VDRs are considered as installed on or after 1 July 2014 if:
the contract for construction of a ship was signed on or after 1 July 2014; or
the ship was constructed on or after 1 July 2014 (refer to the definition "Ships constructed" given in 1.2 of the present Part of the Rules).

For ships other than those ships prescribed above, the VDR is considered as installed on or after 1 July 2014 if:
a contractual delivery date for the VDR is 1 July 2014 or after this date; or
the actual delivery of the VDR to the ship (when the delivery date is not stated in the contract) is 1 July 2014 or after this date.

VDRs installed before 1 July 2014 shall comply with the performance standards specified in 5.20 of Part V of the Rules in force prior to 1 January 2014."

2.2 LIST OF NAVIGATIONAL EQUIPMENT

2.2.6 shall be supplemented with the following text:

"On board the ships of 50000 gross tonnage and above, as well as on other ships where the installation of the speed log measuring speed through the water and speed over the ground, these speed logs shall be provided by two separate devices."

3.7 ARRANGEMENT OF NAVIGATIONAL EQUIPMENT ON BOARD SHIP

3.7.19.1 The words "equipment is arranged" shall be replaced with "units are arranged".

3.7.19.2 shall be supplemented with the following text:

"The long-term recording medium (refer to 5.20.4.3) shall be capable of being accessed from an internal, easily accessible area of the ship."

5.20 VOYAGE DATA RECORDER (VDR)

shall be supplemented by the following text:

5.20.1 VDR shall continuously and automatically maintain sequential records of preselected data items obtained from the ship devices and systems relating to the status and operational modes of the ship's equipment, command and control of the ship, and environment.

5.20.2 The method of recording shall ensure that the various data items can be co-related in date and time during playback on suitable equipment.

5.20.3 The VDR shall include functions to perform a performance test at any time (annually, following repair or maintenance work) to the VDR or any signal source providing data to the VDR, as well as to check the recorded data. This test shall ensure that all the required data items are being correctly recorded.

5.20.4 The final recording medium is an integral part of the VDR and shall consist of the following items on which the data is recorded such that access to any one of them will enable the data to be recovered and played back:

- fixed recording medium;
- float-free recording medium; and
- long-term recording medium.

5.20.4.1 The fixed recording medium shall be installed in a fixed protective capsule which shall meet the following requirements:

- .1 be fixed to the open deck of the ship;
- .2 be capable of being accessed following an incident but secure against a physical or electronically manipulated change or deletion of recorded data;
- .3 maintain the recorded data for a period of at least two years following termination of recording;
- .4 maximize the probability of survival and recovery of the recorded data after any incident, including survival against the following:
 - shock (a half sine-wave pulse of 50 g, with a duration of 11 ms);
 - penetration (a mass of 250 kg with a pin of 100 mm diameter, dropped from a height of 3 m);
 - low temperature fire of 260 °C nominal for 10 h);
 - high temperature fire of 1100 °C for 1 h);
 - 3 m sea water immersion for 30 days;
 - 6000 m deep-sea water immersion for 24 h;
- .5 be fitted with an appropriate device to aid location under water, e.g. an acoustic underwater beacon attached to the case of the fixed protective capsule and indicating location thereof, and operating in the frequency band of 37.5 kHz (frequency band of 25 to 50 kHz) with battery life of at least 90 days.

The protective capsule case shall be of a highly visible colour and marked with retro-reflective materials, as well as with a clearly seen inscription in English: "VOYAGE DATA RECORDER - DO NOT OPEN - REPORT TO AUTHORITIES".

5.20.4.2 The float-free recording medium shall be installed in float-free capsule which shall meet all the following requirements:

- .1 be capable of being accessed following an incident but secure against a physical or electronically manipulated change or deletion of recorded data;
- .2 be fitted with means to facilitate grappling and recovery;
- .3 be so constructed as to minimize risk of damage during recovery operations;
- .4 maintain the recorded data for a period of at least six months following termination of recording;
- .5 be constructed as to comply with the requirements to COSPAS-SARSAT satellite emergency position-indicating radio beacons specified in 9.1 and 9.2, Part IV "Radio Equipment" of the present Rules;
- .6 be provided with automatically activated flashing light with a luminous intensity of 0,75 cd and installed on the capsule, as well as with a device capable of transmitting

an initial locating signal and further locating homing signal for at least 48 h over a period of not less than seven days/168 h.

5.20.4.3 The long-term recording medium shall provide access via the standard interface to the data held on it but be secured against a physical or electronically manipulated change or deletion of recorded data.

The operating manual of the long-term recording medium and instruction describing the means of interfacing with it shall be kept at a prominent position as close to the long-term recording medium as practicable.

5.20.5 The VDR shall provide recording and storage of data items. The time for which all stored data items are retained shall be the following:

- at least 30 days (720 h) on the long-term recording medium;
- at least for 48 h on the fixed recording medium; and
- at least for 48 h on the float-free recording medium.

When the periods of data recording and storage exceed the prescribed ones, the data items which are older than those mentioned above may be overwritten with new data.

5.20.6 It shall be possible to record, as a minimum, the following data items:

.1 date and time in steps ensuring a reconstruction of events sequence. Date and time, referenced to Universal Time Coordinate (UTC), shall be obtained from a source external to the ship and an internal clock (synchronized with valid date and time data) with indication, which source is in use. During times of a loss of the external source, the internal clock shall be used;

.2 latitude and longitude of ship's position derived from a receiver of radio navigation systems with indication of its type and operational mode, as well as the datum used;

.3 ship's heading as indicated by the ship's gyrocompass or magnetic compass;

.4 ship's speed as indicated by the ship's log(s) including an indication if it is through the water or over the ground;

.5 conversations, commands and sound signals on the bridge, and also announcements over public address system;

Microphones shall be positioned on the bridge covering all work stations so that conversation is recorded. The recording shall be such that, on playback, a normal speaking voice shall provide adequate intelligibility while the ship is performing its normal operations.

This shall be achieved through the use of at least two channels of audio recording to ensure selection of valid signal from any noise, including noise from faulty equipment or mounting, or wind. Microphones positioned outside on bridge wings, shall be recorded on at least one additional separate channel;

.6 communications with other ships, objects and shore-based services using VHF radio equipment shall be recorded on an additional separate channel to those referred to in 5.20.6.5;

.7 radar and auxiliary navigational data displayed on both radar display units. The recording method shall be such that, on playback, it is possible to present a faithful replica of the entire radar display that was on view at the time of recording, albeit within the limitations of any bandwidth compression techniques that are essential to the working of the VDR;

.8 electronic signals of the ECDIS display in use at the time as the primary means of navigation (where a ship is fitted with ECDIS). The recording method shall be such that, on playback, it is possible to present a faithful replica of the entire ECDIS display that was on view at the time of recording, albeit within the limitations of any bandwidth compression techniques that are essential to the working of the VDR and in addition the source of the chart data and the version used;

.9 depth under keel, the depth scale currently being displayed and other status information;

.10 all mandatory alarms on the bridge or as received from the bridge alert management system (BAM), if installed, recorded as individually identified alarms;

.11 rudder and steering gear order and response. This shall include status and settings of heading or track control system, if fitted, and indicate the control station, mode, and power unit(s) in use;

.12 engine and thruster order and response. This shall include the positions of any

engine telegraphs or direct engine/propeller controls and feedback indications on the bridge, if fitted, including ahead/astern indicators and indicate the control station in use. This shall also include any thrusters, if fitted, and indicate the control station in use.

.13 status of sea openings of ship's hull. This shall include all mandatory status information required to be displayed on the bridge;

.14 watertight and fire door status. This shall include all mandatory status information required to be displayed on the bridge;

.15 accelerations and hull stresses (where a ship is fitted with suitable sensors, as well as with hull stress and response monitoring equipment) ;

.16 wind speed and direction (where a ship is fitted with suitable sensors) including its true or relative status;

.17 all automatic identification system (AIS) data;

.18 rolling motion (where a ship is fitted with an electronic inclinometer). The recording method shall be such that the rolling motion can be reconstructed during playback.

.19 data block defining the configuration of the VDR and the sensors to which it is connected. This data shall be written into the final recording medium during commissioning of the VDR. The data block shall be maintained up to date with respect to the vessel installation. It shall include details on the manufacturer, type and version number of a sensor, the identification and location of the sensor and the interpretation of the sensor data. The possibility of changes in the data block shall be avoided except the cases related to data corrections due to actual changes in the VDR configuration and sensors. This configuration data shall be permanently retained in the final recording media and protected from modification other than by a duly authorized person following any change to the configuration;

.20 the ship's log book data (where a ship is fitted with an electronic log book) .

5.20.7 Optionally, additional items may be recorded provided that the requirements for the recording and storage of the specified selections are not compromised.

5.20.8 The equipment shall be so designed that, as far as is practical, it is not possible to manipulate the amount of data being recorded by the VDR, the data itself nor the data which has already been recorded.

Any attempt of an unauthorised access to VDR operation shall be recorded..

5.20.9 The recording method shall be such that each item of the recorded data is checked for integrity and an alarm given if a non-correctable error is detected.

5.20.10 If the ship's source of electrical power supply fails, the VDR shall continue to record bridge audio from the dedicated reserve power source (e.g. using its own accumulator batteries) for a period of 2 h. At the end of this 2-h period all recording shall cease automatically.

5.20.11 Malfunctions or failure of VDR shall not affect the operation of the data sensors interfaced thereto.

5.20.12 The VDR shall provide an interface for downloading the stored data and playback the information to an external computer. The interface shall be compatible with an internationally recognized format, such as Ethernet, USB, Fire Wire or equivalent. It shall be possible to perform a download of the recorded data for a user-defined period of time.

5.20.13 A copy of the software programme providing the capability to download the stored data and playback the information onto a connected external laptop computer and for the playback of the data shall be provided for each VDR installation.

The software shall be compatible with a standard operating system available with commercial-off-the shelf laptop computers and provided on a portable storage device such as CD-ROM, DVD, USB-memory stick, etc.

5.20.14 In the technical documentation delivered together with VDR the instructions for connecting the external laptop computer to the S-VDR and for executing the software shall be provided.

5.20.15 The portable storage device containing the software, the instructions and any special (not commercial-off-the-shelf) parts necessary for the physical connection of the external laptop computer, shall be stored within the main input of the VDR.

5.20.16 Where non-standard or proprietary formats are used for storing the data in the VDR, the software for converting the stored data into open industry standard formats shall be provided on the portable storage device or resident in the VDR.”

5.22 BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)

5.22.2.1 shall be supplemented with the following text:

"In ships fitted with the BNWAS required in this Part, this system shall be in operation whenever the ship is underway at sea. Use of automatic mode in such ships is not allowed, and connection of the BNWAS to the heading or track control system is not required. "