

LOCAL VESSELS ADVISORY COMMITTEE

Details on Extending the Scope of Authorization for Authorized Organizations in Survey of Local Vessels

Purpose

Members are invited to note the details on extending the scope of authorization for authorized organizations¹ to conduct surveys of local vessels as set out in this information paper.

Background

2. The Director of Marine currently authorizes surveyors employed by authorized organizations to carry out the approval of plans and surveys of locally licensed Class II low risk vessels, Class III vessels, and Class IV vessels of not more than 150 gross tonnage or with a carrying capacity of not more than 60 passengers. The approval of plans and surveys of Class I vessels, Class II high risk vessels, and Class IV vessels of over 150 gross tonnage or with a carrying capacity of more than 60 passengers, however, have to be carried out by the staff of the Local Vessels Safety Section of the Marine Department (MD).

Details of the extended scope of authorization

3. The industry has urged MD to expedite the process of plan approval, survey and issue of licence for high risk vessels. In response to the request, MD is making arrangements to fully extend the scope of authorization for surveyors who are employed by authorized organizations to provide services to local vessels, covering services to the following:

- (i) High risk vessels: Class I vessels and Class II high risk vessels (including oil carriers, dangerous goods carriers, noxious liquid

¹ A list of authorized organizations (updated on 23 November 2016) can be found at http://www.mardep.gov.hk/en/pub_services/ocean/pdf/lvs_list.pdf.

The persons / organizations / authorities are authorized or recognized by the Director of Marine under Section 7 or 7A of the Merchant Shipping (Local Vessels) Ordinance (Cap. 548) for the purpose of carrying out the work under the Ordinance on approval of plans, inspection and survey of local vessels.

substance carriers or any vessels intended for carrying cargoes of a hazardous nature); and

- (ii) Class IV vessels of over 150 gross tonnage or with a carrying capacity of more than 60 passengers.

The details are tabulated below:

No.	Work	Approval/ Survey Item	Classed/ Not Classed	Applicable Standard (According to the size, construction material, navigation limit, use, etc. of a vessel)	Remarks
(1)	Plan Approval	Structure, including hulls, machinery, fuel oil, shafting, electrical systems, etc.	Include vessels that are classed and not classed	Rules of relevant classification societies	-
		Safety equipment, including life saving appliances, fire fighting equipment, light and sound signals, emergency devices, etc., and structural fire protection		Merchant Shipping (Local Vessels) (Safety and Survey) Regulation (Cap. 548G) and related code of practice	-
		General arrangements of accommodation spaces including layouts, passenger spaces, seating arrangements, maximum carrying capacity, escape, etc.		Relevant code of practice	-
		Freeboard and watertight arrangements including freeboard marks, and arrangements of watertight/weathertight appliances, bulkheads, entrances, windows, sea water suction/discharge, etc.		Rules of relevant classification societies	-
		Stability calculation		Relevant code of practice	-
		Tonnage measurement and calculation		Relevant code of practice	-
		Navigational and radio communication equipment		Relevant code of practice	-
		Prevention and control of pollution [*Hong Kong Oil Pollution Prevention Certificate / Hong Kong Air Pollution Prevention Certificate]		Merchant Shipping (Prevention of Oil Pollution) Regulations (Cap. 413A), Merchant Shipping (Prevention of Air Pollution) Regulation (Cap. 413P) and relevant code of practice	HKOPP/ HKAPP Certificate*, the survey for and the issuance of which shall be performed by MD staff or authorized organizations

No.	Work	Approval/ Survey Item	Classed/ Not Classed	Applicable Standard (According to the size, construction material, navigation limit, use, etc. of a vessel)	Remarks
(2)	Initial Survey ² and ³	Same as the items in No. (1) above	Include vessels that are classed and not classed	Same as above (in accordance with relevant code of practice/ merchant shipping regulations/rules of classification societies	Final inspections conducted by MD staff
(3)	Periodical Survey after Construction	Same as the items in No. (1) above	Vessels that are classed	In accordance with the survey items and cycle required by classification societies	Final inspections conducted by MD staff
(4)	Periodical Survey after Construction	–	Vessels that are not classed	In accordance with the survey items and cycle set out in relevant code of practice.	Final inspections conducted by MD staff

Implementation

4. The above proposal will provide the industry with greater access to services, thus allowing vessel owners and operators more flexibility in arranging plan approval and surveys for vessels.

5. Once the proposal is implemented, vessel owners and operators can approach authorized organizations direct for engagement. They, however, can still opt to have MD conduct plan approval and surveys for their vessels.

Way Forward

6. Subject to the progress of arrangements with authorized organizations, MD anticipates that the relevant codes of practice will be amended and gazetted in the first quarter of 2017 for implementation of related arrangements for the extended scope of services provided by authorized organizations as detailed above. Members are invited to note the details.

Marine Department
Local Vessels Safety Branch
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² Initial Surveys include: (a) Construction surveys of newly built vessels; and (b) Initial surveys of existing vessels.

³ Surveys conducted in accordance with the rules of relevant classification societies (see the example attached at *Annex*).

Example of the Survey Items of a Classification Society

1] Initial survey

1.1 Before construction of a boat, plans and documents in triplicate as specified in this Section are to be submitted to the Society for approval.

1.2 The approved plans and documents are only effective in the designated scope of the construction numbers. The validity of the approved plans and documents is 4 years.

1.3 The following plans and documents are to be submitted to the Society for approval as appropriate: [Note: See 1.6 for those marked with “*”]

* (1) General arrangements;

* (2) Construction profiles (including main transverse sections, bow and stern construction, bulkheads, decks, superstructure, typical joints, etc.);

(3) Laminate designs;

(4) Shell expansion;

(5) Welding methods and specifications

(6) Construction plans of main engine seating and gear box seating;

(7) Technology specifications of hull construction;

* (8) Structure, installation and arrangements of doors, windows and covers;

(9) Calculations of equipment numbers and anchoring, mooring, handrail and deck skid-proof facility arrangements;

(10) Construction of rudder (including rudder blades, rudder stocks, rudder bearings and connections) and calculations of rudder strength;

* (11) Arrangements of machinery spaces;

* (12) Ventilation arrangements in machinery spaces;

* (13) Shafting arrangements and propeller plans;

(14) Calculations of shafting and propeller strength;

(15) Arrangements of Z-type propelling units or stern machinery of inboard/outboard engines;

* (16) Steering systems;

* (17) Arrangements of piping (including main/auxiliary exhaust piping, fuel oil piping, fire piping and bilge piping);

(18) Electric loading calculations (including calculations of storage battery capacity);

* (19) Electric power systems, marking:

① primary rated parameters of motors, transformers, storage

- batteries and power electric equipment;
 - ② all the feeder lines on switchboards;
 - ③ types, section areas and primary rated parameters of cables;
 - ④ types and primary rated parameters of circuit breakers and fuses.
- (20) Single line diagrams of switchboards;
- * (21) Arrangements of electric power equipment (including installation positions of motors, storage batteries, switchboards, etc.);
- (22) Schematic diagrams and arrangements of lighting;
- * (23) Boats' operation manuals (only applicable to high speed boats and yachts, refer to Appendix for content).
- 1.4 The following plans and documents are to be submitted to the Society for information as appropriate:
- * (1) General specifications;
 - (2) Lines;
 - (3) Calculations of weight and gravity centre;
 - (4) Hydrostatic curves;
 - * (5) Scantling calculations according to the Rules;
 - (6) Tonnage calculations (made in accordance with the requirements of relevant code of practice);
 - * (7) Thickness calculations of window glass;
 - * (8) Particulars of all boat equipment.
- 1.5 The names of plans and documents to be submitted may not be all the same. However, at least the contents of the above-mentioned plans and documents are to be included. In addition to 1.3 and 1.4, other plans and documents may be required to submit to the Society according to the actual situations.
- 1.6 The plans and documents of existing boats for initial surveys may be prepared in accordance with the requirements marked with * in 1.3 and 1.4.
- 1.7 Hull survey items of newbuildings are as follows:
- (1) to confirm that the material, technology, equipment and fittings used for hull structure comply with the rules and requirements and hold the relevant marine product certificates;
 - (2) to examine the hull forming die;
 - (3) to check the test report of mechanical properties of hull plating specimens (including single plate and sandwich plate);
 - (4) to check the correctness and completeness of hull assembly and welds quality;

- (5) to examine after the hull is formed;
- (6) to examine the installation quality of the windows of the first layer of superstructure and the front wall of bridge room (including connections between window glasses, frames and bulkheads and walls);
- (7) to examine the anchoring and mooring equipment;
- (8) inclination test.

1.8 Machinery and electrical survey items of newbuildings are as follows:

- (1) to check marine products certificates of essential machinery equipment;
- (2) tightness test of piping systems after installation on board;
- (3) installation and test of essential machinery;
- (4) installation and test of systems;
- (5) to check product certificates of electrical equipment of primary importance;
- (6) to examine and test the generators, storage batteries and switchboards;
- (7) specification check and installation survey of cables;
- (8) internal communication equipment test;
- (9) to examine and test the main/auxiliary engines, steering systems and control, safety and alarm systems;
- (10) to examine the lighting system.

1.9 Mooring trials and sea trials are to be made in accordance with the requirements of Programme of Mooring and Sea Trials.

1.10 Initial surveys of existing boats

- (1) Plans and documents for initial surveys of existing boats are to be submitted in accordance with the requirements set out in 1.6 of this Section.
- (2) The initial survey items may be determined depending on the boat's age and actual condition, but the surveys are to be carried out at least in accordance with the annual survey items. For passenger boats over 5 years of age, surveys are to be carried out in accordance with the renewal survey items.

2】 Annual survey

2.1 Hull survey items are as follows:

- (1) to examine the appearance of hull structure and superstructure to see whether they have cracks or have turned white or are laminated for fabric reinforced plastics boat;
- (2) to examine shell platings, decks and bulkheads for any signs of

corrosion for metal boats;

(3) to examine for any evidence of loosening or water leakage in connections throughout the hull;

(4) to examine the effectiveness of fore window frames and glass connections for high speed boats;

(5) to examine whether natural vents of petrol internal/external engines are effective;

(6) to examine the complement and effectiveness of mooring and rudder equipment.

2.2 Machinery and electrical survey items are as follows:

(1) an external examination of the propelling unit and auxiliary engine of primary importance. If deemed necessary, an effectiveness test may be conducted for some items;

(2) a general examination of machinery spaces ;

(3) to examine the remote control systems of main engines and the hydraulic operating systems of Z-type propelling units and to confirm they are in good order;

(4) to examine whether oil tanks and fuel oil systems are in good order without leakage;

(5) to examine steering gears and control systems and tests should be carried out under working conditions;

(6) to examine the operating conditions of essential piping systems such as bilge systems and main engine cooling systems, etc.;

(7) internal communications test;

(8) an external examination of generators and storage batteries, and an understanding of their operation;

(9) a general examination and test of electrical equipment and cables under working conditions as far as practicable;

(10) a general examination of earthing and lightning-rod earthing.

2.3 Annual survey items for high speed boat should be the same as special survey items.

3】 Survey on slip/docking survey

3.1 The items of survey on slip/docking survey are as follows:

(1) to examine for cracks, damages and corrosion of the shell under waterline;

(2) to examine the integrity of rudders, rudder stocks, rudder bearings, Z-type propelling units, propellers, screw shafts and bearings, water-jet unit, suction boxes and gratings;

(3) to examine whether earth plates of the shell are in good order.

4] Special survey

- 4.1 In addition to the annual survey items and items of survey on slip/docking survey, special survey items are to include the following:
- (1) for motors: to examine cylinders, cylinder heads, valves, pistons, connecting rods, crank shafts and all of the parts, i.e. bearings, engine foundations, chassis, coolers, shock dampers, engine-driven pumps, etc.;
 - (2) for gear boxes: to examine wheels, pinions, shafts, bearings and incorporated clutch arrangements;
 - (3) for Z-type propelling units: to examine wheels, pinions, shafts, bearings and sealing arrangements;
 - (4) a maneuvering test is to be carried out on propelling working condition for the propulsion machinery; the remote control systems and hydraulic operating systems of main engines and Z-type propelling units are in good order;
 - (5) to withdraw screw shafts and examine shafts, liners, keys, shaft cones, fillets of flanges, stern tube bearings, oil sealing arrangement and the fit conditions of propellers and screw shaft cones;
 - (6) for jet propellers : to examine blades, shafts, shaft seals, guiding nozzles, reverse and control systems in way of ingress-egress shafts and measure clearance between blades and guide ducts;
 - (7) measurement of insulation resistance for electrical equipment and circuits;
 - (8) to examine generators, storage batteries and steering motors (if any), and conduct a running test under working conditions;
 - (9) to examine motors together with controls for essential equipment, and conduct a running test under working conditions as far as practicable;
 - (10) to examine switchboards (box) to confirm they are in good working order.
- 4.2 The items in 4.1(2) to (4) of this Section may be replaced by the examination of their maintenance records.
- 4.3 The plywood of the hull should not have turned white or be laminated with any water leakage.
- 4.4 For metal boats, thickness measurements on suspect areas of hull plating should be carried out at the second and subsequent special surveys.

【End】