Voyage Master VMII & VMIII - VDR APT Form

SUBJECT: Annual Performance Test (APT) – Addition of Manufacturer's Data Review

INTRODUCTION: Attached is the released Voyage Master VMII & VMIII VDR Annual Performance Test Rev. 005

This bulletin supersedes the original VDR Bulletin No./APT Form:
APT_VMIIIS-VMIII__REVB
APT_VMIIS-VMII__REVA

SCOPE: This Bulletin is to inform all personnel certified to perform the Voyage Master II & III VDR Annual Performance Test of the revised Performance Test.

GENERAL: This Bulletin adds additional data review procedures to the APT to achieve compliance with IMO MSC.1 Circ.1222 dated Dec 11, 2006, Issue 10. To comply, conduct the APT, completing pages 3 of 14.

Sign the report, but do not issue the certificate.

REQUIRED ACTION: Approved service representatives and agents conducting APT's must while on the vessel:

- Download 12 hours of data from the capsule.
- Complete the Annual Performance Test (APT) form.
- Leave a copy of completed APT form with the vessel.

On completing the APT, the service representative or agent must then upload:

- 12 hours of data from the Capsule.
- A copy of completed APT form
- A copy of the service report
- A copy of valid training certificate.
- Sperry Service Order number or Purchase Order number for the issue of the COC.
-

Please use "NGSM_VDR_SB003 APT DATA UPLOAD" as guidance.

Once data analysis is complete, the completed report will be returned to the service representative.

Service representative have to send original certificate to vessel.

Northrop Grumman Sperry Marine B.V.
vdr.support@sperry.ngc.com
vdr.apt@sperry.ngc.com
service.eu@sperry.ngc.com

ACTION: Service Representatives must submit a Purchase Order to Sperry Marine with submittal of 12 hour data recording, incomplete report and incomplete certificate.
PO, incomplete report and incomplete certificate can be emailed to vdr.apt@sperry.ngc.com.

Approved:

[redacted]
[redacted]
Global Product Support Supervisor
Sperry Marine

[redacted]
[redacted]
Global Product Support & Training Manager
Sperry Marine

Service Report Number: 0158

Job Reference (optional): 510515

Name of Vessel	Flag	Class	IMO number	MMSI number
EL FARO	US	ABS	7395351	368208000

Vessel Type	
Passager Ship	☐
Cargo Ship	☑

Voyage Data Recorder information:

System Version:

Sperry Marine VDR II	☐
Sperry Marine VDR III	☐
Sperry Marine SVDR II	☑
Sperry Marine SVDR III	☐

Model No:	DAU S/No:	SW version installed at arrival:	Installation date: (dd.mm.yyyy)
GII	1000603	2.21	2003

Inspection details:

Certified Technician	Certificate number	Expiration date	Company name	Date of inspection	Location
[redacted]	[redacted]	29 OCT 2016	SPERRY	2 DEC 2014	JACKSONVILLE, USA

The following tools and test equipment must be available prior to this inspection:

Equipment	YES	NO	N/A
Laptop	☑	☐	☐
Voltmeter	☑	☐	☐
Test Kit P/N:1300652	☑	☐	☐
Beacon Tester	☑	☐	☐
PC Monitor	☐	☐	☑

Check for existing alarms:	YES	NO
Are there any alarms presented in the system (Checked at the BAU)?	☐	☑

Check for saved incidents:	YES	NO
Check Bridge Alarm Unit for indication of saved incidents.		
Does BAU show "3 incidents left"?	☑	☐

If there is saved incidents in the system, transfer all these incidents to a removable media, and pass the data to owner or Captain of the vessel. **Do not at this time reinitialize the drives.**

Source of Energy:		YES	NO
Check main source of provided Energy is available in accordance with requirements and specifications:	AC: 100 to 240 VAC 50/60.Hz DC: 20 to 32 VDC		
AC:		☑	☐
(Voyage Master II S-VDR or VDR only) DC:		☐	☑
For a VDR where DC is not connected, confirm that the AC supply to the VDR is backed up by the vessels AC emergency power (automatic switch-over)		☑	☐
Internal Batteries expire at: (mm.yyyy)	JAN 2018		

If batteries are expired or will expire before the next Annual Performance Test (APT), the batteries will need to be replaced and fully charged before below power capacity test is performed.

Check of Internal reserve power capacity:	YES	NO
Disconnect all AC power and DC power (if fitted) to S-VDR or VDR. Confirm that Bridge Alarm Unit is indicating this situation, by alarm code.	☑	☐
Check there is sufficient capacity to operate the basic equipment for 2 hours. At the end of this 2-hour period all recording shall cease automatically		
Confirm that S-VDR or VDR is still operational 1 hour and 55 minutes after power removal.	☑	☐
Confirm that S-VDR or VDR has switched off at 2 hours and 5 minutes, after power removal.	☑	☐
Connect AC power and DC power (if fitted), and restart system.		
Check that Battery LED is flashing every second.	☑	☐

Overall condition of Equipment: Bridge Alarm Unit:	YES	NO
Confirm that Bridge Alarm Unit (BAU) display is adequately illuminated.	☑	☐
Bridge Alarm Unit (BAU) is mounted at:		
Verify the DIM control can adjust the intensity of the background light	☑	☐
Perform BAU test by pressing ACK. Button for 5 seconds		
Did the BAU complete test successfully?	☑	☐

Note the condition of the Bridge Alarm Unit (BAU): GOOD

Overall condition of equipment: Data Acquisition Unit (DAU)	YES	NO	N/A
Visual inspect the Data Acquisition Unit for defects	☑	☐	☐
Verify cabinet grounding to ship's hull	☑	☐	☐
Verify tension of the grounding brackets for all signal cables	☑	☐	☐
Verify Radar Video cable(s) are in good condition and well connected	☑	☐	☐
Verify Microphone cables are in good condition and well connected	☑	☐	☐
Verify VHF audio cable(s) are in good condition and well connected	☑	☐	☐
Verify Serial cable(s) are in good condition and well connected	☑	☐	☐
Verify Capsule cable are in good condition and well connected	☑	☐	☐
Verify tension of the grounding brackets for capsule cable	☑	☐	☐
Verify Ethernet cable(s) are in good condition and well connected (if fitted)	☑	☐	☐
Verify CD with replay software and related documentation is placed inside the main cabinet (use ECO10149-10 ad ref.)	☑	☐	☐

Note the condition of the Data Acquisition Unit (DAU): GOOD

Overall condition of equipment: Sensor Interface Unit (SIU) (only applies to VDR installations)

	YES	NO	N/A
Visual inspect the Sensor Interface Unit for defects	☐	☐	☑
Verify cabinet grounding to ship's hull	☐	☐	☑
Verify tension of the grounding brackets for all signal cables	☐	☐	☑
Verify Digital cable(s) are in good condition and well connected	☐	☐	☑
Verify Analog cable(s) are in good condition and well connected	☐	☐	☑
Verify Serial cable(s) are in good condition and well connected	☐	☐	☑
Verify Ethernet cable(s) are in good condition and well connected	☐	☐	☑

Note the condition of the Sensor Interface Unit: NA

Overall condition of equipment: Remote Video Interface (RVI – if fitted)

	YES	NO	N/A
Visual inspect the Remote Video Interface for defects	☐	☐	☐
Verify cabinet grounding to ship's hull	☐	☐	☐
Verify Radar Video cables are in good condition and well connected	☐	☐	☐
Verify Ethernet cable(s) are in good condition and well connected	☐	☐	☐

Note the condition of the Remote Video Interface (RVI): NA

Overall condition of equipment: NAS External Extended Memory (NAS – if fitted)

	YES	NO	N/A
Visual inspect the NAS External Extended Memory for defects	☐	☐	☐
Verify connection to power source	☐	☐	☐
Verify Ethernet cable are in good condition and connected correctly	☐	☐	☐

Note the condition of the NAS External Extended Memory: NA

Overall condition of Fixed Capsule:

Part Number / Serial Number:
1301603C4/A10631-000480

	YES	NO	N/A
Visual inspect the Fixed Capsule for defects	☑	☐	☐
Verify capsule cradle grounding to ship's hull	☑	☐	☐
Verify capsule is grounded by metal clamp. (only MK3 Capsules)	☑	☐	☐
Verify capsule cable is in good condition and installed correctly	☑	☐	☐
Verify Fixed Capsule is highly visible and fully marked with reflective materials	☑	☐	☐
Verify Fixed capsule is mounted according to installation manual, and that an ROW can retrieve the Fixed Capsule when submerged.	☑	☐	☐
Verify the safety strips mounted and in good condition.	☑	☐	☐

Note the condition of the Fixed Capsule: GOOD

Acoustic Beacon: Battery and function test.
Maker/Model / Serial No:
TELEDYNE BENTHOS/TSOC121 ELP 362D/47368

	YES	NO
Check battery expiration date; has this date been reached?	☐	☑

If battery has expired or will expire before the next Annual Performance Test (APT), the beacon will need to be replaced before COC can be issued.

Date of expiry: (mm.yyyy) MAY 2015

If replaced, new battery expiry date: (mm.yyyy) _____

Test of Beacon:

Test the installed Beacon according to manufactures instructions.

	YES	NO	N/A
Is test showing a fully working Beacon.	☑	☐	☐
Alternative:			
Test the beacon with the Ultrasonic Tester and measuring battery voltage.	☑	☐	☐
Voltage Measured	6	____V	

Note: _____

Beacon Manufacture	Model	Minimum Voltage
Dukane	DK-120	2.97 V
Teledyne Benthos, Inc	ELP-362D	6.00 V

Only above listed beacon types can be used on Sperry Marine VMII and VMIII.

Change or repair of sensors or change of external equipment configuration

Where a sensor or external equipment has been changed or repaired, since the last annual performance test, please ensure that guidelines in the manuals are followed for correct interfacing of the signal.

	YES	NO
Have there been any changes	☐	☑

If you check the YES mark, please specify in below table, all the changes.

List of changes:

Equipment	Change date	Software version	Other

Interfaces: Operation and recording:	Recorded		
Equipment	**YES**	**NO**	**Notes**
Microphone 1A	☑	☐	
Microphone 1B	☑	☐	
Microphone 2A	☑	☐	
Microphone 2B	☑	☐	
Microphone 3A	☑	☐	
Microphone 3B	☐	☐	
Microphone 4 (AUD4)	☐	☐	
Microphone 5A	☐	☐	
Microphone 5B	☐	☐	
Microphone 5C	☐	☐	
Microphone 5D	☐	☐	
Primary VHF Audio	☑	☐	FURUNO FM 8500
Specify source of data (e.g. SI01, DI02 or AN03) **Always include an explanation or refer to one of the predefined notes (see below table) when data listed below is not recorded (except for optional video input and AIS).**			
Primary Radar Video[2)]	☑	☐	FURUNO
Optional Video Input 1	☐	☐	
Optional Video Input 2	☐	☐	
Optional Video Input 3	☐	☐	
AIS[2)4)]	☐	☐	
Date and Time (Master Clock in UTC)	☑	☐	MX420
Ships position (Master position - GPS)	☑	☐	MX420
Ships Speed (Master Speed - LOG)	☑	☐	
Ships Heading (Master heading – Gyro)	☑	☐	NAVIGAT X
Water depth[1)]	☑	☐	FURUNO FE700
Main Alarms[1)]	☐	☐	
Rudder order[1)]	☐	☐	
Rudder response / actual[1)]	☐	☐	
Status & settings of Heading or Track Controller (Autopilot) [3)]	☐	☐	
Main Engine Order[1)]	☐	☐	
Main Engine Response / Actual[1)]	☐	☐	
Thruster Order[1)]	☐	☐	
Thruster Response / Actual[1)]	☐	☐	
Hull Door Status[1)]	☐	☐	
Watertight Door and Fire Door Status[1)]	☐	☐	
Acceleration and Hull Stress Data[3)]	☐	☐	
Wind Speed and Direction[3)]	☑	☐	RM YOUNG
BNWAS	☐	☐	

1) May be omitted for an S-VDR see 61996-2.
2) Radar may be substituted by AIS for an S-VDR see IEC 61996-2.
3) If suitable equipment is fitted.
4) A VDR is not required to record AIS data.

Above list are according IMO regulations. **Predefined notes for exceptions which may be referred to from above table:**
Note A: S-VDR - sensor data is not available in accordance with IEC61162
Note B: Substituted by AIS (S-VDR only)
Note C: Equipment not fitted on this vessel.
Note D: There is no status information displayed on the bridge related to this equipment in accordance with class approval.

SOLAS MANDATORY ALARMS (Applicable for all ships) [1]					
No.	**IMO clause**	**Alarm**	**Notes**	**Alarm provided from which unit**	**Recorded bridge alarms**
1	29.5.2 30.3	Main and auxiliary steering gear power units	Failure of power unit. Operation of devises for short circuit protection, overload, loss of phase in three-phase system.		☐Yes ☑No
2	29.8.4	Main an auxiliary steering gear control system	Failure of power to control system.		☐Yes ☑No
3	29.12.2	Steering gear, low hydraulic fluid level	Low level of fluid in hydraulic fluid reservoir.		☐Yes ☑No
4	31.2.7 49.5	Propulsion machinery remote control system failure	For vessels with bridge control of propulsion machinery and manned engine room: failure of remote control of propulsion machinery.		☐Yes ☑No
5	31.2.9 49.7	Propulsion machinery low starting air pressure	Vessels as 4 Low start air pressure but further starting of propulsion machinery possible.		☐Yes ☑No
6	15.7.3.1/ 25-9, 3[2]	Watertight door low hydraulic fluid level	Passenger ships constructed on or after 1 February 1992 with hydraulic power operated sliding watertight doors. Low level of fluid in hydraulic reservoir.		☐Yes ☑No
7	15.7.3.1[2]	Watertight door low gas pressure, loss of stored energy	Vessel as 9. Low gas pressure or loss of stored energy in operating hydraulic accumulator.		☐Yes ☑No
8	15.7.8[2]	Watertight door electrical power loss	Vessels as 9. Failure of electrical power of operating or control system.		☐Yes ☑No

9	21.1.6.2[2]	High water alarm	High water level in space where water has drained from enclosed cargo space or freeboard deck		☐Yes ☑No
10	23-2.1[2]	Shell door position indicator	Ro-Ro passenger vessels. Door open or locking device not secured. System to have mode switch for "sea or harbour". System active in "sea" mode		☐Yes ☑No
11	23-2.2[2]	Water leakage detection indicator	Vessels as 13. Leakage of water through shell doors		☐Yes ☑No
12	5.3.4.3[3]	Local automatic Halon release	Activation system to release Halon.		☐Yes ☑No
13	7,19 [4]	Fire detection or automatic sprinkler operation			☐Yes ☑No
14	A.830-3.8	Fire detection system power loss			☐Yes ☑No
15	5.3.3.8[3]	Halon system loss of container	Decrease in pressure of gas in container.		☐Yes ☑No
16	5.3.3.2[3]	Halon system electric circuit fault or loss of power	Failure of electric power to circuits connecting containers of gas release.		☐Yes ☑No
17	5.3.3.3[3]	Halon system-hydraulic or pneumatic pressure loss	Loss of pressure to pneumatic or hydraulic circuits for gas release.		☐Yes ☑No

1) For explanatory notes on the mandatory alarms in table, please see Annex B in IEC61996-1. Alarms separately identified for specialist vessels such as gas carriers, fishing vessels, nuclear ships, high speed craft or self propelled Mobile Offshore Drilling Units are in addition to this table. Self propelled MODUs to have VDR installed unless exempted by Flag Administration.
2) Applicable to vessels constructed on or after 1 February 1992.
3) These alarms may be omitted if provided at the central fire control station.
4) Where the fire detection system is of the addressable type that includes means of remotely identifying each detector individually, the activation of the individual detector should be recorded. Where the fire detection system identifies the detection of fire within a specified zone, the detection of fire within the individual zone should be recorded.
5) For installations of S-VDR the "No" box can be ticked if the alarm is not available in IEC 61162 format

IMO Resolutions applicable for ships with periodically unattended engine room E0.				
No	**IMO clause**	**Alarm**	**Alarm provided from which unit**	**Recorded bridge alarms**
1	52	Automatic shut down of propulsion machinery		☐ Yes ☑ No
2	51.1.3	Fault requiring action by or attention of the OOW		☐ Yes ☑ No
3	51.2.2	Alarm system normal power supply failure		☐ Yes ☑ No

IMO Resolutions applicable for ship provided with Personnel Alarm in the Engine Room.				
1	A.481(12) 7.3 A.830 (19) 7.1.1	Personnel alarm (dead man alarm)		☐ Yes ☑ No

TANKERS SOLAS II-2 (2000 Amendments) This section is only applicable for ships constructed on or after 1 July 2002.

☐ Applicable to ship type ☑ Not applicable to ship type (NA for ships built before 1 July 2002))

No	**IMO clause**	**Alarm**	**Alarm provided from which unit**	**Recorded bridge alarms**
1	4.5.10.1.3	Protection of cargo pump-rooms - Hydrocarbon gas alarm		☐ Yes ☐ No
2	4.5.10.1.4	Protection of cargo pump rooms - High bilge level		☐ Yes ☐ No
3	FSS 15.2.4.3	Inert gas system		☐ Yes ☐ No

Bulk carriers. The following alarms are applicable for bulk carriers**.**

☐ Applicable to ship type ☑ Not applicable to ship type

No	**IMO clause**	**Alarm**	**Alarm provided from which unit:**	**Recorded bridge alarms**
1	MSC. 134(76) (SOLAS XII/12.2)	Water ingress pre-alarm		☐ Yes ☐ No
2	MSC. 134(76) (SOLAS XII/12.2)	Water ingress main alarm		☐ Yes ☐ No

Gas or Chemical Carriers.
The following alarms according to Gas or Chemical Codes should be recorded when the alarms are located on the bridge.

☐ Applicable to ship type ☑ Not applicable to ship type

No	IMO clause	Alarm	Alarm provided from which unit	Recorded bridge alarms
1	IBC 15.2.4 BCH 4.19.4	High and low temperature of cargo and high temperature of heat exchanging medium (Ammonium nitrate solution 93% or less)		☐Yes ☐No
2	IBC 15.5.1.6 BCH 4.20.6	High temperature in tanks (Hydrogen peroxide solution over 60% but not over 70%)		☐Yes ☐No
3	IBC 15.5.1.7 BCH 4.20.7	Oxygen concentration in void spaces (Hydrogen peroxide solution over 60% but not over 70%)		☐Yes ☐No
4	IGC 13.4.1 GC 13.4.1	High and low pressure in cargo tank		☐Yes ☐No
5	IGC 13.6.4, 17.9 GC 13.6.4,17.11	Gas detection equipment		☐Yes ☐No
6	IGC 13.5.2, GC 13.5.2	Hull or insulation temperature		☐Yes ☐No
7	IGC 17.18.4.4 GC 17.12.2(d)(iv)	Cargo high pressure, or high temperature at discharge of compressors (Methyl acetylene- propadiene mixtures)		☐Yes ☐No
8	IGC 17.14.4.3	Gas detecting system monitoring chlorine concentration		☐Yes ☐No
9	IGC 17.14.4.4	High pressure in chlorine cargo tank		☐Yes ☐No
10	IBC 15.5.2.5, BCH 4.20.19	High temperature in tanks (Hydrogen Peroxide solutions over 8% but not over 60% by weight)		☐Yes ☐No

11	IBC 15.5.2.6, BCH 4.20.20	Oxygen concentration in void spaces (Hydrogen Peroxide solutions over 8% but not over 60% by weight)		☐Yes ☐No
12	IBC 15.10.2, BCH 4.3. 1 (b)	Failure of mechanical ventilation of cargo tanks (Sulphur (molten))		☐Yes ☐No
13	IBC 19.8.4	Low pressure in inerted cargo tanks		☐Yes ☐No
14	IGC 5.2.1.7, GC 5.2.5(b)	Liquid cargo in the ventilation system		☐Yes ☐No
15	IGC 8.4.2. 1, GC 8.4.2(a)	Vacuum protection of cargo tanks		☐Yes ☐No
16	IGC 9.5.2, GC 9.5.2	Inert gas pressure monitoring		☐Yes ☐No
17	IGC 13.6.1 1, GC 13.6.11	Gas detection equipment		☐Yes ☐No
18	IGC 17.14.1.4, GC 17.12.5(a) (iv)	Gas detection after bursting disk for chlorine		☐Yes ☐No

This document is issued in respect of the regulations given by IMO, these can be seen on the Compliance Certificate. This document is also based on IMO guidance MSC.1/Circ.1222

[redacted]
Technicians Name (in print)

Technicians Signature

[redacted]
Technicians Code/Certificate ID

Sperry Marine
Service Station / Company

see attached
Service Station Class Certificate Number

2016
Service Station Class Certificate Expiry Date

2 Dec 2014
Inspection date (dd.mm.yyyy)

Jacksonville, USA
Inspection location (City - Country)

Ships Representative Name (in print)

Ships Representative Signature

Service Technician Notes (Also use this for messages for the Manufacture):

Note: Discrepancies found will be advised to the vessel promptly. Sperry Marine's services will be offered if appropriate to correct faults. This service is not included in the performance test fee. All items will be corrected prior to issuing Certificate of Compliance. Any issues or questions of compliance will be addressed to Product Support Manager for guidance.

Northrop Grumman Sperry Marine B.V.
vdr.support@sperry.ngc.com
vdr.apt@sperry.ngc.com
service.eu@sperry.ngc.com

CERTIFICATE OF COMPLIANCE

DATE OF INSPECTION	Day	Month	Year
	02	12	2014

Next INSPECTION	Day	Month	Year
	02	12	2014

MSC.1/Circ.1222
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.)

___ VOYAGE DATA RECORDER (VDR)
or
✓ SIMPLIFIED VOYAGE DATA RECORDER (S-VDR)

___ ANNUAL PERFORMANCE TEST
or
___ NEW INSTALLATION PERFORMANCE TEST

MODEL: GII
DAU S/N: 1000603
CAPSULE S/N: a10631-000480
Service Report Number: US17486 0158

IMO Number: 7 3 9 5 3 5 1 CLASS: ✓ABS __DNV __GL __LR _____ (other)

Vessel Name: El Faro

Owner/MGR: _____

Service Supplier Class Certificate Number: [redacted] Expiring Date: 16-Oct-2016

I hereby certify that on 02. December - 2014 *, I conducted the Annual Performance Test on the VDR or S-VDR system described above and existing on the above vessel in accordance with SOLAS Chapter V Regulation 18.8 and found it to be in compliance with IMO Recommendation on Performance Standards for Voyage Data Recorders (VDR's) Resolution A.861 (20) or Performance Standards for Simplified Voyage Data Recorders (S-VDR's) MSC163 (78) as applicable.*

[redacted]
Manufacturer Representative
Name and Signature

NORTHROP GRUMMAN Sperry Marine Certified S/VDR GII/GIII
[redacted]
Exp: 29-Oct-2016

[redacted]
APT Perform By
Print Name – Certified Engineer

For your next inspection, please contact Service Control at:

Europe / Middle East:
Phone - +31 (0) 10 44 51 630
service.eu@sperry.ngc.com

North / South America:
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Exceptions Approved By Class: