

IAMSA BUREAU OF SHIPPING LLC**TECHNICAL DEPARTMENT**

TO: Iamsa Marine Surveyors, Ship`s owners

SUBJECT: PRE-PURCHASE CONDITION SURVEY

PURPOSE: To describe the procedure to conduct a condition survey

APPLICATION: Condition Surveys

REF: Hull and Structural Surveys (IMO) IACS Guidelines
IBSH PUB TEC 002 – Rev 1 – 2008-05-09

REQUIREMENT: N/A

PART A – GENERAL**Introduction**

- 0.0 A Marine Organization evolved in classification, statutory surveys, insurance requirements, cargo insurance, etc has the role and the compromise to develop rules and regulations according these activities. In spite of the ship's owner is who pay for our services and is our first customer it is impossible for us to ignore our principals regulations as well as the international law and mandatory regulations in force when we conduct a survey.
- 0.1 Condition surveys will be performed by using **form IBSH 017** as a check list.

Surveyors

- 1.0 **Iamsa Bureau of Shipping LLC** requires of all their surveyors a full commitment with national and international regulations and with our internal procedures as well.
- 1.1 As a part of his preparation, a surveyor should be interested to develop a permanent improvement on his carrier, be familiar with law and regulations in force, to participate on training programs in order to perform his duties in a qualified, competent and trustworthy manner.
- 1.2 Additionally we expect from our surveyors the following virtues:
honesty, courtesy, impartiality, sound judgement, knowledge.
The official working language of the Organization is English and the organization expects that all its surveyors have a good command over spoken and written English

- 1.3 To perform a Condition Survey, the surveyor will be appointed by the **Form IBSH 028 – Condition Survey Order** in which will be instructed about the services due to render.

Equipment and Check List

- 1.3 All **Pre Purchase Inspections and Conditions Surveys (PPI)** are covering with a Canon Digital Camera PowerShot SX100IS 8.0 Megapixels with a 2 GB of SD memory, Tripod, and extra memory. A portable thickness Measure Instrument is provided to verify measures on shell.
- 1.4 PPI inspection form, is our check list inspection form used for our surveyor to produce the assessment according the type of ship to be inspected: Bulk carriers, Containers ships, Refrigerated ships, Tankers, etc. and Client's requirements: in some cases, customer request to survey special items.

Reporting of Surveys

- 1.5 **Preliminary Report of Survey.** On completion of survey, the Surveyor must issue the Preliminary Report of Survey (electronic data) indicating details of all the survey carried out and details of any remarks. This report includes a minimum of 30 relevant pictures uploaded into a temporary website, usually called "**www.iamsagroup.com/theship**". This preliminary report includes a brief descriptions of each item examined and a full explanation of the important remarks found onboard at the time of the inspection.
- 1.6 **Final Report** Surveys shall be reported within the time frame stipulated and shall contain the full information which has be ascertained by the surveyor as surveyors statement. All other information based on unauthenticated sources such as statements by the Master, log book entries, etc. shall be qualified as such; e.g. "Master of the vessel stated that".
- 1.7 The final report statement will includes also the total pictures, usually 150 to 200 photos about. The final report is made in a mechanical media and delivered by courier within 10 next work days.

PART B - SCOPE OF SURVEY

Hull, deck and holds

- 0.0 Covering these items, surveyors are commitment to fulfill with the specific requirement and rules specified on our **Technical Manual of Procedures on Surveys "IBSH PUB TEC 001" Chapter 2 Part A – Hull.**
- 0.1 However, in general, the **hull condition assessment** will cover Weather decks, Super structure decks and deck houses – Visual examination for wastage or holes, for grooving of weld seams and butts, for distortion or buckling (Particularly mid ship region), for indentations (due to cargo operations etc.) and for cracks. Where doubt exists visual inspection may be supplemented by thickness gauging and/or non-destructive crack detection etc.
- 0.2 Anchoring and Mooring – Visual examination of lowering, and hoisting of anchors and efficiency of windlass or capstan brakes while anchor is freely falling. The wear down of anchor windlass chain lifter should be checked to ensure that the anchor chain does not

- jump clear when chain is let go. Examine visible parts of anchors and chains. Verify condition of mooring lines and arrangements.
- 0.3 Structural fire protection – Visual inspection of internal insulation and fire partitions for various types of spaces and verify the condition of vent / air ducts, fire flaps and covers.
- 0.4 Fire Doors – Verify local and remote operation and fire integrity.
- 0.5 Watertight bulk heads and internal structure – Visually examine condition as far as practicable depending upon accessibility especially within engine rooms, pump rooms, fore castle spaces etc. Thickness gauging and/or NDT may be required depending on the condition.
- 0.6 Watertight doors and remote controls – Verify local and remote operation of watertight doors, indicators in bridge, etc. Hose/chalk testing should be carried out if any doubt exists about water tightness.
- 0.7 Enhanced survey program (ESP) requirements for Oil Tankers, Chemical Tankers and Bulk carriers – Additional survey requirements are applicable for the hull structure within the length of the cargo tanks or cargo holds.
- 0.8 Ballast tanks identified as uncoated or having soft or poor coating during previous intermediate or special survey until the coating condition is made good - Entire tank shall be examined to ascertain that the structure remains in a good or fair condition and the watertight integrity is maintained. May be subjected to close up survey, thickness gauging and hydro testing as found necessary by the surveyor.
- 0.9 Structural aspects of cargo system – Examine for wastage, buckling, cracks of lashing material, pad eyes of fittings, guides, shoes, cell guides, etc. as described in the cargo securing manual. Examine cargo piping. Gauging, proof load testing etc. may be carried out as deemed necessary by the surveyor.
- 0.10 **Minimum Requirements for internal examination of tanks during surveys**

Tank Category	Age 0 - 5 years	Age 5 - 15 years	Age 15 -25 years	Age >25 years
Peak tanks	All	All	All	All
Ballast tanks	Note 3	All	All	All
Fresh water	None	Note 2	Note 3	All
Fuel Oil	None (1)	Note 2	Note 3	All
Lube oil	None	None	Note 2	All

Notes.

1. Subject to satisfaction of the surveyor based on external examination and test and if used exclusively for fuel oil
2. At least one tank of each category shall be examined. Examination may be extended to other tanks also based on the condition of the tank examined.
3. At least one tank of each type shall be examined. Examination may be extended to remaining tanks also based on the condition of the tanks examined.

Main and Auxiliary Machinery

- 1.0 Covering these items, surveyors are commitment to fulfill with the specific requirement and rules specified on our **Technical Manual of Procedures on Surveys “IBSH PUB TEC 001” Chapter 2 Part B – Main and Auxiliary Machinery.**
- 1.1 The following procedures are intended for general guidance only and should not be interpreted as indicating the full and exact extent of any survey.
- 1.2 Surveyors must ensure that the person responsible for opening up machinery items are made aware as early as possible of the extent of opening up required. The precise amount of opening for each item depends to some extent on details of construction, reported faults or obvious signs of defects. Surveyors must therefore use their experience, judgment and any knowledge of the past history of the installation or similar installations when deciding how extensive the opening up should be.

The following items are to be checked:

- (a) Whether any components have been rendered inoperative or removed and if any new/replacement equipment has been placed on board, whether they are of correct/approved type, size, capacity etc.
 - (b) Whether any leaks show up on pipelines, above or below the floor plates or on machines or valves and fittings.
 - (c) The tightness of the inner stern tube seal.
 - (d) The condition of the insulation on pipelines, heaters, boilers, exhaust ducts, etc.
 - (e) The general state of maintenance of indicating and monitoring devices (pressure gauges, volt & ampere meters, thermometers, governors etc) and safety valves.
 - (f) Whether beside the bilge alarm test other monitoring devices need testing.
 - (g) Whether there is free access to, and lighting in emergency exits.
 - (h) Completeness and state of maintenance of spare parts.
 - (i) Operation of various remote shutdown & closing arrangements (oil fuel pumps, oil fuel tank valves, ventilation fans etc) and testing various alarms & controls
 - (j) Examination of bilge pumping arrangements from various compartments including holds and operation of emergency bilge suction from machinery space
- 1.3 Thorough examinations and/or tests may be demanded in cases of doubt where this seems necessary, or if obvious deficiencies call for it. All essential machinery (pumps, compressors, auxiliary engines, ventilation fans, must be operated to the extent possible and confirmed operating satisfactorily. Logbook entries (engine room & Chief Engineer's) should be examined to ensure that machinery has been operating satisfactorily (recorded parameters of main & auxiliary engines etc) in the period since the last surveys and defects / deficiencies noted have been rectified. All remote cont

Main and emergency steering gear

- 1.4 The state of maintenance of the entire installation including controls and fittings is checked by external examination. A special lookout is to be kept for leaks in the hydraulic system (pipelines, packing, cover seals), mechanical damage to piston rods of hydraulic cylinders and high-pressure hoses, grease lubrication of ball and socket joints of hydraulic cylinders and rudder

stocks, rudder stock seals and the condition of limit switches. Each annual class survey is to include a trial of the main and emergency steering gear as follows:

- Switching-on and operating the main gear from the bridge.
- Change over to, and operation of, the emergency gear from the bridge (2nd set of pumps, manual hydraulics, etc.)
- Change over to manual operation and local operation of both sets of gear.
- Run hydraulic cylinder to their limits of travel to check relief valves and/or limit switches (check hydraulic oil pressure).
- Check rudder angle indicators, marking for port/starboard and
- Test of means of communication.

Any defects and deficiencies found which impair the safety of operation of the gear are to be remedied completely before the ship sails and a follow-up survey is to be carried out.

Steam Boilers

- 1.5 Steam boilers are to be subject to external inspection to ensure no water or stem leakages, correct operation of pressure gauges/water level indicators etc.

Electrical Installation

- 1.6 Carry out external examination of generators for main and emergency power supply, electric motors, main and emergency switchboard, switch cabinets, the run of cables, explosion-proof equipment. The state of maintenance is checked by external inspection and if necessary by following trials:
- Trial of emergency generator with connection to mains.
 - Check of parallel running of generators.
 - Check of main switches with protective and safety devices, such as:
 - # Switching off unimportant consumers when the rated current is reached.
 - # Reverse power protection
 - # Under voltage/under frequency protection
 - Check of alarms by random sampling.

Fire – Protection And Safety Equipment

- 1.7 The check of the equipment is effected by external survey and trials. Should any of the defects discovered impair the safe operation of the equipment, these are to be remedied before the ship sails.
- 1.8 Carry out an examination and trials of all emergency equipment (steering gear, fire pump, compressor, generator/battery etc). All emergency equipment must be in satisfactory condition and vessel should not be allowed to sail with any emergency equipment not working satisfactorily.
- 1.9 **In addition the following measurements are to be confirmed from up-to-date reports:**
- crank web deflection of main engine(s)
 - crank shaft deflection of auxiliary engines (where relevant)
 - Axial thrust bearing clearance of shafting
 - Insulation resistance of the generators and operationally important electric motors including cabling and switchgear.
 - Thickness measures from the last dry-dock (hull, holds, plates, frames, chains, etc)

1.10 The following operational tests are to be carried out:

(At the sole discretion of Master)

- Emergency generator set including emergency switchboard (if applicable).
- Emergency bilge suction valve.
- Bilge pumping, ventilation and monitoring arrangements for the transport of dangerous goods.
- Drainage arrangements of starting – air and control air bottles.
- Extended functional check of machinery and electrical installation to prove the unrestricted operability at the discretion of the surveyor.

1.11 Cooling water passages to be examined for fouling and corrosion.**Auxiliary engines**

1.12 Auxiliary engines are generally examined in the same manner as main engines.

Pumping and piping arrangements

1.13 At the Chief engineer's discretion essential pumps should be opened out sufficiently to enable the Surveyor to establish the condition of cylinders, plungers, casings, impellers, valves etc. All seawater pumps must be opened up and surveyed. For other pumps, at least one pump of each type (fuel oil, lube oil, fresh water etc) should be opened up for survey. Lubricating oil, gear oil and fuel pumps as a rule suffer little from wear. Coolers and pressure heaters should be tested when considered necessary.

Compressed Air System

1.14 Compressors should be opened up and the working parts examined. It is important to ensure that the tubes or coils of air coolers are in good condition and when considered necessary a hydraulic test to 1.25 times compressed air discharge pressure in the coils/tubes should be applied. Coils may be found locally thinned due to rubbing against supports or casings or there may be internal erosion at bends, which may be detected by slight hammering.

PART C - SURVEYS ACCORDING THE TYPE OF VESSEL

0.0 This is a general inspection procedure manual; any requests for other surveys such as for Pleasure, Tankers, Container, General Cargo, etc should be referred to Head Office, who will forward the necessary instructions.

0.1 Special arrangement can be made according to special instruction received by principals.