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Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
Manila

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DEPARTMENT ORDER NO: 120 Series of 2016

SUBJECT: Guidelines on the Issuance of Certificate of Fitness for Purpose (CFP) to ALL DPWH Dredges and Support Vessels

Consistent with the Department's mission and vision statements, and its quality policy, to continually improve the delivery of public service through effective and efficient management of quality, safe and environment-friendly infrastructure facilities, this Department shall comply with national laws and regulations, and adopt international standards on the operation and management of various equipment in its inventory to ensure the effective operation thereof and the safety of personnel.

This Department Order particularly addresses the need for a body of safety regulations and a set of standards for all DPWH floating equipment which are more appropriate and practicable than the corresponding statutory safety requirements.

I. Purpose

This Department Order prescribes policies for the issuance of Certificate of Fitness for Purpose (CFP) for all dredges and support vessels owned and operated by the Department of Public Works and Highways (DPWH) in accordance with applicable safety standards, rules and regulations.

II. Scope

This Department Order shall apply to all dredges and support vessels owned and operated by DPWH.

III. Areas of Operation of DPWH Dredges and Support Vessels

According to Executive Order 292, Series of 1987, DPWH, as the mandated agency, shall have direct control and supervision of river and river delta dredging activities all over the country.

In addition, the Mining Industry Coordinating Council through Resolution No. 4 recognizes this DPWH responsibility, that in the case of river and/or river delta dredging activities, DPWH shall have direct control and supervision of said activities.

As such, DPWH dredges and support vessels operate on inland waterways and river mouths only, the characteristics of which are different from the high seas and international waters which most maritime laws and conventions cover.

IV. Legal Bases

Article 94 of UNCLOS 1982 provides that every state shall take such measures for its vessels as are necessary to ensure safety at sea with regard to the construction, equipment and seaworthiness, manning, labor conditions and training of crew, the use of signals, maintenance of communications and the prevention of collisions. Such measures shall include those necessary to ensure that each ship is in the charge of a master and officers who possess appropriate qualifications, and that the crew is appropriate in qualification and numbers for the type, size, machinery and equipment of the ship, and that the master, officers and, to the extent appropriate, the crew are fully conversant with and required to observe the applicable international regulations concerning the safety of life at sea, the prevention of collisions, the prevention, reduction and control of marine pollution, and the maintenance of communications by radio.

Recognizing the lack of safety regulations for non-passenger and non-classed vessels operating on inland waterways of the Philippines, and considering that inland waterway vessels carry out lower risk operations as compared to sea-going vessels which safety regulations under various Maritime Laws and Conventions cover, this Department reviewed the statutory safety requirements for water vessels and developed an Alternative Standards which may be more appropriate and practicable for its floating equipment than the corresponding statutory requirements.

These guidelines shall provide standard for safety and marine pollution prevention for new and existing vessels of this Department that operate on various inland waterways of the Philippines. These guidelines shall facilitate the operations of vessels to which relevant international and national conventions are not applicable but for which application of the basic safety principles embodied in such conventions would ensure safety of the vessel and personnel on board and, the protection of the environment. These guidelines incorporate the basic standards for safety as derived from existing regulations such as the International Convention for Safety of Life at Sea (SOLAS), 1974, as amended, the International Convention for Preventing Collisions at Sea (COLREG), 1972, as amended, and Philippine Coast Guard Memorandum Circular No. 06-12.

These guidelines also import basic technical requirements from established regulations for inland waterway vessels such as the Lake Victoria Transport (Maritime Safety) Act, 2007, and the European Union (EU) Directive 206/87/EC.

Furthermore, these guidelines lay down standards for the construction and equipment of vessels, freeboard and stability, machinery and bilge pumping arrangements, electrical installations, fire protection, life-saving arrangements and appliances, communication equipment, and manning of DPWH vessels.

This Department Order, however, is not intended to verify compliance of DPWH vessels to statutory requirements, but to verify that such are operated in a safe manner and are suitable for the purpose for which they are intended for and the areas where they operate.

V. Seaworthiness and Fitness for Purpose

Seaworthiness was originally used in maritime laws to describe the condition of a ship's hull. This meaning has broadened and evolved. Seaworthiness is now defined as the fitness of a vessel in all respect to encounter the ordinary perils of the sea that could be expected on her voyage, and deliver the cargo safely to its destination. Fitness covers not only the physical condition of the vessel, but also the competence of the crew, adequacy of stores and fuel, and having the proper documents required for the vessel to be able to complete her voyage.

The warranty of seaworthiness, an implied warranty under marine insurance policies, guarantees that a ship is staunch and sound, of sufficient equipment, construction, and supplies; that she has a captain of competent skill and capacity and a competent and sufficient crew; and generally that she is, in every respect, fit for the voyage.[1]

Most of the existing international laws and conventions dealing with safety of navigation apply to vessels upon the high seas and all waters connected therewith that are navigable by sea going vessels. Because of the nature of operation and the areas where our dredges and support vessels operate, seaworthiness may not be required for our vessels, but fitness for purpose may be more appropriately used.

Fitness for purpose is the condition in which a vessel should be in order for her to counter whatever perils she is expected to encounter in performing the function for which the vessel is intended. This means that all equipment are operational and in satisfactory condition, the vessel is equipped with life-saving appliances and equipment, the crew have sufficient knowledge and training on the operation and maintenance of the vessel, safety and emergency procedures, and that the vessel carries the documents necessary for the vessel to be able to perform its function.

VI. General Provisions

The inspections under this Order shall include, but not limited to, the following:

1. Condition and maintenance of structure, machinery and equipment;
2. Freeboard and stability;
3. Fire protection, detection and extinction;
4. Life-saving appliances and arrangements;
5. Communications installations and equipment;
6. Navigational equipment and nautical publications;
7. Emergency signaling devices and equipment;
8. Security plans and measures;
9. Health and safety of persons on board;

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10. Provisions for prevention of pollution;
11. Record of equipment and vessel information;
12. Safe manning and personnel trainings and certification; and
13. All other aspects of the vessel.

VI. Regulations

1. Certification and Surveys

A. Certificate of Seaworthiness (CS) and Certificate of Fitness for Purpose (CFP)

1. All floating equipment of the Department shall be subject to inspection and survey to determine fitness for purpose.
2. Notwithstanding sub-regulation 1, surveyors may opt not to inspect new vessels provided that a Certificate of Seaworthiness (CS) issued by a Classification Society from the country of origin of the vessel is presented by the supplier upon delivery of the unit.
3. The Bureau of Equipment (BOE), DPWH shall issue a Certificate of Fitness for Purpose (CFP) to DPWH vessels that are found to be compliant to the guidelines set forth in this DO.
4. A CFP may be withdrawn by the surveyor if the vessel ceases to comply with the conditions specified in the Certificate.
5. The surveyor may at any time inspect a vessel to confirm that it has a valid CS or CFP and that it complies with all conditions therein.
6. All vessels shall at all times carry on board the Certificate.

B. Validity of Certificate

This guideline shall adopt the scheme used by the Maritime Industry Authority (MARINA) in determining the validity of Certificate as embodied in the Guidelines for Ship Inspection & Certification, August 1, 2005

1. A CFP shall be valid for a period not exceeding 12 months.

2. When a renewal inspection is completed within 3 months before the expiry date of the existing certificate, with no loss of its period of validity, the new certificate shall be valid from the date of completion of the renewal survey up to:

   a. date not exceeding twelve (12) months from the date of expiry of the existing certificate, for dredges;
   b. a date not exceeding five (5) years from the date of expiry of the existing certificate, for support vessels.

3. When the renewal survey is completed after the expiry date of the existing certificate, the new certificate shall be valid from the date of completion of the renewal survey up to:

   a. a date not exceeding twelve (12) months from the date of expiry of the existing certificate, for dredges;
   b. a date not exceeding five (5) years from the date of expiry of the existing certificate, for support vessels.

4. When the renewal survey is completed more than three months before the expiry date of the existing certificate, the new certificate shall be valid up to:

   a. a date not exceeding twelve (12) months from the date of completion of the renewal survey, for dredges;
   b. a date not exceeding five (5) years from the date of completion of the renewal survey, for support vessels.

B. Certifying Body

1. Survey and inspection of vessels shall be carried out by personnel of the Floating Equipment Division (FED), BOE, who shall hereinafter be referred to as surveyors, or by private surveyors contracted by the Department to conduct the survey and inspection.
2. The surveyors must have knowledge on current maritime legislations for the area and the type of vessel being inspected.
3. Inspection of vessels with regard to compliance to pollution prevention regulations shall be conducted by the Environmental Management Bureau (EMB), or personnel from FED trained and duly certified by EMB.
4. A CFP may only be issued by the Director of the Bureau of Equipment upon favorable recommendation of the surveyors.

C. Procedure for issuance of CFP

I. Newly procured vessels

   1. A CFP shall be issued to a new vessel after a survey is carried out, before the vessel is put into service, to confirm that the vessel complies with the requirements set out in this Order.
   2. Notwithstanding sub-regulation 1, surveyors may opt not to inspect a new vessel provided that a CS issued by a Classification Society, based on the country of origin of the vessel, is presented by the supplier upon delivery of the unit. The surveyors, however, shall check and review the CS and the manning and competency of personnel on board prior to issuance of a CFP.

II. Existing operational vessels

1. A CFP shall be issued to an existing vessel, after a survey is carried out, to confirm that the vessel complies with the requirements set out in this DO.
2. If a vessel carries a CS from a classification society and the validity of the CS has not yet expired, the surveyor may opt not to survey the vessel if based on his judgment the vessel can safely perform its function, and provided that no major repair or modification has been made on the vessel's hull or structures which could affect the strength of the vessel.

III. Newly dry-docked vessels

1. A CFP shall be issued to a newly dry-docked vessel after a Certificate of Dry-docking is issued by the MARINA licensed shipyard that conducted the dry-docking of the vessel.

D. Surveys and Inspections[2]

1. The Dredge Master shall present the vessel for inspection in an unladen, clean and equipped condition, and shall provide such assistance as necessary for the inspection.
2. Where the surveyor considers it necessary, he may require:
   a. Inspection of the vessel out of the water;
   b. Performance trials;
   c. Proof by calculation of the strength of the hull and structure; and
   d. Proof by calculation of stability, where necessary, on the basis of an inclining experiment.
3. Where major alterations or repair that modify the structural soundness of a vessel are undertaken after a survey, the vessel shall be subjected to another survey prior to continuation of operation.
4. If a survey is carried out on the basis of item 3, a new CFP reflecting the modifications on the technical characteristics of the vessel shall be issued.
5. For Amphibious Excavators, a stability test result which shows the maximum allowable heeling angle, maximum safe digging depth, safe swing speed, and maximum reach allowable for various depth and loading conditions shall be presented as a requirement for the issuance of a CFP.

E. Non-issuance, cancellation or suspension of Certificate

1. A CFP may be suspended by the BOE Director upon the recommendation of the surveyor if he determines that the vessel does not satisfy the requirements set in this Order, and that failure to comply constitutes a manifest danger. The surveyor shall prevent the vessel from proceeding with its normal operation, and shall then

require the Dredge Master to take necessary corrective actions to rectify the situation.

2. If failure to comply with the requirements does not constitute a manifest danger, the surveyor shall require the Dredge Master to take all necessary corrective actions to rectify the situation without preventing the vessel from proceeding with its normal operation. Meantime, an Interim Safety Certificate (ISC) shall be issued and shall be valid for a period of sixty (60) days.
3. A Certificate shall be suspended if:[3]

    a. the vessel has been involved in an accident and/or incident such as, but not limited to: grounding, collision, and hitting of hard objects, that may put into question the integrity of the hull and its integral parts and other affected machineries/appliances;
    b. non-compliance with mandatory rules and regulations relative to safety and environmental protection is uncovered;
    c. a major deficiency relative to the safe operation of the ship is uncovered.
4. A suspended Certificate may only be restored/reinstated after correction of deficiency and upon favorable recommendation by the Surveyors after a thorough inspection of the vessel.
5. A suspended Certificate shall remain suspended until such time that the suspension is lifted.
6. All records pertaining to the suspension and subsequent lifting of said suspension shall form part of the inspection records of affected vessel.
7. A Certificate may be withdrawn if:

    a. any of the required/imposed condition(s) for the lifting of a suspended Certificate is/are not met;
    b. fraud or mis-representation relative to the acquisition of a certificate is found during the life or validity of subject certificate is proven beyond reasonable doubt;
    c. major deficiency(ies) uncovered has been proven to really exist;
    d. a periodical/annual inspection, as required, is not undertaken; and,
    e. a renewal inspection is not undertaken.

2. Construction and Equipment[4]

A. Construction

1. A vessel shall be constructed in accordance with good shipbuilding practice.
2. The hull of a vessel shall be sufficiently strong to withstand all stresses to which it is subjected to under normal operating conditions.
3. The Dredge Master shall submit to the surveyor the plans showing the construction materials and scantlings of the hull.
4. In the case where new structures are fitted to existing vessels or major modifications which may affect the strength of the vessel are made, design

4. In the case where new structures are fitted to existing vessels or major modifications which may affect the strength of the vessel are made, design calculations for the strength of the structure shall be presented by the Dredge Master.
5. Watertight bulkhead extending to the deck or, in the absence of a deck, to the upper edge of the hull planking or plating shall be installed, consistent with the construction and type of the vessel.
6. The accommodation and engine room, and any working spaces forming part of the engine room shall be separated from each other and from the holds by means of bulkheads which shall be watertight, to the top of the engine room or the hold, as the case may be.
7. Any compartment not capable of being sealed during the operation of the vessel shall be capable of being pumped dry.
8. Each compartment shall be capable of being pumped out separately.
9. No openings shall be fitted in the bulkheads and other partitions between spaces required by sub-regulations (5) and (6), but, manholes are permitted in bulkheads other than the collision bulkhead, provided that they are bolted in a watertight manner.
10. All penetrations of the hull and piping connected to such penetrations shall be constructed so as to prevent the accidental admission of water into the vessel.
11. Water intakes and outlets and pipes connected to them shall be considered to be watertight if they are made in such a way that any unintentional ingress of water into the vessel is impossible.

B. Cranes and winches

1. Winches shall be fitted with a device that prevents unintentional load release, and where a winch does not lock automatically it shall be fitted with a brake adequate to deal with their tractive force.
2. Hand-operated winches shall be fitted with a device to prevent kick-back of the crank.
3. A winch that is both power- and manually-driven shall be designed in such a way that the motive-power control cannot actuate the manual control.
4. A crane, derrick and a winch shall be manufactured in accordance with good engineering practice and maintained in accordance with the manufacturer's instructions and the supporting structure of the vessel shall take account of the forces arising during their use.
5. A name plate shall be affixed to cranes, derricks and winches and shall show -
   a. The name of the manufacturer;
   b. Manufacturing year;
   c. The series or type; and
   d. The serial number, if available.
6. The maximum permissible loadings shall be permanently marked conspicuously on the crane, derrick and winch, in a clearly legible manner.
7. Cranes, derricks and winches on new and existing vessels shall be inspected annually to verify their continued fitness for use.

8. Devices shall be fitted to a crane or derrick to protect against crushing or shearing accidents, and the outer parts of any crane or derrick shall have a safety clearance of 0.5 meter upwards, downwards and to the sides between them and all surrounding objects, except that the safety clearance to the sides is not required outside the work and access areas.
9. The control of a crane shall be of the automatic-return type (buttons without stops) and the operating direction shall be unambiguous and clear.
10. An appropriate device shall be fitted to prevent the load from dropping if the motive power of a crane or derrick fails.
11. Appropriate device shall be fitted so as to limit upward movement of the hoisting device and to prevent the safe load being exceeded.
12. Any downward movement of the hoisting device shall be stopped where there are less than two cable windings on the drum.
13. The tensile strength of the cables for mobile loads shall correspond to five times the permissible loading of the cable.

C. Miscellaneous equipment

1. A vessel shall be provided with the following equipment, as a minimum requirement:

   a. ropes and steel cables consistent with the function of the vessel;
   b. a collision mat;
   c. a gangway which is at least 400 millimeters wide and of an appropriate length in relation to the dimensions of the vessel, having its sides marked by a light colored stripe and fitted with handrails;
   d. Buoyant fenders;
   e. a first-aid kit and instructions for its use;
   f. a fireproof container with a cover for storing oily rags and similar solid wastes and a fire-resistant marked container with a cover for storing oil and similar liquid wastes;
   g. an axe; and
   h. a waterproof electric hand torch.

D. Heating, cooking and refrigeration appliances

1. Heating, cooking and refrigeration equipment, together with their accessories, shall be installed in such manner that they are not dangerous even in the event of overheating and that they cannot overturn or be moved accidentally.
2. The installations referred to in sub-regulation (1) shall not be installed in spaces or engine rooms in which volatile substances are stored or used and flues from such installations shall not be routed through such spaces or engine rooms.
3. The intake of air necessary for combustion shall be ensured in cooking and heating equipment.
4. A closing device shall not be fitted in ducts served by ventilation fans.
5. The flues of heating installations shall be arranged in such a manner as to limit the possibility of obstruction by combustion products and to permit cleaning.

6. Vents shall be fitted above the outlets of refrigeration appliances working on liquid fuel.

E. Openings and penetrations in watertight or weather-tight structures, coamings on exterior openings and freeing ports

1. Engine exhaust outlets that penetrate the hull below the deck shall be provided with an effective means to prevent back-flooding into the hull through the exhaust system.
2. Access openings in a weather-tight superstructure, deckhouse or deck shall be fitted with weather-tight doors or hatches that open outward and that are generally hinged on the forward or outboard sides.
3. Exterior openings through which down-flooding into the hull can occur shall be fitted with coamings of equivalent strength to the structure in which they are located.
4. Hatchway covers shall be of appropriate strength and stiffness and shall be fitted with means of securing and maintaining weather-tightness.

3. Freeboard and Stability[5]

A. Minimum freeboard

The minimum freeboard shall be the freeboard at which a vessel in the maximum condition of loading meet the stability requirements as determined by a stability proof test.

B. Load lines

1. A vessel shall have permanent loading marks placed on each side forward, amidships and aft to indicate the maximum allowable draft and trim corresponding to the minimum freeboard.
2. A loading mark shall be a horizontal line of at least 200 millimeters in length forward and aft, 300 millimeters amidships and 25 millimeters in height, with its upper edge passing through the point of maximum draft.
3. A loading mark shall be painted in a color contrasting the side shell paint.

4. Machinery and bilge pumping arrangements[6]

A. General provisions

1. All machinery and associated installations shall be designed, constructed and installed in accordance with good engineering practice.
2. An engine shall be installed and fitted in such a way as to be adequately accessible for operation and maintenance and not to cause any danger to a person assigned to operate or maintain it.

3. An engine shall be secured against accidental starting, and shall be fitted with safety devices.

B. Engine exhaust system

1. Exhaust gases shall be ducted out of the vessel.
2. Suitable measures shall be taken to avoid ingress of the exhaust gases into any compartment and where exhaust pipes pass through accommodation or the wheelhouse they shall, within such spaces, be covered by protective gas-tight sheathing and the gap between the exhaust pipe and such sheathing shall be open to the outside air.
3. Exhaust pipes shall be arranged and protected in such a way that they cannot cause a fire.
4. Exhaust pipes shall be suitably insulated or cooled in engine rooms and subject to sub-regulation (2), outside the engine rooms, exhaust pipes may be located or protected in such a way as to prevent physical contact.

C. Engine room

1. The engine room shall be arranged in such a way that the equipment may be operated, serviced and maintained safely and easily.
2. Engine room and other areas in which inflammable or toxic gases may evolve shall be adequately ventilated, and the motors driving the blower and suction fans shall be capable of being shut down, where necessary, from outside the spaces in which they are located, and from outside the engine room.
3. Companionways and ladders providing access to engine room shall be permanently affixed and made of steel or an alternative, equally strong and fire-resistant, material.
4. Except where it is demonstrated to the surveyor that it is not possible, engine rooms shall have two exits, one of which may be an emergency exit.

D. Propulsion machinery

1. Propulsion machinery shall be capable of starting, stopping and reversing quickly and safely.
2. Where propulsion machinery is not controlled from the wheelhouse whilst a vessel is under way, a reliable two-way communication system shall be provided between the wheelhouse and the engine room.

E. Fuel tanks, pipes and accessories

1. Liquid fuels shall be stored in steel tanks or, if so required by the design of the vessel, in tanks made of an equivalent fireproof material and the tanks shall form part of the hull or be firmly attached to it.

2. Sub-regulation (1) shall not apply to tanks with a capacity of 12 liters or less that have been incorporated in ancillaries at the factory.
3. A fuel tank shall not have a common surface with a drinking water tank.
4. Tanks and their pipe work and other accessories shall be laid out and arranged in such a way that fuel or gas does not accidentally reach the inside of the vessel and tank valves intended for fuel sampling or water drainage shall close automatically.
5. Liquid fuel or lubricating oil tanks shall be rigidly installed and shall not have common boundaries with accommodation spaces.
6. Daily supply tanks and their fittings shall not be located above engines or exhaust pipes.
7. Except for the daily-supply tanks, orifices for liquid-fuel tank filler necks shall be located on the deck and each filler neck shall be fitted with a cap.
8. Liquid fuel tanks shall be fitted with a breather pipe terminating in the open air above the deck and arranged in such a way that water ingress is not possible.
9. Breather pipes shall have a sectional area at least 1.25 times the cross section area of the corresponding filler neck.
10. Filler orifices for fuel tanks shall be marked to show clearly the tanks to which they are connected.
11. Pipework for the distribution of liquid fuels shall be fitted with a shut-off device at the tank outlet that can be operated from the deck and the shut-off devices shall be protected against unauthorized operation;
12. Fuel pipes, their connections, seals and fittings shall:
    a. be made of materials that are able to withstand the mechanical, chemical and thermal stresses to which they are likely to be subjected in operation;
    b. be fitted in such a way that it is possible to monitor them throughout their length; and
    c. not be subjected to any damaging effects of heat.
13. Liquid-fuel tanks shall be provided with openings with leak-proof closures that permit cleaning and inspection
14. Fuel tanks directly supplying power plants and engines needed for navigation purposes shall be fitted with devices which emit both visual and audible signals in the engine room if their level of filling is not sufficient to ensure continued reliable operation.
15. A battery shall not be fitted under a fuel tank, fuel cock or fuel filler

F. Steering (if applicable)

1. A vessel shall be equipped with reliable steering gear that ensures good maneuverability, having regard to the operation and characteristics of the vessel, and a steering gear shall be capable of putting the rudder over, in not more than 30 seconds, from hard on one side to hard on the other.
2. A powered steering system shall be designed in such a way that the rudder cannot change position unexpectedly.
3. The component parts of the steering system shall be constructed and arranged so as to be able to withstand the stresses to which they may be subjected during

normal operation and the steering equipment and its controls shall be designed and constructed so that its operation is not impaired when external forces are applied to the rudder.

4. The steering system shall incorporate a powered steering control if so required by the forces needed to actuate the rudder.
5. Power-actuated steering devices shall be protected against overloads by means of a system that restricts the torque applied by the control.
6. Penetrations for the rudder stocks shall be designed so as to prevent the spread of water-polluting lubricants.
7. A rudder angle indicator shall be fitted in the wheelhouse so as to be visible to the person steering the vessel.

G. Bilge pumping system

1. Subject to sub-regulation (2), vessels shall be provided with a pumping system capable of pumping from and draining any watertight compartment in a vessel.
2. A watertight compartment less than 7% of the total underdeck volume may be drained into the adjacent compartment by means of a self-closing valve or cock.
3. The valve or cock shall be fitted outside the compartment to be drained and shall be operable from a readily accessible position.
4. In a vessel of 15 meters or more in length the system shall permit pumping and draining from every space in a vessel where any one watertight compartment is flooded.
5. In all vessels:
   a. a power pump may be substituted for a manually operated pump;
   b. a power pump may be driven by the main engine, an auxiliary engine or by an electric motor, and, where two power pumps are required they shall not be dependent on the same source of power;
   c. where a vessel is required by sub-regulation (5) to be fitted with two power pumps and the capacity of one of those pumps is less than that specified by not more than 20%, the deficiency may be made compensated by an excess of capacity in the other power pump;
   d. a bilge pump shall be of the self-priming type or be provided with a suitable priming device; and
   e. Manually operated bilge pumps may be fitted to watertight compartments which are less than 4 meters in length.

H. Bilge piping

1. Flat-bottomed compartments of more than 5 meters in width, shall be fitted with at least one suction strainer on either side and where an engine room is over 5 meters in length at least two suction strainers shall be fitted at its opposite ends.
2. Branch drain pipes from various compartments shall be connected to main pipe by means of closable non-return valves.
3. Compartments or other spaces fitted out for ballast shall be connected to the draining system by means of a simple shut-off device.

4. Holds used for water ballast shall be filled by means other than water intake valves located in the base of the hold and shall be fitted with depth gauges.
5. Where a drainage system incorporates permanently fixed pipe work, bilge bottom drainage pipes intended to extract oily water shall be equipped with closures that are sealed in position.

I. Storage of oily-water and drained oil

1. Water contaminated with oil by operations on board shall be stored on board and the engine-room bilge is considered to be a store for this purpose.
2. An engine room shall contain one or more containers dedicated for the storage of waste oils, the capacity of which shall correspond to at least 1.5 times the quantity of waste oils from all of the internal combustion engines, all of the equipment installed and hydraulic fluids from the hydraulic-fluid reservoirs.

5. Electrical Installations[7]

A. General provisions

1. The following shall be carried on board a vessel of 25 meters or more in length -
a. circuit and installation diagrams, specifying the type and make of electrical machinery and appliances on board, the type and cross-section of cables and all other information necessary for an assessment of the safety of electrical installations; and
b. operating instructions for the electrical installations.

2. Electrical cables shall be flameproof or for applications where flameproof cable is not available, shall be protected from fire as far as is reasonable and practicable.

B. Generators and motors

1. Generators and motors shall be readily accessible for inspection, measurement and repair and shall be located so as to protect the windings from water and oil.
2. Terminal boxes shall be readily accessible for inspection, measurement and repair.
3. Generators driven by a main engine, propeller shaft or auxiliary sets intended for another function shall be designed for the range of rotational speeds expected to occur in service.

C. Batteries

1. A battery shall be accessible and fitted and arranged so as not to shift with the movement of the vessel and while in service, shall not be placed where it is exposed to extreme heat, spray, steam or vapor.

2. A battery, except that for portable appliances, or that which requires a charging power of less than 0.2kW, shall not be installed in a wheelhouse, accommodation or hold.
3. A battery which requires a charging power of more than 2kW shall be installed in a special room, and where located on deck shall be enclosed in a cabinet.
4. A battery which requires a charging power not exceeding 2kW may be installed below decks in a cabinet or chest.
5. Provided that it is protected against falling objects and dripping water, the battery may be installed in the engine room or in any other well ventilated space.
5. The interior surfaces of all rooms, cabinets or boxes, shelving or other built-in features intended for batteries shall be protected against the harmful effects of electrolyte.
6. Provision shall be made for effective ventilation when batteries are installed in a closed compartment, cabinet or chest and forced-draught ventilation shall be provided for nickel-cadmium batteries requiring a charging power of more than 2kW and for lead-acid batteries requiring a charging power of more than 3kW.
7. Forced-draught ventilation shall enter at the bottom and shall be discharged at the top so as to ensure total gas extraction.
8. Ventilation ducts shall not include any stop valves or other devices that obstruct the air flow.
9. "No smoking" signs having a minimum diameter of 100 millimeters shall be affixed to doors or covers of compartments, cabinets and chests containing batteries.

D. Electrical switchboards

1. Appliances, switches, protective devices and switchboard instruments shall be arranged so as to be clearly visible and accessible for maintenance and repair.
2. Terminals for voltages of up to 50V, and those for voltages higher than 50V, shall be kept separate and marked appropriately.
3. Marker plates identifying the circuits of all switches and appliances shall be affixed to the switchboards and the current ratings and circuits for protective devices shall be identified.
4. Live components of appliances with an operating voltage greater than 50V, installed behind doors, shall be protected against accidental contact when the doors are open.
5. Accessories and equipment for bodily protection shall be available for installing and removing fuses with a high breaking capacity in electrical switchboards.
6. Switchboards shall be located in accessible and well-ventilated spaces and protected against water and mechanical damage and piping and air ducts shall be arranged so that switchboards cannot be damaged in the event of leakage.
7. Where installation near electrical switchboards is unavoidable, pipes in the vicinity shall not be fitted with detachable connections.

E. Switches, protective devices and circuits

1. Generator circuits and consumer circuits shall be protected against short circuits and overcurrent on all non-earthed conductors.
2. Overload circuit-breakers or fuses may be used for purposes of sub-regulation (1).
3. Outputs from the main switchboard to appliances operating at more than 16A shall include a load or power switch.
4. Circuit-breaking equipment shall be fitted on the basis of current rating, thermal or dynamic strength and breaking capacity and switches shall be identifiable and capable of simultaneously cutting off all live conductors.
5. Emergency circuit breakers for oil burners, fuel pumps, fuel separators and engine-room ventilators shall be installed outside the spaces containing the equipment.
6. Fuses shall be of the enclosed-melt type and be made of porcelain or an equivalent material.
7. Arrangements for changing fuses shall minimize the danger of operator contact.

F. Lighting

1. Lighting appliances shall be installed in such a manner that heat emitted by them does not set fire to nearby inflammable objects or units.
2. Lighting appliances in enclosed spaces in which batteries are installed, or in which paints and other highly inflammable substances are stored, shall be of a type that minimizes the risk of explosion.

G. Grounding

1. Metal parts that are not intended to carry current when in use, including machine frames and casings, appliances, fittings and accessories, shall be earthed in cases where they are not already mounted in effective metallic contact with the hull
2. In direct current systems, metal fittings and accessories and metal sheaths of cables and ducts shall be earthed at both ends, except where cables are mounted on wood or a plastic material, in which case only one earth connection need be fitted.
3. In an alternating current system, single-conductor cables and ducts shall not be earthed at more than one point.

H. Emergency power

1. A vessel of 10 meters or more in length shall be equipped with an emergency source of power to supply power to the electrical installations when the main power supply is interrupted. The emergency power source shall be able to supply the following:

    a. signal lights;
    b. audible warning devices;
    c. emergency lighting for evacuation routes;

d. emergency lighting for spaces where life-saving equipment are stored;
e. engine room and emergency exit;
f. emergency lighting for the location of firefighting equipment; and
g. emergency floodlight.

2. The main or emergency power equipment shall be installed in such a manner that its failure shall not adversely affect the operational safety of the electrical installations that it serves.

6. Fire Protection[8]

A. General provisions

1. All vessels shall be fitted with fire extinguishing systems.
2. Where fire-fighting appliances are installed so as to be concealed from view, the partition covering them shall be marked with a red letter 'F' of at least 100 millimeters in height.
3. In vessels of 10 meters or more in length, a fire control plan shall be displayed in the wheelhouse, showing:
   a. fire divisions fitted on the vessel;
   b. particulars of any fire extinguishing systems; and
   c. the position of fire pumps, fire hydrants, fire hoses and fire extinguishers.

B. Portable fire extinguishers

1. The recommended locations for portable fire extinguishers are:
   a. in the wheelhouse;
   b. near points of access from deck to accommodation;
   c. at the point of access to service areas not accessible from the accommodation and in which heating, cooking or refrigerating equipment running on solid or liquid fuel are installed;
   d. in galleys, where the extinguisher provided under paragraph (c) is not readily accessible from a galley;
   e. near engines or at the entrance to engine rooms
2. Portable extinguishers shall be maintained in fully charged and operable condition and kept in their designated places at all times when not in use
3. Extinguishers shall be installed on hangers or brackets conspicuously located in unobstructed areas readily accessible in the event of fire. [9]
4. Extinguishers having group weight not exceeding 18 kilograms shall be installed so that the top is not more than meter above the floor. Those exceeding 18 kg, except wheeled types, shall be installed not more than 1 m above the floor. [10]
5. At regular intervals of not more than one year, or when specifically indicated by an inspection, extinguishers shall be thoroughly examined, recharged or repaired. [11]
6. Instructions for use shall be clearly shown on each portable extinguisher.

7. Extinguishers that are sensitive to extreme cold or heat shall be so installed and protected as to ensure their continued effectiveness.

C. Hydrants and hoses[12]

1. The number and position of the fire hydrants shall be such that at least one jet of water may be directed into any part of the vessel by means of a fire hose, which fire hose shall not exceed 18 meters in length.
2. At least one hose shall be provided for each hydrant.
3. Nozzles shall be fitted with a device for regulating the water jet at high pressure or spray and for stopping the flow.
4. Valves fitted to water pipes shall be designed to open with a counter-clockwise rotation of the hand wheel.
5. All fire hydrants shall be equipped with hoses spanners, secured by light chain.
6. Fire hoses shall be made of leather, seamless hemp, closely woven flax, canvas or other suitable material and shall be provided with couplings, conductors, other necessary fittings and a nozzle suitable for dealing with all fires.
7. Fire hoses shall be stowed so as to be protected against damage and shall be kept in good order so as to be ready for use at all times.

7. Life-saving appliances[13]

A. Personal life-saving appliances

1. A vessel of 25 meters or more in length shall carry at least five (5) lifebuoys and a vessel of less than 25 meters in length shall carry at least two (2) lifebuoys.
2. As far as is practicable, lifebuoys shall be equally distributed on both sides of the vessel and of the lifebuoys carried, at least one shall be provided with a self-igniting light and one shall be fitted with a buoyant lifeline
3. A lifebuoy required under this regulation shall:
   a. possess buoyancy of not less than 100N in fresh water;
   b. be made of suitable material and be resistant to oil and its derivatives and to temperatures of up to 50°C;
   c. be so colored as to be readily visible in the water;
   d. have a mass of not less than 2.5 kilograms; have an inside diameter of 0.45m ±10%;
   e. be fitted with a grab rope;
   f. be marked with retro-reflective material; and
4. A vessel shall carry lifejackets compliant with the requirements of the Department as provided in D.O. No. 74 S 2015, for every person on board.
5. Lifejackets shall be placed in secure but readily accessible location on board all the vessel.

6. Every lifejacket shall be fitted with retro-reflective material and shall be provided with a whistle firmly secured by a cord.

B. Emergency communications equipment[14]

1. Fire alarms and air horn must be inspected and maintained regularly.
2. To alert other vessels in the area of an emergency situation on-board, visual signaling devices may be used in conjunction with alarms. All vessels must be equipped with one (1) day non-pyrotechnic device (SOS Flag) and one (1) night non-pyrotechnic device (SOS Light).

C. Manning and survival procedures

1. All persons manning vessels shall be trained in launching and operating all types of survival craft carried on the vessel.
2. Each member of the crew shall participate in at least one abandon ship drill and one fire drill every month at which on-board training in the use of life-saving appliances, including survival craft equipment, shall be provided.
3. Each lifeboat, where carried, shall be launched with its assigned operating crew aboard and maneuvered in the water at least once every three months during an abandon ship drill required by sub-regulation (2).
4. Illustrations and instructions relating to the use of life-saving appliances, in appropriate languages, shall be posted in the Safety Bulletin Board as required in D.O. No. 74 S 2015.
5. Assembly stations and embarkation stations shall be adequately illuminated by floodlights supplied from the emergency source of electric power
6. Emergency instructions, giving clear instructions to be followed in case of emergency, shall be provided and exhibited in conspicuous places within the vessel, including the wheelhouse, machinery spaces and accommodation spaces.
7. Records relating to abandon ship drills, fire drills and on-board training shall be entered in the official log book.

8. Measuring and Monitoring Devices

Dredges shall be equipped with the following devices/instruments for monitoring accomplishment and resource consumption:

a. Fuel meter
b. Engine RPM Indicator
c. Engine hour meter
d. Hydraulic Pressure Indicator (for hydraulic dredges)
e. Voltage Indicator
f. Depth sight/gage
g. Magnetic Compass (as appropriate)

The above instruments shall be inspected regularly and maintained in good condition, and shall be calibrated as necessary.

9. Health and safety in the accommodation and working stations

All vessels shall comply with the requirements set by D.O. No. 74 Series of 2015 regarding safety on-board dredges and support vessels.

10. Manning and Certificate of competency[15]

A. Certificate of competency

A Certificate of Competency shall be issued to floating equipment personnel based on the following standards:

	Eligibility	Education	Experience	Trainings and Certifications	Minimum Age
DREDGE MASTER III	RA 1080	Bachelor's Degree in Engineering relevant to the job.	2 years of relevant experience	8-hour Safety training and certification, certified by OSHC-DOLE	24
				First aid and CPR training and certification, certified by the Philippine Red Cross or other competent agency	
				Training on Dredge Management and Project Planning and Management	
				Training on emergency response	
				Training on the use of fire-fighting equipment	
				Training on proper wearing and use of PPE	
				Training on Risk Management and Hazard Analysis	
DREDGE MASTER II	RA 1080	Bachelor's Degree in Engineering relevant to the job.	1 year of relevant experience	First aid and CPR training	21
				8-hour Safety training	
				Training on the use of fire-fighting equipment	
				Training on proper wearing and use of PPE	
				Training on Dredge Management and Project Planning and Management	
				Training on emergency response procedure	

	Eligibility	Education	Experience	Trainings and Certifications	Minimum Age
DREDGEMAN FOREMAN	Heavy Equipment Operator	High School graduate or completion of relevant vocational/trade course	N/A	First aid and CPR training 8-hour Safety training Training on the use of fire-fighting equipment Training on proper wearing and use of PPE Training on the proper operation of dredge (dredge specific) Training on the maintenance of dredge (dredge specific) Training on emergency response procedure	20
MARINE ENGINEMAN II	Automotive Mechanic	High School graduate or completion of relevant vocational/trade course	N/A	Training on the proper operation of dredge (dredge specific) Training on the maintenance of dredge (dredge specific) Training on emergency response procedure	20
WELDER II	Welder	Elementary School Graduate	N/A	Training on the proper operation of dredge (dredge specific) Training on the maintenance of dredge (dredge specific) Training on emergency response procedure	18

B. Training and experience

A candidate for certification shall undergo an approved competitive training program which shall:

a. ensure that the candidate receives practical training and experience in the appropriate tasks and duties appurtenant to his position;
b. be closely supervised by competent and qualified personnel aboard the vessel;
c. be documented in the dredge training log book.

C. Safe manning

1. Pursuant to Executive Order 366 the following are the approved regular plantilla positions for DPWH dredges:

Dredge Class	Regular Positions
Cutter Suction Dredge	Dredge Master III
	Dredgeman Foreman
	Marine Engineman
Multi-Purpose Amphibious Dredge	Dredge Master III
	Dredgeman Foreman
Amphibious Excavator	Dredge Master III
	Dredgeman Foreman

2. To augment the regular crew onboard dredges, this Department, thru the BOE, shall hire additional personnel to be employed on Job Order basis. In hiring additional personnel, BOE shall ensure that the number of personnel would be sufficient to:

   a. perform all tasks related to dredging operations, and complete the project according to plan;
   b. inspect and maintain the structural integrity of the vessel;
   c. inspect and maintain all equipment and machinery on board the vessel;
   d. inspect and maintain all emergency equipment and life-saving appliances;
   e. manage and maintain the safety of the vessel and crew during operation;
   f. maintain the cleanliness and orderliness of the vessel to minimize risks associated with various hazards in dredging operations; and
   g. document all activities performed on board and submit the required reports monthly and on time.

D. Certificate of Fitness for Work

A Certificate of Fitness for Work shall be issued to a floating equipment personnel who satisfied all the requirements set out in this Order.

13. Pollution Prevention[16]

A. General Provisions

1. Dumping of any kind of vessel waste, plastic wastes, oil (i.e. petroleum products), and discharge of sewage into the water are prohibited.
2. No discharge into the sea shall contain chemicals or other substances in quantities or concentrations which are hazardous to the marine environment or chemicals.[17]
3. Oil residues which cannot be discharged into the waters shall be retained on board or discharged to reception facilities, as required by MARPOL.
4. Oil absorbent materials, shall be available at all times during any operation involving oil or an oil mixture to deal with any small spill that may occur.
5. Spilled oil on-board shall be immediately cleaned up and contained for subsequent disposal.
6. Spilled oil or oil mixture shall not be washed, or otherwise discharged, overboard

7. Vessels shall be fitted with means of preventing fuel oil from escaping into the machinery space bilges.
8. All vessels shall carry on board sufficient number of receptacles for different types of wastes.
9. It is advised that vessels provided with toilet facilities should have a sewage holding tank of sufficient capacity taking into account the number of persons likely to be carried onboard, together with an appropriate means of emptying the tank. Tank venting should be adequate so as not to contaminate the air quality of accommodation spaces or to other vessels when alongside.[18]

B. Certification of compliance to pollution prevention regulations

Survey and inspection of vessels to determine compliance to pollution prevention regulations shall be conducted by the Environmental Management Bureau (EMB).

VI. Forms

1. Survey and inspection of vessels shall be conducted using the form/checklist (Annex B) adopted by this Bureau from the International Marine Contractors Association (IMCA), Marine Inspection Checklist for Small Workboats, with additional checkpoints specific for dredges.
2. Certificate of Fitness for Purpose shall follow the format specified in Annex A of this Order.

VII. Penalty Clause

Employees found guilty of violation of any of these rules and regulations shall be charged administratively and penalized in accordance with existing rules and regulations.

VIII. References

1. *Nicolas R. Foster, The Seaworthiness Trilogy: Carriage of Goods, Insurance, and Personal Injury, 40 SANTA CLARA L. REV. 473 (2000)*
2. *Lake Victoria Transport (Maritime Safety) Regulations, 2010*
3. *MARITIME INDUSTRY AUTHORITY, SHIP SAFETY INSPECTION SYSTEM MANUAL Guidelines for Ship Inspection & Certification, 2005*
4. *Lake Victoria Transport (Maritime Safety) Regulations, 2010*
5. *Lake Victoria Transport (Maritime Safety) Regulations, 2010*
6. *Lake Victoria Transport (Maritime Safety) Regulations, 2010*
7. *Lake Victoria Transport (Maritime Safety) Regulations, 2010*
8. *Lake Victoria Transport (Maritime Safety) Regulations, 2010*
9. *Department Order No. 74 Series of 2015*
10. *Department Order No. 74 Series of 2015*
11. *Department Order No. 74 Series of 2015*

12. Lake Victoria Transport (Maritime Safety) Regulations, 2010
13. Lake Victoria Transport (Maritime Safety) Regulations, 2010
14. Department Order No. 74 Series of 2015
15. Civil Service Commission, Qualification Standards, Revised 1997
16. Lake Victoria Transport (Maritime Safety) Regulations, 2010
17. Maritime & Coast Guard Agency, MGN 469, Inland Waterways – Non-Passenger Vessels: Applicable Safety Standards for Vessels Operating Solely on Inland Waterways in the United Kingdom
18. Maritime & Coast Guard Agency, MGN 469, Inland Waterways – Non-Passenger Vessels: Applicable Safety Standards for Vessels Operating Solely on Inland Waterways in the United Kingdom

Initial survey of all DPWH vessels to assess and identify deficiencies in relation to fitness for purpose shall be completed within five (5) months after publication of this Order in the DPWH website. Deficiencies found shall be addressed and rectified within one year after the completion of survey, after which period, compliance to the regulations set in this Order shall be monitored regularly according to the terms of this Order.

This Order shall take effect immediately.

For strict compliance.

ROGELIO L. SINGSON
Secretary

Department of Public Works and Highways
Office of the Secretary
WIN6T01442

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF EQUIPMENT
Manila

Annex A

CERTIFICATE OF FITNESS FOR PURPOSE

This Certificate is issued by the Department of Public Works and Highways under Department Order No. ____ Series of 2016 to:

Name of vessel: _____ DPWH Property No.: _____
Type of vessel: _____ Displacement: _____
Make/type of engine:
MGE: _____
DPE: _____
AuxE: _____

Issued to _____ as a [new vessel/existing vessel], and valid for a period of one (1) year, which may be extended based on the judgment of authorized surveyors, for dredging operations on inland waterways of the Philippines.

THIS IS TO CERTIFY THAT:

The vessel has been inspected and surveyed in accordance with the applicable provisions of Department Order No. ____ Series of 2016.

That the vessel satisfied the requirements set by the above cited DO relevant to its type and purpose in relation to:

1. Part VI Regulation 2 – that the condition of structure, machinery and equipment on-board was satisfactory, and does not pose any danger to both personnel and properties.

2. Part VI Regulation 3 – that a freeboard of _____ mm was assigned and maintained during operation.

3. Part VI Regulation 4 – that machinery and bilge pumping arrangements are designed in accordance with good engineering practice.

4. Part VI Regulation 5 – that electrical installations are properly and adequately designed and planned in accordance with good engineering practice.

5. Part VI Regulation 6 – that there is an adequate means to extinguish any type of fire that may occur on-board the vessel.

6. Part VI Regulation 7 – that enough life-saving appliances were provided, and that personnel on-board have sufficient knowledge on how to use life-saving appliances.

7. Part VI Regulation 8 – that the vessel is equipped with the required measuring and monitoring instruments, and that such are tested and are operational.

8. Part VI Regulation 9 – that the vessel was equipped and fitted in compliance to D.O. No. 74 S 2015 so as to ensure health and safety of all personnel on-board in the accommodation and working stations.

9. Part VI Regulation 10 – that the vessel was adequately manned by competent personnel duly certified by the Bureau of Equipment as Fit to Work based on the Qualification Standards set in this regulation.

10. Part VI Regulation 11 – that the vessel was equipped and fitted in relation to prevention of pollution.

That the vessel carries on-board all documents required by Department Order No. ____ Series of 2016.

That the vessel is fit in every aspect to perform dredging operations in waters of _____ deep, with maximum water current of _____, and waves not higher than _____.

This Certificate is valid until _____ 20__.

Issued on _____ at the Bureau of Equipment, 2nd St., Port Area, Manila, Philippines.

_____

Director, Bureau of Equipment

(Official stamp of BOE, as appropriate)

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF EQUIPMENT
Manila

Annex A

CERTIFICATE OF FITNESS FOR PURPOSE

This Certificate is issued by the Department of Public Works and Highways under Department Order No. ____ Series of 2016 to:

Name of vessel: _____ DPWH Property No.: _____
Type of vessel: Amphibious Excavator
Make/type of engine: _____ Serial No.: _____
Arm Length: _____

Issued to _____ as a [new vessel/existing vessel], and valid for a period of one (1) year, which may be extended based on the judgment of authorized surveyors, for dredging operations on inland waterways of the Philippines.

THIS IS TO CERTIFY THAT:

The vessel has been inspected and surveyed in accordance with the applicable provisions of Department Order No. ____ Series of 2016.

That the vessel satisfied the requirements set by the above cited DO relevant to its type and purpose in relation to:

1. Part VI Regulation 2 – that the condition of structure, machinery and equipment on-board was satisfactory, and does not pose any danger to both personnel and properties.

2. Part VI Regulation 3 – that a freeboard of _____ mm was assigned and maintained during operation.

3. Part VI Regulation 6 – that there is an adequate means to extinguish any type of fire that may occur on-board the vessel.

4. Part VI Regulation 7 – that enough life-saving appliances were provided, and that personnel on-board have sufficient knowledge on how to use life-saving appliances.

5. Part VI Regulation 8 – that the vessel is equipped with the required measuring and monitoring instruments, and that such are tested and are operational.

6. Part VI Regulation 9 – that the vessel was equipped and fitted in compliance to D.O. No. 74 S 2015 so as to ensure health and safety of all personnel on-board in the accommodation and working stations.

7. Part VI Regulation 10 – that the vessel was adequately manned by competent personnel duly certified by the Bureau of Equipment as Fit to Work based on the Qualification Standards set in this regulation.

8. Part VI Regulation 11 – that the vessel was equipped and fitted in relation to prevention of pollution.

That the vessel carries on-board all documents required by Department Order No. ____ Series of 2016.

That the vessel is fit in every aspect to perform dredging operations in waters of _____ deep, with maximum water current of _____, and waves not higher than _____.

This Certificate is valid until _____ 20__.

Issued on _____ at the Bureau of Equipment, 2nd St., Port Area, Manila, Philippines.

_____

Director, Bureau of Equipment

(Official stamp of BOE, as appropriate)

Annex B

Republic of the Philippines
Department of Public Works and Highways
BUREAU OF EQUIPMENT

Inspection Checklist for Dredges and Support Vessels

	Particulars	Yes/ No	Remarks	Recommendation
A. Weather-tight integrity				
1	Is it possible to secure all openings to prevent the ingress of water whilst in operation?			
2	Are doors located above the weather deck, which give access to spaces below, weather-tight and able to be operated from either side?			
3	If there are any opening skylights fitted, can they be effectively secured from either side?			
4	Are blanks available for securing in place, in the event of breakage of a skylight?			
5	If any opening or port-lights are below the weather deck, are there dead-lights or blanks available to be secured in place?			
6	Can all opening port-lights be effectively secured?			
7	Are all weather-tight closures to ventilators in full working order?			
8	Does the hull and structure of the vessel appear in a good state?			
9	Is there any independent certificate of inspection of the vessel available (*e.g. classification society/flag state/insurance survey*)?			
10	When a deck is fitted with bulwarks such that water may be trapped, are there effective freeing ports?			

11	Are sea inlets and discharges below the waterline fitted with a seacock or other effective means of closure?			
12	Is there evidence of any water leaking into the vessel below decks?			
Machinery and electrical installations				
13	Are the engines/generators operational and well maintained?			
14	Are the spaces in which engines are sited clean and well maintained?			
15	Are vent pipes for fuel tanks protected against water ingress by a goose neck or other efficient means?			
16	Are vent pipes for fuel tanks protected against flame ingress by a suitable gauze diaphragm?			
17	What means is there to effectively control fuel spillages or leaks from permanent or temporary equipment?			
18	Is there a safe means of isolating the fuel supply in the event of an emergency?			
19	Are there any fuel or oil leaks in the machinery spaces?			
20	Are the bilges free from oil?			
21	When batteries are the sole means of starting the propulsion engine, are there at least two sets of batteries available?			
22	Are there safe means of isolating electrical supplies?			
23	Are electrical systems protected from water?			
24	Are battery spaces adequately ventilated?			

25	Is the battery cut-off switch operational?			
26	Are all batteries secured firmly to prevent movement?			
27	How is effective emergency lighting provided to allow escape from under-deck and to allow essential activities to continue?			
28	How is effective emergency lighting provided to illuminate: i) survival craft launching and embarkation areas; ii) man-overboard rescue equipment and rescue areas?			
29	Are there two fully working bilge pumps?			
30	Is at least one bilge pump available for duty in an emergency? (*The pumps and sources of power, if power-driven, should be in widely separated spaces so that any single event does not disable all the pumping systems.*)			
31	Is an operating bilge alarm for watertight enclosed spaces where machinery fitted in?			
32	Are operating manuals available for the machinery?			
33	Are adequate tools and emergency spares available for the machinery?			
34	Are maintenance records available for the on-board equipment?			
Stability				
35	Does the vessel have an approved stability information booklet?			
36	Are any stability records available to show the limit to which the vessel may be tilted without			

	overturning?			
37	What is the maximum water current in which the vessel can safely operate without overturning?			
38	Are the crew familiar with the stability issues with regard to the operation of the vessel?			
Freeboard				
39	Is the vessel marked with a deck line and freeboard mark?			
40	If the vessel is not marked with a deck line and freeboard mark, how is the safe maximum draft determined?			
Means of escape				
41	Are there at least two means of escape from any manned/occupied space?			
42	Are means of escape clearly marked?			
Fire protection				
43	Are fire detectors, where fitted, working?			
44	Are the fire detectors, where fitted, tested on a regular basis?			
45	If no fire detectors are fitted, how is smoke or fire detected?			
46	Is the fire pump working? (*This may be a manual or power driven pump.*)			
47	Can the fire hose deliver a jet of water to any part of the vessel? (if not, up to how many meters?)			
48	Does the jet and spray nozzle work on the fire hose?			
49	Are there at least two multi-purpose fire extinguishers on the vessel?			

50	Do they appear in good condition?			
51	Is there a fixed means of discharging a fire-extinguishing medium to the engine room?			
52	If there is no fixed means of discharging a fire-extinguishing medium to the engine room how would an engine room fire be extinguished?			
53	Are there at least two fire buckets with lanyards?			
54	Is there a fire blanket in the galley or cooking area?			
55	Do the crew know how to operate the fire fighting equipment?			
Navigation equipment				
56	Are the navigation lights working			
57	Is there a means of making an efficient sound signal in case of emergency?			
58	Is the all-round anchor light working?			
59	Does the magnetic compass have a valid deviation card?			
60	Does the light on the magnetic compass work?			
61	Is there a copy of list of radio signals available for the area of operation?			
62	Is a copy of the International Code of Signals available?			
63	Is an efficient waterproof signalling lamp suitable for Morse signalling provided?			
64	Is there a working fixed or portable searchlight for a vessel that may operate in darkness?			
65	Does the vessel have sufficient anchor cable for the proposed area of operation?			
66	Is the vessel provided with operator policy			

	statements, instructions and procedures with regard to safe navigation?			
Accommodation				
67	Are all heavy equipment in the accommodation secured?			
68	Is there an efficient working ventilation system for enclosed spaces that may be entered by personnel?			
69	Is there adequate ventilation for all accommodation spaces including air conditioning if appropriate?			
70	Is there adequate electric lighting?			
71	Is there an adequate supply of fresh drinking water?			
72	Is there emergency drinking water of two liters per person?			
73	Is there a bunk or cot for all those that will be on-board?			
74	Is there a galley with adequate means for preparing food, a stove for cooking and a sink?			
75	Are there adequate toilet facilities for the proposed personnel on-board (POB)?			
76	Are there adequate stowage facilities for personal effects for the proposed POB?			
Protection of personnel				
77	Is there a safe means of access to the vessel?			
78	Are there adequate guardrails around the deck?			
79	Are there at least two safety harnesses on-board and additional harnesses for all those required to work on deck?			

80	Is the surface of the working deck non-slip?			
81	Are personnel provided with protective clothing appropriate to the prevailing air and sea temperatures?			
82	What measures have been taken to prevent personnel from being exposed to excessive noise?			
83	Are noise-warning signs posted as appropriate?			
84	Is a safety briefing given to all personnel who go on operation covering such items as use of lifejackets and procedures to be followed in the case of an emergency?			
85	In the event of collision, grounding, fire, explosion, gas or toxic vapour release, are adequate written emergency procedures in place?			
86	Are adequate medical stores provided?			
Crane				
87	Is there a valid test certificate for the crane, if fitted?			
88	Are there markings on the crane that show the maximum load permissible?			
Manning				
89	Does the person in command hold an appropriate certificate of competency?			
90	Is there a second person on-board deemed experienced by the person in command?			
91	Is there a person on-board familiar with the operation and maintenance of the main machinery?			
92	Is there at least one person on-board who holds			

	an approved medical first aid certificate?			
93	Are the crew members able to satisfactorily demonstrate operation of life saving appliances and fire-fighting equipment?			
Dredging equipment				
94	Is the dredge pump engine operational and properly maintained?			
95	Is the main generator engine operational and properly maintained?			
96	Is the auxiliary engine operational and properly maintained?			
97	Is the dredge pump properly maintained?			
98	In case of pump failure due to blockage, how is the impeller accessed for maintenance?			
99	Is the ladder, if fitted, in satisfactory condition?			
100	Are pulleys and winches in good condition?			
101	Are steel cables in good condition? free of kinks?			
102	Are hydraulic hoses in good condition?			
103	Are both spuds in good working condition?			
104	Are the spuds fitted with stoppers to prevent from overshooting upwards?			
105	Are the spuds sufficient for the river depth where the dredge is operating?			
106	Is the dredge ladder in satisfactory condition?			
107	Is the cutter head maintained in good condition?			
108	Are all fittings and connections snug and fit?			
Reporting				
109	Are accidents and incidents investigated and reported in accordance with D.O. No. 74 S 2015?			
110	Have there been any accidents or incidents on			

	the vessel in the last 12 months?			
111	If there have been any accidents or incidents, are reports available?			
Pollution prevention				
112	What arrangements are in place to prevent the discharge of sewage in prohibited areas?			
113	How are prohibited areas for sewage discharge identified?			
114	What arrangements are in place for the retention of garbage on-board?			
115	What arrangements are in place for the handling of oily wastes?			
116	What arrangements are in place for the prevention of discharge of oil/oil-contaminated water overboard?			
Life-saving appliances				
117	Is there a life raft on-board sufficient for the proposed maximum POB?			
118	If no life raft is fitted, what means are there in place to abandon the vessel in the water if required to do so?			
119	Does the life raft have a current certificate of examination?			
120	When is/are the life raft(s) next due for examination?			
121	Does/do the life raft(s) have a hydrostatic release with a valid certificate of examination?			
122	Are there sufficient lifebuoys for the type of operation and vessel?			
123	Are there sufficient lifebuoys with light for the			

	type of operation and vessel?			
124	Do the lifebuoys have buoyant heaving lines?			
125	Is there a lifejacket for every person carried on the vessel?			
126	Are there parachute flares on-board the vessel?			
127	Are there red hand flares on-board the vessel?			
128	Is there a thermal protective aid for every person carried on the vessel?			
129	Are there effective means to recover a person from the water?			
130	Are life-saving signal tables available?			
131	Is there a means of sounding a general alarm in the event of an emergency?			
132	Does the general alarm operate satisfactorily?			
133	Is there a training manual for use of life saving appliances (LSA)?			
134	Are there instructions for on-board maintenance of the LSA?			
135	Is a record of emergency drills maintained?			
136	Is there an up to-date onshore emergency response plan/manual?			
Mooring				
137	Are there adequate mooring points on the vessel?			
138	Is there a sufficient number of mooring lines in good condition?			
Towing				
139	Is there a suitable towage point on the vessel?			

140	Are there suitable towing lines?			
Boat hook				
141	Is there at least one boat hook available for recovering lines or to assist in rescuing personnel who fall overboard?			
Anchor				
142	Is a suitable anchor available?			
143	If none, is one required for the size of vessel for the proposed area of operation?			

Date of Inspection:

Inspected by:

Concurred:

(Signature over printed name)

(Signature over printed name)
Dredge Master