ISTHMUS BUREAU OF SHIPPING

SURVEY REPORT ON SOLAS GMDSS
RADIO TECHNICIAN'S SURVEY[1]

This form must kept on board and be available for inspection
By a nominated surveyor of recognized organization at all times

Name of Ship:	Port of Registry:	GT:	Call Letters:	Year Keel Laid:
Patent Number and Expiration:	IMO No.:	Telex ID No:		
Sea area in which vessel is certified to operate[2]: A1 ☐ A2 ☐ A3 ☐ A4 ☐		MMSI No.		INMARSAT ID No.

1. The following test instruments used:	**Y**	**N**	**NA**
a. Frequency counter			
b. Watt meter with plug in elements covering MF, HF and VHF			
c. Ampere / Volt / Ohm meter			
d. Insulation resistance tester.			
e. Acid tester (specific gravity)			
f: instrument for decoding the ID-signal of satellite EPIRB's			
g. Spectrum analyzer.*			
h. Oscilloscope *			
i. Deviation meter. *			
j. Demute tester for testing the radiotelephone distress frequency watch receiver (2182 kHz) *			

The following items were checked and tested as necessary and found satisfactory

2. Sources of energy:	**Y**	**N**	**NA**
a. Checked main source of energy available in accordance with requirements.			
b. Emergency source of energy (specify below) b 1. Capacity _____ b 2. Location _____			
c. Reserve source of energy (specify below) c 1. Capacity _____ c 2. Location _____			

[1] The following part of the survey should always be performed by a fully qualified Radio Technician who has adequate knowledge of the Radio Regulations, the Convention, as amended, and the IMO performance standards for radio equipment.

[2] Verify and assign the navigation area according to the Radio Equipment installed on board.

- This test equipment may also be used but is not mandatory.

3. Radio Installations:	Y	N	NA
a. The radio controls for operating the radio installation are adequately illuminated.			
b. The capacity of battery(s) has been checked at intervals not exceeding 12 months			
c. Electrical lighting is permanently arranged and connected to a source of power independent of the main / emergency[3] source of power.			
d. Radio installation clearly marked with call sign, ship station identify and other applicable codes.			
e. Radio equipment is located at[4]:			
f. Remote control from conning position provided.			

4. Radio Equipment Requirement:	Y	N	NA
a. Equipment installed fulfills the functional requirements for the vessel's sea areas of operation.			

5. Method of availability of functional requirements:[5]	Y	N	NA
a. Duplication of equipment.			
b. Shore-based maintenance (Copy of contract should be verified and collected).			
c. At-sea maintenance.			

6. Antennas:	Y	N	NA
a. Was a visual inspection of all antennas including, INMARSAT, GPS and AIS VHF antennas, and feeders for satisfactory sitting *including consideration of any possible interference and defects made.			
b. Checked that arrangements are provided enabling MF/HF transmitting antennas to be grounded.			
c. Checked that the MF/HF transmitting antennas are protected against being touched accidentally.			
d. For NIS ships, transmitting results to be tested with MEGGER MEGOHM (>50 MOHM dry, > 5 humid).			
e. For NIS ships, antenna coupling for MF/HF located outside of deckhouse.			

7. Reserve source of energy:	Y	N	NA
a. Checking there is sufficient capacity to operate the basic or duplicated equipment For 1 hour or 6 hours as appropriate (Regulation IV/3).[6]			
b. If reserve source of energy is a battery, *specify type:* *and*:			
b. 1. Checked its sitting and installation. Specify location:			
b. 2. Checked for defects, including all cables			
b. 3. Checked its conditions by specific gravity measurement or voltage Measurement. *Specify Voltage / Specify Gravity:*			
b. 4. With battery off change, and the maximum required radio installation load connected to the reserve source of energy, checked the battery voltage and discharge current. *Specify Maximum discharge current:*			
b. 5. Checked that the charger(s) are capable of recharging the reserve battery			

[3] Delete as appropriate.
[4] Please, indicate where is located.
[5] Ships engaged on voyages in sea area A3 and A4 must use a combination of two methods (check all that apply).
[6] Specify 1 or 6 hours.

within 10 hours.			
b. 6. Checked that battery charger is of an automatic type.			
8. VHF Transreceivers:			**NA**

	Basic	Duplication
Make / Model:		

a. Checked for operation on channels 6, 13, and 16.			
b. Checked that equipment is within frequency tolerance.			
c. Checked RF power output and VSWR on 6, 13 and 16.			
d. Checked correct operation of all controls including priority of control.			
e. Checked that the equipment operates from the main, emergency (if provided) and reserve sources of energy.			
f. Checked operation of the VHF control unit(s) of portable VHF equipment provided for navigational safety from bridge wings.			
g. Checked for correct operation by on–air contact with a coast station or other ship.			
h. Checked that correct DSC number is programmed into the unit.			
i. Checked that DSC distress procedure and DSC number are clearly displayed near the unit.			
j. Checked that the ship's position in the distress alert is automatically provided with this information from an internal or an external navigation receiver (e.g. GPS).			
k. Checked compliance with IMO performance standards.			

9. VHF DSC Controllers and Channel 70 DSC watch receiver:	**Y**	**N**	**NA**

Make / Model: _____

Make / Model: _____

a. Performed and off-air check confirming the correct Maritime Mobile Service Identify programmed in the equipment.			
b. Checked for correct transmission by means of a routine or test call to a coast station other ship, on board duplicate equipment, or special test equipment.			
c. Checked for correct reception by means of a routine or test call to a coast station other ship, on board duplicate equipment, or special test equipment.			
d. Checked the audibility of the VHF/DSC alarm.			
e. Checked that the equipment operates from the main, emergency (if provided) and reserve sources of energy.			
f. Checked that the ship's position in the distress alert is automatically provided with this information from an internal or external navigation receiver (e.g. GPS).			
g. Checked for compliance with IMO performance standards.			
h. Checked DSC alerting available from conning position.			

10. MF / HF Radiotelephone equipment:	**Y**	**N**	**NA**

Make / Model: _____

Make / Model: _____

a. Checked that the equipment operates from the main, emergency (if provided) and reserve sources of energy.			
b. Checked antenna tuning in all appropriate bands.			
c. Checked that equipment is within frequency tolerance on all appropriate bands (10 kHz).			
d. Checked for correct operation by contact with a coast station and / or measure RF power output and VSWR.			
e. Checked receiver performance by monitoring known stations on all appropriate bands.			
f. Checked that the control unit on the bridge has first priority for the purpose of Initialing distress alerts, if control units are provided outside the navigational bridge			
g. Checked for compliance with IMO performance standards			

11. MF / HF Radio telex equipment:	**Y**	**N**	**NA**

Make / Model: _____

a. Checked that the equipment operates from the main, emergency (if provided) and reserve sources of energy.			
b. Confirmed that the correct selective calling number is programmed in the equipment.			
c. Checked correct operation by inspection of recent hard copy or by a test with a coast radio station.			
d. Checked for compliance with IMO performance standards			

12. MF / HF DSC controller(s):	**Y**	**N**	**NA**

Make / Model: _____

a. Checked that the equipment operates from the main, emergency (if provided) and reserve sources of energy.			
b. Confirmed that the correct Maritime Mobile Service Identify is programmed in the equipment.			
c. Checked the off air self test program.			
d. Checked operation by means of a test call on MF and / or HF to a coast radio station if the rules of the berth permit the use of MF/HF transmissions.			
e. Checked the audibility of the MF/HF DSC alarm.			
f. Checked that the ship's position in the distress alert is automatically provided with this information from an internal or external navigation receiver (e.g. GPS).			
g. Checked for compliance with IMO performance standards.			
h. Checked DSC alerting available from conning position.			

13. MF / HF DSC watch receivers:	**Y**	**N**	**NA**

Make / Model: _____

a. Confirm that only DSC channels indicated in the Regulation IV/9, 10, 11, and 12			

are being monitored.			
b. Checked that a continuous watch is being maintained while keying MF/HF radio transmitters.			
c. Checked the off air self test program.			

14. INMARSAT Ship Earth Station(s):	**Y**	**N**	**NA**

	No.1	No.2	No.3
Make / Model:			

Specify Type: A ☐ B ☐ C ☐ Specify: Basic ☐ Duplication ☐

a. Checked that the equipment operates from the main, emergency (if provided) and reserve sources of energy, and that were an uninterrupted supply of information from the ship's navigational or other equipment is required, ensuring such information remains available in the event of failure of the ship's main or emergency source of electrical power.			
b. Checked the distress function by means of an approved test procedure, where possible.			
c. Checked for correct operation by inspection of recent hard copy of test call by telex or telephone.			
d. Checked distress function only if permitted to carry out test by the coast earth station.			
e. Checked for compliance with IMO performance standards.			

15. NAVTEX equipment:	**Y**	**N**	**NA**

Make / Model: _____

a. Checked for correct operation by monitoring incoming messages or inspecting recent hard copy.			
b. Performed test run of the self-test program, if provided.			
c. Checked for compliance with IMO performance standards.			

16. Enhanced Group Call:	**Y**	**N**	**NA**

Make / Model: _____

a. Checked for correct operation by monitoring incoming messages or inspecting recent hard copy.			
b. Performed test run of the self-test program, if provided.			
c. Checked for compliance with IMO performance standards.			

17. Float free satellite EPIRB:	**Y**	**N**	**NA**

Make / Model: _____

a. Checked position and mounting for float free operation Location: _____			
b. Verified that the lanyard is firmly attached in a good condition, neatly stowed, and not tied to the vessel or the mounting bracket.			
c. Carried out visual inspections for defects .			
d. Carried out the self-test routine.			
e. Checked that the EPIRB ID and other information (included call sign of the ship) is clearly marked on the outside of the equipment.			
f. Decoding the EPIRB identify number an other information confirming it is correct and the same as that marked on the EPIRB Identity number: _____			
g. Checked registration through documentation or through the point of contact associated with a country code.			
h. Checked battery expiry date: _____			
i. Checked hydrostatic release unit (HRU) and its expiry date: _____			
j. Checked the emission in the 406 MHz band using the self–test mode or an appropriate device to avoid transmission of a distress call satellites.			
k. If possible, checked the emission on the 121.5MHz frequency using the self–test mode or an appropriate device to avoid activating the satellite system.			
l. Checked that the EPIRB has been maintained by an approved shore–based maintenance provider at interval required by the administration (but not exceed 5 years)[7]. Date: _____ , SBM Provider: _____ _____			
m. Checked that no transmission has been started after the test and remounting of the EPIRB in its bracket.			
n. The presence o bacon operating instructions was verified.			
o. Checked for compliance of IMO performance standards.			

18. Secondary means of alerting:

Type of secondary means of alerting: _____

19. Two way VHF Radiotelephone apparatus for survival craft :	Y	N	NA

	Make / Model	Battery expiration date
No.1		
No.2		
No.3		

a. Checked for correct operation on channel 16 and one other by testing with another fixed or portable VHF installation.			

[7] The results of shore–based maintenance should be provided in a form of shore–based maintenance report a copy which should be on board the vessel, and a label affixed to the exterior of the bacon detailing the name of the SBM provider and the date when the next shore–based maintenance is due. The SMB provider may affix a tamper proof seal or similar device on completion of the SBM. The maintenance interval provided it does not exceed 5 years, may be aligned with the replaced date of the battery.

b. Checked the battery charging arrangements where rechargeable batteries are used.			
c. Checked that available channels are in compliance with requirements of flag administration.			
d. Checked the battery expiry dates if primary cells are used.			
e. Checked any fixed installation provided in a survival craft, where appropriate.			
f. Checked they are clearly marked with ship's call sign (fixed).			
g. Checked for compliance of IMO performance standards.			

20. Radar transponders :	**Y**	**N**	**NA**

	Make / Model
No.1	
No.2	

a. Checked for satisfactory functional test using on board 9 GHZ radar, if possible.			
b. Checked for satisfactory stowage.			
c. Checked for operating instructions.			
d. Checked for sufficient battery capacity for stand-by condition and to provide transmissions.			
e. Checked for clear markings with ship's call sign.			
f. Battery expiration date 1) _____ 2). _____			
g. Operating frequencies:			
g. Checked for compliance with IMO performance standards			

21. Equipment and Spares:	**Y**	**N**	**NA**
a. Checked test equipment and spares carried to ensure carriage is adequate in accordance with the sea areas in which the ship trades and the declared options for maintaining availability of the functional requirements.			

22. Radars :	**Y**	**N**	**NA**

	Make / Model
No.1	
No.2	

a. Checked for satisfactory functioning of equipment.			
b. Checked radar facilities operational (if ARPA integral part of Radar).			
c. Checked acquisition, if test means is provided.			
1. Manual			
2. Automatic			
d. Checked capability to operate on 9GHz frequency[8]			

[8] As per regulation V/12 (g) and (h) of the GMDSS Amendments, for ships that are required to be fitted with radar installations, at least one radar installation shall be capable of operating in the 9 GHz frequency band from 1 February 1995.

23. ARPA :	Y	N	NA

	Make / Model
No.1	
No.2	

a. Checked for satisfactory functioning of equipment.			
b. Checked radar facilities operational (if ARPA integral part of radar).			
c. Checked acquisition, if test means is provided.			
1. Manual.			
2. Automatic.			
d. Checked audible / visual operational warnings			
e. According to GMDSS all equipment needs to be type approved.			
f. Checked for compliance of IMO performance standards.			

24. Receiver for a Global Navigation Satellite system or a Terrestrial Radio navigation System (GPS)[9] :	Y	N	NA

	Make / Model
No.1	
No.2	

a. Information on the ship's position is continuously and automatically provided to all relevant GMDSS equipment.			
b. The navigation receiver is supplied from a source of energy ensuring continuous supply of the ship's position information in the event of failure of the ship's main or emergency source of energy.			
c. Checked for compliance of IMO performance standards.			

25. Ship Security Alert System (SSAS):	Y	N	NA
a. Checked for compliance of IMO performance standards.[10]			
b. Checked that a minimum two activation points, one of which is on the navigation bridge, are provided, that are protected against inadvertent operation. (It should not be necessary for the user to remove seals or to break any lid or cover in order to operate any control)[11]			
c. Checked that the transmission of the security alert is possible without any adjustment of the radio system, i.e. tuning of channels setting of modes or menu options. (Operation of the activation points should not cause any alarm or indication to be raised on the ship nor should impair the functionality of the GMDSS			

[9] A RDF is not longer required, as per 2000 SOLAS amendments to Chapter V.

[10] If installed on or after July 1st, 2004, conforms to performance standards not inferior to those specified in the Annex RESOLUTION MSC. 147(77). If installed before July 1st, 2004,, conforms to performance standards not inferior to those specified in the Annex to Resolution MSC 136(76).

[11] Personnel involved in the survey of SSAS installation and testing are to have the necessary security clearance to know where the "secure" activation point(s) are located on board. If they do not have the security clearance, then the appropriate ship's crew/operating person is to be requested to activate the SSAS "IN TEST MODE" from the bridge and from the other "secure" location.

installation).			
d. Checked that the transmission initiated by SSAS activation points include a unique code/identifier indicating that the alert has not been generated in accordance with GMDSS distress procedures.			
e. Checked that the transmission includes the ship identity and current position associated with a date and time. (The transmission should be addressed to a shore station and should not to ship stations).			
f. Checked that the SSAS, when activated, continues the ship security alert until deactivated and/or reset.			
g. Checked that the SSAS capable of being tested.			
h. Checked that, where the ship security alert system is powered from the ship's main source of electrical power is it also possible to operate the system from an alternative source of power.			

The following requirement(s) is/are considered part of the Safety Equipment Survey, however it must be inspected by an IBS approved Radio Firm. If this equipment is not inspected at time of the Radio Survey, then the IBS approved Radio Firm is to be on board at the time of the Safety Equipment survey when an inspection of the below items is carried out:

26. Automatic Identification System (AIS):	**Y**	**N**	**N/A**
a. Checked for compliance of IMO performance standards.			
b. Verified that the AIS power supply unit is type approved or tested for electromagnetic compatibility according to IMO Res. A.813(19), if the AIS does *not* have an integrated power supply unit.			
c. Verified that the interface installed between the AIS and other Radio-navigational equipment is type-approved.			
d. Verified that the AIS is connected to the emergency source of power.			
e. Checked that the AIS is synchronized with UTC, and if provided, position information is correct and valid.			
f. Verified that correct ship information has been entered into the AIS.			

27. VDR/S-VDR
Note- Check Y for success, N for failure or N/A for Non fitted interfaces in these boxes, as appropriate.

Voyage Data Recorder Details	
Manufacturer:	
Model:	
System Serial number:	
Software version Number:	
Date fitted:	

Inspection Details	
Name person conducting testing:	
Company:	
Inspection Date:	
Inspection Location:	

	Y	**N**	**N/A**
1. Pre- Existing Alarms			

Confirm that no alarms were present at start of procedures				

2. Power supply alarm check

Remove sources of external power. Confirm that alarm is activated.				
Record time (hh.mm)				

3. Reserve power source check

Allow VDR to continue running for 1 hour 55minutes from ”2” above.				
Confirm that equipment is still operating at this time, with no additional alarms.				
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.				
Record time (hh.mm) :				

5. Battery

Battery				
Expiry Date (where applicable)				
Acoustic Beacon				
Reserve power source				

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.				

7. Overall Conditions of equipment

Inspect Equipment and record condition, tick if satisfactory				
Sub unit	Notes on Conditions			
Protective Capsule				
External Cables				
Main Unit				

8. Interfaces: Operation and recording

Date and Time	Preferably external to ship (e.g. Global Navigation Satellite System.)				
Ship’s position	Electronic Positioning System				
Speed (Through or over ground)	Ship’s designated speed and distance measuring equipment				
Heading	Ship’s compass				
Bridge audio	1 or more bridge microphones				
Communication Audio	VHF				
Radar Data-post display selection	Master radar display				

Water depth	Echo sounder				
Main Alarms	All mandatory alarms on bridge				
Rudder order and response	Steering gear and autopilot				
Engine order and response	Telegraphs, controls and thrusters				
Hull openings Status	All mandatory status information displayed on bridge				
Watertight and fire door status	All mandatory status information displayed on bridge				
Acceleration and hull stresses	Hull stresses and response monitoring equipment where fitted				
Wind speed and direction	Anemometer where fitted				

9.Change or repair of sensors

Check maintenance records of VDR			
Confirm any defects property 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.

10. Manufacturer's analysis

Note- This confirms the endorsement by the manufacturer of the test and that the master record/datable has been checked.

Manufacturer's Analysis of 12 hours 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.			

11. Observations and additional manufacture'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 e4xisting 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 satisfy 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.

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28. Radio Technician Remarks:

Radio Technician's Signature

Radio Firm Name

Port of survey **Date (mm/dd/yy)**

AUTOMATIC IDENTIFICATION SYSTEM (AIS) ANNUAL TEST REPORT

Name of ship/call sign:	
MMSI number:	
Port of registry:	
IMO Number:	
Gross tonnage:	
Date keel laid:	

1. Installation details		
	Item	**Status**
1.1	AIS transponder type:	
1.2	Type approval certificate	
1.3	Initial installation configuration report on board?	
1.4	Drawings provided? (Antenna-, AIS-arrangement and block diagram)	
1.5	Main source of electrical power,	
1.6	Emergency source of electrical power,	
1.7	Capacity to be verified if the AIS is connected to a battery	
1.8	Pilot plug near pilots operating position?	
1.9	120 V AC provided near pilot plug? (Panama and St. Lawrence requirement)	
2. AIS programming - Static information		
2.1	MMSI number	
2.2	IMO number	
2.3	Radio call sign	
2.4	Name of ship	
2.5	Type of ship	
2.6	Ship length and beam	
2.7	Location of GPS antenna	
3. AIS programming - Dynamic information		
3.1	Ships position with accuracy and integrity status (Source: GNSS)	
3.2	Time in UTC (Source: GNSS)	
3.3	Course over ground (COG) (will fluctuate at dockside) (Source GNSS)	
3.4	Speed over ground (SOG) (zero at dockside) (Source: GNSS)	
3.5	Heading (Source: Gyro)	
3.6	Navigational status	

3.7	Rate of turn, where available (ROT)	
3.8	Angle of heel, pitch and roll, where available	
4. AIS programming - voyage related information		
4.1	Ships draught	
4.2	Type of cargo	
4.3	Destination and ETA (at masters discretion)	
4.4	Route plan (optional)	
4.5	Short safety-related messages	
5. Performance test using measuring instrument		
5.1	Frequency measurements AIS ch. 1 and 2, GMDSS ch. 70	
5.2	Transmitting output, AIS ch. 1 and 2, GMDSS ch. 70	
5.3	Polling information ch. 70	
5.4	Read data from AIS	
5.5	Send data to AIS	
5.6	Check AIS response to "virtual vessels"	
6. "On air" performance test		
6.1	Check reception performance	
6.2	Confirm reception of own signal from other ship/VTS	
6.3	Polling by VTS/shore installation	
Electromagnetic interference from AIS observed to other installations?:		
Remarks (to be added in item 28 above):		

The AIS has been tested according to IMO SN/Circ.227 and resolution MSC.74(69), annex 3		
Name of Radio Inspector	Date and place	Name of Radio InspectorCompany