

4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

MSC.1/Circ.1222/Rev.1
14 June 2019

**GUIDELINES ON ANNUAL TESTING OF VOYAGE DATA RECORDERS (VDR)
AND SIMPLIFIED VOYAGE DATA RECORDERS (S-VDR)**

1 The Maritime Safety Committee, at its seventy-third session (27 November to 6 December 2000), approved the revision of SOLAS regulation V/20 which included the requirement for voyage data recorder (VDR) systems to be the subject of an annual performance test and, at its seventy-ninth session (1 to 10 December 2004), adopted amendments to regulation V/20 to include the requirement for VDRs which may be simplified voyage data recorders (S-VDR), to be fitted on existing cargo ships on a phased-in carriage requirement. Such VDRs were also to be the subject of an annual performance test.

2 At its eighty-second session (29 November to 8 December 2006), the Committee approved *Guidelines on annual testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR)* (MSC.1/Circ.1222).

3 At its 101st session (5 to 14 June 2019), the Committee approved amendments to the *Guidelines on annual testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR)*, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue, at its sixth session (16 to 25 January 2019). The revised guidelines are set out in the annex.

4 The purpose of an annual performance test is to determine that a VDR/S-VDR is operational as defined in the manufacturer's specification. In addition, because of the "black box" nature of this equipment, there is a need to have a document which clearly lists all the interfaces which have been checked to confirm compliance with the appropriate International Electrotechnical Commission (IEC) test standards. This transparency is essential for surveyors or inspectors of flag Administrations port States or recognized organizations.

5 To assist in achieving this aim, it is recommended that all VDR and S-VDR be subject to a standard method of testing as detailed in the annexed revised Guidelines.

6 Member States are invited to bring these Guidelines to the attention of shipping companies, shipowners, ship operators, equipment manufacturers, recognized organizations, shipmasters and all parties concerned.

7 This circular supersedes MSC.1/Circ.1222. Any reference to MSC.1/Circ.1222 should henceforth be read as reference to this circular.

ANNEX

GUIDELINES ON ANNUAL TESTING OF VDR AND S-VDR

- 1 The annual testing of VDR/S-VDR required by SOLAS regulation V/20 should be carried out by the manufacturer or a person authorized by the manufacturer.
- 2 The examination of the VDR/S-VDR installation should include:
 - .1 confirmation that no alarms are present prior to commencement of the test;
 - .2 confirmation that when the external power is removed the power supply alarm is activated, the equipment continues to operate for at least 1 h 55 min and automatically stops recording no later than 2 h 5 min after the external power is removed;
 - .3 confirmation that the acoustic beacon is functional using the appropriate manufacturer's test equipment or by the substitution of a certified fully operational unit;
 - .4 confirmation that the overall condition of the equipment is satisfactory and that any batteries within the equipment (acoustic beacon and power supply) are in date;
 - .5 confirmation that accurate maintenance records of the VDR are available;
 - .6 confirmation that the items to be recorded, specifically those data items available and required to be recorded at the time of original commissioning as defined in resolution A.861(20) and resolution MSC.163(78) for VDR and S-VDR, respectively, are satisfactorily stored for the duration of the 12-hour recording period;
 - .7 confirmation that the capsule float-free arrangements, where required or fitted, are satisfactory as originally accepted at commissioning; and that any battery, release mechanism or other datable items are within their expiry date. In addition, for float-free capsules approved in accordance with resolution MSC.333(90), the examination should be carried out in accordance with MSC.1/Circ.1040/Rev.1; and
 - .8 confirmation that the equipment is restored to normal operation mode following completion of the tests.
- 3 The manufacturer must complete a review, record any changes and issue the completed test report within 45 days. To accommodate performance checks to align with the appropriate survey under the Harmonized System of Survey and Certification (HSSC), the annual performance check may be carried out up to 3 months before the due date for a passenger ship and +/- 3 months of the due date for a cargo ship (the maximum period between subsequent checks is, therefore, 15 months for passenger ships and 18 months for cargo ships, unless either certificate has been extended as permitted by SOLAS regulation I/14, in which case a similar extension may be granted).
- 4 The annual test should be recorded in the form of the model test report given in the appendix. If the language used is neither English nor French nor Spanish, the text should include a translation into one of these languages.

APPENDIX

VOYAGE DATA RECORDER PERFORMANCE TEST REPORT

(Note: Insert **Yes** for success, **No** for failure or **N/A** for non-fitted interfaces in these boxes, as appropriate)

Yes	No	N/A
-----	----	-----

Ship's details

Ship's name	
Flag	
IMO number	
Date keel laid	
Gross tonnage	

Voyage data recorder details

Manufacturer	
Model	
System serial number	
Software version number	
Date fitted	

Inspection details

Name of person conducting testing	
Company	
Inspection date	
Inspection location	

1 Pre-existing alarms

Confirm that no alarms were present at start of procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------

2 Power supply alarm check

Remove source of external power. Confirm that alarm is activated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record time (hh.mm)			

3 Reserve power source check

Allow VDR to continue running for 1 hour 55 minutes from '2' above.

Confirm that equipment is still operating at this time, with no additional alarms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record time (hh.mm)			

4 Reserve power source shutdown check

2 hours 05 minutes from '2' above confirm that the VDR has automatically stopped recording.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record time (hh.mm)			

5 Battery expiry dates

Battery	Expiry date (where applicable)			
Acoustic beacon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reserve power source		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 Acoustic beacon test

Using manufacturer's test equipment confirm that acoustic beacon is functional or by the substitution of a certified fully operational unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------

7 Overall condition of equipment

Inspect equipment and record condition, tick if satisfactory:

Sub unit	Notes on condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protective capsule		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
External cables		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main unit		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8 Interfaces: Operation and recording

Date and time	Preferably external to ship (e.g. Global Navigation Satellite System.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ship's position	Electronic Positioning system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speed (through water or over ground)	Ship's designated speed and distance measuring equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heading	Ship's compass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bridge audio	1 or more bridge microphones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communications Audio	VHF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radar data- post display selection	Master radar display (both radars, where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ECDIS	ECDIS display in use, where fitted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AIS	All AIS data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rolling motion	Electronic inclinometer, where fitted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Configuration data	Where applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic logbook	Where fitted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water depth	Echo sounder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main alarms	All mandatory alarms on bridge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rudder order and response	Steering gear and autopilot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engine order and response	Telegraphs, controls and thrusters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hull openings status	All mandatory status information displayed on bridge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watertight and fire door status	All mandatory status information displayed on bridge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acceleration and hull stresses	Hull stress and response monitoring equipment where fitted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind speed and direction	Anemometer where fitted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 Float-free capsule

Yes **No** **N/A**

For float-free capsules approved in accordance with resolution MSC.333(90): an examination according to MSC.1/Circ.1040/Rev.1 has been conducted.	
---	--

--	--	--

10 Change or repair of sensors

Check maintenance records of VDR				
Confirm any defects properly rectified				
Person authorized by the Manufacturer	Ship's representative			
Date	Date			

If the manufacturer does not complete a review and issue a completed test report within 45 days, this test report should go forward for certification.

11 Manufacturer's analysis

Note – This confirms the endorsement by the manufacturer of the tests and that the master record/database has been checked.

Manufacturer's analysis of 12-hour log is attached and in accordance with International Electrotechnical Commission (IEC) 61996 Maritime navigation and radiocommunication equipment and systems – Shipborne voyage data recorder (VDR) – Performance requirements – Methods of testing and required test results section 4.6 – Data items to be recorded (resolution A.861(20), section 5.4). Confirmation that all data is available throughout the 12-hour recording.			
Date and time of above log.			

--	--	--

12 Observations and additional manufacturer's requirements

Note – This specifically provides for the logging of significant events that may have occurred on board since the previous test, including the refitting of equipment or major unit change to existing equipment. – Any or all of which may have an impact on the availability or quality of the VDR/S-VDR input signal.

This performance test was conducted in accordance with SOLAS regulation V/18.8 and forms part of the procedure for the issue of the Annual Performance Test Certificate. The results, information and any comments should be relayed to the manufacturer in accordance with the instructions contained within

the Operation Manual. Subject to satisfactory results, an Annual Performance Test Certificate will then be issued.

In accordance with the principles of harmonization of Certificates, the Certificate, when issued, will remain valid until the next annual re-validation of that Certificate, subject to the equipment being maintained in appropriate operational condition.
