

**DETAILS OF ACCEPTANCE OF NECESSITY (AoN) FOR ACQUISITION**  
**03 X BOTTOM OPENING DUMB BARGE**

1. Acceptance of Necessity (AoN) has been accorded for acquisition of 03 x Bottom Opening Dumb Barge on 15 Jul 25. The approved acquisition scheme is related to construction of 03 x Bottom Opening Dumb Barge for which RFP would be issued shortly (under Buy (Indian-IDD) with minimum 50% Indigenous Content (IC) in accordance with Section 'B', Chapter XII of DAP 2020). Vendors desirous of participating in the approved acquisition scheme related to procurement of 03 x Bottom Opening Dumb Barge are required to submit their willingness.

2. Technical Specifications of the project are placed at **Appendix 'A'**.

3. The willingness should be dispatched to the following:-

Cmde (Ship Production)  
Directorate of Ship Production  
Naval Headquarters, Ministry of Defence  
Room No. E-201, 2<sup>nd</sup> Floor  
East Wing, Nausena Bhawan  
Delhi Cantt, New Delhi 110010  
Tele: 011-20896998  
E-mail: dsp@navy.gov.in

**TECHNICAL SPECIFICATIONS FOR CONSTRUCTION OF**  
**03 X BOTTOM OPENING DUMB BARGE**

1.	<b>Aim</b>	To promulgate the Preliminary Staff Requirements for Non-Propelled Bottom Opening Barge capable of dumping ammunition at sea.
2.	<b>Functions</b>	<p>(a) To dump ammunition at sea in deep waters (&gt;300m).</p> <p>(b) The barge should be capable of carrying the following cargo, either singly or in combination, for dumping.</p> <ul style="list-style-type: none"> <li>(i) Gunnery ammunition.</li> <li>(ii) ASW ammunition including Mines.</li> <li>(iii) Torpedoes.</li> <li>(iv) Missiles.</li> <li>(v) Air ammunition.</li> </ul> <p>(c) Total cargo tonnage capacity up to 200 tons.</p> <p>(d) Securing arrangement for accessories/ associated gears for missiles like fuel tanks, defueling hoses, HP air bottle etc. is to be provided.</p>
3.	<b>General Remarks</b>	<p>(a) The barge is to be built as per NHQ MoD (N) approved Classification Society Standards (ABS/ BV/ DNV-GL/ IRS/ LR/ RINA/ ClassNK). The notation for the barge and QAP for shipbuilding, including trials, should be finalised in consultation with NHQ MoD (N). Classification Society is to certify that the Class notation proposed by the yard covers all the requirements of build specs/ guideline specifications.</p> <p>(b) A certificate is to be provided by the Classification Society confirming that 'Class Notations have been provided for all functional requirements indicated in RFP'.</p> <p>(c) The barge should comply with all the latest requirements of MARPOL/ MEPC and SOLAS regulations.</p> <p>(d) It should have a OCR cycle of at least 5 years.</p> <p>(e) Hopper Door Type Bottom Opening Mechanism is to be provided for entire cargo hold to enable dumping of ammunition at sea. The mechanism should be capable of being operated by suitably rated Diesel Generators of the barge.</p> <p>(f) Bottom opening Mechanism should have three layers of safety for its operation to ensure that the ammunition is not discharged unintentionally into sea during loading or transit. Further in case of failure of mechanised modes, Bottom Opening Mechanism should operate in manual mode.</p>



		<p>Suitable indication for Bottom Opening mechanism is to be provided in the Bridge/ Control Post.</p> <p>(g) The hold should be provided with the following:-</p> <p>(i) Provisioning of semi-automatic sprinkling system for the cargo hold, which can be remotely operated from the control/ master room instead of manually operated sprinkling system.</p> <p>(ii) CCTV/ Video surveillance facility for the crew to monitor ammunition in the cargo hold for safety.</p> <p>(h) All electrical and ventilation fittings; should be flame proof, and firefighting system should be iaw Classification Society rules.</p> <p>(j) The hold is to have a sliding hatch cover to provide opening of 17 m x 6 m x 3.5 m (length x breadth x height). Not more than two persons should be required for undertaking manual operation of the sliding hatch cover. A suitable roll on cover is to be provided to assist the closing/opening of the hatch covers. At the ends of sliding hatch cover, provision of automatic/manual locking arrangement is to be provided.</p> <p>(k) Points for lashing are to be provided on the longitudinal walls in the hold at a height of 1 ft and 5 ft from the cargo hold floor with distance between each point being 5 ft.</p> <p>(l) The weather deck should have 2 in number 500 Watt water and spark proof flood lights capable of being powered by external power source.</p>
4.	<b>Sea State</b>	Operable upto sea state 3 and sustainable up to sea state 4.
5.	<b>Crew</b>	Six qualified civilian crew. Sheltered space is to be provided for the crew members.
6.	<b>Dimensions</b>	<p>(a) As required to carry the cargo specified at Sub-Paras 2(b) to 2(d).</p> <p>(b) Cargo Hold. Should have clear opening of 17 m x 6 m x 3.5 m (Length x Breadth x Height)</p>
7.	<b>Draught</b>	Max of 2 meters, when fully loaded.
8.	<b>Environmental Conditions</b>	<p>All equipment should be marinised and capable of performing under the following ambient conditions:-</p> <p>(a) Ambient Air Temperature - (up to 45 °C)</p> <p>(b) Average machinery Space Temperature - up to 55 °C</p> <p>(c) Sea Water Temperature - (upto 40° C)</p>

		(d) Relative Humidity - 95% condensation at 35 ° C Condensation at 35 ° C
9.	<b>Construction Features</b>	<p>(a) The size of the cargo hold of the barge should not be less than 17 m x 6 m x 3.5 m (Length x Breadth x Height).</p> <p>(b) Torpedo / missile stowage space is to be well protected from the sides and bottom.</p> <p>(c) The barge is to be of proven design either existing in service; or in case of new design, the design should be supported by relevant calculations. The sea keeping characteristics of the barge is to be calculated using proved methods/ calculations/ software.</p> <p>(d) Barge is to be constructed in accordance with Classification Society rules.</p> <p>(e) The weather deck should have clear walk way around the cargo hatch and the super structure with a minimum width of one meter. This clear width should not be obstructed/cluttered by bollards, fairleads, protrusions etc.</p> <p>(f) Removable wooden gratings (of 1.5 m x 1.5 m size) are to be provided in the cargo deck flushed with the protruding lodgement shoes to bear the load of the containerised missiles.</p> <p>(g) Removable/ detachable rack arrangement, reusable cradles, stands and associated facility of sea water resistant material with associated maintenance facility need to be provided to enable the barge to change her function iaw Para 2.</p> <p>(h) Fixed metal ladders are required inside the cargo hold in the forward, mid and aft sections of the cargo hatch.</p> <p>(j) A portable/ collapsible gangway (length 10 feet), capable or carrying 02 men should be provided.</p> <p>(k) A pilot ladder of 10 meter length is to be provided.</p> <p>(l) Height of Wheel House from waterline should be NMT 6.6 meter. A collapsible mast is to be provided to restrict height of the barge from waterline.</p> <p>(m) Collapsible Jack Staff and Ensign Staff are to be provided.</p> <p>(n) Bottom Opening Barge should have on isolated space or chamber for keeping exudated Depth Charge, Warhead of Missiles Torpedoes or any ammunition which is required to be dumped into deep sea.</p>



		<p>(p) Loading arrangement of unserviceable/ obsolete ammunition should be such that there is no rattling of these stores during dumping.</p> <p>(q) Bottom opening barge/ split hopper barge should have system of levers/ pulleys/ switch or such automation so that once layers of safety are removed, dumping of stores can be done by gravity alone.</p>
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#### **SECTION B - NAVIGATION**

10.	<b>Bridge</b>	Enclosed bridge is to be provided at suitable location. Bridge should have all around visibility for efficient assistance in manoeuvring alongside.
11.	<b>Magnetic Compass</b>	One magnetic compass is to be provided on the bridge.
12.	<b>Nav Light</b>	<p>Navigation Lights are to be provided to meet the following requirements:-</p> <p>(a) International Regulations for Prevention of Collision at Sea 1972.</p> <p>(b) Flame proof and capable of operating on 24V fire retardant Valve Regulated Lead Acid (VRLA) batteries.</p> <p>(c) The audio and visual alarms for failure of Navigational lights.</p>

#### **SECTION C – COMMUNICATION**

13.	<b>Communication</b>	<p>Following Class approved communication facilities are to be provided:-</p> <p>(a) VHF hand held Radio sets - Five MOTOTRBO XIRP8668i</p> <p>(b) 5" Hand signaling Lantern - One with stowage box</p> <p>(c) Portable loud hailers - One</p> <p>(d) Megaphone - Two</p> <p>(e) Call up bells As Req.</p> <p>(f) Sound Power Telephone As Req.</p>
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#### **SECTION D – HULL**

14.	<b>Build Specification</b>	The barge should be built to NHQ MoD (N) approved classification society standards (ABS/BV/DNV-GL/IRS/LR/RINA/ Class NK). The Seller is to provide a certificate from the nominated Class Society that the barge has been built to approved Class Notations and the vessel (design and build) complies with all aspects of the Built
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		<p>Specifications. The Seller shall therefore share a copy of GLS/ Build Specifications with the nominated Class society and finalize the contract with Class accordingly.</p> <p>All Hull equipment being procured to meet the relevant specifications under inspection/ certification by Classification Society rules.</p>
15.	<b>Hull Material</b>	<p>(a) The barge is to be built of Class approved steel suitable for the type and function of barge.</p> <p>(b) The barge should be of mono hull construction of a proven design or validated by calculations using proven ship design software. Structural analysis including Direct Strength Analysis (DSA) should be carried out to ensure that hull is designed for intended area of operation.</p>
16.	<b>Stability</b>	Should be designed to have intact and damaged stability as per the Classification Society and IMO/SOLAS requirements. The barge should meet intact stability requirements as per Class rules for Bottom Open conditions also.
17.	<b>U/W Hull Protection</b>	The barge should be designed for a five inter docking interval. A suitable U/W hull protection (sacrificial anode as per IN specifications) system is to be provided. Sacrificial anodes are also to be fitted in sea tubes, bilges, pumps, traps and other areas where sea water tends to accumulate. In addition, zinc rings are to be fitted at the neck sea tubes near the flange and also in the overboard discharge.
18.	<b>Paint Scheme</b>	Paint Scheme is to be iaw NO 53/ 16. Surface preparation, paint application, curing time etc are to be ensure to the satisfaction of paint OEM and Classification Society rules.
19.	<b>Deck covering</b>	Suitable Class approved Epoxy Deck covering is to be applied in the relevant internal compartments (wet spaces, main alleyways, crew compartments and bridge.

#### **SECTION E – ENGINEERING, FIRE FIGHTING AND DAMAGE CONTROL**

20	<b>Portable Pumps</b>	<p>The following pumping out arrangement is to be provided:-</p> <p>(a) One suitable engine driven pump of 37 TPH capacity and two submersible pumps (one each of 20 and 40 TPH) as per latest NHQ MoD(N)/NBCD Policy.</p> <p>(b) 20 TPH and 40 TPH submersible pumps be provided with 02 starters and a spare OBS starters along with sockets in each section.</p> <p>(c) A hand pump of 10 GPM capacity.</p>
21	<b>Fire Fighting and Damage Control</b>	<p>(a) Fire Fighting and Damage Control equipment are to be as per Classification Society norms. Portable extinguishers (ie, 09 Ltr AFFF and 2 Kg CO<sub>2</sub>) are to be provided at suitable locations with securing arrangements.</p> <p>(b) Class approved addressable Smoke and Fire Detection System (AFDS) is to be provided.</p>



		<p>(c) Four 300 Bar BASCCA sets are to be provided.</p> <p>(d) Four pairs of BRISTOL Firefighting suits with all accessories are to be provided.</p> <p>(e) Flexible fire fighting and hoses are to be provided for taking water supply from Fire pumps, submersible pumps or cargo pumps for fire fighting.</p>
22	<b>Dewatering Arrangement</b>	Dewatering arrangements are to be provided as per Class requirements along with suction and discharge hoses and all other accessories as per Para 14 above.
23	<b>Power Generation</b>	<p>(a) Standard COTS inverter conforming to Classification Society of sufficient capacity capable of meeting maximum electrical load with suitable maintenance free fire retardant VRLA battery is to be provided for the electrical consumers (lights, fans, Nav lights etc). Watertight charging points for charging the batteries using 415/230V, 50Hz, 3/1 phase shore supply are to be provided on port and stbd sides of super structure. The batteries on full charge should be able to hold full load for at least three hours. Relevant safety indications are to be provided for monitoring of batteries.</p> <p>(b) Four in number reflector reflector lamps/twin tube light fittings (Flame/Explosion proof) are to be affixed flushed with the bulkheads 1 m above the deck level of the cargo hold.</p> <p>(c) Suitably rated Diesel Generator to meet complete electrical load requirements is to be provided.</p> <p>(d) Electron Beam Cross Linked (EBXL) cable is to be used and it should be routed through metallic fire proof conduits.</p> <p>(e) All equipment connected to working voltage above 150 V A/C should have caution board.</p> <p>(f) All 230 V switch socket to be compliant to and type tested as per EED-50-17.</p> <p>(g) The vessel should be provided with suitable number of Portable Generators, capable of meeting maximum electrical load for navigation lights, CCTV monitoring system, 2 x 500W flood lights, Submersible pump (20 TPH), Submersible pump (40 TPH), 04 reflectors, 04 flood lights/tube lights and 03 fans, smoke and Fire Detection System (AFDS) for maximum electrical load envisaged and should not be more than 80% of the normal rating. While selecting the generator a minimum growth margin of 10% of the estimated load should be catered.</p>
24.	<b>Power Distribution</b>	The power distribution system is to be catered in accordance with Classification Society rules. In general normal supply is to be arranged from the power sources nearest to the load and alternate supply from the sources farthest from the load. Distribution panel (if any) to be fed from 415/230/24 volts, 3 phase transformers rectifier cum battery charger for lighting



		and other small power consumers. All circuits will be protected by MCBs. All domestic supplies would be of four wire system.
25.	<b>Transformers</b>	A suitable three phase transformer conforming to Classification Society regulations is to be provided for General and Navigational Lights. Domestic equipment are to be fed from 230V, 50 Hz, single phase.
26.	<b>Shore Supply Arrangements</b>	Two watertight shore supply connection boxes for 415V, 3 Phase, 50 Hz of enclosure protection IP-57 or higher shall be fitted on weather deck (one on either side), at appropriate positions, to facilitate charging of batteries. The shore supply boxes should have suitable terminals for connecting flexible cables. Two sets of flexible shore supply cables of 100 M length with a reel for stowage should be provided. A stowage reel should be positioned at suitable location on the weather deck.
27	<b>Battery Charger Arrangement</b>	A suitable battery charger should be provided to facilitate charging of 24 V batteries. A battery charger should be compatible for 415V 3 Ph input supply.
28	<b>Electric Cables</b>	Cables for all lighting, power, shore supply and equipment is to be as approved by the Classification Society.
29	<b>Lighting</b>	LED based luminaries should be used in the barge.
30	<b>HV Mats</b>	Class approved High voltage insulated synthetic mats are to be used in switchboards, Converter Rooms Equipment Rooms, Battery Compartments.
31	<b>Ventilation</b>	<p>(a) Machinery spaces and inverter room should have forced supply and exhaust ventilation as per Classification Society rules.</p> <p>(b) Ventilation arrangement should be provided in all relevant spaces as per Class rules.</p> <p>(c) WCs, galleys and bath rooms should have forced supply and exhaust as per Class rules.</p> <p>(d) Ventilation system is to be provided in sheltered spaces and battery compartment in accordance with Class rules.</p> <p>(e) Ten portable thermometers for measuring Cargo hold temperature are to be provided stowage arrangement.</p>
<b><u>SECTION G – ACCOMMODATION AND HABITABILITY</u></b>		
32.	<b>Accommodation</b>	<p>Following accommodation should be provided along with following associated facilities:-</p> <p>(a) One six bunk cabin for the crew.</p> <p>(b) Marineised AC of adequate capacity.</p> <p>(c) One set of separate WC and shower for the crew.</p>
33.	<b>Galley</b>	(a) A common galley is to be provided for a crew of 4 personnel.



		<p>(b) A dining hall of sitting capacity of four personnel should be provided.</p> <p>(c) The galley should be equipped with the following equipment:-</p> <p>(i) Hot Plate - 01</p> <p>(ii) Oven (of 3 kw) - 01</p> <p>(iii) Hot Case - 01</p> <p>(iv) Electric Kettle - 01</p> <p>(v) Water cooler of 30 Lts Capacity with Water Purifier - 01</p> <p>(vi) Stainless steel sink with a fresh water nickel silver tap with splash back and drain board</p> <p>(vii) Additionally, one tap, 500 mm above the deck, with a sill around, to restrict water splash.</p>
34.	<b>Medical Facilities</b>	<p>Medical facilities are to be provided as follows:-</p> <p>(a) <b><u>First Aid Boxes (FAB)</u></b>. 01 each in cargo hold, Port side Accommodation space and Starboard side Accommodation space.</p> <p>(b) <b><u>Stretchers</u></b>. 01 each of Neil - Robertson stretcher, Ambulance stretchers and scoop stretcher.</p>
35.	<b>Recreational facilities</b>	One smart 40" LED Colour TV and SRE are to be provided.
<b>SECTION H - SEAMANSHIP, LIFE SAVING AND SAFETY EQUIPMENT</b>		
36.	<b>Seamanship Fittings</b>	<p>(a) <b><u>Anchor and Chain Cable</u></b>. Anchor and Chain Cable arrangement should be provided as per Class requirements. Anchor chain cables and accessories should be iaw class rules.</p> <p>(b) <b><u>Towing and Berthing Gears</u></b>. Towing and Berthing gear are to be provided as follows.</p> <p>(i) Minimum three sets of bollards with fairleads on either side of bollard. Bollards and Fairleads should be strengthened to enable alongside towing.</p> <p>(ii) Canterline bollard and bullring/ fairlead on stem &amp; stern of towing.</p>

		<p>(iii) Stag horns/ cleats of requisite strength on either side for berthing and rigging of fenders.</p> <p>(iv) HMPE Berthing hawsers of suitable size and strength as per Class rules.</p> <p>(v) Polypropylene towing hawsers of suitable size and strength as per Class rules.</p> <p>(c) <b>Fendering.</b> All around fendering with Class approved fendering material and of suitable dimension to avoid metal to metal contact during towing, berthing alongside should be provided.</p> <p>(d) Scuppers are to be provided at suitable location for draining rain water from deck.</p>
37.	<b>Life Saving</b>	<p>(a) Life saving requirement should be as per SOLAS.</p> <p>(b) <b>Life Rafts.</b> 1 x 20 men life rafts with securing arrangements iaw FOST Safety Acquaint SAQ/SS-02/13 is to be provided.</p> <p>(c) <b>General Service Life Jackets (GSLJs).</b> 12 General Service Life jacket are to be provided. Specification of GSLJ is to be iaw latest NCD 3925.</p> <p>(d) <b>Hazardous Duty Life Jackets (HSLJs).</b> Six Hazardous Duty life jackets are to be provided; specification of HDLJ is to be iaw latest NCD 3926.</p> <p>(e) <b>Life Buoy and MOB Markers.</b> Life buoys and MOB markers are to be provided on upper deck as follows:-</p> <p style="padding-left: 40px;">(i) One Lifebuoy on foxye.</p> <p style="padding-left: 40px;">(ii) One Lifebuoy each on either side of superstructure.</p> <p style="padding-left: 40px;">(iii) One Lifebuoy with Man Overboard Light and Smoke Marker on QD.</p> <p>(f) Specification of Man Overboard Light and Smoke Marker should be iaw Article 06033 of 67/2009 (Admiralty Manual of Seamanship).</p>
38.	<b>Safety Equipment.</b>	<p>The following safety equipment for marine use are to be provided:-</p> <p>(a) Safety Helmets - 11</p> <p>(b) Ear Plugs - 11 pairs</p> <p>(c) Safety Gloves - 25 pairs</p>



		(d) Anti Splash Goggles - 4
		(e) Dust Protectors - 11
		(f) Safety Harness - 4
<b><u>SECTION J – ARMAMENT</u></b>		
<b>(Not Applicable)</b>		
<b><u>SECTION K – MISCELLANEOUS</u></b>		
39.	<b>Documentation</b>	Complete inventory of spares and the relevant documentation of equipment and machinery to be provided. As fitted drawings, maintenance, repairs and refit documents, Catalogue of spares / D 787 for OBS and B&D inventory and Passports for all the machinery are to be provided, along with the barge. A detailed Engineering Maintenance Schedule (Equipment and Systems) should be prepared and submitted four months prior to commissioning. The final revised Maintenance Schedule is to be available at time of Commissioning of the vessel. The documentation is to be provided in IETM level II format.
40.	<b>Test Equipment</b>	Test equipment iaw Classification Society rules.
41.	<b>AMC</b>	NA