

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC**  
**11 Laurier St. / 11, rue Laurier**  
**Place du Portage , Phase III**  
**Core 0A1 / Noyau 0A1**  
**Gatineau, Québec K1A 0S5**  
**Bid Fax: (819) 997-9776**

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

<b>Title - Sujet</b> 9M RHIB		
<b>Solicitation No. - N° de l'invitation</b> W6399-12DD09/A	<b>Date</b> 2013-06-25	
<b>Client Reference No. - N° de référence du client</b> W6399-12DD09		
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$MD-027-23845		
<b>File No. - N° de dossier</b> 027md.W6399-12DD09	<b>CCC No./N° CCC - FMS No./N° VME</b>	
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2013-08-23</b>		<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>		
<b>Address Enquiries to: - Adresser toutes questions à:</b> Haydock(MDDIV), Mark		<b>Buyer Id - Id de l'acheteur</b> 027md
<b>Telephone No. - N° de téléphone</b> (819) 956-1397 ( )		<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF NATIONAL DEFENCE ATTN BLDG 14 SUPPLY 8355 FRANKTOWN RD RICHMOND Ontario K0A2Z0 Canada		

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

Ship Refits and Conversions / Radoubss et modifications de  
navires and / et  
11 Laurier St. / 11, rue Laurier  
6C2, Place du Portage  
Gatineau, Québec K1A 0S5

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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Solicitation No. - N° de l'invitation

W6399-12DD09/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

027md

Client Ref. No. - N° de réf. du client

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CCC No./N° CCC - FMS No/ N° VME

W6399-12DD09

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## **PART 1 - GENERAL INFORMATION**

### **1. INTRODUCTION**

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Performance and Technical Specifications, the Basis of Payment, the Insurance Requirements, DND 626 Task Authorization Form and any other annexes

### **2. SUMMARY**

The Department of National Defence (DND) has a requirement for high performance Rigid Hull Inflatable Boats (RHIBs) that support the maritime interdiction role in Canada. The boats will operate in fresh and salt water environments including Canadian internal waterways and coastal waters out to 200 nautical miles in all seasons. The Boats will be transportable by road on a trailer, and also have the capability of being transported by ship and on DND air assets such as the CC130 Hercules. The contractor shall build and deliver Fifteen (15) RHIBs in accordance with the requirements as described in the The Statement of Requirements (Annex A) and the Performance and Technical Specifications (Annex B) within one hundred eighty-five (185) weeks of Contract Award; DND also requires In-Service Support (ISS) as detailed in The Statement of Requirements (Annex A) a period of five (5) years following Contract Award.

Pursuant to section 01 of Standard Instructions 2003 and 2004, Bidders must submit a Complete List Of names of all individuals who are currently directors of the Bidder. Furthermore, as determined by the Special Investigations Directorate, Departmental Oversight Branch, each individual named on the list may be requested to complete a Consent to a Criminal Record Verification form and related documentation.

Material supplied must be new and conform to the latest issue of the applicable drawing, specification and/or part number that is in effect on the bid solicitation closing date.

This procurement is subject to the Controlled Goods Program.

There is no security requirement associated with this requirement.

The requirement is exempt from the World Trade Organization Agreement on Government Procurement (WTO-AGP) and the North American Free Trade Agreement (NAFTA). The requirement is subject to the Agreement on Internal Trade (AIT). It is subject to the Canadian Shipbuilding, Repair, Refit and Modernization Policy.

Government Contract Regulations do apply.

The Standard Instructions - Goods or Services 2003 - Competitive Requirements (2012-03-02) are incorporated by reference into and form part of the bid solicitation.

### 3. DEBRIEFINGS

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by Telephone or in person.

## PART 2 - BIDDER INSTRUCTIONS

### 1. STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-Manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 Standard Instructions - Goods or Services - Competitive Requirements (2012-11-19), are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days  
Insert: ninety (90) days

### 2. EQUIVALENT PRODUCTS

Products that are equivalent in form, fit, function and quality to the item(s) specified in the bid solicitation will be considered where the Bidder:

- i) designates the brand name, model and/or part number of the substitute product;

- ii) states that the substitute product is fully interchangeable with the item specified;
- iii) provides complete specifications and descriptive literature for each substitute product;
- iv) provides compliance statements that include technical specifics showing the substitute product meets all mandatory performance criteria that are specified in the bid Solicitation; and
- v) clearly identifies those areas in the specifications and descriptive literature that support the Substitute product's compliance with any mandatory performance criteria.

Products offered as equivalent in form, fit, function and quality will not be considered if:

the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute product; or

the substitute product fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.

In conducting its evaluation of the bids, Canada may, but will have no obligation to, request bidders offering a substitute product to demonstrate, at the sole cost of bidders, that the substitute product is equivalent to the item specified in the bid solicitation.

### **3. SUBMISSION OF BIDS**

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

### **4. ENQUIRIES - BID SOLICITATION**

All enquiries must be submitted in writing to the Contracting Authority no later than 14 calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

### **5. APPLICABLE LAWS**

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian

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their province or territory specified and inserting the name of the Canadian province or territory of choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

## **6. BASIS FOR CANADA'S OWNERSHIP OF INTELLECTUAL PROPERTY**

The Department of National Defence has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, on the following grounds: National Security



## PART 3 - BID PREPARATION INSTRUCTIONS

### 1. BID PREPARATION INSTRUCTIONS

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (4 hard copies and 2 soft copies on CD)  
 Section II: Financial Bid ( 2 hard copies and 1 soft copy on CD)  
 Section III: Certifications (2 hard copies and 1 soft copy on CD)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement

<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders

Canada requires that each bid, at closing date and time or upon request from the Contracting Authority, be signed by the Bidder or by an authorized representative of the Bidder. If a bid is submitted by a joint venture, it must be in accordance with section 17

### SECTION I: TECHNICAL BID

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

## 1) PROJECT SCHEDULE AND DELIVERY DATES

As part of its technical bid, the Bidder must propose its preliminary project schedule, in MS Project format or equivalent. The project schedule must be reasonable and feasible and shall include the Bidder's work breakdown structure.

The project schedule shall include scheduling of main activities and indicate dates for the main events, including all milestone listed in the milestone schedule, attached as Schedule "B"

The project schedule must indicate the Bidder's best delivery date for Acceptance.

## 2) EQUIPMENT, MATERIAL, AND SERVICES SOURCE LIST AND SUBCONTRACTORS LIST.

Bidders shall address their proposed Equipment, Material, Services Source List and Subcontractors List in the format provided at Annex "J". The Bidders proposed Equipment, Material, and Services Source List and Subcontractors List shall form part of the Contract that

may result from this RFP.

No changes shall be made to these lists unless specifically requested by Canada in which case the Design Change procedure will apply.

In accordance with 2030 General Conditions - Higher Complexity-Goods (2013-03-02), Article 05, "Conduct of the Work": *Bidders are reminded that their submission of proposed "Equipment, Material, Services Source and Subcontractors List" shall not relieve the Contractors of the obligation to supply equipment which shall fully conform to the Contract*

## SECTION II: FINANCIAL BID

- 1.1 Bidders must submit their financial bid in accordance with the "Basis of Payment in Annex "C". The Price Proposal must include a price for every line item in Schedule "A" Detailed Cost Breakdown. All prices must be in Canadian dollars, Canadian customs duty and excise tax included, (delivered Duty Paid INCO Terms 2000) to Canada to delivery points identified in the RFP, GST and HST extra, as applicable

The Financial Proposal shall not be attached to or contained within the Technical Proposal and prices must not appear in any other area of the proposal except the Financial Proposal.

Exchange Rate Fluctuation

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- 1.2 Unless otherwise specified in the bid solicitation, bids must be in Canadian currency.
- 1.3 Bidders may request Canada to assume the risk for exchange rate fluctuation. This request must be specifically made at time of bidding.
- 1.4 The foreign currency component is defined as the element of the price that will be directly affected by exchange rate fluctuations. It could include the net price FOB foreign manufacturer's plant, costs associated with applicable duty, excise tax, Goods and Services Tax or Harmonized Sales Tax, if applicable, entry fees, transportation costs or delivery charges payable in a foreign currency, and any other charges associated with being the importer of record if they originated from and are required to be paid in a foreign currency.
- 1.5 The foreign value of the foreign currency component of the bid or negotiated price must be provided in the bid. Form PWGSC-TPSGC 9411, Claim for Exchange Rate Adjustments, may be used for this purpose. If milestone payments are proposed, it is recommended to indicate on the above form the foreign currency component associated with each milestone event.
- 1.6 All bids are evaluated in Canadian currency. Therefore, for evaluation purposes, the noon rate quoted by the Bank of Canada as being in effect on date of bid closing, or such other date as May be specified in the bid solicitation, will be applied as the initial conversion factor for the Specified currency. (Column 3 of the above form will be completed by the Contracting Authority.)
- 1.7 Rates proposed by bidders will not be accepted for the purposes of this exchange rate Adjustment provision.
- 1.8 If there are two (2) identical bids, and provided that the bid selected would still be considered the most advantageous to Canada, preference will be given to the Bidder who assumes all or part of the exchange rate adjustment risk over a bidder who does not assume any of this risk. Furthermore, preference will be given to the Bidder who assumes all of the exchange rate adjustment risk over a bidder who assumes only part of this risk.
- 1.9 Canada will pay the exchange rate adjustment amount in Canadian currency using the prevailing noon rate on the date of payment by Canada or, as applicable, in accordance with the following clause: C3020C.

### SECTION III: CERTIFICATIONS

Bidders must submit the certifications required under Part 5.

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## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **1. EVALUATION PROCEDURES**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical, and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### **1.1 TECHNICAL EVALUATION**

**1.1.1** In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements at 'Annex D'

#### **1.2 FINANCIAL EVALUATION**

##### **1.2.1 Mandatory Financial Criteria**

Bidders must complete Annex E. Annex E sets out the methodology for the financial evaluation.

SACC clause A0220T Evaluation of Price (2007-05-25)

### **2. BASIS OF SELECTION**

- 2.1** A bid must comply with the requirements of the bid solicitation and meet all mandatory Technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

## PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and related documentation to be awarded a contract. Canada will declare a bid non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications, to provide the related documentation or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

### 1. MANDATORY CERTIFICATIONS REQUIRED PRECEDENT TO CONTRACT AWARD

By submitting a bid, the Bidder certifies as per section 01 of Standard Instructions 2003, for himself and his affiliates, to be in compliance with the Code of Conduct and Certifications clause of the Standard instructions. The related documentation thereafterinafter requiredmentioned will help Canada in confirming that the certifications are true.

### 2. ADDITIONAL CERTIFICATIONS PRECEDENT TO CONTRACT AWARD

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

#### 2.1 FEDERAL CONTRACTORS PROGRAM - CERTIFICATION

- 2.2.1** The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at \$200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the Reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be Declared non-responsive.

**2.2.2** If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not Have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.

**2.2.3** The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

(a) ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;

(b) ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;

(c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;

(d) ( ) is subject to the FCP, and has a valid certificate number as follows: \_\_\_\_\_

(e.g. has not been declared an ineligible contractor by HRSDC.)

Further information on the FCP is available on the HRSDC Web site.

\_\_\_\_\_  
(Name of Bidder)

Per \_\_\_\_\_

\_\_\_\_\_  
Signature & Title

## 2.3 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's

repre-

entatives and at the time specified in the bid solicitation or agreed to with Canada's representa  
tives. If for reasons beyond its control, the Bidder is unable to provide the services of an

individual

named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide

the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability.

## 2.4 Availability of Facilities

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, the two

local service centres identified in the Bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives.

If for reasons beyond its control, the Bidder is unable to provide the services of service location named in its bid, the Bidder may propose a substitute with similar qualifications. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name and qualifications of the proposed replacement.

If the Bidder has proposed any service centre which does not belong to the Bidder or an affiliate(as defined in the Canada Business Corporations Act) of the Bidder, the Bidder certifies that it has the permission from that service centre to propose its services in relation to the Work to be performed and to submit its qualifications to Canada.

The Bidder must provide a written confirmation, signed by an authorized representative of each identified service centre, of the permission given to the Bidder and of its availability.

## 2.5 Workers Compensation Certification - Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board. The Bidder agrees to provide with the bid, a certificate or letter from the applicable Workers' Compensation Board confirming that the Bidder's account is in good standing. The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

If the certificate or letter from the applicable Workers' Compensation Board confirming that the Bidder's account is in good standing is not provided with the bid, then the Bidder must provide, within **5 days following a request from the Contracting Authority. Failure to comply with the request may result in the bid being declared non-responsive.**

Failure to comply with the request may result in the bid being declared Non-responsive.

## 3. ADDITIONAL CERTIFICATIONS REQUIRED WITH THE BID

Bidders **must** submit the following duly completed certifications as part of their bid.

### 3.1 Welding:

Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following Canadian Standards Association (CSA) Standards:

CSA W59.2-M1991 Welded Aluminum Construction; Division 2;

CSA W47.2 M 1987 Certification of Companies for Fusion Welding of Aluminum Division 2;  
and

CSA W47.1 M 1987 Certification of Companies for Fusion Welding of Steel Division 3

It is a requirement of this RFP that the Bidders must provide evidence of certification in for the current year for their shipyard with their bids and agree to maintain certification, until completion of the project, by the Canadian Welding Bureau (CWB) to CSA Standard W47.2: "Certification of Companies for Fusion Welding Aluminium".

The Bidder hereby attaches the following applicable information with the bid:

- (a) Proof of certification to CSA Standard W47.2 for the current year; and
- (b) Proof of CWB currently approved welding procedure specifications and supporting welding data sheets to construct the vessels to project welding requirements; and
- (c) Proof of employed or sub-contracted inspection personnel are currently certified to CSA Standard W178.2; and
- (d) Proof of employed welders currently certified to CSA Standard W47.2; and
- (e) Proof of employed welding supervisors currently certified to CSA Standard W47.2; or
- (f) Proof of capability to obtain as and when required personnel currently certified / approved to the standards identified in (c) and (d) and (e) above.

Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the Canadian Standards Association (CSA) standards listed above.

The Bidder agrees to maintain currently certified personnel or confirm capability to obtain currently certified personnel for all of the above for the duration of the Contract .



\_\_\_\_\_  
(Name of Bidder)

Per \_\_\_\_\_

\_\_\_\_\_  
Signature & Title

### 3.2 Labour Agreement

Where the Bidder has a labour agreement, or other suitable instrument, in place with its unionized labour, and where such labour agreement or instrument is scheduled to expire during the period of the Contract, the Bidder represents that negotiations and good faith bargaining have commenced at least six (6) months in advance of the labour agreement expiry. The Bidder further represents and warrants that it will take all appropriate actions to ensure a Continuous valid labour agreement, with all its workers, for the duration of the Contract.

The following documents must be provided on or before bid closing date:

- a) List of all labour unions at Bidder's facilities; and
- b) List the number of labour agreements in force with these unions and provide copies of all labour agreements in force; or
- c) Statement that there are no labour unions at the bidder's facility. Bidder acknowledges and agrees that it is a Prerequisite condition for Contract award:

Documentary evidence of the agreement or suitable instrument must be provided on or before bid closing date.

\_\_\_\_\_  
(Name of Bidder)

Per \_\_\_\_\_

\_\_\_\_\_  
Signature & Title

### 3.3 Rate and Price Certification

The Bidder certifies that the rates and prices proposed

- (a) are not in excess of the lowest price charged anyone else, including the Bidder's most Favored customer, for the like quality and quantity of the goods, services or both;
- (b) do not include an element of profit on the sale in excess of that normally obtained by the Bidder on the sale of goods, services or both of like quality and quantity, and
- (c) does not include any provision for discounts to selling agents.

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(d) are calculated in accordance with 1031-2 (2012-07-16)

\_\_\_\_\_  
(Name of Bidder)

Per

\_\_\_\_\_  
Signature & Title

## PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

### 1. SECURITY REQUIREMENT

There is no security requirement associated with the requirement.

### 2. FINANCIAL CAPABILITY

Financial Capability Requirement: The Bidder must have the financial capability to fulfill this requirement. To determine the Bidder's financial capability, the Contracting Authority may, by written notice to the Bidder, require the submission of some or all of the financial information detailed below during the evaluation of bids. The Bidder must provide the following information to the Contracting Authority within fifteen (15) working days of the request or as specified by the Contracting Authority in the notice:

i) Audited financial statements, if available, or the unaudited financial statements (prepared by the Bidder's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Bidder's last three fiscal years, or for the years that the Bidder has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).

ii) If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Contracting Authority, the Bidder must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Contracting Authority requests this information.

iii) If the Bidder has not been in business for at least one full fiscal year, the following must be provided:

the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and

the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement) as of two months before the date on which the Contracting Authority requests this information.

iv) A certification from the Chief Financial Officer or an authorized signing officer of the Bidder that the financial information provided is complete and accurate.

v) A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Bidder outlining the total of lines of credit granted to the Bidder and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Contracting Authority requests this information.

vi) A detailed monthly Cash Flow Statement covering all the Bidder's activities (including the requirement) for the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures on a monthly basis, for all the

Bidder's activities. All assumptions made should be explained as well as details of how cash shortfalls will be financed.

vii) A detailed monthly Project Cash Flow Statement covering the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures, for the requirement, on a monthly basis. All assumptions made should be explained as well as details of how cash shortfalls will be financed.

If the Bidder is a joint venture, the financial information required by the Contracting Authority provided by each member of the joint venture.

If the Bidder is a subsidiary of another company, then any financial information in 1. (a) to (f) above required by the Contracting Authority must be provided by the ultimate parent company. Provision of parent company financial information does not by itself satisfy the requirement for the provision of the financial information of the Bidder, and the financial capability of a parent cannot be substituted for the financial capability of the Bidder itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.

Financial Information Already Provided to PWGSC: The Bidder is not required to resubmit any financial information requested by the Contracting Authority that is already on file at PWGSC with the Contract Cost Analysis, Audit and Policy Directorate of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:

the Bidder identifies to the Contracting Authority in writing the specific information that is on file and the requirement for which this information was provided; and

the Bidder authorizes the use of the information for this requirement.

It is the Bidder's responsibility to confirm with the Contracting Authority that this information is still on file with PWGSC.

Other Information: Canada reserves the right to request from the Bidder any other information that Canada requires to conduct a complete financial capability assessment of the Bidder.

Confidentiality: If the Bidder provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act, R.S., 1985, c.c. A-1, Section 20(1) (b) and (c).

Security: In determining the Bidder's financial capability to fulfill this requirement, Canada may consider any security the Bidder is capable of providing, at the Bidder's sole expense (for example, an irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).

### 3. INSURANCE REQUIREMENTS

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex H.

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

*SACC Manual clause G1007T 2012-07-24 Insurance*

#### 4. CONTROLLED GOODS REQUIREMENT

Controlled goods cannot be released to persons that are not registered, exempt or excluded by the Controlled Goods Program (CGP). For more information on controlled goods, visit the Controlled Goods Directorate Web site: <http://ssi-iss.tpsgc-pwgsc.gc.ca/dmc-cgd/index-eng.html>

As this Requirement requires production of or access to controlled goods that are subject to the Defence Production Act R.S. 1985, c. D-1, the Contractor and any subcontractor are advised That, within Canada, only persons who are registered, exempt or excluded under the Controlled Goods Program (CGP) are lawfully entitled to examine, possess or transfer controlled goods. Details on how to register under the CGP are available at: Controlled Goods Program

When the Contractor and any subcontractor proposed to examine, possess or transfer controlled goods are not registered, exempt or excluded under the CGP at time of contract Award, the Contractor and any subcontractor must, within seven (7) working days from receipt of Written notification of the contract award, ensure that the required application(s) for registration Or exemption are submitted to the CGP. No examination, possession or transfer of controlled Goods must be performed until the Contractor has provided proof, satisfactory to the Contracting Authority, that the Contractor and any subcontractor are registered, exempt or excluded under The CGP.

Failure of the Contractor to provide proof, satisfactory to the Contracting Authority, that the Contractor and any subcontractor are registered, exempt or excluded under the CGP, within

thirty

(30) days from receipt of written notification of contract award, will be considered a default under the Contract except to the extent that Canada is responsible for the failure due to delay in processing the application.

The Contractor and any subcontractor must maintain registration, exemption or exclusion from the CGP for the duration of the Contract and in any event for so long as they will examine, possess or transfer controlled goods

## PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 1. REQUIREMENT

The Contractor must perform the Work in accordance with this Contract and in particular the Statement of Work at Annex "A and the Performance and Technical Specifications at Annex B" and the Contractor's proposal dated \_\_\_\_\_. The Work includes construction from a proven design, outfit, tests, trials, demonstration, certification, and delivery of Fifteen(15) Rigid Hull Inflatable Boat(s) plus authorized additional work and all other Work specified herein.

The Rigid Hull Inflatable Boat(s) will be produced in accordance with the Canadian Shipbuilding, Repair, Refit and Modernization Policy

Fifteen(15) Rigid Hull Inflatable Boat(s) shall be delivered to Canada. Five of which shall be delivered to Canada, upright, stable, seaworthy to FOB Canadian Forces Base Esquimalt, British Columbia, five of which shall be delivered to Canada, upright, stable, seaworthy to Canadian Forces Base Halifax, Nova Scotia and five of which shall be delivered to Canada, upright, stable, seaworthy to Dwyer Hill Training Centre, Ontario as specified at Section 1.1 Annex A; At least One Rigid Hull Inflatable Boat(s) shall be delivered every 10 weeks commencing 6 months after contract award. The last Rigid Hull Inflatable Boat(s) shall be delivered within 185 weeks of Contract Award

### 2. STANDARD CLAUSES AND CONDITIONS

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual

[buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual](http://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual)) issued by Public Works and Government Services Canada.

#### 2.1 GENERAL CONDITIONS

2030: 2012-12-07 General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

2030 General Conditions - Higher Complexity - Goods (2012-03-02) is amended as Follows:

2030 05 Conduct of the Work 2 e. Is inserted as follows:

e) select and employ a sufficient number of qualified people; and provide effective and Efficient supervision to ensure that the quality of workmanship meets the requirements

of

the Contract.

2030 05 Conduct of the Work 6. Is inserted as follows:

6) The Work must not be performed by any person who, in the opinion of Canada, is incompetent, unsuitable or has conducted himself/herself improperly.

2030 05 Conduct of the Work 7. Is inserted as follows:

7) Unless the Contracting Authority orders the Contractor to suspend the Work or part of the Work pursuant to section 28, the Contractor must not stop or suspend the Work or part of the Work pending the settlement of any dispute between the Parties about the Contract.

2030 05 Conduct of the Work 8. Is inserted as follows:

8) Canada's facilities, equipment and personnel are not available to the Contractor to perform the Work unless the Contract specifically provides for it. The Contractor is responsible for advising the Contracting Authority in advance if it requires access to Canada's facilities, equipment or personnel to perform the Work. The Contractor must comply and ensure that its employees and subcontractors comply with all security measures, standing orders, policies or other rules in force at the site where the Work is performed.

2030 44 Ownership Is inserted as follows:

2030 44 (2008-05-12) Ownership

Unless provided otherwise in the Contract, the Work or any part of the Work belongs to Canada after delivery and acceptance by or on behalf of Canada.

However if any payment is made to the Contractor for or on account of any Work, either by way of progress or milestone payments, that work paid for by Canada belongs to Canada upon such payment being made. This transfer of ownership does not constitute acceptance by Canada of the Work or any part of the Work and does not relieve the Contractor of its obligation to perform the Work in accordance with the Contract.

Despite any transfer of ownership, the Contractor is responsible for any loss or damage To the Work or any part of the Work until it is delivered to Canada in accordance with

the

Contract. Even after delivery, the Contractor remains responsible for any loss or damage to any part of the Work caused by the Contractor or any subcontractor.

Upon transfer of ownership to the Work or any part of the Work to Canada, the Contractor must, if requested by Canada, establish to Canada's satisfaction that the title is free and clear of all claims, liens, attachments, charges or encumbrances. The Contractor must execute any conveyances and other instruments necessary to perfect the title that Canada may require.

2030 45 Harrasment In the Workplace Is inserted as follows:

2030 45 (2008-05-12) Harrasment In the Workplace

The Contractor acknowledges the responsibility of Canada to ensure, for its employees, A healthy work environment, free of harassment. A copy of the Policy on the Prevention And Resolution of Harassment in the Workplace, which is also applicable to the Contractor, is available on the Treasury Board Web site.

The Contractor must not, either as an individual, or as a corporate or unincorporated entity, through its employees or subcontractors, harass, abuse, threaten, discriminate against or intimidate any employee, contractor or other individual employed by, or under contract with Canada. The Contractor will be advised in writing of any complaint and will have the right to respond in writing. Upon receipt of the Contractor's response, the Contracting Authority will, at its entire discretion, determine if the complaint is founded and decide on any action to be taken.

**2030 06 (2012-07-16) Subcontracts is deleted and replaced with the following:**

**2030 06 (2012-07-16) Subcontracts**

1. Except as provided in subsection 2, the Contractor must obtain the Contracting Authority's written consent before subcontracting or permitting the subcontracting of any part of the Work. A subcontract includes a contract entered into by any subcontractor at any tier to perform any part of the Work.

2. The Contractor is not required to obtain consent for subcontracts specifically authorized in the Contract. The Contractor may also without the consent of the Contracting Authority:

A ) purchase "off-the-shelf" items and any standard articles and materials that are ordinarily produced by manufacturers in the normal course of business;

3. In any subcontract other than a subcontract referred to in paragraph 2.(a), the Contractor must, unless the Contracting Authority agrees in writing, ensure that the subcontractor is bound by conditions compatible with and, in the opinion of the Contracting Authority, not less favourable to Canada than the conditions of the Contract.

4. Even if Canada consents to a subcontract, the Contractor is responsible for performing the Contract and Canada is not responsible to any subcontractor. The Contractor is responsible for any matters or things done or provided by any subcontractor under the Contract and for paying any subcontractors for any part of the Work they perform.

**2030 22 (2012-07-16) Warranty - is deleted****2.2 SUPPLEMENTAL GENERAL CONDITIONS**

- 1) 1028 - Ship Construction Firm Price, 2010-08-16 , apply to and form part of the Contract

1028 - Ship Construction Firm Price, 2010-08-16 Section 12 "Warranty" is deleted

- 2) 1031-2 - Contract Cost Principles (2008-05-12) apply to and form part of the Contract

- 3) 4007 Canada to Own Intellectual Property Rights in Foreground Information with License to Intellectual Property Rights in Background Information, as amended and set out in Annex L, apply to and form part of this Contract.

- 4) 1029 (2010-08-16) Ship Repairs

**3. SECURITY REQUIREMENT**

There Is no Security Requirement

**4. PERIOD OF THE CONTRACT**



Fifteen(15) Rigid Hull Inflatable Boat(s) shall be delivered to Canada as described in the system Performance and Technical Specifications (Annex B). At least One Rigid Hull Inflatable Boat(s) shall be delivered every 10 weeks commencing 6 months after contract award. The last Rigid Hull Inflatable Boat(s) shall be delivered within 185 weeks of Contract Award

The Work described as In-Service Support (ISS) as detailed in The Statement of Work, Annex A at Appendix 2 is to be performed as and when requested from delivery of the first Rigid Hull Inflatable Boat until five years following Contract Award

#### **4.1 OPTION TO EXTEND THE CONTRACT**

- A) The Contractor grants to Canada irrevocable option(s) to purchase up to a maximum of 5 additional RHIB's with Trailers, under all of the same terms and conditions specified in the Contract, and at the firm unit prices provided for in Annex "E"Basis of Payment" . The option(s) may be exercised at any time and from time to time up to thirty-six (months) from Contract Award. The option, may only be exercised by the Contracting Authority.
- B) The Contractor grants to Canada irrevocable option(s) to purchase Additional spares and Specialized tools based on the initial spares and specialize tools , under all of the same terms And Conditions specified in the Contract detailed in Section 7.0 of Annex A and at the prices provided at Annex E Section 2 ; The option(s) may be exercised at any time and from time to Time up to thirty-six (months) from Contract Award. The option, may only be exercised by the Contracting Authority; and
- C) The Contractor grants to Canada the irrevocable option to extend the term of the Work described as In-Service Support as detailed in The Statement of Work, Annex A at Appendix 2 by up to 5 additional 1 year period(s) under all of the same terms and Conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least 90 calendar days before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

### **5. AUTHORITIES**

#### **5.1 CONTRACTING AUTHORITY**

The Contracting Authority for the Contract is:

Name: Mark Haydock  
 Address: 6C2, Place du Portage  
 11 Laurier St.  
 Gatineau, Quebec  
 K1A0S5  
 Telephone: 819 956-1397  
 E-mail address: mark.haydock@pwgwc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to

the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

## 5.2 THE TECHNICAL AUTHORITY (TA):

Name:

Title:

Organization:

Address:

Telephone:

Facsimile:

E-mail address:

The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority; however, the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

## 5.3 INSPECTION AUTHORITY/QUALITY ASSURANCE AUTHORITY:

All work is subject to Government Quality Assurance performed at the Contractor's or subcontractor's facility, and at the installation site, by the Director of Quality Assurance, or its designated Quality Assurance Representative (QAR).

Director of Quality Assurance

National Defence Headquarters

MGen George R. Pearkes Building

101 Colonel By Drive

Ottawa, ON K1A 0K2

E-mail: ContractAdmin.DQA@forces.gc.ca

Within forty-eight (48) hours of contract award, the Contractor must contact the QAR. The name, location and phone number of the QAR can be obtained from the nearest National

Defence

Quality Assurance Region (NDQAR) listed below:

Atlantic - Halifax 902-427-7224 or 902-427-7150

Quebec - Montreal 514-732-4410 or 514-732-4477

Quebec - Quebec City 418-694-5998, ext. 5996

National Capital Region - Ottawa 613-996-1827

Ontario - Toronto 416-635-4404, ext. 6081 or 2754

Ontario - London 519-964-5757

Manitoba/Saskatchewan - Winnipeg 204-833-2500, ext. 6574

Alberta - Calgary 403-410-2320, ext. 3830

Alberta - Edmonton 780-973-4011, ext. 2276

British Columbia - Vancouver 604-225-2520, ext. 2460

British Columbia - Victoria 250-363-5662

The Contractor is responsible for performing, or having performed, all inspections and tests necessary to substantiate that the material or services provided conform to the requirements of the Contract.

The Contractor must provide, at no additional cost, all applicable test data, all technical data, test pieces and samples as may reasonably be required by the QAR to verify conformity to

the

requirements of the Contract. The Contractor must forward at its expense such technical data, test data, test pieces and samples to such location as the QAR may direct.

Quality control, inspection and test records that substantiate conformity to the specified requirements, including records of corrective actions, must be retained by the Contractor for

three

(3) years from the date of completion or termination of the Contract and must be made available to the QAR upon request.

#### 5.4 REQUISITION AUTHORITY

The RA is responsible for DND contract management and the logistics aspect related to this Contract.

The Requisition Authority is: William Hafner  
 Directorate Land Procurement - DLP 5-3-2  
 Department of National Defence  
 Ottawa, ON, K1A 0K2  
 Telephone: 613-945-2789  
 Email: WILLIAM.HAFNER@forces.gc.ca

#### 5.5 CONTRACTOR'S REPRESENTATIVE

To Be Determined at Contract Award

### 6. BASIS OF PAYMENT

#### 6.1 BASIS OF PAYMENT - CONSTRUCTION

##### 6.1.1 RHIB

For the performance of the Work, under the terms of the Contract for the provision of fifteen

(15)

DND RHIBs and trailers, the Contractor shall be paid the firm unit price of \$\_\_\_\_\_.

as

identified in Annex E Basis of Payment.

For the performance of the Work , at Annex E, Section 5.6, The Contractor will be paid as follows under the terms of the Contract, the Contractor shall be paid the firm unit prices as identified in Schedule A Detailed Cost Breakdown, customs duty and excise tax included, if applicable, DDP, the Department of National Defence, CFB Esquimault Victoria B.C., and Department of National Defence, CFB Halifax, Halifax NS, GST/HST extra, as applicable.

Description Firm Price:

Fifteen (15) Special Operations Rigid Hull Inflatable Boats, Plus Trailers, Plus Initial Spares Packages Plus Transportation Costs, Plus TDP, Plus Tools And equipment

	\$ _____
HST	\$ _____
<b>Total</b>	<b>\$ _____</b>

**6.1.2 Labor Rates for Additional Work including Design Change**

For the performance of the Work as a result of approved additional Work including Design, or Engineering Change, or change in the scope of Work, the Contractor shall be paid the firm hourly charge-out rate of \$\_\_\_\_\_ per hour, GST/HST extra, as per Annex E Basis of Payment Section 6.0. This rate shall be a blended rate for all classes of labor, engineering and foreperson and shall include all overheads, supervision and profit.

The firm hourly charge-out labour rate will remain firm for the term of the Contract and any subsequent amendments.

**6.1.3 Material for Additional Work including Design Change**

For the performance of the Work to procure additional Material as a result of approved additional Work including Design Change or change in the scope of Work, the Contractor shall be paid the Direct Material Cost as defined in Contract Cost Principles 1031-2 plus a firm mark-up of 10% GST/HST extra, as applicable. Other than the 10% mark-up, no additional charges relating to material procurement, insurance, handling, store keeping and activities of this nature, or any other charge whatsoever, will be accepted as part of the additional Work prices.

The material mark-up rate will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Charge-out Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

The material mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

**6.1.4 Overtime**

Overtime shall not be paid unless authorized in writing by the Contracting Authority  
And for authorized additional Work only.

The Overtime Rates are as follows:

Time and One-Half Rate: \$ \_\_\_\_\_ / per person hour

Double Time Rate: \$ \_\_\_\_\_ / per person hour

Overtime shall be calculated and paid as follows:

Time and One-Half : "Time and One-Half Rate" x *Charge Out Rate*( Article 6.1.2)

Double Time: "Double Time Rate" x *Charge Out Rate*( Article 6.1.2)

#### 6.1.5 Payment for Fuels, Oils and Lubricants

The Contractor is responsible for the supply and cost of all fuel, lubricating oil, hydraulic oil and other lubricants sufficient for fully charging all systems as required for operating the machinery and other equipment and for performing all tests and trials.

## 6.2 BASIS OF PAYMENT - IN SERVICE SUPPORT - FIRM HOURLY RATES

The Contractor will be paid for the actual hours worked at the firm hourly rates detailed below.  
The rates to be applied are those in effect at the time of the Task Authorization.

The Contractor will be paid an initial half hour minimum charge calculated from the time the Contractor's technician arrives on-site. All additional chargeable time, over and above the first half hour, will be rounded to the nearest quarter hour.

### Year 1 - FY 13/14

Labour Category	Regular Time*	Overtime 1 **	Overtime 2*** premium
Level I Marine Engineer/Technician	\$ _____ /hr	\$ _____ /hr	\$ _____ /hr

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Level II Mechanic Engineer/ Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Naval Architect 1	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level III Support Staff	\$_____ /hr	\$_____ /hr	\$_____ /hr

**Year 2 - FY 14/15**

Labour Category	Regular Time*	Overtime 1 **	Overtime 2*** premium
Level I Marine Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level II Mechanic Engineer/ Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Naval Architect 1	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level III Support Staff	\$_____ /hr	\$_____ /hr	\$_____ /hr

**Year 3 - FY 15/16**

Labour Category	Regular Time*	Overtime 1 **	Overtime 2*** premium
Level I Marine Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level II Mechanic Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Naval Architect 1	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level III Support Staff	\$_____ /hr	\$_____ /hr	\$_____ /hr

**Year 4 - FY 16/17**

Labour Category	Regular Time*	Overtime 1 **	Overtime 2*** premium
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Level I Marine Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level II Mechanic Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Naval Architect 1	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level III Support Staff	\$_____ /hr	\$_____ /hr	\$_____ /hr

**Year 5 - FY 17/18**

Labour Category	Regular Time*	Overtime 1 **	Overtime 2*** premium
Level I Marine Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level II Mechanic Engineer/Technician	\$_____ /hr	\$_____ /hr	\$_____ /hr
Naval Architect 1	\$_____ /hr	\$_____ /hr	\$_____ /hr
Level III Support Staff	\$_____ /hr	\$_____ /hr	\$_____ /hr

\* regular time is defined as an 8 hour work day

\*\* Overtime 1 is defined as time in excess of the regular time, And will be computed at the rate of 1.5 x regular time

\*\*\*Overtime 2 (premium) is defined as Sundays and Statutory Holidays , And will be computed at the rate of 2 x regular time

Overtime: No premium overtime work will be charged to this Contract unless authorized in Writing by the Contracting Authority prior to the commencement of the Work. Such written Authorization will be a condition precedent for payment of the rate or rates specified herein for Premium overtime work. The Contractor will submit to the Contracting Authority a report with respect to the premium overtime work

**6.21 Material and Replacement Parts**

All prices for material and replacement parts are FOB Bidder's facility.

the

The prices of material and replacement parts are subject to the Contractor's certification in the Contract as to price. Material and replacement parts will be charged to Canada at the lower of list price and most favoured customer price (or other lower price to which

Contractor's certification relates) for material and replacement parts supplied by the contractor and for parts supplied by any affiliate of the Contractor, at list price. The Contractor will also provide a discount against all such prices, of \_\_\_\_\_ percent.

Material and replacement parts from other suppliers shall be supplied at the Contractor's laid-down cost of acquiring same, plus mark-up of 10 percent. All prices for parts and material are FOB destination. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax (GST/HST) is extra, if applicable.

The mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

## 6.22 Subcontract(s)

All subcontracts cost must be pre-approved by the Contracting Authority. For subcontracts other than with affiliates of the Contractor and to the facilities specified at Article 52, the Contractor will be paid the laid down cost of the subcontracted work plus mark-up of 10 percent..

However, for payment purposes, subcontracts to affiliates (as defined in the Canada Business Corporations Act) of the Contractor and to the facilities specified at Article 52, will be treated as specified above for Material and Replacement Parts, and for other Work, shall be priced and paid in accordance with the firm hourly rates set out in the Contract and in accordance with the basis of payment specified in the applicable Task Authorization. There will be no mark-up/profit to the Contractor.

The mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

All subcontracts must be in accordance with the General Conditions 2030 06 - Subcontracts

## 6.23 Economic Price Adjustment

1. Beyond the first fiscal year of the Contract, the price(s) / rate(s) indicated in the Basis Of Payment, Annex E Article 3, are subject to economic price adjustments to account for Actual fluctuations in the economy during the term of the Contract.

2. The economic indicator used to account for actual fluctuations in the economy will be The All-items Consumer Price Index (not seasonally adjusted), for Nova Scotia, as published by Statistics Canada in Catalogue no. 62-001-XPB, titled "The Consumer Index".

3. At the beginning of each fiscal year, the price(s) / rate(s) applicable will be adjusted on

Price



Account of fluctuations in the applicable economy. The adjusted price(s) / rate(s) applicable for the coming 12 months period will be calculated as indicated below. These price(s) / rate(s) must remain fixed (with respect to economic price adjustment) for the year, except for adjustments provided for within this clause.

$P(x) = P(o) \times \text{CPI}(x) / \text{CPI}(o)$ , where

$P(x)$  = Firm price/rate for the coming 12 month period.

$P(o)$  = Firm price/rate for the first fiscal year of the Contract.

$\text{CPI}(x)$  = The All-items Consumer Price Index (not seasonally adjusted), for Nova Scotia, As published by Statistics Canada in Catalogue no. 62-001-XPB, titled "The Consumer Price Index"; index for the third month preceding the Contract effective date.

$\text{CPI}(o)$  = The All-items Consumer Price Index (not seasonally adjusted), for Nova Scotia, As published by Statistics Canada in Catalogue no. 62-001-XPB, titled "The Consumer Price Index"; index for the third month preceding the Contract effective date.

4. All calculations will be performed to the limits of the computer (i.e.: no limit on the number of significant decimals). The final result: the price(s) / rate(s) applicable for the coming twelve (12) months period, must be rounded to the nearest penny.

5. The Contractor and Canada are entitled to adjustments for any retroactive change to The published values of any index used to determine price(s) / rate(s) beyond the first year of the Contract. Notification of, and retroactive adjustments are to be made in a timely manner. Changes to already established firm price(s) / rate(s) resulting from retroactive changes to any index value occurring within a period of twelve (12) months from its "first published date" is allowable. In such case, one of the party to the Contract is to advise the other party of the revised index and the resulting revised price(s) /

rate(s).

The Contractor will then use the revised price(s) / rate(s) for invoicing and correct any amount previously invoiced if applicable.

6. If the Economic Price Adjustment Index referred to in this Clause is discontinued, or if the basis for reporting this index is changed from that in existence on the award date of the Contract, the Contractor and Canada will immediately thereafter agree to and establish replacement indices, or formulate adjustments, consistent with those set forth

in

this Clause.

7. For any In-Service Support option years , the price(s) / rate(s) indicated in the Basis of

Payment, Annex E Article 3, are subject to economic price adjustments as per 6.23 to account for Actual fluctuations in the economy during the term of the Contract.

### 6.3 LIMITATION OF PRICE

**6.3.1** Canada's total liability under this Contract shall not exceed \$ TBD, Goods and Services Tax or Harmonized Sales Tax (GST/HST) extra, as appropriate.

**6.3.2** No increase in the total liability of Canada or in the price of Work resulting from any design changes, modifications or interpretations of specifications, made by the Contractor, will

be authorized or paid to the Contractor unless such changes, modifications or interpretations, have been approved, in writing, by the Contracting Authority, prior to their incorporation into the Work. The Contractor shall not be obliged to perform any Work or provide any service that Would cause the total liability of Canada to be exceeded without the prior written approval of the Contracting Authority.

#### 6.4 LIMITATION OF EXPENDITURE - IN SERVICE SUPPORT

Canada's total liability to the Contractor for in-servicesupport as detailed in Basis of Payment, Annex E Article 3 of the Contract must not exceed \$ 3,400,000.00 Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if Applicable. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must Not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor

must

notify the Contracting Authority in writing as to the adequacy of this sum:

when it is 75 percent committed, or

four (4) months before the contract expiry date, or

as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,

whichever comes first.

If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by

the

Contractor does not increase Canada's liability.

#### 6.5 LIMITATION OF EXPENDITURE - CUMULATIVE TOTAL OF ALL TASK AUTHORIZATIONS

Canada's total liability to the Contractor under the Contract for all authorized Task Authorizations (TAs), inclusive of any revisions, must not exceed the sum of \$3,400,000.00. Customs duties are included and the Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

No increase in the total liability of Canada will be authorized or paid to the Contractor unless an increase has been approved, in writing, by the Contracting Authority.

The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:

when it is 75 percent committed, or

four (4) months before the contract expiry date, or

as soon as the Contractor considers that the sum is inadequate for the completion of the Work required in all authorized TAs, inclusive of any revisions,

whichever comes first.

If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority, a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

## 6.6 TRAVEL AND LIVING EXPENSES:

Contractor personnel may be required to travel to NDHQ or other military establishments, to other Contractor's plants, and to other locations within Canada as may be designated by the Technical Authority.

At such time the Contractor personnel may be provided service transportation and, on a cost reimbursable basis, accommodation and messing equivalent to that of an officer in the Canadian Forces.

If service transportation, accommodation and messing if not provided, the Contractor will be reimbursed for the authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance With the meal, private vehicle and incidental expense allowances specified in Appendices B, C and D of the Treasury Board Travel Directive, and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

There will be no travel time or travel and living expenses payable for services rendered within 75 kilometres from where the Work will be performed.

For services rendered further than 75 kilometres from where the Work is performed, the Contractor will be paid its actual travel time in accordance with the hourly rates detailed above.

All travel conducted by the employees of \_\_\_\_\_ will be invoiced in accordance with \_\_\_\_\_ rates and Terms and Conditions for the applicable year.

All travel must have the prior authorization of the Contracting Authority.

All payments are subject to government audit.

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## 7. INVOICING INSTRUCTIONS

The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the General Conditions and the DND 626. Invoices cannot be submitted until all work identified in the invoice is completed.

1. Each invoice must be supported by:

- a) DND Financial Coding;
- (b) Contract Serial Number;

c) details of item(s) repaired including NSN, Description of item, Labour hours, Category of work, material costs, work order numbers; stock holding code change-notification and document number;

d) rate of payment;

(e) number of hours applicable to task, if a ceiling price task (Category 2);

(f) task authorization requisition number (Category 2);

(g) engineering or technical support classification (Category 2);

(h) approved travel and living expenses related to the task (receipts required);

(i) a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses.

2. Invoices must be distributed as follows:

(a) The original and two (2) copies with attachments must be forwarded to the following address For certification and payment.

Department of National Defence Headquarters  
Canadian Special Operations Forces Command (CANSOFCOM) COS FD  
101 Colonel By Drive  
Ottawa, ON, Canada, K1A 0K2

(b) One (1) copy must be forwarded to the Contracting Authority identified under the section Entitled "Authorities" of the Contract.

## 7.1 METHOD OF PAYMENT - CONSTRUCTION - MILESTONE PAYMENTS

1. Canada will make milestone payments in accordance with the **Basis of Payment, Annex "E"** and the Schedule of Milestones, Annex "E" Section 12 and the payment provisions of the Contract *if*:

- (a) an accurate and complete progress claim form PWGSC/TPSGC 1111 with Invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract; The forms may be obtained at:  
<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>
- (b) all such documents have been verified by Canada;
- (c) all work associated with the milestone and as applicable any deliverable required  
Has been completed and accepted by Canada..

2. All certificates appearing on the reverse of the said form are to be signed by the respective persons indicated thereon or their delegate.

(i) Each claim shall show as a minimum:

- (a) Boat and invoice number and amount currently claimed with a brief description;
- (b) total of all previous claims against the Contract, the extensions of the total to date;

- 
- (c) GST/HST being claimed;
  - (d) Financial Code (FC) and Contract Number; and
  - (e) Any documentation required to substantiate the completion of the progress claim.
- (ii) The Contractor shall prepare the original and two (2) copies of the claim form PWGSC/TPSGC 1111 signed by a representative of the Company certifying that the Work to date has been completed. The claim shall be submitted to the Inspection Authority who will certify the claim and forward it to the Contracting Authority who in turn will certify and submit to the Technical Authority for certification and payment.
  - (iii) The Progress Claims may be claimed for each completed delivery as per Annex "D"
- 3 Payment by Canada to the Contractor for the Work shall be made:
- (a) In the case of each Progress Claim (Invoice), within thirty (30) calendar days following the date of receipt of a duly completed Progress claim on form PWGSC/TPSGC 1111.
  - (b) If Canada has any objection to the form of the claim, within fifteen (15) working days of its receipt Canada shall notify the Contractor of the nature of the objection. "Form of the claim" means a claim which contains or is accompanied by such substantiating documentation as Canada requires. Failure by Canada to act within fifteen (15) calendar days will only result in the date specified in subparagraph a) and b) of the clause to apply for the sole purpose of calculating interest on overdue accounts.

4. The Payment for each Boat delivered, inclusive shall be payable by Canada upon delivery of each Boat to the Crown, minus the holdback for double the total estimated value of any outstanding Work items.

5. The Holdback for outstanding Work shall be payable by Canada upon completion of the outstanding Work.

## 7.2 METHOD OF PAYMENT - IN SERVICE SUPPORT - FIRM HOURLY RATES

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.

Each claim must show:

- a. all information required on form PWGSC-TPSGC 1111;
- b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- c. expenditures plus pro-rated profit or fee;
- d. approved travel and living expenses related to the task (receipts required);
- e. Details of items repaired including the NSN, work order numbers, stock holding code change notification and document number.

Each claim must be supported by:

- a. a copy of time sheets to support the time claimed;
- b. a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
- c. any other documentaion as requested by the DND.

2. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no GST/HST payable as it was claimed and payable under the previous claims for progress payments.

3. Not more than once a month, the Contractor will prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Requisitioning Authority (RA) identified under the section entitled "Authorities" of the Contract. The RA will certify that

the

Work has been performed; the goods have been provided; or, the services have been rendered and that the relevant terms and conditions of the Contract have been satisfied.

4. The RA will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

5. The Contractor must not submit claims until all work identified in the claim is completed.

### 7.3 TASK AUTHORIZATION

The Workdetailed in Annex B be on an "as and when requested basis" using a Task Authorization (TA). The Work described in the TA must be in accordance with the scope of the Contract.

#### 7.3.1 TASK AUTHORIZATION PROCESS

Task Authorization Process:

1. The Technical Authority or the Requisitioning Authority will provide the Contractor with a Statement of Work (SoW).
2. The SOW will contain the details of the activities to be performed, a description of the deliver bles, and a schedule indicating completion dates for the major activities or submission dates for the deliverables. The TA or the RA will also include the applicable basis (bases) and methods of payment as specified in the Contract.
3. The Contractor must provide, within **seven (7)** calendar days of its receipt, a proposal to complete the Task, including the proposed total estimated cost for performing the task and a breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract. This proposal will include , as a minimum:
  - i) a detailed description of the task to be performed;
  - ii) Sourcing: (indicate if work to be performed by Contractor or sub-contractor).  
Where the work is to be performed by a sub-contractor, the proposal will include detailed price justification acceptable to Canada. Work to be performed on the west or east coast of Canada at the designated facilities provided for in this Contract or work performed by the Contractor or any affiliate (as defined in the

- iii) Canada Business Corporations Act) will be priced in accordance with the firm hourly rates and other prices specified in the Basis of Payment of this Contract. a list of deliverables and delivery dates or task milestones with estimated activity Start date and completion date;
- iv) contacts (names, location, telephone numbers);
- v) any other supporting details.

Generally, within ten (10) working days of receipt of the Contractor's Task Authorization proposal,

Canada shall review and either accept the Task Authorization proposal, or may request any clarifications or negotiate any modifications as necessary, resulting in a 'revised Task Authorization proposal' from the Contractor. Canada shall either notify the Contractor that the proposed Task Authorization will not be approved, or approve the Task Authorization as described below. Any Task Authorization proposal shall be subject to the acceptance of Canada.

If Canada accepts the Task Authorization proposal (or revised Task Authorization proposal, as the case may be) provided by the Contractor for the required task(s):

- a) when the Task Authorization is within the DND Requisitioning Authority's approval limit, the Requisitioning Authority will approve and issue the Task Authorization by forwarding the duly signed copy of the Task Authorization, and a copy to the Contracting Authority;

OR

- b) when the Task Authorization exceeds the DND Requisitioning Authority's approval limit, the Requisitioning Authority will recommend the Task Authorization by signing and forwarding the Task Authorization to the Contracting Authority for review and approval. The Contracting Authority will issue the Task Authorization by forwarding a signed copy of the Task Authorization to the Contractor, the Requisitioning Authority, and the TA

The Contractor must acknowledge receipt of the approved Task Authorization by signing and forwarding the Task Authorization to the appropriate Task Authorization Approval Authority and a copy to the Technical Authority.

The Contractor must complete the work under the Task Authorization within the time frame and price stated in the approved Task Authorization.

4. The Contractor must not commence work until a Task Authorization (form DND 626) attached as **Annex "G"** is approved by authorized by the Requisitioning Authority or the Contracting Authority. The Contractor acknowledges that any work performed before an approved TA has been received will be done at the Contractor's own Risk.

5. Any change(s) to a Task Authorization must be authorized in writing using the procedures specified above, and incorporated as an amendment to the Task Authorization.

### 7.3.2 Payment

Depending on the type of Task Authorization, one of the following Bases of Payment will apply and will be specified in the Task AUTHORIZATION:

### 7.3.3 For a Firm Price Task Authorization:

7.3.3.1 A Firm Price Task Authorization will be used when the statement of work can define the requirement in sufficient detail to enable the Contractor to establish a firm price.

7.3.3.2 In consideration of the Contractor satisfactorily completing all of its obligations under the Task Authorization, the Contractor will be paid the firm price stipulated in the applicable Task Authorization document, without any adjustment.

### 7.3.4 For a Task Authorization Subject To a Ceiling Price:

7.3.4.1 A Ceiling Price Task Authorization will be used instead of firm price only in cases where the Work to be performed is not in sufficient detail to accurately determine a reasonable firm price, through which the Contractor is bound to complete the prescribed Work without additional payment whether or not actual costs exceed the ceiling.

7.3.4.2 The Contractor will be paid its costs reasonably and properly incurred in the performance of the Work under the Task Authorization, to the ceiling price specified in the applicable Task Authorization document .

7.3.4.3 The ceiling price is subject to downward adjustment so as not to exceed the actual charges and costs reasonably incurred in the performance of the Work and computed in accordance with the Basis of Payment specified in the Task Authorization document.

### 7.3.5 For a Task Authorization Subject To a Limitation Of Expenditure:

7.3.5.1 A Task Authorization subject to a Limitation of Expenditure will be used for urgent Technical Investigations and Engineering Services (TIES), where the nature of the work cannot be defined in detail for pricing purposes. When goods and/or services are to be furnished under a Limitation of Expenditure Task Authorization, the parties agree on a Limitation of Expenditure for the Contractor to commence work.

7.3.5.2 The Contractor will be paid its costs reasonably and properly incurred in the performance of the Work under the Task Authorization, in accordance with the Basis of Payment specified herein and in the applicable Task Authorization document.

### 7.3.6 All inclusive annual Firm hourly rates

The all inclusive annual applicable firm hourly rates set out at Article 6.2 herein shall be used to price any Task Authorization under this Contract.

### 7.3.7 Task Authorization Limit

The Requisition Authority may authorize individual task authorizations up to a limit of \$25,000. Goods and Services Tax or Harmonized Sales Tax included, inclusive of any Revisions.

***Any task authorization to be issued in excess of that limit must be authorized by The Contracting Authority before issuance.***

### 7.3.8 Canada's Obligation - Portion of the Work - Task Authorizations



Canada's obligation with respect to the portion of the Work under the Contract that is Performed through task authorizations is limited to the total amount of the actual tasks performed by the Contractor.

### 7.3.9 Periodic Usage Reports - Contracts with Task Authorizations

The Contractor must compile and maintain records on its provision of services to the Federal government under authorized Task Authorizations issued under the Contract.

The Contractor must provide this data in accordance with the reporting requirements Detailed below. If some data is not available, the reason must be indicated. If services are not provided during a given period, the Contractor must still provide a "nil" report.

The data must be submitted on a quarterly basis to the Contracting Authority.

The quarterly periods are defined as follows:

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31; and

4th quarter: January 1 to March 31.

The data must be submitted electronically in MS Word format to the Contracting Authority no later than 10 calendar days after the end of the reporting period.

#### Reporting Requirement- Details

A detailed and current record of all authorized tasks must be kept for each contract with a Task authorization process. This record must contain For each authorized task:

#### For each authorized task:

- the authorized task number or task revision number(s);
- a title or a brief description of each authorized task;
- the total estimated cost specified in the authorized Task Authorization (TA) of each

task,

GST or HST extra;

- the total amount, GST or HST extra, expended to date against each authorized task;
- the start and completion date for each authorized task; and
- the active status of each authorized task, as applicable.

#### For all authorized tasks:

- the amount (exclusive of Applicable Taxes) specified in the contract (as last amended, as applicable) as Canada's total liability to the contractor for all authorized TAs; and
- the total amount, exclusive of Applicable Taxes, expended to date against all

authorized

TAs

### 7.3.10 Task Authorization - Department of National Defence

The administration of the Task Authorization process will be carried out by "DND 626, Task Authorization Form" This Process includes monitoring, controlling and reporting on expenditures of the contract with task authorizations to the Contracting Authority.

## 7.4 DISCRETIONARY AUDIT

The following are subject to government audit before or after payment is made:

The amount claimed under the Contract, as computed in accordance with the Basis of Payment, including time charged.

The accuracy of the Contractor's time recording system.

The estimated amount of profit in any firm-priced element, firm time rate, firm overhead rate, or firm salary multiplier, for which the Contractor has provided the appropriate certification. The purpose of the audit is to determine whether the actual profit earned on a single contract if only one exists, or the aggregate of actual profit earned by the Contractor on a series of negotiated contracts containing one or more of the prices, time rates or multipliers mentioned above, during A particular period selected, is reasonable and justifiable based on the estimated amount of profit included in earlier price or rate certification(s).

Any firm-priced element, firm time rate, firm overhead rate, or firm salary multiplier for which the Contractor has provided a "most favoured customer" certification. The purpose of such audit is to determine whether the Contractor has charged anyone else, including the Contractor's most favoured customer, lower prices, rates or multipliers, for like quality and quantity of goods or Services.

Any payments made pending completion of the audit must be regarded as interim payments only and must be adjusted to the extent necessary to reflect the results of the said audit. If there has been any overpayment, the Contractor must repay Canada the amount found to be in excess.

## 8. CERTIFICATIONS

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

### 8.1 T1204 - DIRECT REQUEST BY CUSTOMER DEPARTMENT

1. Pursuant to paragraph 221 (1)(d) of the Income Tax Act, R.S. 1985, c. 1 (5th Supp.), payments made by departments and agencies to contractors under applicable services contracts (including contracts involving a mix of goods and services) must be reported on a T1204 Government Service Contract Payments slip.

2. To enable departments and agencies to comply with this requirement, the Contractor must provide Canada, upon request, its business number or Social Insurance Number, as applicable. (These requests may take the form of a general call-letter to contractors, in writing or by

telephone).

## 8.2 LIEN, SECTION 427 OF THE BANK ACT

1. If any lien under section 427 of the Bank Act, S.C. 1991, c. 46, exists in respect to any materials, parts, work-in-process, or finished work for which the Contractor intends to claim payment, the Contractor agrees to inform the Contracting Authority without delay and agrees, unless instructed otherwise by the Contracting Authority, either:

(a) to cause the bank to remove such lien and to provide the Contracting Authority with written confirmation from the bank; or,

(b) to provide to the Contracting Authority an undertaking from the bank that the bank will not make any claim under section 427 of the Bank Act on materials, parts, work-in-process, or finished work in respect of which payment is made to the Contractor under the Contract.

2. Failure to inform the Contracting Authority of such lien or failure to implement paragraph 1(a) Or (b) above will constitute default under the default section of the general conditions and will Entitle Canada to terminate the Contract.

## 9. APPLICABLE LAWS

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

### 9.1 CANADA SHIPPING ACT, 2001

The Contractor shall co-operate with Canada in the recording and registration procedures set out in Part I of the *Canada Shipping Act, 2001*, it being the Owner's intention to register the Rigid Hull Inflatable Boats (RHIB's) to Near Coastal Voyage, Class 1 with restriction to a voyage within 50 nautical miles from shore in waters continuous to Canada, the United States (except Hawaii), or Saint Pierre and Miquelon, the West Indies, Mexico, Central America or the northeast coast of South America and within 200 nautical miles from a place of refuge. All certificates and necessary exemptions for a vessel of this class must be provided.

### 9.2 CERTIFICATES

9.21 The Contractor shall obtain and deliver to Canada in the name of the Owner all the usual and all the relevant certificates for the proper and safe operation of the Rigid Hull Inflatable Boats. The following documents (1 original and 2 copies) for the proper and safe operation of the Rigid Hull Inflatable Boats shall be supplied by the Contractor at the time of delivery and prior to Acceptance:

- (a) Builder certificates;
- (b) Transport Canada Marine Safety Branch Certificate as required by the Class of Vessel;
- (c) Test performance certificates for all machinery, equipment and materials such as engine, gearbox, pumps, switchboards, deck machinery, navigation and communications systems;

- (d) Certificates of building material such as anchor chain, joiner bulkhead;
- (e) Certificates for EPIRBs, light and sound signaling equipment, GMDSS equipment and all other SOLAS safety equipment;
- (g) Type Approval Certificates for four (4) engine sets (first ship set shall be shop tested as per Specification at Annex "A");
- (h) Compass adjustment certification and deviation card;
- (i) Radio license(s);
- (j) Original copy of the warranty certificates of all bought-in machinery, equipment and apparatus (valid for twelve (12) months from the date of acceptance of each boat);
- (k) Inclining experiment report and stability information booklet;
- (l) Fire Suppression System; and
- (m) All other certificates as required by regulatory bodies.

9.22 All costs associated with obtaining certificates referred to in sub-clause 9.21 above are included in the price identified in Annex E Basis of Payment for the RHIBs

## 10. PRIORITY OF DOCUMENTS

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 1028 - Ship Construction Firm Price, 2010-08-16;
- (c) the supplemental general conditions 1029 - Ship Repairs 2010-08-16;
- (d) the supplemental general conditions 4007 Canada to Own Intellectual Property Rights in Foreground Information with License to Intellectual Property Rights in Background Information, *Annex L*;
- (e) the general conditions 2030, 2012-12-07, Higher Complexity - Goods
- (f) the general conditions 1031-2 - Contract Cost Principles, 2008-05-12;
- (g) Annex "M" - Bidders Questions and Answers
- (h) Annex A, Statement of Work;
- (i) Annex B The Statement of Requirements
- (j) Annex E, Basis of Payment
- (k) Annex "H" Insurance Requirements
- (l) Annex "I" Warranty Procedure
- (m) the signed Task Authorizations
- (n) the Contractor's bid dated \_\_\_\_\_,

## 11. DEFENCE CONTRACT

The Contract is a defence contract within the meaning of the Defence Production Act, R.S.C.

1985, c. D-1, and must be governed accordingly.

Title to the Work or to any materials, parts, work-in-process or finished work must belong to Canada free and clear of all claims, liens, attachments, charges or encumbrances. Canada is entitled, at any time, to remove, sell or dispose of the Work or any part of the Work in accordance with section 20 of the Defence Production Act.

## **12. SCHEDULE OF CONSTRUCTION DRAWING SUBMISSION DURING CONSTRUCTION PHASE**

Within fifteen (15) working days of the date of award of Contract, the Contractor shall submit to the Contracting Authority a "Schedule of Construction Drawing Submission". This Schedule shall include the following information:

- (a) A list of proposed Construction Drawings; and
- (b) The date on which each Construction drawing is scheduled to be submitted to the Contracting Authority for review.

The Schedule of Construction Drawing Submission shall be maintained and updated on a continuing basis including a record of actual comments from the Inspection Authority and Technical Authority, and submitted to the Contracting Authority, seven (7) calendar days prior to each Progress Meeting, for the duration of this Contract.

The Contractor shall submit Construction drawings to Canada in accordance with the Schedule of Construction Drawing Submission. Up to ten (10) working days, after receipt of drawings, are required by Canada for examination of drawings.

## **13. SCHEDULE OF PURCHASING DURING CONSTRUCTION PHASE**

13.1 Within fifteen (15) working days of Contract Award, the Contractor will submit to the Contracting Authority, a "Schedule of Purchasing". This Schedule shall include the following information:

- (a) A list of material and equipment proposed to be purchased by the Contractor, excluding "stock room" material; and
- (b) The date on which the Contractor proposes to purchase each item of material or equipment; and
- (c) The anticipated delivery date of each item on the list; and
- (d) There shall be separate lists, or separate sub-divisions of the Purchasing Schedule, with respect to:
  - (i) Hull;
  - (ii) Hull Outfit;
  - (iii) Machinery and equipment; and
  - (iv) Electrical and electronic equipment.

13.2 The Schedule of Purchasing shall be maintained and updated on a continuing basis including records of actual comments from the Inspection Authority and Technical Authority,

and submitted to the Contracting Authority seven (7) calendar days prior to each Progress Review Meeting, for the duration of this Contract.

13.3 The Contractor shall provide Canada with a copy of its purchase orders. Up to ten (10) working days is required by Canada for examination of purchase orders. Canada shall advise the Contractor of its decision in respect to each one of the purchase orders.

#### 14. MARKING

The Contractor must ensure that the manufacturer's name and part number are clearly stamped or etched on each item for positive identification purposes. Where stamping or etching is impracticable, a secure tab will be acceptable if legibly written.

#### 15. LABELING

The Contractor must ensure that the manufacturer's and specification numbers appear on each item, either printed on the container or on an adhesive label of highest commercial standard affixed to the container.

Additional labeling shall be provided as identified in the Specification.

#### 16. SHIPPING INSTRUCTIONS (DND) - CANADIAN-BASED CONTRACTOR

16.1 Delivery will be FCA Free Carrier at \_\_\_\_\_ (Insert the named place, e.g. Contractor's Facility) Incoterms 2000. The Contractor must load the goods onto the carrier designated by the Department of National Defence (DND). Onward shipment from the delivery point to the consignee will be Canada's responsibility.

16.2. Before shipping the goods, the Contractor must contact the following DND Inbound Logistics Coordination Center by facsimile or e-mail, to arrange for shipment, and provide the Information detailed at paragraph 3.

a. Insert the following for all repair and overhaul contracts where the Contractor is Located between Kingston inclusive and westward to the Ontario/Manitoba border:

Inbound Logistics Central Area (ILCA)

Telephone: 1-866-371-5420 (toll free)

Facsimile: 1-866-419-1627 (toll free)

E-mail: ILCA@forces.gc.ca

OR

b. Insert the following for all repair and overhaul contracts where the Contractor is Located in Manitoba, Saskatchewan, Alberta, British Columbia, and the National Capital Region Inclusive to east of Kingston:

Inbound Logistics Coordination Center (ILCC)

Telephone: 1-877-877-7423 (toll free)

Facsimile: 1-877-877-7409 (toll free)

E-mail: ILHQOttawa@forces.gc.ca

OR

located c. Insert the following for all repair and overhaul contracts where the Contractor is

In Quebec:

Inbound Logistics Quebec Area (ILQA)  
Telephone: 1-866-935-8673 (toll free), or  
1-514-252-2777, ext. 2323, 2852 or 4673  
Facsimile: 1-866-939-8673 (toll free), or  
1-514-252-2911  
E-mail: 25DAFCTrafficQM@forces.gc.ca

OR

d. Insert the following for all repair and overhaul contracts where the Contractor is Located In Atlantic (New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador):

inbound Logistics Atlantic Area (ILAA)  
Telephone: 1-902-427-1438  
Facsimile: 1-902-427-6237  
E-mail: FLogILAA@forces.gc.ca

16.3. The Contractor must provide the following information to the DND Inbound Logistics Coordination Center when arranging for shipment:

- a. the Contract number;
- b. consignee address (for multiple addresses, items must be packaged and labelled separately with each consignee address);
- c. description of each item;
- d. the number of pieces and type of packaging (i.e., carton, crate, drum, skid);
- e. actual weight and dimensions of each piece type, including gross weight;
- f. full details of dangerous material, as required for the applicable mode of transportation, signed certificates for dangerous material as required for shipment by the International Maritime Dangerous Goods Code, the International Air Transport Association regulations or the applicable Canadian Dangerous Goods Shipping Regulations, and a copy of the materiel safety data sheet.

16.4. Following receipt of this information by Canada, Canada will provide the appropriate Shipping instructions, which may include the requirement for specific consignee address Labelling, and the marking of each piece with a Transportation Control Number.

16.5. The Contractor must not ship the goods before receiving shipping instructions from the DND Inbound Logistics contact.

16.6. If the Contractor delivers the goods at a place and time which are not in accordance with The Given delivery instructions or fail to fulfill reasonable delivery instructions given by Canada, The Contractor must reimburse Canada any additional expenses and costs incurred.

16.7. If Canada is responsible for delays in delivering the goods, ownership and risk will be transferred to Canada upon expiry of either thirty (30) days following the date on which a duly completed shipping application is received by Canada or by its appointed forwarding agent, or thirty (30) days following the delivery date specified in the Contract, whichever is later.

## 17. PRODUCTION SCHEDULE

17.1 Within fifteen (15) working days of Contract Award, the Contractor shall submit to the Contracting Authority, Inspection Authority, and Technical Authority, a Production Schedule including critical path items.

17.2 The Contractor is responsible for planning and scheduling the Work required herein. The Production Schedule shall be maintained and updated on a continuing basis and shall be presented to the Contracting Authority, seven (7) calendar days prior to each Progress Review Meeting.

## **18. DRAWINGS AND PURCHASE ORDERS DURING CONSTRUCTION PHASE**

18.1 All drawings and purchase orders shall be submitted to the Contracting Authority for review and comment.

18.2 Any examination of any Contractor's drawings or purchase orders by or on behalf of Canada shall not relieve the Contractor of any responsibility under this Contract and shall not relieve any Subcontractor of any responsibility under any subcontract. In particular, examination or approval of drawings or purchase orders shall not:

- (a) Relieve the Contractor of its obligation to ensure that all details are correct;
- (b) Obligate Canada to accept an item that does not meet the Contract requirements;
- (c) Confirm that an item complies with the Contract requirements; and
- (d) Relieve the Contractor of the responsibility for any omissions and the consequences resulting therefrom.

## **19. "AS-FITTED DRAWINGS" AND RECORDS**

The Contractor shall obtain and deliver to the Technical Authority and Inspection Authority, the following documents:

- (a) Six weeks prior to commencement of Dock and Sea Trials that are part of the Tests, Trials and Demonstrations preliminary to Acceptance, three (3) hard copies of the proposed trial record sheets which shall include the full trials requirement of each individual test. The Contractor shall be responsible for recording all test, and trial data;
- (b) Prior to delivery of each Rigid Hull Inflatable Boat, for the Tests, Trials and Demonstrations preliminary to Acceptance, one (1) soft copy in English, and three (3) hard copies in English of all Data Books, Instruction Books, Pamphlets and Recommended Spare Parts Lists (including part numbers and ordering instructions) describing all machinery and equipment fitted on the Rigid Hull Inflatable Boat;
- (c) Within ten (10) working days after delivery and Acceptance of each of the Rigid Hull Inflatable Boat: one (1) soft copy in English and three (3) hard copies in English of records of all Dock Trials, Sea Trials, and any other Tests, Trials and Demonstrations, and all other inspections to be included in the Trials Data Booklet as outlined in Annex A; and



- (d) Within thirty (30) working days after Acceptance of each of the Rigid Hull Inflatable Boat(s), one (1) soft copy and two (2) hard copies of all "as-fitted" drawings for the Rigid Hull Inflatable Boats.

## 20. VESSEL - ACCESS BY CANADA

Canada reserves the right to carry out limited Work by its personnel on equipment on board the Rigid Hull Inflatable Boats. Such Work will be carried out at times mutually acceptable to Canada and to the Contractor.

## 21. WORK SITE ACCESS

Authorized representatives of Canada must have access to any site where any part of the Work is being carried out at any time during working hours to make examinations and such tests of the Work as they may think fit.

## 22. INSPECTION

22.1 All reports, deliverables, documents, goods and all services rendered under this Contract shall be subject to inspection by the Inspection Authority. Should any report, document, good or service not be in accordance with the requirements of the Contract, the Inspection Authority shall have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment. Any communication with a Contractor regarding the quality of Work performed pursuant to this Contract shall be undertaken by official correspondence through the Contracting Authority.

22.2 The Contractor shall be responsible for properly setting up, preparing, providing access to and presenting Work for inspection and for giving adequate notice to the Inspection Authority and the Regulatory Body that the Work is complete, and having been pre-tested or inspected by the Contractor, is ready for formal inspection.

22.3 Inspection will be done by the Inspection Authority at the most appropriate location:

- (a) For the Rigid Hull Inflatable Boats, at Contractor's facilities during the construction of the Rigid Hull Inflatable Boats, up to and including Provisional Acceptance of the Rigid Hull Inflatable Boats; and at Canada's facilities for Acceptance; and

- (b) For most of the Documentation, at Canada's facilities.

22.4 Inspection requirements shall be in accordance with the provisions of this Contract including 2030 General Conditions - Higher Complexity - Goods (2010-08-16) and 1028 Ship Construction - Firm Price (2010-08-16) 1030 Ship Repair (2010-08-16) and the following procedures:

- (a) Construction Drawings

- (i) Construction drawings and calculations: Upon receipt of each drawing and the associated technical data by the Inspection Authority and Technical Authority they will be reviewed for their content against the provisions of the

Contract. Canada shall notify the Contractor in writing of any discrepancies or concerns within fifteen (15) working days of the receipt of the document.

- (ii) Upon receipt of each construction drawing and purchase order by the Inspection Authority and Technical Authority, they will be reviewed against the Contract. Canada shall notify the Contractor in writing of any discrepancies or concerns within fifteen (15) working days of the receipt of the document.
- (b) Inspection during the Construction Phase as carried out by the Inspection Authority will consist of the audit of the Contractor's Quality Control System and records, a series of inspections and the witnessing of tests, trials and demonstrations deemed necessary by the Inspection Authority to verify that the Work has been performed in compliance with the provisions of the Specification.
- (c) Non-conformance Report (NCR): A NCR will be issued for each Non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the Non-conformance.

When the Non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the NCR by adding an appropriate signed and dated notation.

When Acceptance Sea Trials have been successfully completed and the Contractor has corrected and addressed items on the Non-conformance list, an Acceptance Inspection of the boat shall be carried out by the Inspection Authority. Three (3) working days prior to the scheduled Acceptance Date, the content of all Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Delivery Document prior to the Inspection Authority certification of such document. A final Deficiencies Database shall be prepared for signature if necessary. Acceptance Certificate of Ship into Department of National Defence shall be prepared for signature

The Contractor shall correct all outstanding deficiencies during the warranty period at a time and place agreed to by the Contractor and the Technical Authority and the Contract Authority.

- (d) Notwithstanding the above and the inspection by the Inspection Authority, the discrepancy notices, the Non-conformance reports, or absences thereof, or corrections thereto, or acceptance thereof, do not relieve the Contractor of its obligations to satisfy the requirements of this Contract. As such, the Contractor shall correct any and all defects or deficiencies discovered at no additional cost to Canada.

## 23. TESTS AND TRIALS

### 23.1 Launching of the Rigid Hull Inflatable Boats

The Contractor shall be responsible for the safe and satisfactory launching of the Rigid Hull Inflatable Boats at a time and in a manner agreed upon between the Contractor and Canada. If at any time prior to Acceptance of the Rigid Hull Inflatable Boats there is reason to believe the

underwater portion of the Rigid Hull Inflatable Boats has been seriously impaired, the Contractor shall place the Rigid Hull Inflatable Boats in dry-dock and adequately inspect, repair, clean, and paint the damaged areas at its own expense and to the satisfaction of Canada. On completion of the Work, the Contractor shall be responsible for the safe and satisfactory returning the Rigid Hull Inflatable Boats to afloat, alongside and upright at the Contractor's facility.

#### 23.2 Tests, Trials and Demonstrations

- (a) To enable the Inspection Authority and the Technical Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract, the Contractor shall schedule, coordinate, perform, and record all specified Tests, Trials and Demonstrations required by the Inspection Authority, and Technical Authority.
- (b) Where the Contract contains a specific performance requirement for any component, equipment, sub-system or system, the Contractor shall test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the Contract.
- (c) Tests, Trials and Demonstrations shall be conducted in accordance with a logical, systematic schedule which shall ensure that all associated components and equipment are proven prior to sub-systems demonstration or testing, and sub-systems are proven prior to system demonstration or testing.
- (d) Where the Contract does not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor shall demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority and Technical Authority.
- (e) The Contractor shall keep written records of all Tests, Trials, and Demonstrations conducted, including all rejections, comments, or recommendations made at such times. Records shall be in a format, and contain data, such that the Inspection Authority can certify compliance of the component, equipment, sub-system, or system with the specified requirements.
- (f) The Contractor shall in all respects be responsible for the conduct of all Tests and Trials and Demonstrations in accordance with the requirements of this Contract.
- (g) Canada reserves the right to defer starting or, continuing with any Sea Trials for any reasonable cause including but not limited to adverse weather visibility, equipment failure or degradation, lack of qualified personnel and inadequate safety standards.
- (h) The Contractor shall dry-dock the boat on successful completion of Acceptance Trials for underwater inspection and final approval by the Inspection Authority and Technical Authority prior to acceptance of each boat. On completion of the Work, the Contractor shall be responsible for the safe and satisfactory returning the boat to afloat, alongside and upright at the Contractor's facility.

## 24. WEIGHT AND DISTRIBUTION CONTROL

24.1 The Contractor recognizes that the weight of the Rigid Hull Inflatable Boats and its distribution are of crucial importance to the satisfactory completion of this Contract. The Contractor agrees to implement a weight control program in accordance with the requirements of the Contract and to deliver the Rigid Hull Inflatable Boats within the allowable weight and weight distribution parameters.

24.2 The Contractor shall provide a weight report seven (7) working days prior to each Progress Review Meeting to the Inspection Authority, and Technical Authority.

24.3 Any anticipated deviation in the construction from the terms of the full weight statement shall forthwith be brought to the attention of Canada. No changes to the weight distribution of the Rigid Hull Inflatable Boats that will affect stability are to be effected without the written agreement of Canada. Notwithstanding such agreement the Contractor shall remain responsible for meeting the performance requirements including conditions of stability set out in the Contract, except as may be agreed to in writing by Canada.

## **25. TRADE QUALIFICATIONS AND WELDING**

The Contractor shall use qualified, certificated and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Inspection Authority may request to review and record details of the certification and/or qualifications held by the Contractor's tradespeople.

## **26. ADDITIONAL WORK INCLUDING DESIGN CHANGE DURING CONSTRUCTION**

26.1 The Contractor hereby acknowledges that Canada may require the Contractor to perform additional Work at any time and from time to time, during this Contract over and above the Work identified at Article 6.1.1. The additional Work could include but not be limited to:

- (a) Additions or variations to the Work including Design Changes; and
- (b) Dispensing with or change to any portion of the Work.

26.2 If any additional Work is required, the procedure for processing the "Additional Work" shall be as set out in Annex "K", Procedure for Implementing Additional Work, hereto. All negotiations must be completed and the additional Work authorized on form PWGSC-TPSGC 1379 prior to the commencement of the Work, unless and until the Contracting Authority specifically authorizes commencement of the additional Work, in writing, prior to completion of negotiations and completion of form PWGSC-TPSGC 1379.

26.3 The Contractor shall perform the additional Work under the same terms and conditions of the Contract. The additional Work will be negotiated using the labor rates and markups contained in the Contract.

26.4 The Contractor may request a change to the Work for Canada's consideration by submission of a request for change proposal to the Contracting Authority.

26.5 Extensions in the delivery date as a result of the approved additional (unscheduled) Work must be presented at the time of the proposal and to the satisfaction of the Contracting Authority, otherwise extensions to the delivery date will not be considered.

26.6 No cost additional Work: Notwithstanding the foregoing, should Canada deem it advisable to make any reasonable change in the Work during the course of the Work, provided

the change is ordered before that particular part of the Work to which Canada refers is commenced and involves no extra cost to the Contractor, such changes shall be made by the Contractor without extra cost to Canada.

26.7 Incorporation of Additional Work or Design Changes: Where additional Work including Design Changes has been agreed to by the Parties, the resulting change shall be incorporated into the Work, and:

- (a) Be subject to all of the provisions of the Contract;
- (b) Not relieve the Contractor of its obligation to ensure that the Rigid Hull Inflatable Boats meet all of the performance requirements set out in the Specification and shall not affect the delivery date unless otherwise provided for in form PWGSC-TPSGC 1379 relating to such additional work or design change.

## **27. PAYMENT FOR ADDITIONAL WORK INCLUDING DESIGN CHANGE**

The Contractor may claim payment for Additional Work including Design Change where the Work involved in the additional Work or Design Change has been initiated, fully in accordance with the provisions of the Contract. Each additional Work package or Design Change is to be divided over the entire period of construction proportionately to each Milestone event set out at Annex F Section 12 Milestone Schedule For Construction. Payment for Additional Work or Design Change shall be subject to the applicable rates at article 6.1 Basis of Payment - Construction

## **28. PAYMENT FOR FUEL, OILS AND LUBRICANTS**

The Contractor shall be responsible for the supply and cost of all fuel, lubricating oil, hydraulic oil and other lubricants sufficient for fully charging all systems as required for operating the machinery and other equipment and for performing all tests and trials. After successful completion of all trials and upon Acceptance of the Rigid Hull Inflatable Boats by Canada, all oils, lubricants and fuels shall be returned to full condition levels at the Contractor's cost.

## **29. QUALITY MANAGEMENT SYSTEMS - REQUIREMENTS (QAC Q);**

In the performance of the Work described in the Contract, the Contractor must comply with the requirements of:

ISO 9001:2008 - Quality management systems - Requirements, published by the International Organization for Standardization (ISO), current edition at date of submission of Contractor's bid.

It is not intended that the Contractor be registered to ISO 9001; however, the Contractor's quality management system must address all requirements appropriate to the scope of the Work. Only exclusions in accordance with clause 1.2 of ISO 9001 are acceptable.

Assistance for Government Quality Assurance (GQA)

The Contractor must provide the Quality Assurance Representative (QAR) with the accommodation and facilities required for the proper accomplishment of GQA and must provide any assistance required by the QAR for evaluation, verification, validation, documentation or

release of product.

The QAR must have the right of access to any area of the Contractor's or subcontractor's Facilities where any part of the Work is being performed. The QAR must be afforded unrestricted opportunity to evaluate and verify Contractor conformity with quality system procedures and to validate product conformity with the requirements of the Contract. The Contractor must make available for reasonable use by the QAR the equipment necessary for all validation purposes. Contractor personnel must be made available for operation of such equipment as required.

When the QAR determines that GQA is required at a subcontractor's facilities, the Contractor must provide for this in the purchasing document and forward copies to the QAR, together with relevant technical data as the QAR may request.

The Contractor must notify the QAR of non-conforming product received from a subcontractor when the product has been subject to GQA.

### **30. WARRANTIES**

#### **A) Warranty for Vessels:**

30.1 Despite acceptance of the Work and without restricting any other term of the Contract or any condition, warranty or provision implied or imposed by law, the Contractor warrants that, during the warranty period, the Vessel, including without limitation, the hull, propelling machinery and auxiliaries, fittings and equipment of all kinds will:

- a. be free from all defects of design, material, workmanship, assembly or compatibility of components; and
- b. meet or surpass all of the performance standards and tests set out in the Specifications and be fit for the particular purposes for which it is required as described in the Contract.

30.2. The warranty period for the Vessel is twelve (12) months from the date of its delivery to and acceptance by Canada. However, the warranty period for the hull is two (2) years from the date of the Vessel's delivery to and acceptance by Canada.

30.3. The Contractor must repair or remove and replace, all at its own expense, any work which fails, at any time during the warranty period, to meet the requirements of section 2 above and deliver and install such repair or replacement free from all defects at the Contractor's facility, or at such other facility or location as Canada may direct.

30.4. If Canada chooses not to have the defective Work repaired or replaced at the Contractor's facility, then:

- a. the Contractor must replace or make good the defective Work at such location as the Contracting Authority may specify and Canada will pay the actual Cost incurred in so doing (including reasonable traveling and living expenses) with no allowance by way of overhead or profit, less a sum equivalent to the Cost of making good the defective Work had it been made good at the Contractor's facility; or
- b. at Canada's option Canada may have the defective Work repaired or replaced elsewhere, and the Contractor must pay Canada such sums as are equivalent to the

Cost of supplying the necessary part or parts and doing the Work at the Contractor's facility.

30.5. The warranty period for the Vessel will be extended by the amount of time, in excess of one month for each occasion during which the Vessel is out of service while undergoing warranty repairs or replacements.

30.6. If the Contractor is not located close to the vessel home port / station, it must appoint a local representative to resolve and correct defects arising during the warranty period. The name and address of the representative must be given to the Contracting Authority sixty (60) calendar days before the Contractor delivers the Vessel to Canada.

30.7. The warranty provided for in this clause does not apply with respect to defects in the Vessel, including defects in performance, which are caused by

- a. Canada not complying with the Contractor's reasonable instructions for the operation, maintenance and repair of the Vessel;
- b. alterations by Canada to the Vessel which are not approved by the Contractor, provided that approval is not unreasonably withheld; and
- c. damage and defects arising from the negligence of any person employed on board the Vessel during the warranty period, except the negligence of the Contractor or its representative.

30.8. The Contractor must transfer to Canada all warranties on work supplied or held by the Contractor which exceed the warranty period indicated above, and the Contractor must exercise any such rights and warranties on behalf of Canada.

30.9. Upon the identification and reporting to the Contractor of any defects in the Work subject to warranty, the Contractor must carry out the Work to correct warranty defects or failures with a minimum of delay, at a time agreed to with the Technical Authority to avoid any restriction of the Vessel operation.

30.10. All claims by Canada pursuant to this section will be made in accordance With  
the  
Warranty Claim Procedure attached as Annex "I" to the Contract

## B) Warranty For Work, Excluding Vessels

31.0. Despite inspection and acceptance of the Work by or on behalf of Canada and *without restricting any other provision of the Contract or any condition*, warranty or provision imposed by law, the Contractor warrants that, for twelve (12) months (or any other period stated in the Contract), the Work will be free from all defects in design, material or workmanship, and will conform to the requirements of the Contract. The warranty period begins on the date of delivery, or if acceptance takes place at a later date, the date of acceptance. With respect to  
Government

Property not supplied by the Contractor, the Contractor's warranty will extend only to its proper incorporation into the Work.

31.1 In the event of a defect or non-conformance in any part of the Work during the warranty Period, the Contractor, at the request of Canada to do so, must as soon as possible repair, replace or otherwise make good at its own option and expense the part of the Work found to be defective or not in conformance with the requirements of the Contract.

31.2. The Work or any part of the Work found to be defective or non-conforming will be returned To the Contractor's plant for replacement, repair or making good. However, when in the opinion Of Canada it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location. In such cases, the Contractor will be paid the fair and reasonable Cost (including reasonable travel and living expenses) incurred in so doing, with no allowance for profit, less an amount equal to the Cost of rectifying The defect or non-conformance at the Contractor's plant.

31.3 Canada must pay the transportation cost associated with returning the Work or any part of The Work to the Contractor's plant pursuant to subsection 3. The Contractor must pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location directed by Canada.

31.4. The Contractor must remedy all data and reports pertaining to any correction or Replacement under this section, including revisions and updating of all affected data, manuals, Publications, software and drawings called for under the Contract, at no cost to Canada.

31.56. If the Contractor fails to fulfill any obligation described in this section within a reasonable time of receiving a notice, Canada will have the right to remedy or to have remedied the defective Or non-conforming work at the Contractor's expense. If Canada does not wish to correct or Replace the defective or non-conforming work, an equitable reduction will be made in the Contract Price.

All claims by Canada pursuant to this section will be made in accordance with the Warranty Claim Procedure attached as Annex "I" to the Contract

## 32. **INSURANCE**

The Contractor must comply with the insurance requirements specified in **Annex H**, below. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill Its obligation under the Contract and to ensure compliance with any applicable law. Any Additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.



### 33. CONTROLLED GOODS PROGRAM

33.1 As the Contract requires production of or access to controlled goods that are subject to the Defence Production Act R.S. 1985, c. D-1, the Contractor and any subcontractor are advised That, within Canada, only persons who are registered, exempt or excluded under the Controlled Goods Program (CGP) are lawfully entitled to examine, possess or transfer controlled goods. Details on how to register under the CGP are available at: Controlled Goods Program

33.2 When the Contractor and any subcontractor proposed to examine, possess or transfer controlled goods are not registered, exempt or excluded under the CGP at time of contract Award, the Contractor and any subcontractor must, within seven (7) working days from receipt of Written notification of the contract award, ensure that the required application(s) for registration Or exemption are submitted to the CGP. No examination, possession or transfer of controlled Goods must be performed until the Contractor has provided proof, satisfactory to the Contracting Authority, that the Contractor and any subcontractor are registered, exempt or excluded under The CGP. Failure of the Contractor to provide proof, satisfactory to the Contracting Authority, that the Contractor and any subcontractor are registered, exempt or excluded under the CGP, within thirty (30) days from receipt of written notification of contract award, will be considered a default under the Contract except to the extent that Canada is responsible for the failure due to delay in processing the application.

33.3 The Contractor and any subcontractor must maintain registration, exemption or exclusion from the CGP for the duration of the Contract and in any event for so long as they will examine, possess or transfer controlled goods

### 34. PROGRES REVIEW AND TECNICAL MEETINGS

34.1 Progress Review Meetings shall be held at the Contractor's facility and chaired by the Contracting Authority. The first meeting shall be held within four (4) weeks of Contract Award and the following Progress Review Meetings shall be held every four (4) weeks thereafter. Attendees will be the Contractor Representatives, the Contracting Authority, Inspection Authority and Technical Authority.

The draft agenda will be provided by the Contractor to the Contracting Authority with a copy to the Inspection Authority and Technical Authority approximately five (5) working days prior to each meeting for review by attendees and request for additions. The final agenda will be provided at the meeting by the Contractor.

The Contractor shall record the minutes of all meetings, and include as a minimum discussion items, records of decisions, all action items, risk items, and a record of conclusions reached at the Technical Meetings. The Contractor will distribute a draft of all minutes to the Contracting Authority, Inspection Authority and Technical Authority for review and comment of Canada prior to issuing the final version. The Minutes shall be signed as accepted by the Contractor, Contracting Authority, Technical Authority and the Inspection Authority once comments are incorporated to the satisfaction of Contracting Authority.

34.2 Technical Meetings shall be held as required at the Contractor's facility and chaired by the Technical Authority. Attendees will be the Contractor Representatives, the Contracting Authority, Inspection Authority and Technical Authority. The Minutes shall be signed as accepted by the Contractor and Technical Authority once comments are incorporated to the satisfaction of Technical Authority.

34.3 Wherever possible the Progress Review and Technical Review Meetings will be held together and co-chaired by the Contracting and Technical Authorities. The minutes of these meetings shall be signed as accepted by the Contractor, Contracting Authority and Technical Authority once comments are incorporated to the satisfaction of the Contracting Authority.

### **35. PROGRESS REVIEW REPORTS**

Progress Review Reports shall be provided detailing the Work completed to date, a copy of the updated Master Schedule, problems incurred as well as problems solved and how they were solved both for the current reporting period and from Previous reporting period(s). The report shall be provided monthly to the Contracting Authority and should be provided electronically.

### **36. MAINTENANCE AND OPERATOR'S MANUAL**

The Contractor shall supply a commercial maintenance and operator's manual, with the Rigid Hull Inflatable Boats in accordance with the Requirement in the Request for Proposal. The Price of all operator's manuals is included with the Contract Price as per Annex J The Basis of Payment.

### **37. GOODS AND SERVICES TAX / HARMONIZED SALES TAX**

37.1 All prices and amounts of money in the Contract are exclusive of Goods and Services Tax (GST) or Harmonized Sales Tax (HST), as applicable, unless otherwise indicated. The GST Or HST, whichever is applicable, is extra to the price herein and will be paid by Canada.

37.2 The estimated GST or HST is included in the total estimated cost. GST or HST, to the extent applicable, will be incorporated into all invoices and progress claims and shown as a separate item on invoices and progress claims. All items that are zero-rated, exempt or to which the GST or HST does not apply, are to be identified as such on all invoices. The Contractor agrees to remit to Canada Revenue Agency any amounts of GST and HST paid or due.

### **38. DANGEROUS GOODS / HAZARDOUS PRODUCTS D3015C - 2007-11-30**

The Contractor must ensure proper labelling and packaging in the supply and shipping of dangerous goods/hazardous products to the Government of Canada.

The Contractor will be held liable for any damages caused by improper packaging, Labelling or carriage of dangerous goods/hazardous products.

The Contractor must clearly mark all merchandise labels with the percentage of volume That is a hazardous item. Failure to do so will result in the Contractor being held responsible for damages caused in the movement of goods/products by government vehicles or government Personnel.

The Contractor must adhere to all applicable laws regarding dangerous goods/hazardous products.

### **39. WELDING PERSONNEL**

**Welding Certification:**

39.1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

CSA W59.2-M1991 Welded Aluminum Construction; Division 2;

CSA W47.2 M 1987 Certification of Companies for Fusion Welding of Aluminum Division 2; and

CSA W47.1 M 1987 Certification of Companies for Fusion Welding of Steel Division 3

39.2. In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.

39.3. Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel he intends to use in the performance of the Work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding

#### **40. FOREIGN NATIONALS**

The Contractor must comply with Canadian immigration requirements applicable to foreign nationals entering Canada to work temporarily in fulfillment of the Contract. If the Contractor wishes to hire a foreign national to work in Canada to fulfill the Contract, the Contractor should immediately contact the nearest Service Canada regional office to inquire about Citizenship and Immigration Canada's requirements to issue a temporary work permit to a foreign national. The Contractor is responsible for all costs incurred as a result of non-compliance with immigration requirements.

#### **41. IDENTIFICATION MARKING (R&O)**

All equipment assemblies or components after overhaul or reconditioning must have the original Marking information restored and must have the following information added immediately Adjacent to the original identification markings or previous reconditioning markings: Reconditioner's identification, date of reconditioning, date of expiration of warranty and QAR's stamp/number.

#### **42. CONDITION OF MATERIAL**

Unless provided otherwise in the Contract, material supplied must be new and conform to the latest issue of the applicable drawing, specifications and part number that is in effect on the bid closing date or, if there was no bid solicitation, the date of the Contract.

#### **43. RELEASE OF MATERIAL**

43.1 Materiel is to be released for shipment using one of the release documents indicated below:

For CANADIAN Contractors;

a. Unless otherwise directed by the Department of National Defence (DND) Quality Assurance Authority, signature of the DND Quality Assurance Representative (QAR) on the release document is required,

b. Materiel is to be released for shipment using either DND form CF 1280, Certificate of Inspection and Release, or a release document containing the same information. Release document(s) shall be prepared by the Contractor, and

c. For return of materiel from repair and overhaul contractors to the Canadian Forces Supply System (CFSS), use forms DND 2227/DND 2228 in lieu of DND form CF 1280.

For Non-Canadian Contractors (Except U.S): Materiel is to be released for shipment using a Certificate of Conformity in accordance with NATO STANAG 4107 which shall be prepared by

the

Contractor.

#### 44. GOVERNMENT SUPPLIED MATERIEL

Government Supplied Material (GSM) is the property of the Government of Canada. The Contractor is responsible for maintaining satisfactory records of the disposition of all GSM.

The GSM described herein must be used in the manufacture of the item(s) contracted. Only the quantity of material stated herein will be supplied by Canada without charge.

If GSM does not conform to requirements for incorporation into the Work, the Contractor shall make a request for replacement GSM in writing to Canada within 30 days after the receipt

of

GSM. At Canada's instruction, the Contractor shall replace or repair any GSM, at the prices and In Accordance with Contract provisions relating to Unscheduled Work.

The Contractor shall replace or make good, at its own expense, any GSM which fail to conform to the Contract requirements as a result of faulty or inefficient cutting, manufacture or workmanship by the Contractor,

In the event of problems with the GSM supplied, the Contractor shall advise the Contracting Authority immediately, identifying the specific problem. Should the Contractor proceed without guidance from the Contracting Authority, any costs incurred, and loss of GSM shall be at the Contractor's expense.

The Contractor shall repair or replace at its own expense GSM that is damaged or lost while in the Contractor's care.

While a final GSM accounting is not automatically required for every Contract, Canada reserves the right to request a final accounting at any time within one year of the Contract completion date.

The following items will be supplied as Government Supplied Material (GSM) for the Rigid Hull Inflatable Boat Project

Outboard motors as GSM to be installed on each DND RHIB as follows:

- part
- i. Fifteen (15) standard rotating (XL) Mercury Verado™ 350 hp outboard motors Model # 19V1AFMHH complete with a leg length of 63.5 cm (25 in) (Mercury Number 1600-880686T61); and
- part
- ii. Fifteen (15) counter rotating (CXL) Mercury Verado™ 350 hp outboard motors Model # 19V1AFNHH complete with a leg length of 63.5 cm (25 in) (Mercury Number 1600-880686T62);

#### 45. GOVERNMENT FURNISHED EQUIPMENT

All Government Property must be used by the Contractor solely for the purpose of the Contract and remains the property of Canada. The Contractor must maintain adequate accounting records of all Government Property and, whenever feasible, mark it as being the property of Canada.

The Contractor must take reasonable and proper care of all Government Property while it is in its possession or subject to its control. The Contractor is responsible for any loss or damage resulting from its failure to do so other than loss or damage caused by ordinary wear and tear.

All Government Property, unless it is installed or incorporated in the Work, must be returned to Canada on demand. All scrap and all waste materials, articles or things that are Government Property must, unless provided otherwise in the Contract, remain the property of Canada and must be disposed of only as directed by Canada.

At the time of completion of the Contract, and if requested by the Contracting Authority, the Contractor must provide to Canada an inventory of all Government Property relating to the Contract.

The following items will be supplied as Government Furnished Equipment

- A. Multiband V/UHF Radios as GFE to be used to fit for but not with on each DND RHIB, as follows:
  - i. Quantity two (2) AN/PRC 117F Multiband V/UHF radios;
  - ii. Quantity two (2) AN/PRC-148 MBITR radios; and
  - iii. Quantity two (2) Peltor headsets.

#### 46. PERFORMANCE AND RELIABILITY

Equipment, systems and/or vessels repaired or overhauled in accordance with the terms of this Contract must be produced to meet the standards of performance and reliability described in Applicable engineering orders and test sheets. When such standards are not described or when the standards described are considered by the Contractor to be inadequate, the Contractor will submit the standards of performance and reliability to which he proposes to repair/overhaul the equipment through the Quality Assurance Representative (QAR) to the Technical Authority For Approval.

#### 47. PROOFING AND TESTING

The Contractor is responsible for the conduct of all examinations and tests required to demonstrate full conformance of the work to contract requirements. The Contractor may use his

own or any other inspection facility and service acceptable to the Quality Assurance Representative (QAR).

#### **48. ENVIRONMENTAL PROTECTION**

The Contractor is responsible for ensuring that all work carried out is in compliance with all Applicable municipal, provincial, federal and statutory environmental protection laws and Regulations.

Prior to the commencement of work the contractor must have in place an Emergency / Spill Response Plan and also processes and procedures for the identification, management, handling and disposal of all substances, pollutants and material covered by the applicable municipal, provincial, federal and statutory environmental protection laws and regulations. Copies of all Hazardous Material Disposal Certificates raised whilst completing any work under the scope of the Contract are to be provided to the Contract Authority.

Furthermore, additional evidence of compliance with municipal, provincial, federal and statutory environmental laws and regulations is to be forthwith furnished by the Contractor to the Contract Authority upon request.

Failure to comply with any of the above will be, of and by itself, grounds for termination of the contract for default.

#### **49. URGENT REQUIREMENTS**

The Contractor must take immediate action to satisfy urgent requirements of the Department of National Defence, as and when authorized by the Requisitioning Authority, provided however, That if such requirements do not comply with the nature of the work set out in this Contract, the Contractor must first obtain the authorization of the Contracting Authority.

#### **50. FAILURE TO DELIVER**

Time is of the essence of this Contract. Failure to deliver by the date(s) specified in the Contract will prejudice Canada.

Delivery is an essential part of this contract. Except for excusable delays notified in accordance with Section 11 of 2030 General Conditions - Higher Complexity - Goods, failure to deliver by the

date(s) specified in this Contract will prejudice the Government of Canada and will, at the Government of Canada's discretion, entail either:

- a. Contract Termination in accordance with 2030 General Conditions Sections 10 (Time of the Essence) and 30 (Default by the Contractor); or
- b. Consideration for Contract Amendment. Delivery date(s) will not be extended without consideration being provided by the Contractor in the form of adjustment to the price, warranty, quantity and / or service to be provided.

#### **51. TOTAL SYSTEM RESPONSIBILITY**

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The Contractor shall have Total System Responsibility (TSR) for the work performed by on on behalf of the Contractor under the Contract. TSR includes but is not limited to:

- (a) system design and total system integration which includes the task of aggregating, interconnecting, setting-to-work, testing, trials and making compatible all the Systems and Deliverables, including their associated software, so as to fulfill the performance and other requirements described in Annex "B", Technical Statement of Requirements; and
- (b) placement and management of sub-contractors; and
- (c) ensuring that documentation and publications are sufficient to permit operation and maintenance of the systems and the equipment which they depict; and
- (d) all other work required to ensure the Rigid Hull Inflatable Boats are fully functional and meets the requirements of the Contract.

## 52. LOCAL SERVICE CENTRES

The Contractor shall maintain the following two local services centres, one on each coast, available to perform Work in accordance with the Statement of Work, Annex B under this Contract:

Name and Address of local service centre on East Coast:

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Name and Address of local service centre on West Coast:

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**DEPARTMENT OF NATIONAL DEFENCE  
RIGID HULL INFLATABLE BOAT  
(DND RHIB)**

**STATEMENT OF WORK (SOW)**



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**STATEMENT OF WORK  
FOR THE  
DEPARTMENT OF NATIONAL DEFENCE (DND) RIGID HULL INFLATABLE BOAT**

**1.0 SCOPE**

**1.1 Purpose**

The purpose of this Statement of Work (SOW) is to define the scope and requirements that apply to the provision, integration, testing, delivery and support of welded marine grade aluminum hull open top Rigid Hull Inflatable Boats to the Department of National Defence (DND).

**1.2 Background**

DND has a requirement for high performance Rigid Hull Inflatable Boats (RHIBs) that support the maritime interdiction role in Canada. The boats will operate in fresh and salt water environments including Canadian internal waterways and coastal waters out to 200 nautical miles in all seasons. The Boats will be transportable by road on a trailer, and also have the capability of being transported by ship and on DND air assets such as the CC130 Hercules. The Boats are to be deployable from the trailer and by crane from a ship or dock. This capability will be referred to in this SOW as the DND Rigid Hull Inflatable Boat (DND RHIB).

**2.0 STANDARDS**

**2.1 Documentation**

The following documents, definitions and acronyms form part of this SOW:

- MIL-HDBK-61A Configuration Management Guidance ([www.everyspec.com](http://www.everyspec.com))
- A-LM-184-001/JS-001 Special Instructions - Repair and Overhaul Contractors (copy provided upon request)
- CSA W47.2 M 1987 Certification of Companies for Fusion Welding of Aluminum ([www.csa.ca](http://www.csa.ca))
- D-01-100-214/SF000 Preparation of Parts Identification Lists (copy provided upon request)

**2.2 Definitions**

Level One Repair/Maintenance	Tasks that include operator actions including daily inspections and preventive maintenance such as servicing and cleaning as well as preliminary diagnosis of faults and corrective maintenance tasks of a minor nature (i.e., maximum four (4) hours to diagnose and conduct repair).
OEM Level Repair	Any tasks required to bring an item to serviceable condition.
Overhaul	The restoration of an item to its original condition. It includes the replacement of worn, damaged or life expired parts, the incorporation of approved modifications and the rework of components as necessary and/or approved by the TA
Repair	The identification and correction of those specific effects, which degrade the performance of an item, causing it to function below the specifications.
Serviceable Condition	The condition of an item which allows it to be used, shipped or held in stores without being subjected to any limitations (not applicable to new equipment).
Turn Around Time	The time from when a non-serviceable item arrives at the Contractor repair facility to when the repaired item departs the repair facility, en route to its destination.

## 2.3 Acronyms

AWR	Additional Work Request
CA	Contract Award
CDR	Critical Design Review
CDRL	Contractor Data Requirements List
CM	Configuration Management
DID	Data Item Description
DND	Department of National Defence
EBS	Equipment Breakdown Structure
ECP	Engineering Change Proposal
FSR	Field Service Representative
GFE	Government Furnished Equipment
GSM	Government Supplied Material
ILS	Integrated Logistics Support
ISS	In-Service Support
ITDB	Issue Tracking Database
LCG	Longitudinal Center of Gravity
MPN	Manufacturer Part Number
MPR	Monthly Progress Report
NATO	North Atlantic Treaties Organization
NOR	Notice of Revision
NSN	NATO Stock Number
OEM	Original Equipment Manufacturer
OTM	Operator Technical Manual
PA	Procurement Authority
PBL	Product Baseline
PM	Project Manager
PMP	Project Management Plan
PMS	Project Management Schedule
PRM	Progress Review Meeting
PRR	Production Readiness Review
PWGSC CA	Public Works Government Services Canada Contracting Authority
QA	Quality Assurance
QAR	Quality Assurance Representative
R&O	Repair and Overhaul
RFD	Request for Deviation
RFW	Request for Waiver
RHIB	Rigid Hull Inflatable Boat
RMA	Return Material Authorization
RSPL	Recommended Spare Parts List
SBS	Systems Breakdown Structure
SCN	Specification Change Notification
SDD	Systems Design Document
SEMP	Systems Engineering Management Plan
SOW	Statement of Work
SPTD	Supplemental Provisioning Technical Documentation
SRR	Systems Requirements Review
STTE	Special Tools and Test Equipment
TA	Technical Authority
TAT	Turn Around Time

TDP	Technical Data Package
TRM	Technical Review Meeting
VCG	Vertical Center of Gravity
WBS	Work Breakdown Structure

### 3.0 **DELIVERABLES**

The Contractor shall deliver the following:

- (a) Fifteen (15) DND RHIBs as described in the system Performance and Technical Specifications (Annex B) within one hundred eighty-five (185) weeks of Contract Award;
- (b) Training in accordance with Section 3.1;
- (c) Project and Systems Engineering management as detailed in Section 5.0;
- (d) Certifications and trials in accordance with Annex C including the Contract Data Requirements Lists (CDRLs) at Annex C Appendix 1 and their associated Data Item Descriptions (DIDs) at Annex C Appendix 2;
- (e) Data in accordance with the CDRLs at Appendix 3 and their associated DIDs at Appendix 4;
- (f) A Technical Data Package (TDP) as detailed in Section 6.0;
- (g) An initial spares and specialized tools package as detailed in Section 7.0; and
- (h) In-Service Support (ISS) as detailed in Appendix 2 for a period of five (5) years following the first DND RHIB delivery to DND.

#### 3.1 Training

The Contractor shall conduct the following courses at their facility within thirty (30) days of the first DND RHIB delivery:

- (a) A two (2) day, eight (8) hours per day (maximum) Technical Training course as follows:
  - i. Accommodate a class size of up to six (6) DND personnel;
  - ii. Include an overview of the DND RHIB systems and maintenance requirements;
  - iii. Include hands-on training for routine and corrective maintenance; and
  - iv. Include a copy of the training course and manuals in both hard copy and in electronic format (MS Word, MS PowerPoint or PDF) for each participant;
- (b) A two (2) day, eight (8) hours per day (maximum) Operator Training course as follows:
  - i. Accommodate a class size of up to six (6) DND personnel;
  - ii. Include an overview of the DND RHIB systems and maintenance requirements;
  - iii. Include hands-on (open water) operational training for operators;
  - iv. Include hands-on training for routine operator maintenance; and
  - v. Include a copy of the training course and manuals in both hard copy and in electronic format (MS Word, MS PowerPoint or PDF) for each participant.

All costs associated with attendance, transportation, accommodation and expenses for the DND personnel while at the Contractor's location are the responsibility of the Crown. The final dates for the training must be arranged with the Technical Authority.

#### **4.0 GOVERNMENT SUPPLIED MATERIAL/GOVERNMENT FURNISHED EQUIPMENT**

DND will provide Government Supplied Material (GSM) and Government Furnished Equipment (GFE) in accordance with Appendix 1.

#### **5.0 PROJECT AND SYSTEMS ENGINEERING MANAGEMENT**

##### **5.1 Project Manager**

The Contractor shall designate a Project Manager (PM) to lead the project for the duration of the Contract. The PM shall:

- (a) Be the primary point of contact between the Contractor and the DND TA and the PWGSC CA as it relates to the Contract;
- (b) Be responsible for planning, scheduling, organizing, directing, coordinating, executing and monitoring all aspects of the production of the DND RHIBS;
- (c) Provide resource management, risk management, and environmental health and safety oversight;
- (d) Provide reports and communications; and
- (e) Be responsible for closing out action items as it relates to the work conducted under the Contract.

##### **5.2 Project Management Program**

The Contractor shall prepare a Project Management Plan (PMP), and deliver and maintain all updates to it in accordance with the requirements of CDRL and DID PM-001. Through the implementation of the Project Management Program (and its associated programs - Systems Engineering, Configuration Management, Integrated Logistics Support and Quality Assurance) the Contractor shall ensure that all products being designed, manufactured, assembled, inspected, tested and delivered fully meet all requirements of the Contract and that all performance and technical requirements (Annex B) are traceable to the final product.

##### **5.2.1 Project Master Schedule**

The Contractor shall prepare a Project Master Schedule (PMS), and deliver and maintain all updates to it in accordance with the requirements of CDRL and DID PM-002. The DND approved PMS will be the governing document for scheduling activities.

##### **5.3 Systems Engineering Program**

The Contractor shall prepare a Systems Engineering Management Plan (SEMP), and deliver and maintain all updates to it in accordance with the requirements of CDRL and DID SE-101.

##### **5.3.1 Systems Design Document**

The Contractor shall prepare and deliver a Systems Design Document (SDD) for the DND RHIB in accordance with CDRL and DID SE-102.

##### **5.4 Meetings**

All project meetings and reviews are conducted to establish and maintain a common understanding of project objectives, priorities, and current issues as the project progresses. The Contractor shall schedule, plan and organize meetings on an as-required basis throughout the duration of the Contract. For each meeting, the Contractor shall:

- (a) Schedule the meeting with attendees to include (as a minimum) the Contractor's Project Manager and technical representatives as required, the PWGSC CA, the DND TA, other representatives as appropriate;
- (b) Provide all material to the PWGSC CA and DND TA that is identified for review at the meeting not less than one week prior to the meeting date;
- (c) Host the meeting at the Contractor location or alternatively conduct the meeting by video-conference when previously agreed with the PWGSC CA and DND TA prior to the release of the draft meeting agenda;
- (d) Support the chairing of the meeting by the PWGSC CA for the Programmatic Meetings and the DND TA for Technical Review meetings;
- (e) Prepare and deliver the Meeting Agenda in accordance with the requirements of CDRL and DID PM-003; and
- (f) Record, prepare and deliver the Meeting Minutes in accordance with the requirements of CDRL and DID PM-004;

#### 5.4.1 Progress Review Meetings (PRM)

The Contractor shall schedule, plan and organize Progress Review Meetings (PRMs) on a monthly basis, and when otherwise requested by the PWGSC CA, for the duration of the contract. During each PRM the Contractor shall provide a status of the overall contracted project, including programmatic, production, test, Integrated Logistics Support, subcontract, risk issues, and progress as it relates to the Project Master Plan and Schedule, and the associated Work Breakdown Structure. For each PRM, the Contractor shall:

- (a) Ensure that Contractor data, personnel and facilities are available for each formal meeting in order that the meetings may be conducted in an efficient manner; and
- (b) Include the following agenda items for discussion and resolution:
  - i. PMS and updates;
  - ii. Contractual Issues;
  - iii. Financial Issues;
  - iv. Technical Issues;
  - v. Integrated Logistics Support (ILS) Issues;
  - vi. Environmental, Health and Safety Issues; and
  - vii. Previous action items.

The PWGSC CA or authorized representative will chair the PRMs and will approve decisions prior to adjourning the PRM, with the resulting decisions reflected in the Meeting Minutes.

#### 5.4.2 Technical Review Meetings (TRM)

The Contractor shall schedule, plan and organize Technical Review Meetings (TRMs) on a monthly basis, and when otherwise requested by the PWGSC CA, for the duration of the contract (normally in conjunction with the PRM). The TRMs are to update project status as it relates to the technical concerns, and resolution of action items. In the conduct of the TRMs the Contractor shall:

- (a) Review all technical action items and address each action item status (open/closed), impact, and action responsibilities;

- (b) Describe each technical concern and resolution strategy; and
- (c) Support the initiation of additional action items by both the Crown and the Contractor.

#### 5.4.2.1 Design Review Meetings

The Contractor shall conduct the following design review meetings, as a minimum, throughout the duration of the Contract:

- (a) Systems Requirements Review (SRR) - The SRR is a single formal system level review conducted early in the project to ensure that system requirements are completely articulated and that a mutual understanding exists between the Crown and Contractor. In the conduct of the SRR the Contractor shall:
  - i. Confirm an understanding of the design mission;
  - ii. Confirm an understanding of the requirements for all sub-systems;
  - iii. Confirm an understanding of requirements related to user interfaces;
  - iv. Confirm system requirements and performance requirements are testable;
  - v. Identify technical risks at the system level and plan mitigation measures to ensure delivery meets specification, cost, and schedule expectations;
  - vi. Confirm an understanding of quality assurance requirements throughout the manufacturing process;
  - vii. Review the Systems Design Document (Initial); and
  - viii. Confirm material selection for all subsystem assemblies including “or equivalent” substitution;
- (b) Critical Design Review (CDR) - The CDR is a single formal system level review conducted to assess the final design as captured in product specifications and respective detailed design documentation. In the conduct of the CDR the Contractor shall:
  - i. Provide an overview of the total system design that satisfies all requirements;
  - ii. Describe any system changes incorporated since the SRR;
  - iii. For each sub-system describe system architecture addressing modifications and additions to the proven design;
  - iv. Describe user interfaces and displays;
  - v. Describe how the design satisfies safety critical requirements and Government regulations;
  - vi. Describe the design from the perspective of reliability, availability, and maintainability;
  - vii. Describe test and analysis plans;
  - viii. Describe quality assurance plans to be implemented throughout the manufacturing process
  - ix. Describe where industry and government standards are applied;
  - x. Identify lower level tests to be performed throughout the manufacturing process on the components, modules, and subsystems;
  - xi. Address identified risks that impact successful completion; and
  - xii. Review the Systems Design Document (Developmental);
- (c) Production Readiness Review (PRR) - The PRR is a single formal system level review conducted to confirm that the 1<sup>st</sup> Article Testing is completed to the satisfaction of the Crown and all design and quality assurance issues resulting from the testing are incorporated into the construction of the remaining boats. In the conduct of the PRR the Contractor shall:
  - i. Describe the results of the 1<sup>st</sup> Article testing;
  - ii. Describe updated design items resulting from 1<sup>st</sup> Article testing;



- iii. Describe updated quality assurance items resulting from 1st Article testing;
- iv. Describe test approaches to be applied to the acceptance testing for the remaining boats;  
and
- v. Review the Systems Design Document (Production).

#### 5.4.3 Requirements Verification Matrix

The Contractor shall prepare a Requirements Verification Matrix in accordance with CDRL and DID PM-006 to be used by DND to conduct the pre-delivery verification for each DND RHIB.

#### 5.4.4 Close-Out Meeting

The Close Out Meeting is a single formal meeting conducted to acknowledge project close out and ensure all action items, both technical and programmatic, have been closed. In the conduct of the Close-Out Meeting, the Contractor shall review all project activities and milestones and confirm completion in accordance with the Contract.

#### 5.5 Action Item Tracking

The Contractor shall establish and maintain an Issue Tracking Database (ITDB) to be used to monitor issues, assign responsibility, direct action and track status. The ITDB shall electronically store Action Item data in a searchable, structured database. The Contractor shall collect and document all pertinent information in the ITDB, and present the current status of all action items at each PRM.

#### 5.6 Problem Reporting

Problem Reports are applicable to circumstances or situations including, but not necessarily limited to:

- (a) The identification of significant engineering problems, including those affecting safety and environment;
- (b) Anticipation of a milestone slippage;
- (c) Development of a significant problem affecting schedule or technical quality of the deliverables;  
and
- (d) Development of a significant problem that may affect the Work and/or planned activities under the Contract.

Within twenty-four (24) hours following the identification of a circumstance requiring a Problem Report, the Contractor shall:

- (a) First inform the PWGSC CA and/or DND TA by telephone; and
- (b) Prepare and submit the Problem Report in accordance with the requirements of CDRL and DID PM-005

#### 5.7 Monthly Progress Reports

The Contractor shall prepare and submit Monthly Progress Reports (MPRs) in the Contractor's own format in time to be discussed at the PRM. Progress Reports captures the project progress throughout the duration of the contract, and shall provide continuity of information from one month to the next in order of their appearance. The MPR shall include:

- (a) A brief narrative summary of the actual project schedule progress relative to the approved project baseline schedule;

- (b) A brief summary of all tasks and milestones attained and deferred in the period since the last report;
- (c) Substantiation addressing deferred activities and milestones with a plan in place to restore the original project schedule;
- (d) All technical action items opened and closed since the previous MPR submission;
- (e) Any issues that pose a risk to performance, schedule, and cost; and
- (f) A summary of critical risk mitigation and corrective measures to ensure that original performance, schedule, and cost objectives remain achievable.

#### 5.7.1 Milestones and Activities

The baseline Milestones related to the delivery of the DND RHIBs is based upon achieving specific design, production, testing and delivery points (Activities) in the project. The DND anticipated delivery Milestones are given in Table 1 and Platform Delivery Schedule in Table 2. Activities are annotated by a number prefixed with "A" (e.g., A1, A2, etc.), and Milestones are prefixed with "M" (e.g., M1, M2, M3, etc.).

Table 1: Milestones and Activities

No.	Activity/Milestone	Date	Frequency
<b>CA</b>	<b>Contract Award</b>	<b>CA</b>	<b>Once</b>
A1	Kick Off Meeting	CA+2 weeks	Once
A2	Systems Engineering Management Plan	CA+4 weeks	Once
A3	Systems Design Document (Initial)	CA+4 weeks	Once
A4	Trial and Evaluation Master Plan (Annex C)	CA+6 weeks	Once
A5	Trial Description and Test Procedures (Annex C)	CA+6 weeks	Once
<b>M1</b>	<b>System Requirement Review</b>	<b>CA+6 weeks</b>	<b>Once</b>
A6	Systems Design Document (Developmental)	CA+10 weeks	Once
<b>M2</b>	<b>Critical Design Review</b>	<b>CA+12 weeks</b>	<b>Once</b>
A7	1 <sup>st</sup> Article Test (Annex C)	CA+25 weeks	Once
A8	1 <sup>st</sup> Article Test Report (Annex C)	A7+2 weeks	Once
A9	1 <sup>st</sup> Article Acceptance		Once
A10	Systems Design Document (Production)	CA+28 weeks	Once
<b>M3</b>	<b>Production Readiness Review</b>	<b>CA+30 weeks</b>	<b>Once</b>
A11	Fleet Acceptance Test (Annex C)	1 Week prior to delivery	Per Boat
A12	Fleet Acceptance Test Report (Annex C)	1 Week prior to delivery	Per Boat

No.	Activity/Milestone	Date	Frequency
A13	Fleet Provisional Acceptance		Per Boat
A14	Fleet Acceptance		Per Boat
<b>M4</b>	<b>Final Delivery</b>	<b>CA+185 weeks</b>	<b>Once</b>
A15	Close Out Meeting	M4+6 Weeks	Once

Table 2: Platform Delivery Schedule

Hull No.	Activity/Milestone	Date	Est. Date
<b>1</b>	<b>1<sup>st</sup> Hull Delivery (for testing)</b>	<b>CA+6 months</b>	<b>Jan 14</b>
2	2 <sup>nd</sup> Hull Delivery	CA+8 months	Mar 14
3-7	Delivery of 5 hulls: Delivery approx. 10 week intervals		2014
8-12	Delivery of 5 hulls: Delivery approx. 10 week intervals		2015
13-15	Delivery of 3 hulls: Delivery approx. 10 week intervals		2016

## 6.0 TECHNICAL DATA PACKAGE

### 6.1 Technical Data Package (TDP)

The Contractor shall provide a final production Technical Data Package (TDP), in English, with the delivery of the first DND RHIB that includes

- (a) Operator Technical Manual (OTM) - two (2) master copies in both electronic and hard copy in the Contractors format (MS Word) to the TA, and one hard copy with each DND RHIB. The OTM shall contain a comprehensive technical and operating description of all boat systems and sub-systems including the following:
  - i. General Information Section - To include a description of the arrangement and function of all structures, systems, fittings, and accessories, with illustrations as appropriate to address:
    - a. Operating procedures;
    - b. Operational performance characteristics (temperatures, pressures, maneuvering characteristics, etc.);
    - c. Level One (Operator/Maintainer) fault isolation and repair instructions;
    - d. Planned Maintenance Requirements (including engine and drivetrain recommendations from the OEM); and
    - e. Troubleshooting Procedures;
  - ii. Technical Information Section - To include
    - a. A detailed description and illustrated parts list in a top-down breakdown format including the description, the manufacturer's part numbers, the source of supply and the NATO Stock Number (NSN) if available for all components including (but not limited to):
      1. Hull;
      2. Tube Set;
      3. Outboard engines;
      4. Major sub-systems (steering, fuel, electrical, etc.);
      5. Electronics;

- 6. Fittings, Accessories and Ancillary Equipment (including third party equipment supplied with the DND RHIB);
  - b. Weight of boat including a list of major equipment with the longitudinal center of gravity (LCG) and the vertical center of gravity (VCG);
  - c. Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step (including instructions necessary for onboard repair of the tube set);
  - d. Fire suppression material certificates and/or flotation foam rating sheets;
  - e. Copies of all welding certifications;
  - f. Test and Trial Results (confirming Operational Performance Parameters); and
  - g. Regulatory and Stability Information (as per Transport Canada Marine Safety Regulations TP 1332E) including structural calculations.
- (b) Verified as-built drawings of sufficient detail to enable the identification and removal of any field removable component by part number. The system drawing(s) shall include the following information for each item:
  - i. Item Name;
  - ii. NCage;
  - iii. Manufacturer Part Number (MPN);
  - iv. Price;
  - v. Volume;
  - vi. Weight; and
  - vii. Shelf Life (if applicable);
- (c) The following verified as-built drawings:
  - i. Hull form drawing including complete welding specifications; and
  - ii. Hull layout drawing including conduit layout, tank layout and internal crossmembers with complete welding specifications.

## **7.0 INITIAL SPARES AND SPECIALIZED TOOLS PACKAGE**

The Contractor shall provide the following:

- (a) A manufacturer's Recommended Spare Parts List (RSPL) required to operate the DND RHIB for a period of five hundred (500) hours of operation (in electronic format, MS Word or MS Excel) including the following information for each item:
  - i. Item Name;
  - ii. NCage;
  - iii. Manufacturer Part Number (MPN);
  - iv. Price;
  - v. Volume;
  - vi. Weight; and
  - vii. Shelf Life (if applicable).
- (b) A list of all Special Tools and Test Equipment (STTE) required to operate and/or maintain the DND RHIB (in electronic format, MS Word or MS Excel) including the following information for each item:
  - i. Item Name;
  - ii. NCage;
  - iii. Manufacturer Part Number (MPN);
  - iv. Price;

- v. Volume;
  - vi. Weight; and
  - vii. Shelf Life (if applicable).
- (c) With the delivery of each DND RHIB:
- i. Consumables from the RSPL (approved by DND);
  - ii. Tube Patch Repair Kit (OEM approved) to include:
    - a. Specialized glue and other chemicals required for tube repairs;
    - b. Patching material;
    - c. Tools/Equipment required for tube repairs;
    - d. Manual foot air pump; and
    - e. Pressure gauge;
  - iii. Specialized tools for Operator routine/emergency repair as follows:
    - a. Valve Adjustment Tools;
    - b. Air gauges to verify tube holding pressure; and
    - c. Other specialized tools from the STTE list (DND approved) required for routine operations and emergency maintenance;
  - iv. Spare Parts as follows:
    - a. Right Hand propeller (Quantity: 1);
    - b. Left Hand propeller (Quantity: 1);
    - c. Spare pressure relief valve (Quantity: 6);
    - d. Spare tube intercommunication valve (Quantity: 6);
    - e. Spare fittings for the fast inflation system (from the RSPL, approved by DND); and
    - f. Additional spare and emergency repair parts (from the RSPL, approved by DND).
- (d) A single package (i.e., not with each DND RHIB) prior to the delivery of the first DND RHIB:
- i. Additional specialized tools (from the STTE list, approved by DND) required for all Level One Repair/Maintenance activities of the tube set not included in the routine/emergency repair specialized tools with each DND RHIB above (Quantity: 8 sets);
  - ii. Tube repair equipment including:
    - a. Spare tube set (Quantity: 1);
    - b. Valve rebuild kits (Quantity: 10); and
    - c. Patching material (as recommended by the OEM);
  - iii. Propulsion equipment including:
    - a. Starting batteries (Quantity 10); and
    - b. Throttle and shift harness (Quantity 10);
  - iv. Electrical equipment including:
    - a. Fuses (Quantity: 10 each);
    - b. Light bulbs (Quantity: 10 each); and
    - c. Switches (lighting and console) (Quantity: 10 each);
  - v. Radar Arch and Fittings - miscellaneous commonly used fasteners (Quantity: 10 each); and
  - vi. Fasteners - 10% spare fasteners that are subject to general routine use;
- (e) Supplementary Provisioning Technical Documentation (SPTD) including required data elements listed on a Provisioning Parts Breakdown worksheet in accordance with D-01-100-214/SF-000.

## 8.0 REQUIREMENTS

The purpose of this section is to detail the quality assurance and configuration management requirements for the DND RHIB.

### 8.1 Service Locations

The Contractor must have a minimum of two (2) service centers, with at least one within 150 km (94 miles) of Halifax/Dartmouth, Nova Scotia and one within 150 km (94 miles) of Esquimalt, British Columbia, which the Technical Authority may choose from depending on the types of repairs needed and operational requirements. The Contractor must also have certified service facilities within the geographical restraints above to carry out specialized work as required by the Technical Authority including the following:

- (a) At each service location, the Contractor must service and repair the propulsion system using only mechanics/technicians that have an OEM (Mercury Marine) certification for the system/engines being serviced and repaired; and
- (b) At each service location, the Contractor must repair all structural defects in accordance with CSA 47.2 M 1987 using new materials. All welds (aluminum or otherwise) must be inspected by a Canadian Welding Bureau certified Welding Inspector, in accordance with CAS W47.2 M 1987, and copies of all welding certificates must be provided with each repair task. All welds must meet or exceed standards approved for the current configuration baseline, to the standards for each joint/weld as prescribed by the vessel manufacturer for each specific joint/weld.

### 8.2 Quality Assurance (QA) Program

The Contractor shall establish, implement, document and maintain a quality system that ensures conformance to contractual requirements and meets the objectives of the ISO 9001 or equivalent quality system model during performance of this contract. The Contractor shall conduct Quality Conformance Inspections and Tests during manufacture in accordance with the Contractor's standard acceptance test plan. Details of the test plan, and documentation of all inspections/tests, are to be provided to DND upon request. DND reserves the right to send a representative(s) to witness production acceptance testing for all DND RHIBs (mandatory and optional deliveries). DND will provide a minimum two (2) weeks' notice of an intended QA visit.

### 8.3 Configuration Management

The Contractor shall

- (a) Implement and maintain a DND QAR verifiable Configuration Management (CM) Program in accordance with MIL-HDBK-61A that ensures the management of engineering data is closely coordinated with the project-wide functions of Configuration, Data and Information Management;
- (b) Implement methods, procedures and controls to ensure effective configuration identification, configuration control, configuration status accounting, and configuration audits for the DND RHIB;
- (c) Deliver all DND RHIBs to the same product baseline that supports interchangeability/interoperability of parts; and
- (d) Maintain the established product baseline during repair. Any deviation from the baseline shall be approved in advance by the TA.

8.3.1 Configuration Control

The Contractor shall control, manage and track all changes to the established Product Baseline. Configuration control shall be maintained through the following:

- (a) The Contractor shall prepare and deliver Engineering Change Proposals (ECPs) in accordance with CDRL and DID SE-105;
- (b) The Contractor shall prepare and deliver Request for Deviations (RFDs) in accordance with CDRL and DID SE-106 when the Contractor determines that it is not possible to satisfy specified requirements;
- (c) The Contractor shall prepare and deliver Request For Waivers (RFWs) in accordance with CDRL and DID SE-107 in order to seek authorization to deliver a one-time lot of manufactured materials not meeting specified requirements, but for which the Contractor believes that the items are suitable for use "as is" or after rework or retrofit by an approved method;
- (d) The Contractor shall prepare and deliver Specification Change Notices (SCNs) in accordance with CDRL and DID SE-108, for each specification that require revision if ECPs or RFDs are approved;
- (e) The Contractor shall prepare and deliver Notice of Revision (NOR) in accordance with CDRL and DID SE-109, for drawings, associated lists and other non-specification type documents which require revision if ECPs or RFDs are approved; and
- (f) The Contractor shall neither change nor modify any item, component or product after Canada's approval of an ECP, without a new ECP.

## **APPENDIX 1      GSM/GFE**

The following will be supplied by DND;

- (a) Outboard motors as GSM to be installed on each DND RHIB as follows:
  - i. Fifteen (15) standard rotating (XL) Mercury Verado™ 350 hp outboard motors Model # 19V1AFMHH complete with a leg length of 63.5 cm (25 in) (Mercury part number 1600-880686T61); and
  - ii. Fifteen (15) counter rotating (CXL) Mercury Verado™ 350 hp outboard motors Model # 19V1AFNHH complete with a leg length of 63.5 cm (25 in) (Mercury part number 1600-880686T62);
- (b) The following as GFE to be used to fit for but not with on each DND RHIB and returned separately to DND:
  - i. Quantity two (2) AN/PRC 117F Multiband V/UHF radios;
  - ii. Quantity two (2) AN/PRC-148 MBITR radios; and
  - iii. Quantity two (2) Peltor headsets.

The delivery schedule for the GSM and GFE to the Contractor's facility and the terms and conditions of the loan will be determined and documented at the Kick-Off Meeting.



## **APPENDIX 2 IN-SERVICE SUPPORT (ISS)**

The ISS requirements for the DND RHIB include Additional Work Request (AWR) services, Repair and Overhaul (R&O) services, technical support services, TDP support, Field Service Representative (FSR) services and Contractor Furnished Parts as detailed in the following sections.

### **A2.1 Additional Work Request (AWR)**

The Contractor shall provide AWR services on the DND RHIBs to include non-warranty repair and modifications/upgrades at the discretion of DND. All DND RHIBs returned to the Contractor for repair shall have a Return Material Authorization (RMA) number assigned by DND in accordance with A-LM-184-001/JS-001 prior to the DND RHIB being shipped from the unit. All AWR work on a DND RHIB is to be authorized in advance by the PA (in writing) in accordance with the following:

- (a) Non-Warranty Repair:
  - i. Prior to acknowledging receipt, the Contractor shall:
    - a. Verify that the articles received correspond with the packing slip that accompanies the shipment and promptly report any losses or discrepancies to the TA; and
    - b. Inspect such articles to ensure that they are candidates for servicing under the contract. Items incorrectly received shall be promptly reported to the TA and segregated pending receipt of disposition instructions;
  - ii. Upon confirmation of receipt of DND equipment serviceable under the contract, the Contractor shall:
    - a. Open a work order;
    - b. Carry out a physical check to ensure that the item is complete and is in accordance with the accompanying vouchers;
    - c. Notify the TA of receipt of the equipment;
    - d. Determine the extent of the work required, prepare a cost estimate and submit it to the PA for approval. If approved, the TA will issue a Task Authorization on a DND 626 to complete the repair (no work is to commence until the DND 626 is received authorizing the repair); and
    - e. Complete the repair, test and return the DND RHIB to DND.
- (b) Modification/Upgrade
  - i. The Contractor will be authorized to proceed with the Work by the issuance of a "DND 626 - Task Authorization". Each Task Authorization will be signed by the TA to approve the scope of Work, and the PA to authorize the Work;
  - ii. The Contractor shall provide, within five (5) working days after receipt of the signed DND 626, acknowledgment of receipt of the task and acceptance of the terms. Upon acceptance of the terms of the task, the Contractor shall complete the task within the time frame and price stated;
  - iii. Upon completion of each task, the Contractor shall submit a Completion Certificate to the TA identified in the DND 626. The Certificate shall include the following information:
    - a. Completion date;
    - b. Reasons for any delay;
    - c. Recommendations for future improvements; and
    - d. Lessons learned.
  - iv. The TA identified on the DND 626 will approve or reject the work performed, with rationale in writing, within fifteen (15) working days after receipt of the Completion Certificate.

#### A2.2 Contractor Supplied Parts

The Contractor shall provide the repair parts required for AWR repairs, including the location of sources for the required parts. The Contractor is not required to maintain a spares inventory specifically for DND; however, the Contractor shall maintain a spares supply chain that is compatible with the targeted turn-around time (TAT). The targeted TAT is thirty (30) calendar days as detailed in the Task Authorization for AWR services, including all aspects of administration, work completion and testing. Where this target cannot be met, the Contractor shall immediately notify the PA of the delay and of any extenuating circumstances that would cause significant impediment to timely completion of the work. In the event that an original part is no longer available and the Contractor determines that a replacement part will serve with respect to fit, form, function and at a reasonable cost, then the use of that part shall be approved by the PA in advance of the repair. As a minimum, substituted parts shall remain fully interchangeable (fit, form and function) with articles catalogued under the same reference number, part number and of the same modification status.

#### A2.3 Warranty

Following completion of AWR repairs the Contractor shall provide a warranty against material defect and workmanship, at no additional cost to DND, for a period of at least one (1) year. Manufacturer's warranty for items installed in the vessel (e.g., equipment, instruments, auxiliaries, etc.) shall be in accordance with the individual manufacturer's standard warranty. Copies of all warranties shall be provided to the TA.

#### A2.4 Repair and Overhaul (R&O)

The Contractor shall provide R&O services in order to extend the DND RHIB service life. The prime requirement in the R&O process is to return each vessel to the approved configuration in accordance with the applicable drawings as last approved by the TA. The Contractor shall carry out repairs at its facility, or at a third party location as applicable, to include (but not limited to) the following:

- (a) Aluminum hull, deck, and internal structures;
- (b) Buoyancy tube complete with valves, baffles, rub strip, bolting flange, and other attachments;
- (c) Propulsion system;
- (d) Ancillary equipment;
- (e) Seating;
- (f) Console;
- (g) Navigation system;
- (h) Hoisting system; and
- (i) Trailer.

#### A2.5 Repair Process

The provision of R&O services on an "as and when required" basis is to be in accordance with the following process:

- (a) All DND RHIBs returned to the Contractor for repair shall have a Return Material Authorization (RMA) number assigned by DND in accordance with A-LM-184-001/JS-001 prior to the DND RHIB being shipped from the unit;
- (b) Upon receipt of the DND RHIB at the Contractor's facility, the Contractor shall:
  - i. Conduct a receipt inspection in accordance with Section A2.6; and
  - ii. Document the results of the inspection in a Receipt Report detailing the following:
    - a. Identification plate information (Manufacturer #, Serial #, Year/Month/Date of Manufacture);
    - b. Condition report of all systems and components;
    - c. A list of repairs required to bring the DND RHIB to the baseline configuration/condition including labour costs;
    - d. A list of materials required with an itemized replacement cost;
    - e. An estimated time to complete repairs (including performance testing);
    - f. A list of inspections, tests and trial to be performed including a schedule; and
    - g. Total cost;
- (c) DND will authorize the Work by the issuance of a "DND 626 - Task Authorization", co-signed by the PWGSC CA;
- (d) The Contractor shall:
  - i. Provide, within five (5) working days after receipt of the signed DND 626, acknowledgment of receipt of the Task Authorization and acceptance of the terms;
  - ii. Complete the tasks identified in the Task Authorization within the time frame and price stated; and
  - iii. Upon completion of each task, submit a Completion Certificate to the TA identified in the DND 626 including the following information:
    - a. Completion date;
    - b. Reasons for any delay;
    - c. Recommendations for future improvements; and
    - d. Lessons learned.
- (e) The TA identified on the DND 626 will approve or reject the work performed, with rationale in writing, within fifteen (15) working days after receipt of the Completion Certificate.

#### A2.6 Receipt Inspection

Upon arrival at the repair facility, the Contractor shall inspect the DND RHIB for defects, unauthorized modifications, uncompleted modifications and missing equipment to include the following (as a minimum):

- (a) Verify the identification plate on the console or transom and record the data on the receipt report;
- (b) Hull components - A general inspection of the hull and peripheral equipment/structures, including all non-buoyancy tube components;
- (c) Non-Destructive testing of all aluminum structural components where required to determine structural defects;
- (d) Console - A general inspection of the console, including functional testing of all instrumentation and controls;

- (e) Inflatable collar (buoyancy tube) inspected for general condition and leak-tested;
- (f) Propulsion system - The propulsion system, including the outboard engines, by a mechanic/technician that has an OEM certification for the system/engines being evaluated;
- (g) Electrical System - A complete inspection of electrical wiring and components. All batteries are to be replaced with new, fully charged, 12 Volt marine grade batteries, model Odyssey 34M-PC1500MS, prior to return of the vessel to DND;
- (h) Ancillary equipment - An inspection of all remaining components and equipments not covered above, including functional testing where applicable; and
- (i) Trailer - A general inspection of the trailer (if delivered with the DND RHIB) for damage/defects including functional testing.

A2.7 Work Performance

As a minimum, the following Work is to be completed by the Contractor as part of the R&O process:

- (a) Aluminum Hull, Deck, and Structures:
  - i. Structural defects shall be repaired in accordance with CSA W47.2 M 1987 using new materials;
  - ii. All welds (aluminum or otherwise) shall be inspected by a Canadian Welding Bureau certified Welding Inspector in accordance with CSA W47.2 M 1987; and
  - iii. Copies of all welding certifications shall be provided with each DND RHIB.
- (b) Propulsion System shall be serviced and repaired by a mechanic/technician that has an OEM certification for the system/engines being serviced and repaired;
- (c) The buoyancy collar shall be tested for leaks on completion of any inflation collar repairs as follows:
  - i. Air Retention;
  - ii. Overpressure;
  - iii. Bulkhead Pressure Test; and
  - iv. Valve leakage;
- (d) The lifting points and harness shall be tested in accordance with Section 3.0 (Certifications) of Annex C including provision of test certificates and identification plates;
- (e) Pre-Launch Trials - Prior to launching the DND RHIB for Sea Trials, the following tests shall be completed:
  - i. System Tests - All of the DND RHIB systems (i.e., mechanical, electrical, lighting, etc.) tested for correct functioning including confirmations that all components are properly serviced with fluids, coolants, and lubricants; and
  - ii. Weight - Weight of the complete boat at Normal Load Configuration determined and recorded;
- (f) Sea Trials - A full series of sea trials witnessed, at DND's discretion, by the TA and/or an authorized DND representative is to be completed by the Contractor. The Contractor shall:
  - i. Arrange the trial schedule in conjunction with the TA, and provide an agenda for all trials based upon the agreed upon dates
  - ii. Furnish, install and operate all trial instrumentation and equipment;

- iii. Provide calibration data and certification of the accuracy of the instrumentation, in accordance with ISO 10012-1
  - iv. Conduct all trials in accordance with the recurring Fleet Acceptance Trial program detailed in Annex C;
  - v. After satisfactory completion of the trials, remove all trial instrumentation;
- (g) Test and Trial Documentation - The Contractor shall:
- i. Provide clear, complete and current written inspection and test procedures for each inspection operation, including those relating to the assessment of the adequacy of process controls;
  - ii. Identify to the TA, on request, those inspection operations for which no written procedures are provided;
  - iii. Maintain records of all inspections, tests and trials performed; and
  - iv. Provide a written report to the TA detailing the results;
- (h) Post-Trial Servicing and Inspection - On completion of trials, prior to delivery to DND, the Contractor shall:
- i. Visually examine all equipment for signs of mechanical damage, electrical damage, etc., and all defects and deficiencies noted
  - ii. Correct defects and deficiencies, where possible, prior to delivery to DND; and
  - iii. Note defects and deficiencies that are not rectified prior to delivery to DND in the R&O completion report for future rectification by the Contractor.

#### A2.8 Contractor Supplied Parts

The Contractor shall provide the repair parts required for R&O, including the location of sources for the required parts. In the event that an original part is no longer available and the Contractor determines that a replacement part will serve with respect to fit, form, function and at a reasonable cost, then the use of that part shall be approved by the PA in advance of the repair. As a minimum, substituted parts shall remain fully interchangeable (fit, form and function) with articles catalogued under the same reference number, part number and of the same modification status.

#### A2.9 Warranty

Following completion of R&O the Contractor shall provide a warranty against material defect and workmanship, at no additional cost to DND, for a period of at least one (1) year. Manufacturer's warranty for items installed in the vessel (e.g., equipment, instruments, auxiliaries, etc.) shall be in accordance with the individual manufacturer's standard warranty. Copies of all warranties shall be provided to the TA.

#### A2.10 Care of Vessel

All parts of the vessel including, but not limited to, structure, deck coverings, fittings, outfit, furniture, insulation, paint work, machinery auxiliaries, systems appliances and apparatus shall be maintained in a satisfactory condition (equivalent or better than that when received by the Contractor) during the entire period the vessel is in the Contractor's possession. The Contractor shall have in place controls and procedures to prevent damage and/or deterioration of the DND RHIBs, including the following protective measures:

- (a) Prevention of corrosion or other deterioration;
- (b) Fire prevention;
- (c) Exposure of internal system components to dust, moisture or other foreign matter;

- (d) Exposure to extremes in temperature;
- (e) Damage during construction to unpainted, polished and moving parts; and
- (f) Protection from freezing.

**A2.11 Preparation for Shipment**

In preparation for shipping the DND RHIB (post repair), the Contractor shall ensure that:

- (a) The interior is clean and free of debris;
- (b) The bilges are dry and free of oil and debris;
- (c) Engine and drivetrain are prepared for shipping in accordance with OEM recommendations for storage of up to one year in an environment that will be subjected to freezing temperatures;
- (d) Wire tie a durable warning tag to the steering wheel indicating that the boat has been preserved for shipping and storage and that pre-startup procedures should be used to reactivate the propulsion systems;
- (e) Secure the boat to the trailer to prevent movement or damage during shipping and storage;
- (f) Ensure all associated spare parts and documentation are shipped with the boat; and
- (g) Install a shrink-wrap cover to protect the boat during shipping and storage.

**A2.12 Technical Support**

The Contractor shall provide technical support during the hours of 0800-1700 local standard time at its facility to include unlimited phone and email Customer Service Representative or Customer Service Technical support team for the purposes of:

- (a) Aiding with the use and maintenance of the vessels;
- (b) Troubleshooting of problems encountered; and
- (c) Provision of document updates.

**A2.13 TDP Support**

The Contractor shall produce and maintain the initial DND RHIB TDP to the construction baseline at time of build. In the event of any changes to the equipment configuration, integrated logistic support and/or operating/maintenance procedures as a result of parts replacement or equipment update, the Contractor shall, at no additional cost to DND:

- (a) Inform the TA, in writing, of all of the necessary changes to the TDP;
- (b) Receive approval from the TA prior to making any changes; and
- (c) Provide to the TA updated versions of the TDP.

**A2.14 Field Service Representative (FSR)**

The Contractor shall provide FSR support within Canada at the discretion of DND. Each call-out for FSR support will be via an authorized DND 626 Call-up.

**A2.15 Contractor Furnished Parts**

The Contractor shall provide, on as and when required basis, parts and equipment from the list of parts associated with the as-built drawings at Section 6.1 (b) and the list of Special Tools and Test Equipment at Section 7.0 (b). All demands for parts and equipment will be via an authorized DND 626 Call-up. The Contractor shall not provide parts and equipment to the end users without a signed DND 626 Call-up.

### APPENDIX 3 CONTRACT DATA REQUIREMENTS LISTS (CDRLS)

**Block A – Annex Description** – Provides the name of the System or Item for which the CDRL applies.

**Block B – Contract or RFP Number**– Identifies the Contract or RFP for which the CDRL applies.

**Block C - SOW Identifier** – Identifies the SOW for which the CDRL applies.

**Block D - Data Category** – Identifies the general category of the data for which the CDRL is being prepared.

**Block E – Contractor** – Identifies the contractor responsible for the delivery of the CDRL.

**Block 1 - Item Number** –Denotes the sequential alphanumerical number assigned to the CDRL. This identification number is composed of a WBS alpha code supplemented by a sequential number (e.g. CDRL-PM-001). The abbreviation codes used for the prefix are:

"PM" for Project Management  
"SE" for Systems Engineering

**Block 2 – Title or Description of Data** - Denotes the title of the data to which the CDRL refers.

**Block 3 - Subtitle** – A subtitle is used only if the title requires further identification.

**Block 4 – Authority (DID)** - Indicates the number of the DID to which the CDRL refers.

**Block 5 - Contract Reference** – Refers to the specific paragraph number of the Statement of Work that will assist in identifying the work effort associated with the data item.

**Block 6 – Requiring Office** – Refers to the technical office of primary interest responsible for defining the data requirement, and for ensuring the adequacy of the delivered data.

**Block 7 - Inspection** - This block indicates the requirement for INSPECTION and ACCEPTANCE of the data. Enter the appropriate code, if applicable; otherwise enter N/A:

SS = Source, Source  
DD = Destination, Destination  
SD = Source, Destination



DS = Destination, Source

**Block 8 – APP Code** - denotes whether the data is to be submitted for approval or information. Block 8 indicates items of critical data requiring specific advanced written approval, such as test plans, identified by placing an “A” in this field. These data may require submission of a preliminary draft prior to publication of a final document. When a preliminary draft is required, Block 16 shall show the length of time for Government approval/disapproval and when final is to be delivered. Block 16 also indicates the extent of the approval requirements, e.g. approval of technical content and/or format. Unless otherwise specified in Block 16 of the CDRL, an “I” or a blank in Block 8 means that the deliverable will be reviewed by Canada for acceptability of format, clarity and completeness. Once accepted, the Deliverable shall be considered for information only. The approval code in Block 8 of the CDRL is intended for deliverable end items submitted after contract award. If advance approval is not required, this block is marked as “N/A”

**Block 9 – Input** – An “X” indicates that data is the integrated results of specific inputs from associated contractors. If otherwise, this block is blank.

**Block 10 – Frequency** - Denotes the frequency of delivery of the data. The following frequency codes are used:

ASREQ	As required
ONE/R	One time with revisions

Note: For Blocks 10 to 13 the date(s) and frequencies may be expressed as Day/Month/year or in relation to specific events using the above listed codes.

**Block 11 – As of Date** – As specified in Block 16.

**Block 12 – Date of First Submission** – The initial submission date or constraint for the 1st submission of the data item is indicated in this block using typical abbreviations listed under Block 11 above.

**Block 13 – Date of Subsequent Submission** - If data is to be submitted more than once, specifies any subsequent data deliveries dates, (to be read in conjunction with Block 12), otherwise enter “N/A”. If submittal is constrained by a specific event or milestone, the constraint is entered such as 15 day after EOQ.

**Block 14 Distribution** – This block indicates the addressees/office and number of copies (hard/soft) to be provided to Canada during implementation of Contract.

**Block 15 – TOTAL** – Indicates the total number of copies (hard copies and soft copies separately) required for both the original submission and the final submission.

APPENDIX 3 to ANNEX A to W6399-12-DD09  
14 June 2013

**Block 16 – Remarks** - Where other blocks refer to Block 16, then the associated block number is indicated with the information, and a “See Block 16” note would be entered in the referring block.

**Block - Prepared By** – This block identifies the CDRL originator’s name and designation.

**Block – Prepared Date** – This block indicates the date of the CDRL preparation.

**Block – Approved By** – This block contains the identification information, such as name and designation, of the person approving the CDRL.

**Block – Approved Date** – This block indicates the date of the CDRL approval.

**Blocks 17 –19** – These blocks are for Contractor input as required as part of the RFP or Contract. These blocks are not used by the TA.

CDRL List

The following section lists the CDRLs (Block 2 – Title or Description of Data) as well as their associated Data item Description (DID) number (Block 4 – Authority: Data Item Number):

CDRL #	Title	DID #
CDRL PM-001	Project Management Plan (PMP)	DID PM-001
CDRL PM-002	Project Master Schedule (PMS)	DID PM-002
CDRL PM-003	Meeting Agenda	DID PM-003
CDRL PM-004	Meeting Minutes	DID PM-004
CDRL PM-005	Problem Report	DID PM-005
CDRL PM-006	Requirements Verification Matrix	DID PM-006
CDRL SE-101	Systems Engineering Management Plan (SEMP)	DID SE-101
CDRL SE-102	Systems Design Document	DID SE-102
CDRL SE-103	Systems Breakdown Structure	DID SE-103
CDRL SE-104	Equipment Breakdown Structure (EBS)	DID SE-104
CDRL SE-105	Engineering Change Proposal (ECP)	DID SE-105
CDRL SE-106	Request for Deviation (RFD)	DID SE-106
CDRL SE-107	Request for Waiver (RFW)	DID SE-107
CDRL SE-108	Specification Change Notice (SCN)	DID SE-108
CDRL SE-109	Notice of Revision	DID SE-109

CDRL-PM-001 PROJECT MANAGEMENT PLAN									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat						B. CONTRACT/RFP NUMBER W6399-12-DD09			
C. SOW IDENTIFIER			D. DATA CATEGORY Project Management			E. CONTRACTOR TBD			
1. ITEM NUMBER PM-001			2. TITLE OR DESCRIPTION OF DATA Project Management Plan (PMP)			3. SUBTITLE N/A			
4. AUTHORITY (Data Item Number) PM-001			5. CONTRACT REFERENCE SOW Para 5.2			6. REQUIRING OFFICE DND TA			
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		a. ADDRESS	
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APPENDIX 3 to ANNEX A to W6399-12-DD09  
14 June 2013

CDRL-PM-002 PROJECT MASTER SCHEDULE										
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat			B. CONTRACT/RFP NUMBER W6399-12-DD09							
C. SOW IDENTIFIER		D. DATA CATEGORY Project Management			E. CONTRACTOR TBD					
1. ITEM NUMBER PM-002		2. TITLE OR DESCRIPTION OF DATA Project Master Schedule (PMS)			3. SUBTITLE N/A					
4. AUTHORITY (Data Item Number) PM-002		5. CONTRACT REFERENCE SOW Para 5.2.1			6. REQUIRING OFFICE DND TA					
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES		
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		b. COPIES		
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CDRL-PM-003 MEETING AGENDA									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat							B. CONTRACT/RFP NUMBER W6399-12-DD09		
C. SOW IDENTIFIER		D. DATA CATEGORY Project Management							
E. CONTRACTOR		TBD							
1. ITEM NUMBER PM-003		2. TITLE OR DESCRIPTION OF DATA Meeting Agenda							
4. AUTHORITY (Data Item Number) PM-003		5. CONTRACT REFERENCE SOW Para 5.4(c)							
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		a. ADDRESS	
								b. COPIES	
								INITIAL	
								Hard Copy	
								Soft Copy	
								FINAL	
16. REMARKS									
Block 12. The Meeting Agenda shall be submitted for review no later than ten (10) working days prior to each meeting.									
Block 13. The revised Meeting Agenda, addressing the comments from Canada, shall be tabled at the meeting.									
Response Time. Comments on the Meeting Agenda, including additions or deletion of discussion items, will be provided by Canada within five (5) working days of receipt.									
PREPARED BY:		DATE		APPROVED BY					
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL			
						1			
						2			
						2			
						2			

CDRL-PM-004 MEETING MINUTES							
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat		B. CONTRACT/RFP NUMBER W6399-12-DD09					
C. SOW IDENTIFIER		E. CONTRACTOR TBD					
1. ITEM NUMBER PM-004		3. SUBTITLE N/A					
4. AUTHORITY (Data Item Number) PM-004		6. REQUIRING OFFICE DND TA					
7. INSPECTION DD		14. DISTRIBUTION and ADDRESSEES					
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8. APP CODE A				Hard Copy	Soft Copy	Hard Copy	Soft Copy
16. REMARKS				1	1	1	1
Block 12. The Meeting Minutes, including action items, shall be submitted for review within two (2) working days following each meeting.					1		1
Block 13. Revised Meeting Minutes, addressing the comments from Canada, shall be submitted for approval within two (2) working days of receipt of comments.							
Response Time. Comments on the Meeting Minutes will be provided by Canada within five (5) working days of receipt.							
PREPARED BY:		DATE		APPROVED BY			
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL	
						1      2      1      2	

CDRL-PM-005 PROBLEM REPORT									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat			B. CONTRACT/RFP NUMBER W6399-12-DD09						
C. SOW IDENTIFIER			E. CONTRACTOR TBD						
1. ITEM NUMBER PM-005			3. SUBTITLE N/A						
4. AUTHORITY (Data Item Number) PM-005			6. REQUIRING OFFICE DND TA						
7. INSPECTION SD			14. DISTRIBUTION and ADDRESSEES						
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16. REMARKS			PWGSC CA						
			DND TA						
PREPARED BY:			DATE		APPROVED BY				
17. CONTRACT FILE/DOCUMENT NUMBER			18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE				
					15. TOTAL				
					2				

CDRL-PM-006 REQUIREMENTS VERIFICATION MATRIX							
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat				B. CONTRACT/RFP NUMBER W6399-12-DD09			
C. SOW IDENTIFIER		D. DATA CATEGORY Project Management		E. CONTRACTOR TBD			
1. ITEM NUMBER PM-006		2. TITLE OR DESCRIPTION OF DATA Requirements Verification Matrix		3. SUBTITLE N/A			
4. AUTHORITY (Data Item Number) PM-006		5. CONTRACT REFERENCE SOW Para 5.4.3		6. REQUIRING OFFICE DND TA			
7. INSPECTION DD		9. INPUT		10. FREQUENCY ONE/R		12. DATE OF 1st SUBMISSION See Block 16	
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16	
16. REMARKS Block 12. The Requirements Verification Matrix (RVM) shall be submitted for review a minimum of sixty (60) days prior to the commencement of 1st Article Sea Trials. Canada will provide comments on the RVM within ten (10) working days of receipt. Block 13. The updated RVM, addressing the comments from Canada, shall be submitted for acceptance within ten (10) working days of the receipt of comments.							
PREPARED BY:		DATE		APPROVED BY			
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL	
						2      2      2      2	



CDRL-SE-101 SYSTEMS ENGINEERING MANAGEMENT PLAN (SEMP)									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat			B. CONTRACT/RFP NUMBER W6399-12-DD09						
C. SOW IDENTIFIER			E. CONTRACTOR TBD						
1. ITEM NUMBER SE-101			3. SUBTITLE N/A						
4. AUTHORITY (Data Item Number) SE-101			6. REQUIRING OFFICE DND TA						
7. INSPECTION DD			14. DISTRIBUTION and ADDRESSEES						
8. APP CODE A			a. ADDRESS			b. COPIES			
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16. REMARKS			PWGSC CA						
			DND TA						
PREPARED BY:			DATE		APPROVED BY				
17. CONTRACT FILE/DOCUMENT NUMBER			18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL		
							2      2      2      2		

APPENDIX 3 to ANNEX A to W6399-12-DD09  
14 June 2013

CDRL-SE-102 SYSTEMS DESIGN DOCUMENT									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat			B. CONTRACT/RFP NUMBER W6399-12-DD09						
C. SOW IDENTIFIER		D. DATA CATEGORY Systems Engineering Data		E. CONTRACTOR TBD					
1. ITEM NUMBER SE-102		2. TITLE OR DESCRIPTION OF DATA Systems Design Document							
4. AUTHORITY (Data Item Number) SE-102		5. CONTRACT REFERENCE SOW Para 5.3.1							
7. INSPECTION DD		9. INPUT		10. FREQUENCY ONE/R		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
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CDRL-SE-103 SYSTEMS BREAKDOWN STRUCTURE									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat						B. CONTRACT/RFP NUMBER W6399-12-DD09			
C. SOW IDENTIFIER			D. DATA CATEGORY Systems Engineering Data			E. CONTRACTOR TBD			
1. ITEM NUMBER SE-103			2. TITLE OR DESCRIPTION OF DATA Systems Breakdown Structure			3. SUBTITLE N/A			
4. AUTHORITY (Data Item Number) SE-103			5. CONTRACT REFERENCE SOW Para 5.3.1			6. REQUIRING OFFICE DND TA			
7. INSPECTION DD		9. INPUT		10. FREQUENCY ONE/R		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
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CDRL-SE-104 EQUIPMENT BREAKDOWN STRUCTURE (EBS)									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat						B. CONTRACT/RFP NUMBER W6399-12-DD09			
C. SOW IDENTIFIER			D. DATA CATEGORY Systems Engineering Data			E. CONTRACTOR TBD			
1. ITEM NUMBER SE-104		2. TITLE OR DESCRIPTION OF DATA Equipment Breakdown Structure (EBS)					3. SUBTITLE N/A		
4. AUTHORITY (Data Item Number) SE-104		5. CONTRACT REFERENCE SOW Para 5.3.1					6. REQUIRING OFFICE DND TA		
7. INSPECTION DD		9. INPUT		10. FREQUENCY ONE/R		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		b. COPIES	
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<b>CDRL-SE-105 ENGINEERING CHANGE PROPOSAL (ECP)</b>									
<b>A. ANNEX DESCRIPTION</b> DND Rigid Hull Inflatable Boat							B. CONTRACT/RFP NUMBER W6399-12-DD09		
C. SOW IDENTIFIER	D. DATA CATEGORY	E. CONTRACTOR							
	Systems Engineering Data	TBD							
1. ITEM NUMBER SE-105	2. TITLE OR DESCRIPTION OF DATA Engineering Change Proposal								
4. AUTHORITY (Data Item Number) SE-105	5. CONTRACT REFERENCE SOW Para 8.3.1(a)								
7. INSPECTION DD	9. INPUT	10. FREQUENCY ASREQ	12. DATE OF 1st SUBMISSION N/A	14. DISTRIBUTION AND ADDRESSES					
8. APP CODE A		11. AS OF DATE See Block 16	13. DATE OF SUBSEQUENT SUBMISSION/EVENT N/A	a. ADDRESS	b. COPIES				
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16. REMARKS  Block 11. Engineering Change Proposals (ECPs) shall be submitted for review prior to any engineering changes to system assemblies, sub-assemblies or component s, to request authorization to depart from a particular performance or design requirement of the contract, specific at ion, or reference document.  Response Time: Approval or Rejection of ECPs will be provided by Canada within ten (10) working days of receipt.				PWGSC CA			Hard Copy	Soft Copy	
				DND TA					
PREPARED BY:				DATE	APPROVED BY				
17. CONTRACT FILE/DOCUMENT NUMBER	18. ESTIMATED NO OF PAGES	19. ESTIMATED PRICE		15. TOTAL				1	2

CDRL-SE-106 REQUEST FOR DEVIATION									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat						B. CONTRACT/RFP NUMBER W6399-12-DD09			
C. SOW IDENTIFIER		D. DATA CATEGORY Systems Engineering Data			E. CONTRACTOR TBD				
1. ITEM NUMBER SE-106		2. TITLE OR DESCRIPTION OF DATA Request for Deviation (RFD)			3. SUBTITLE N/A				
4. AUTHORITY (Data Item Number) SE-106		5. CONTRACT REFERENCE SOW Para 8.3.1(b)			6. REQUIRING OFFICE DND TA				
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION N/A		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE A				11. AS OF DATE See Block 16		13. DATE OF SUBSEQUENT SUBMISSION/EVENT N/A		a. ADDRESS	
16. REMARKS		PWGSC CA							
		DND TA							
PREPARED BY:		DATE		APPROVED BY					
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL			
						2			

CDRL-SE-107 REQUEST FOR WAIVER									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat			B. CONTRACT/RFP NUMBER W6399-12-DD09						
C. SOW IDENTIFIER		D. DATA CATEGORY Systems Engineering Data							
E. CONTRACTOR		TBD							
1. ITEM NUMBER SE-107	2. TITLE OR DESCRIPTION OF DATA Request for Waiver (RFW)		3. SUBTITLE N/A						
4. AUTHORITY (Data Item Number) SE-107	5. CONTRACT REFERENCE SOW Para 8.3.1(c)		6. REQUIRING OFFICE DND TA						
7. INSPECTION DD	9. INPUT	10. FREQUENCY ASREQ	12. DATE OF 1st SUBMISSION N/A	13. DATE OF SUBSEQUENT SUBMISSION/EVENT N/A	14. DISTRIBUTION and ADDRESSEES				
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								1	1
16. REMARKS Block 11. Requests For Waiver (RFW) shall be submitted for review when the Contractor determines either during or after manufacture of items, that the items do not meet specified requirements, but nevertheless believes that the items are suitable for use as is or after rework or retrofit by an approved method.  Response Time: Approval or Rejection of RFW's will be provided by Canada within ten (10) working days of receipt									
PREPARED BY:		DATE	APPROVED BY						
17. CONTRACT FILE/DOCUMENT NUMBER	18. ESTIMATED NO OF PAGES	19. ESTIMATED PRICE							
		15. TOTAL							
		2							
		2							

CDRL-SE-108 SPECIFICATION CHANGE NOTIFICATION										
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat				B. CONTRACT/RFP NUMBER W6399-12-DD09						
C. SOW IDENTIFIER		D. DATA CATEGORY Systems Engineering Data			E. CONTRACTOR TBD					
1. ITEM NUMBER SE-108		2. TITLE OR DESCRIPTION OF DATA Specification Change Notification			3. SUBTITLE N/A					
4. AUTHORITY (Data Item Number) SE-108		5. CONTRACT REFERENCE SOW Para 8.3.1(d)			6. REQUIRING OFFICE DND TA					
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION N/A		14. DISTRIBUTION and ADDRESSEES		
8. APP CODE				11. AS OF DATE See Block 16		13. DATE OF SUBSEQUENT SUBMISSION/EVENT N/A		a. ADDRESS		
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CDRL-SE-109 NOTICE OF REVISION									
A. ANNEX DESCRIPTION DND Rigid Hull Inflatable Boat							B. CONTRACT/RFP NUMBER W6399-12-DD09		
C. SOW IDENTIFIER			D. DATA CATEGORY Systems Engineering Data				E. CONTRACTOR TBD		
1. ITEM NUMBER SE-109			2. TITLE OR DESCRIPTION OF DATA Notice of Revision				3. SUBTITLE N/A		
4. AUTHORITY (Data Item Number) SE-109			5. CONTRACT REFERENCE SOW Para 8.3.1(e)				6. REQUIRING OFFICE DND TA		
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION N/A		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE				11. AS OF DATE See Block 16		13. DATE OF SUBSEQUENT SUBMISSION/EVENT N/A			
16. REMARKS Block 11. Notices of Revision (NOR) shall be submitted for drawings, associated lists and other non-specification type documents that require revision following approval of any ECPs or RFDs.									
PREPARED BY:			DATE		APPROVED BY				
17. CONTRACT FILE/DOCUMENT NUMBER			18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL		2

#### APPENDIX 4 DATA ITEM DESCRIPTIONS (DIDS)

##### Data Item Description Format

The following section defines the various blocks of information found on the Data Item Description (DID) blocks form:

**Block 1 – Title:** Denotes the title of the Data Item (DI).

**Block 2 – Identification Number:** Denotes the sequential alphanumerical number assigned to the DID. The numbering convention is the same as that described in paragraph 1.3.6 for CDRL Items.

**Block 3 – Description/Purpose:** Provides a description of the data content requirements.

**Block 4 – Approval Date:** Not used.

**Block 5 – OPI:** Denotes Canada's Office of Primary Interest (OPI) designation responsible for the data requirement.

**Block 6 – GIDEP Applicable:** Not used.

**Block 7 – Application/Interrelationship:** Identifies the DOORS® Identifier (ID) in the SOW that calls up the CDRL associated with the DID.

**Block 8 – Originator:** Denotes Canada's designation of the DID originator.

**Block 9 – Applicable Forms:** Not used.

**Block 10 – Preparation Instructions:** This block identifies the format and content requirements for data to be prepared for use by Canada under the terms of the Contract.

##### DID List

The following section lists the DIDs attached to this document. Unless specified in the DID, all data shall be delivered in formats compatible with office software in the current DND MS Office baseline (Word, PowerPoint, Visio, Project, etc.) that permits viewing, modifying, selecting, copying and pasting of information from the files to other DND software files.

DID #	Title
DID PM-001	Project Management Plan (PMP)
DID PM-002	Project Master Schedule (PMS)
DID PM-003	Meeting Agenda

APPENDIX 4 to ANNEX A to W6399-12-DD09  
14 June 2013

DID PM-004	Meeting Minutes
DID PM-005	Problem Report
DID PM-006	Requirements Verification Matrix
DID SE-101	Systems Engineering Management Plan (SEMP)
DID SE-102	Systems Design Document
DID SE-103	Systems Breakdown Structure
DID SE-104	Equipment Breakdown Structure (EBS)
DID SE-105	Engineering Change Proposal (ECP)
DID SE-106	Request for Deviation (RFD)
DID SE-107	Request for Waiver (RFW)
DID SE-108	Specification Change Notice (SCN)
DID SE-109	Notice of Revision

DID-PM-001 PROJECT MANAGEMENT PLAN		
1. TITLE Project Management Plan	2. IDENTIFICATION NUMBER DID-PM-001	
3. DESCRIPTION The Project Management Plan (PMP) shall describe the Contractor's processes and organization for integrating and carrying out all management activities necessary to complete the Work required by the Contract within the approved schedule and budgetary constraints, and meeting all contractual requirements. The PMP will be used to provide the DND Technical Authority (TA) insight into the Contractor's project management practices and procedures as they apply to the Contract.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS <u>Format</u> The Project Management Plan (PMP) shall be in the Contractor's format and as further amplified herein.		
<u>Content</u> The PMP shall consolidate the management processes, administrative procedures and organizational structure that will be used to manage the Work required of the Contractor as part of the Contract. The PMP shall further detail the practices and procedures for project scheduling, planning, organizing, directing, executing, monitoring, controlling, providing orderly resource management, communicating, reporting, managing risk, managing environmental health and safety issues and impacts, managing information, and closing of action items for all Work required by the Contract . The PMP shall address in detail the above points through provision of the following:  Overview: a. Purpose, Background, Scope and Objectives; b. Assumptions, Constraints and Risks; c. Project Deliverables; d. Organization Summary; and e. Schedule Summary.  Management Processes: a. Project Management Approach and Procedures; b. Sub-Contractor Management;		

c. Schedule Control;  
d. Resource Allocation;  
e. Budget Control;  
f. Quality Assurance;  
g. Performance Monitoring;  
h. Reporting;  
i. Communications;  
j. Problem Resolution;  
k. Project Work Tasks/Elements Closing;  
l. Process Improvement;  
m. Risk Management;  
n. Environmental, Health and Safety Issues Management;  
o. Information Management; and  
p. Change Control Processes.

<b>DID-PM-002 PROJECT MASTER SCHEDULE</b>		
<b>1. TITLE</b> Project Master Schedule		<b>2. IDENTIFICATION NUMBER</b> DID-PM-002
<b>3. DESCRIPTION</b> The Project Master Schedule (PMS) shall detail the sequencing of all WBS activities down to the work package level which must occur for the objectives and requirements of the Contract to be achieved.		
<b>4. APPROVAL DATE</b>	<b>5. OFFICE OF PRIMARY INTEREST</b> DND TA	<b>6. GIDEP APPLICABLE</b> N/A
<b>7. APPLICATION / INTERRELATIONSHIP</b>		
<b>8. ORIGINATOR</b> DND TA		<b>9. APPLICABLE FORMS</b> N/A
<b>10. PREPARATION INSTRUCTIONS</b> <b>FORMAT</b> The Project Master Schedule (PMS) shall be delivered in Microsoft Project format.		
<b>CONTENT</b> The PMS shall reflect the delivery and support schedule defined in the Contract and include all Work Breakdown Structure elements and task s (those which define the level of reporting that the contractor will provide DND), all milestones and deliverable end items. The PMS shall detail the sequencing, activity duration, mandatory, discretionary and external dependencies, schedule of all events against a calendar time base, milestones and all WBS activities down to the work package level which must occur for the objectives and requirements of the Contract to be achieved. The PMS shall detail all activities covering the complete duration of the Contract. The PMS shall be baselined at contract award. The PMS updates shall further provide the DND TA with the visibility of accomplishments to date at a level of detail that is indicative of overall performance. PMS performance shall be compared to the approved contractual baseline.  The PMS shall be a Gantt Chart reflecting activity start and end dates, expected activity duration, activity dependencies, critical path(s) and activity WBS code of accounts all against a calendar time base. Updates to the PMS shall clearly indicate actual progress to a specific date against the schedule baseline, and changes in activity start and end dates. The PMS baseline, as set at contract award, shall be the measurement baseline for project performance and actual versus planned progress. All baseline activity start and finish dates (i.e., the originally scheduled start and finish dates), as reflected in the PMS baseline schedule, shall be maintained and provided using the same WBS code of accounts entry on the Gantt chart incorporating any approved changes to activity start and finish dates. The baseline activities start and finish dates and updated start and finish dates shall be uniquely identifiable at the activity level (i.e., different colour, different icon, etc.). Re-Baselining of the schedule shall not occur without prior written authorization by the PWGSC CA and DND TA. The PMS, and updates, shall include a detailed legend depicting the meaning of all symbols, abbreviations and colours utilized.		

The PMS Gantt Chart and associated WBS code of accounts shall permit filtering on activities, through a one-step filter, in order to provide the following independent schedules:

- a. Project Management schedule of activities;
- b. Systems Engineering schedule of activities;
- c. Test & Evaluation (T&E) schedule of activities;
- d. Integrated Logistics Support (ILS) schedule of activities; and
- e. Financial milestone schedule.

The PMS shall show a time-phased sequence of upper level activities and events, and their relationship to the WBS elements and activities, to include:

- a. The sequence, duration and completion dates of deliverable items;
- b. Project tasks down to the work package level;
- c. Project milestones;
- d. Proposed payment milestones;
- e. Delivery of documentation for review and final delivery;
- f. Projected dates for Training; and
- g. Projected dates for Qualification Testing and Acceptance Testing.

Each PMS activity shall include all details associated with each WBS elements and tasks, to include as a minimum the following:

- a. WBS Code of Accounts;
- b. Contract line item number(s) associated with the element/activity;
- c. Element/activity predecessors;
- d. Element/task completion criteria;
- e. Element/task description;
- f. Element/task early start and finish dates;
- g. Element/task late start and finish dates; and
- h. Element/task free float.

DID-PM-003 MEETING AGENDA			
1. TITLE Meeting Agenda		2. IDENTIFICATION NUMBER DID-PM-003	
3. DESCRIPTION Meeting Agendas shall set forth the venue and identify the Discussion items to be covered at meetings.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Meeting Agenda shall be in the Contractor's format and as further described herein.			
<p><u>CONTENT</u> The Meeting Agenda shall set forth the venue, identify any requirements and list the discussion items to be covered at the meeting.</p> <p>Venue: The Meeting Agenda shall address the venue as follows;  a. Meeting Identification Number;  b. Purpose;  c. Date, time and location; and  d. Attendees.</p> <p>Discussion items: The Meeting Agenda shall address the discussion items through the following sections:  a. Opening Remarks;  b. Agenda Review;  c. Review of previous Minutes;  d. Opened Discussion Items;  e. New Discussion Items;  f. Review of Action Items;  g. Next Venue; and  h. Closing Remarks.</p>			



DID-PM-004 MEETING MINUTES			
1. TITLE Meeting Minutes		2. IDENTIFICATION NUMBER DID-PM-004	
3. DESCRIPTION Meeting Minutes shall consist of the detailed records of proceedings, discussions, decisions and action items from meetings.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Meeting Minutes shall be in the Contractor's format and as further described herein.			
<u>CONTENT</u> The Meeting Minutes shall contain the detailed records of proceedings, discussions, decisions and action items from the meeting. The detailed records shall be presented through the following sections: a. General - including meeting identification number, purpose, date, time and location; d. Attendees; c. Opening Remarks; d. Agenda Review; e. Review of previous Minutes; f. Discussion Items - Including a summary record of proceedings, discussions, decisions, information addressees, action addressees and action completion date, for each item; g. Next Venue; h. Closing Remarks; and i. Signature of Contractor's Project Manager, PWGSC CA and DND TA.			

DID-PM-005 PROBLEM REPORT		
1. TITLE Problem Report	2. IDENTIFICATION NUMBER DID-PM-005	
3. DESCRIPTION Problem Reports shall describe matters that may significantly impact the Contract.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS <u>FORMAT</u> Problem Reports shall be in the Contractor's format and as further described herein.		
<u>CONTENT</u> Problem Reports shall contain the following minimum information: a. Originator, date and identification number; b. Essence of situation that prompts the report; c. Identification of significant problems (e.g. Engineering problems, logistical problems, etc.); d. Impact s on Project Master Schedule (PMS); e. Impact s on other items, components or aspects of the Contract (e.g. deliverables, risk, requirements, materials, etc.); f. Actions taken to date; g. Recommendations; and h. Signature of Contractor's Project Manager.		

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DID-PM-006 REQUIREMENTS VERIFICATION MATRIX			
1. TITLE Requirements Verification Matrix (RVM)		2. IDENTIFICATION NUMBER DID-PM-006	
3. DESCRIPTION The Requirements Verification Matrix shall identify the means of compliance verification against the technical and performance requirements in Annex B.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS <u>FORMAT</u> The RVM shall be in the Contractor's format and as further described herein.			
<p><u>CONTENT</u></p> <p>The RVM shall be in tabular format and identify, for each technical and performance requirement in Annex B, as it relates to the design of the DND RHIB reflected in the Systems Design Document (DID-SE-102). The RVM shall contain the following as a minimum:</p> <ul style="list-style-type: none"> <li>a. Requirement (Annex B);</li> <li>b. Requirement cross-reference (SDD);</li> <li>c. Requirement specification (description);</li> <li>d. Means of determining compliance to include:</li> </ul> <p><u>Certification:</u> The Contractor shall provide documents certifying compliance with the requirements. Certifications shall be signed by the Contractor's certifying official with signing authority and shall include supporting justification including but not limited to performance, inspection and analytical data as applicable.</p> <p><u>Demonstration:</u> The Contractor shall demonstrate that the requirements are met by visual inspection or functional checks of boat systems, subsystems or major assemblies.</p> <p><u>Test:</u> The Contractor shall demonstrate that the requirements are met through systematic physical operation of the DND RHIB, its subsystems or major components under specified conditions, along with the collection, analysis and evaluation of resulting data.</p> <ul style="list-style-type: none"> <li>e. Location of verification;</li> <li>f. Responsible party (Crown or Contractor); and</li> <li>g. Amplifying instructions.</li> </ul>			

DID-SE-101 SYSTEMS ENGINEERING MANAGEMENT PLAN (SEMP)			
1. TITLE Systems Engineering Management Plan (SEMP)		2. IDENTIFICATION NUMBER DID-SE-101	
3. DESCRIPTION The Systems Engineering Management Plan (SEMP) shall set forth the Contractor's Systems Engineering Program as it relates to the activities required for the Contract.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS <u>FORMAT</u> The Systems Engineering Management Plan (SEMP) shall be in the Contractor's format as further described herein.			
<u>CONTENT</u> The SEMP shall set forth the Contractor's Systems Engineering Program, as it relates to the activities required for the Contract, describing the Contractor's processes for scheduling, planning, organizing, directing, conducting, controlling and coordinating the required Systems Engineering effort. It shall describe the Contractor's organizational responsibilities and authority for all systems engineering activities, including any subsystem contractor engineering activities.			

DID-SE-102 SYSTEMS DESIGN DOCUMENT			
1. TITLE Systems Design Document		2. IDENTIFICATION NUMBER DID-SE-102	
3. DESCRIPTION The Systems Design Document shall establish the performance, design, development and test requirements of the DND RHIB components at the appropriate level of details as defined by the required specification clause in Annex B.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Systems Design Document shall be in the Contractor's format as further described herein.			
CONTENT The Systems Design Document shall define the system architecture and the physical and functional performance at the system and sub-system level, as well as all the functional and physical interface requirements between DND RHIB components. The Systems Design Document shall include a linking matrix that details the relationship of the SDD statements to the TA's requirements statements (Annex B), which will be used as the baseline document for discussion at design review meetings. The Systems Design Document shall contain the following:			
(a) A System Breakdown Structure (SBS) in accordance with CDRL and DID SE-103; and			
(b) An Equipment Breakdown Structure (EBS), which identifies the selected Configuration Items (CIs), in accordance with CDRL and DID SE-104.			
SUBMISSION The Systems Design Document shall be submitted prior to each design review as follows:			
Initial Systems Design Document - The Initial Systems Design Document captures elements of the technical design that have changed since the technical bid submission in preparation for the SRR. In the preparation of the Initial Systems Design Document, the Contractor shall address the following elements:			
a. System configuration overview;			
b. System functionality description; and			

c. Conceptual design data (drawings, 3-D model(s), calculations and description of engineering concepts on which the design approach is based).

Developmental Systems Design Document - The Developmental Systems Design Document captures elements of the technical design that have changed since the Initial Systems Design Document in preparation for the CDR. In the preparation of the Developmental Systems Design Document, the Contractor shall address the following elements;

- a. Overview of system design, including subsystems, modules, and the interfaces among them;
- b. Developmental design data (drawings, 3-D models, calculations, and associated material lists);
- c. Performance specifications;
- d. Design specifications; and
- e. Design constraints, applicable standards, and compatibility requirements;

Production Systems Design Document - The Production Systems Design Document captures elements of the technical design that have changed since the Developmental Systems Design Document in preparation for the PRR. In the preparation of the Production Systems Design Document, the Contractor shall address the following elements;

- a. Detailed design data (drawings, 3-D models & associated material lists);
- b. Reference documents;
- c. Supplementary technical data;
- d. Special Packaging Instruction (SPI); and
- e. Verification.

DID-SE-103 SYSTEM BREAKDOWN STRUCTURE		
1. TITLE Systems Breakdown Structure	2. IDENTIFICATION NUMBER DID-SE-103	
3. DESCRIPTION The System Breakdown Structure shall provide a description for each major component that is required for the system that meets all requirements of the DND RHIB specification (Annex B).		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS <u>FORMAT</u> The System Breakdown Structure shall be in the Contractor's format as further described herein. The data shall include a block diagram as well as necessary descriptive text.  <u>CONTENT</u> Each major component shall be identified clearly by the following information: a. Basic item name; b. Prime manufacturers part number; c. Prime manufacturer's NATO Supply Code of Manufacturer (NSCM) Code or Commercial and Government Entity (CAGE) Code (if available); and d. OEM Part Number and the quantity per system/assembly/component  The SBS shall be the baseline for the DND RHIB. Any changes to the configuration of the system will require the submission of an Engineering Change Proposal (ECP) for approval by Canada.		

DID-SE-104 EQUIPMENT BREAKDOWN STRUCTURE		
1. TITLE Equipment Breakdown Structure	2. IDENTIFICATION NUMBER DID-SE-104	
3. DESCRIPTION The Equipment Breakdown Structure (EBS) shall define the system including the selected Configuration Items (CIs), and identify the associated Product Baseline data and document s.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Equipment Breakdown Structure (EBS) shall be in the Contractor's format and as further described herein.		
CONTENT The EBS shall define the system including the selected Configuration Items (CIs), and identify the associated Product Baseline data and documents. The EBS shall be comprised of a list and a pictorial representation of the system decomposition down to the part level, including identification of each item selected as CI. The EBS shall also identify the associated Product Baseline data and documents, including drawings, for each item.		



DID-SE-105 ENGINEERING CHANGE PROPOSAL (ECP)			
1. TITLE Engineering Change Proposal		2. IDENTIFICATION NUMBER DID-SE-105	
3. DESCRIPTION The Engineering Change Proposal (ECP) shall fully describe and substantiate the engineering change required for a proposed alteration in the configuration of a CI and/ or its related documentation. The ECP shall enable the Contractor and the DND TA to fully evaluate for authorization the engineering change proposed.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA		6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT Engineering Change Proposals (ECPs) shall be in the Contractor's format and as further described herein.			
<p><u>CONTENT</u> The following information shall be included and detailed for each ECP:</p> <ul style="list-style-type: none"> <li>a. General information (i.e. originator, date, class, number, type, priority, revision, title, etc.);</li> <li>b. Configuration Item Information (CI (s) to which ECP applies);</li> <li>c. Current CI production state (if applicable);</li> <li>d. Impact on baselines, specifications, interfaces, schedules, performance, availability, logistics, environmental, health and safety, etc.;</li> <li>e. Description of change;</li> <li>f. Substantiation (need) of change;</li> <li>g. Costs /Savings details;</li> <li>h. Trade-offs and/ or alternative solutions;</li> <li>i. Implementation Plan, including implementation schedule and associated details;</li> <li>j. Date of Approval required; and</li> <li>k. Authorities (Submitting, Reviewing, Recommending and Approving).</li> </ul>			

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DID-SE-106 REQUEST FOR DEVIATION (RFD)		
1. TITLE Request for Deviation	2. IDENTIFICATION NUMBER DID-SE-106	
3. DESCRIPTION Requests for Deviation (RFD) shall provide the required details in order to seek authorization to deliver materials not meeting specified requirements. The RFD shall fully enable the DND TA to evaluate and authorize the item not conforming to contractual requirements with respect to the impact on performance, availability, logistics support and any other affected areas.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT Requests for Deviation (RFD) shall be in the Contractor's format and as further described herein.		
<p><u>CONTENT</u></p> <p>The following information shall be included and detailed for each RFD:</p> <ul style="list-style-type: none"> <li>a. General information (i.e. originator, date, RFD number, designation, title, etc.);</li> <li>b. Configuration Item Information (CI (s) to which RFD applies);</li> <li>c. Impact on performance, availability, logistics, environmental, health and safety, training, specifications, interfaces and any other affected areas;</li> <li>d. Description of deviation;</li> <li>e. Substantiation of deviation; and</li> <li>f. Authorities (Submitting, Reviewing, Recommending and Approving).</li> </ul>		

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DID-SE-107 REQUEST FOR WAIVER (RFW)		
1. TITLE Request for Waiver	2. IDENTIFICATION NUMBER DID-SE-107	
3. DESCRIPTION Requests for Waiver (RFW) shall provide the required details in order to seek authorization to deliver a one-time lot of manufactured materials not meeting specified requirements. The RFW shall fully enable the DND TA to evaluate and authorize an item not conforming to contractual requirements with respect to the impact on performance, availability, logistics support, interfaces and any other affected areas.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS <u>FORMAT</u> Requests for Waiver (RFW) shall be in the Contractor's format and as further described herein.		
<u>CONTENT</u> The following information shall be included and detailed for each RFW: a. General information (i.e. originator, date, RFW number, designation, title, etc.); b. Configuration Item Information (CI (s) to which RFW applies); c. Impact on performance, availability, logistics, environmental, health and safety, training, specifications, interfaces and any other affected areas; d. Description of waiver; e. Substantiation of waiver; f. Corrective actions taken and/or planned; g. Extent of manufacturing of non-conformance; and h. Authorities (Submitting, Reviewing, Recommending and Approving).		

DID-SE-108 SPECIFICATION CHANGE NOTIFICATION		
1. TITLE Specification Change Notification	2. IDENTIFICATION NUMBER DID-SE-108	
3. DESCRIPTION Specification Change Notices (SCN) shall describe the required changes to specifications for which an Engineering Change Proposal (ECP) or Request for Deviation (RFD) is being submitted. Prior to approval of the associated ECP or RFD, each SCN shall provide the specification approving authority with the changes that will be implemented if the ECP or RFD is approved. Following approval of the associated ECP or RFD, each SCN will be used to direct the specification custodian to implement the required changes.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT Specification Change Notices (SCN) shall be in the Contractor's format and as further described herein.		
<p><u>CONTENT</u></p> <p>SCNs shall describe the required changes to specifications for which an Engineering Change Proposal (ECP) or Request for Deviation (RFD) is being submitted. Each SCN shall have sufficient details to permit the specification custodian to implement the required changes once the ECP or RFD is approved. The following information shall be included and detailed for each SCN;</p> <ul style="list-style-type: none"> <li>a. General information (i.e. originator, date, SCN number, etc.);</li> <li>b. Related ECP or RFD number;</li> <li>c. Specification number (specification to which SCN applies);</li> <li>d. Configuration Item (CI to which ECP or RFD applies );</li> <li>e. Description of changes;</li> <li>f. Previously approved related SCN (including related ECPs, RFDs, changed pages, dates, etc.);</li> <li>g. Disposition of SCN; and</li> <li>h. Authorities (Submitting, Reviewing, Recommending and Approving).</li> </ul>		

DID-SE-109 NOTICE OF REVISION		
1. TITLE Notice of Revision	2. IDENTIFICATION NUMBER DID-SE-109	
3. DESCRIPTION Notices of Revision (NOR) shall describe the required changes to drawings, associated lists and other non-specification type documents comprising the configuration identification of an item for which an Engineering Change Proposal (ECP) or Request for Deviation (RFD) is being submitted. Following approval of the associated ECP or RFD, each NOR will be used to direct the custodian of drawing, associated list or other non-specification type document to implement the required revisions.		
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP		
8. ORIGINATOR DND TA	9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT Notices of Revision (NOR) shall be in the Contractor's format and as further described herein.		
<p><u>CONTENT</u></p> <p>NORs shall describe the required changes to drawings, associated lists and other non-specification type documents comprising the configuration identification of an item for which an Engineering Change Proposal (ECP) or Request for Deviation (RFD) is being submitted. Each NOR shall have sufficient details to permit the custodian of a drawing, associated list or other non-specific at ion type document to implement the required revisions once the ECP or RFD is approved. The following information shall be included and detailed for each NOR:</p> <ul style="list-style-type: none"> <li>a. General information (i.e. originator, date, NOR number, etc.);</li> <li>b. Related ECP or RFD number;</li> <li>c. Document identification (document to which revision applies);</li> <li>d. Configuration Item (CI to which ECP or RFD applies );</li> <li>e. Description of revision (detailed 'from' and 'to' depiction of the exact changes to be made);</li> <li>f. Disposition of NOR; and</li> <li>g. Authorities (Submitting, Reviewing, Recommending and Approving).</li> </ul>		

**DEPARTMENT OF NATIONAL DEFENCE  
RIGID HULL INFLATABLE BOAT  
(DND RHIB)  
PERFORMANCE AND TECHNICAL SPECIFICATIONS**

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**PERFORMANCE AND TECHNICAL SPECIFICATIONS  
FOR THE  
DEPARTMENT OF NATIONAL DEFENCE (DND) RIGID HULL INFLATABLE BOAT**

**1.0 OVERVIEW**

**1.1 General**

This operational performance and technical specification addresses the construction and delivery of welded marine grade aluminum hull open top Rigid Hull Inflatable Boats (RHIBs) of a proven design, with trailers, for operation on all waterways. These boats are referred to as the Department of National Defence (DND) RHIB, or simply as the boat, in this document.

**2.0 STANDARDS**

**2.1 Documentation**

The following documents, definitions and acronyms form part of this specification:

**2.1.1 DND/Military Standards**

- DCIEM Report 98-CR-15 Anthropometric Survey of the Land Forces ([pubs-rddc.gc.ca](http://pubs-rddc.gc.ca))
- MIL-STD-1366E Department of Defence - Interface Standard for Transportability Criteria ([www.everyspec.com](http://www.everyspec.com))
- C-28-020-001/TB-001 In Service Certification Requirements for Shipboard Lifting Equipment (provided upon request)

**2.1.2 Government Standards**

- TP 1332E Transport Canada Marine Safety Regulations - Construction Standards for Small Vessels ([www.tc.gc.ca](http://www.tc.gc.ca))
- Canada Shipping Act - Collision Regulations ([www.tc.gc.ca](http://www.tc.gc.ca))
- FED-STD-595C Colours Used in Government Procurement ([www.everyspec.com](http://www.everyspec.com))

**2.1.3 International Standards**

- ISO 12217-1 Small Craft - Stability and Buoyancy Assessment and Categorization - Part 1: Non-Sailing Boats of Hull Length Greater Than or Equal to 6 M ([www.iso.org](http://www.iso.org))
- ISO 11812 2001 Small Craft - Watertight Cockpits and Quick-Draining Cockpits ([www.iso.org](http://www.iso.org))
- American Boat and Yacht Council (ABYC) Standards ([www.abycinc.org](http://www.abycinc.org))
- CSA C22.2 No. 183.2-M1983(R1999) Standards for D.C. Electrical Installations on Boats ([www.csa.ca](http://www.csa.ca))
- CSA W47.1 M 1987 Certification of Companies for Fusion Welding of Steel ([www.csa.ca](http://www.csa.ca))
- CSA W47.2 M 1987 Certification of Companies for Fusion Welding of Aluminum ([www.csa.ca](http://www.csa.ca))
- CSA W59.2-M1991 Welded Aluminum Construction ([www.csa.ca](http://www.csa.ca))
- ABS Rules for Building and Classing Aluminum Vessels
- ANSI/IEC 60529-2004 Degrees of Protection Provided by Enclosures (IP Codes) ([www.ansi.org](http://www.ansi.org))
- ABCD-TR-08-01 V1.0 High Speed Craft Human Factors Engineering Design Guide ([www.highspeedcraft.org](http://www.highspeedcraft.org))

**2.1.4 Supplied Documents**

- Naval Engineering Test Establishment drawing DWG-ZT-4028-S-2 Boat Cradle (Sheets 1-14) (Schedule C / RFP)

## 2.2 Guidelines and Definitions

Chine	A hull that incorporates sharp angles in its form that provides a reduced draft and greater stability.
dtex	A unit of measure for the linear mass density of fibers and is defined as the mass in grams per 10,000 meters.
High Speed	Movements conducted at speeds where the boat is operating on plane.
Hypalon™	Hypalon is a trademark of DuPont Performance Elastomers, a subsidiary of DuPont, and is a chlorosulfonated polyethylene (CSPE) synthetic rubber noted for its resistance to chemicals, temperature extremes, and ultraviolet light. It is commonly used to make inflatable boats and folding kayaks.
Marine Grade	Material specified is certified by the appropriate standards agency (e.g., ANSI for stainless steel, Lloyd's of London for plywood, etc.) to have superior performance in a marine environment
Neoprene	Neoprene (or polychloroprene) is a family of synthetic rubbers that are produced by polymerization of chloroprene
nit	A unit of luminescence equivalent to one candela per square meter.
Nominal Dimensions	Dimensions stated as nominal shall be treated as approximate dimensions (+/- 5%). Nominal dimensions reflect a method by which materials or products are generally identified for sale commercially, but which differ from the actual dimensions.
Strake	A strip of rugged material glued or bonded along the length of the hull (bottom and sides) that provide additional abrasion resistance.

## 2.3 Sea States

The following WMO Sea States are referenced in this document:

WMO Sea State	Descriptive Term	Sea Height (m)
SS0	Calm (glassy)	0
SS1	Calm (rippled)	0 - 0.1
SS2	Smooth (wavelets)	0.1 - 0.5
SS3	Slight	0.5 - 1.25
SS4	Moderate	1.25 - 2.5
SS5	Rough	2.5 - 4
SS6	Very rough	4 - 6
SS7	High	6 - 9
SS8	Very high	9 - 14
SS9	Phenomenal	Over 14

## 2.4 Acronyms

ABCA	American, Britain, Canadian, Australian and New Zealand
ABS	American Bureau of Shipping
ABYC	American Boating and Yacht Council
AC	Alternating Current
AIS	Automatic Identification System
ANSI	American National Standards Institute
ASTM	American Society for Testing of Materials
CSA	Canadian Standards Association
CSPE	Chlorosulfonated Polyethylene

DC	Direct Current
DCIEM	Defence and Civil Institute for Environmental Medicine
DND	Department of National Defence
DSM	Digital Sounder Module
FCC	Federal Communications Commission
GFE	Government Furnished Equipment
GPS	Global Positioning System
GRP	Glass Reinforced Plastic
GSM	Government Supplied Material
HF	High Frequency
HP	High Pressure
HS	High Speed
IEC	International Electrotechnical Commission
ISO	International Standards Association
LED	Light Emitting Diode
LNA	Low Noise Amplifier
MB	Mega-Byte
MTBF	Mean Time Between Failure
NEMA	National Electrical Manufacturers Association
OEM	Original Equipment Manufacturer
Radome	Radar Dome
RAM	Random Access Memory
RF	Radio Frequency
RHIB	Rigid Hull Inflatable Boat
SAE	Society of Automotive Engineers
SS	Sea State
SWL	Safe Working Load
TA	Technical Authority
TacSat	Tactical Satellite
UHF	Ultra-High Frequency
USB	Universal Serial Bus
VGA	Video Graphics Display
VHF	Very High Frequency
WAAS	Wide Area Augmentation System
WMO	World Meteorological Organization
XGA	Extended Graphics Display

### 3.0 SCOPE

The DND RHIB is to be an aluminum hull boat with a light-weight neoprene/Hypalon™ tube set based upon an existing proven design that is optimized with current engineering technology to support the maritime interdiction role in Canada. The boats shall be equally capable of operating in fresh and salt water environments including full internal waterway and coastal waters coverage to 200 nm in all seasons, and be easily transportable by road and on DND air assets (e.g., CC130 Hercules). Coastal operation requires robustness to survive groundings and outer hull contact with obstacles and debris. Continuous operations require the ability to refuel at sea by any available means and the ability to embark and disembark personnel as required.

#### 3.1 Normal Load Configurations

The DND RHIB is to have an open Console at the front with side-by-side fixed shock-mitigating seats for the Coxswain (driver) and Navigator, and shock mitigating seats for ten (10) fully equipped embarked

personnel aft of the Console. The DND RHIB Normal Load Configuration (Deep Departure Configuration) is as follows:

- (a) The fully equipped boat including hull and tube set, engine, controls, etc. as specified in this document;
- (b) Safety equipment (as per Section 5.5);
- (c) Full fuel load (as per Section 5.3.11) not including auxiliary fuel storage bladder;
- (d) Navigation and communication equipment;
- (e) Two operators (Coxswain & Navigator) (120 kg (264 lbs) each) for a total weight of 240 kg (528 lbs);
- (f) Ten (10) passengers with equipment (120 kg (264 lbs) each) for a total of 1200 kg (2640 lbs); and
- (g) Additional equipment and supplies weighing 230 kg (506 lbs) maximum.

### 3.2 Design Mission

The DND RHIB structures and components (hull, deck, tube set, console, seating, etc.) shall be designed to withstand, within a defined margin in the Normal Load Configuration, the lateral and vertical impact-loading that equates to the conditions of the Design Mission as follows:

- (a) Rapid transit in any waterway condition up to World Meteorological Organization (WMO) Sea State (SS) 5 to the full endurance limit of the boat;
- (b) Station keeping with stable attitude to Sea State 5;
- (c) Survival in heavy sea states during abnormal or emergency operational conditions including the loss of engine power with waves washing overboard; and
- (d) Proximate boarding of ships underway, including rubbing contact at low and high speeds, in any waterway condition up to WMO Sea State 5.

## 4.0 **OPERATIONAL PERFORMANCE REQUIREMENTS**

### 4.1 Proven Design

The DND RHIB shall be based upon a proven (tested) design that is in current production and is currently in use with an ABCA member force or a Canadian/US Police/Law Enforcement agency for at least six (6) months at time of bid submission.

### 4.2 Operational Performance

The DND RHIB, with a qualified operator in an environment of Sea State 2 or less (unless stated otherwise) at Normal Load Configuration, shall:

- (a) Be designed to have directional stability and be capable of maintaining course with nominal steering input as follows:
  - i. Tracking a continuous bearing within +/- 3°; and
  - ii. Within 1 meter (3.3 ft) or less lateral displacement and 50 cm (20 in) or less fore/aft displacement of a larger vessel (minimum twice the displacement of the DND RHIB)

with intermittent to continuous inflatable collar contact with the larger vessel in SS2 at speeds up to 25 knots;

- (b) Have stability in maneuvers such that induced momentary lateral gravitational forces do not vary more than 5%;
- (c) Have speed and endurance as follows:
  - i. Maximum speed of at least 45 knots with GFE supplied engines;
  - ii. Endurance at full throttle of at least two (2) hours;
  - iii. Range of 180 nautical miles with 10% fuel reserve at not less than 25 knots; and
  - iv. Capable of astern maneuvering with the throttles set to provide up to 1/3 of the rated engine horsepower;
- (d) Be capable of:
  - i. Achieving, at Normal Load Configuration from standstill, full plane within twelve (12) seconds or less;
  - ii. Operating in water depths of 1.0 m (3.3 ft) with outboard motors lowered;
  - iii. Perform basic maneuvering in water depths of 0.8 m (2.6 ft) with outboard motors in a partially raised position;
  - iv. Beaching at Normal Load Configuration without damaging the hull or degrading the operational capability of the boat as follows;
    - a. Beach on soft (sand, loam, or clay) surfaces at a speed of not more than 5 knots; and
    - b. Beach on hard (stone or concrete) surfaces at a speed of not more than 3 knots;
  - v. Completing a 90 degree turn to Port or Starboard at 75% throttle;
  - vi. Completing a 360 degree turn at not less than 50% throttle within a turning radius of 30 m (98 ft); and
  - vii. Operating and maintaining stability in accordance with ISO 12217-1 (stability and buoyancy assessment) in the following conditions:
    - a. Air temperature: -15 °C to +35 °C (5 °F to 95 °F);
    - b. Water temperature: - 5 °C to + 25 °C (23 °F to 77 °F);
    - c. Wave heights: 0-4 m (0-13 ft) (i.e., up to SS 5);
    - d. Wind speeds: 0-48 km/hr (0-26 knots); and
    - e. Freezing spray or freezing rain with ice accumulations of up to 6 mm (1/4 in) on the surface of the boat.

#### 4.3 Safety

The following applies to the DND RHIB:

- (a) All systems and components shall be safe and easy to use by a 5-95<sup>th</sup> percentile male or female, in accordance with the DCIEM Report 98-CR-15 Anthropometric Survey of the Land Forces (as per SAE Rule B3.9.3), under all operating conditions;
- (b) Locking and release mechanisms shall be operable with one hand;
- (c) Construction shall be free from sharp edges and protruding objects capable of snagging clothing or impeding occupants moving in and around the vessel;
- (d) Seating positions shall be free from hard surfaces and sharp/protruding objects that would present a striking hazard to the occupants when transiting in rough waters;

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- (e) Safety critical system functionality (e.g., propulsion system) shall be attended directly by a person at all times or is otherwise disabled (e.g., by a dead man switch); and
- (f) Deck and transom areas shall be free from obstructions as much as possible to permit usage of safety and emergency equipment including the spine board.

#### 4.4 Durability

The boat design and construction shall enable a projected service life of the complete boat system of not less than seven (7) years.

#### 4.5 Maintainability

The DND RHIB design and construction shall enable ready access to all equipment for inspection, cleaning and maintenance. Ready access is defined as requiring no more than two (2) minutes to gain access.

#### 4.6 Reliability

The following applies to the DND RHIB reliability:

- (a) Systems shall be designed to minimize the chance of critical failures that result in the loss of maneuverability and/or propulsion; and
- (b) Removable components shall have a calculated Mean Time Between Failure (MTBF), using a standard reliability model under normal operating conditions up to and including the design mission, as follows:
  - i. Not less than 500 hours for easily removable components (e.g., those that can be removed and replaced during operations); and
  - ii. Not less than 2000 hours for fixed components (e.g., those that require special tools, removal from the water, extensible removal of interference items, etc.).

### 5.0 **TECHNICAL REQUIREMENTS**

#### 5.1 Dimensions

The DND RHIB shall have the following dimensions:

- (a) Length of rigid hull (bow to stern engine guard): 10.0 +/- 0.5 m (32.8 +/- 1.6 ft);
- (b) Width of rigid hull: no more than 2.6 m (8.5 ft);
- (c) Overall length (tube set inflated, engines raised): no more than 10.5 +/- 0.5 m (34.4 +/- 1.6 ft);
- (d) Overall width (Beam) of inflated tube set: no more than 3.25 +/- 0.2 m (10.7 +/- 0.7 ft);
- (e) Overall height (arch folded and stowed): no more than 2.7 m (8.9 ft);
- (f) Deadrise at transom: minimum 21 degrees, maximum 24 degrees;
- (g) Hull angle at transom: 24 +/- 4 degrees;
- (h) Hull angle at mid-ships: 36 +/- 4 degrees;
- (i) Draft (outdrive motors lowered): no more than 0.9 +/- 0.1 m (3 +/- 0.3 ft); and

- (j) Draft (outdrive motors raised): no more than 0.6 +/- 0.1 m (2 +/- 0.3 ft).

## 5.2 Weight

The DND RHIB shall have a weight at Normal Load Configuration of no more than 6590 kg (14,500 lbs).

## 5.3 Physical Features

The DND RHIB shall be comprised of the following systems and equipment (as detailed in the following sections):

- (a) Hull;
- (b) Deck;
- (c) Lazarette Box;
- (d) Radar Arch;
- (e) Air Inflatable Components;
  - i. Inflation System;
- (f) Console;
  - i. Coxswain Station;
  - ii. Navigator Station; and
  - iii. Communication Station;
- (g) Navigation Equipment;
  - i. Navigation Lighting;
- (h) Communication System;
- (i) Seating;
- (j) Propulsion System;
- (k) Fuel System;
- (l) Steering System;
- (m) Electrical System; and
- (n) Pumping and Drainage.

### 5.3.1 Hull

The DND RHIB shall:

- (a) Have an aluminum hull as follows:
  - i. Incorporates the performance and draft characteristics of a general deep V design that promotes increased water flow to the propulsion unit and at the same time directs spray away from onboard personnel;

- ii. Incorporates welding that as a minimum is double continuous and/or full penetration in areas subject to corrosion or vibration including the outboard motor bracket;
  - iii. Presents a reduced radar signature;
  - iv. Provides secure attachment for an inflatable tube set;
  - v. Supports the outboard engines and interfaces (section 5.3.10);
  - vi. Includes a center line full length keel that is flat to support mounting in a cradle on a flat surface;
  - vii. Hull scantlings include transverse and longitudinal framing to provide the necessary strength and stiffness for the intended use of the hull while minimizing the overall weight;
  - viii. Incorporates chines and strakes to provide optimum shallow water accessibility;
  - ix. Include a zinc anode mounted on the aft plate for hull corrosion prevention; and
  - x. Includes sufficient watertight compartments to ensure adequate stability and positive buoyancy in a flooded condition in accordance with TP 1332E and ISO 12217-1 including the following:
    - a. Hull compartments with fire rated low smoke and flame spread flotation or fire retardant flotation; and/or
    - b. Fixed flotation devices;
  - xi. Include (20) D-ring tie downs on the outer side of the hull below the buoyancy tube, ten (10) on each side port and starboard for attaching the cover in accordance with Section 5.7, and to secure the boat to the trailer;
- (b) Permit operator/passenger seating in accordance with Section 5.3.9;
- (c) Have a non-corrosive attachment point for a plate bow eye of not less than 32 mm (1.25 in) diameter in the bow stem area to permit ready attachment of a bow line or trailer hook that has sufficient capacity to support towing of three DND RHIBS in line;
- (d) Have a towing bollard of an appropriate size (in accordance with TP1332E) located in the transom area to enable mooring, towing and anchoring with the bollard;
- (e) Have four (4) 25 cm (9.8 in) cleats that meet the requirements of TP 1332E to enable mooring and anchoring with the cleats and cleat mounts capable of withstanding the force applied by the propulsion system at 25% throttle from rest, located as follows:
- i. One on the top of each side of the Lazarette box; and
  - ii. One on each side of the Console ;
- (f) Include an integrated Lazarette box at the transom area, in accordance with Section 5.3.3;
- (g) Have all interior rough edges and sharp angled corners rounded and ergonomically adapted for safe and efficient occupation;
- (h) Include a non-reflective capacity plate permanently affixed to the boat (either on the console or the transom) that lists the following information (metric and imperial units):
- i. Length;
  - ii. Beam;
  - iii. Builder;
  - iv. Model and year;
  - v. Maximum engine rating;
  - vi. Maximum weight capacity; and
  - vii. Maximum number of occupants.



### 5.3.2 Deck

The deck shall:

- (a) Safely and securely support the occupants, shock mitigation seating and equipment without noticeable and measureable deformation;
- (b) Incorporate construction in accordance with Section 5.9;
- (c) Incorporate a flat deck that:
  - i. Is level at the beam, declining to the stern, and above the waterline with no obstructions or steps;
  - ii. Attaches to the hull by bolts only above the watertight compartments to enable access to the compartments;
  - iii. Supports shock mitigation seating in accordance with Section 5.3.9;
  - iv. Provides a deck surface area free of tripping and snagging hazards, including flush-mounted fasteners, with sufficient footing and traction for the occupants to access any area of the boat; and
  - v. Provide clear deck space with no protrusions or recesses large enough to catch foot wear (nominally 25 cm<sup>2</sup> (4 in<sup>2</sup>) area that is no deeper than 2.5 cm (1 in)) for the width of the boat from gunwale to gunwale for a length of 162 cm (64 in) from the aft immovable object forward to a point in line with the removable tube sections, available by on-board reconfiguration to clear the area of all equipment including stowing the seats in the forward-most position.

#### 5.3.2.1 Deck Finish

The deck shall be finished as follows:

- (a) Shock mitigating flooring at the Coxswain and Navigator position sufficient to support footing when sitting, standing or reclining;
- (b) Light-weight durable grey rubber matting for shock absorption that does not absorb water and provides traction when wet on all remaining deck areas larger than 25 cm<sup>2</sup> (4 in<sup>2</sup>); and
- (c) Light grey non-slip deck covering (Treadmaster deck covering (part number TU008342) or equivalent) on all deck areas where it is not practicable to install grey rubber matting.

#### 5.3.2.2 Stowage

The following stowage shall be provided;

- (a) Deck compartment stowage as follows:
  - i. Secure and accessible stowage of an anchor and cable (Section 5.5 (c)i) in the bow area;
  - ii. Secure and accessible stowage of additional safety equipment (Section 5.5) in a weatherproof compartment in the bow area (excluding the anchor, fire extinguishers and sea beacons);
  - iii. Under deck stowage with ventilation and drainage in the forward well deck area;
  - iv. Weather tight stowage for small items of equipment provided in void spaces where practicable; and
  - v. All stowage compartment hatches and hinges flush-mounted and operable by gloved and reduced sensitivity (i.e., cold and wet) hands;

- (b) Bow deck stowage as follows:
  - i. Three (3) removable storage containers that attach to the deck by the same mechanisms in which the removable seats attach to the deck;
  - ii. Deck mounting points in the bow area to permit attachment of one (1) container; and
  - iii. Storage containers capable of being installed side by side with 15 cm (6 in) of separation to replace a row of removable seats, with nominal dimensions as follows:
    - a. Length: 91 cm (36 in);
    - b. Width: 69 cm (24 in); and
    - c. Height: 69 cm (24 in).

#### 5.3.2.3 Tie-Downs

The deck shall incorporate tie-downs as follows:

- (a) Twelve (12) tie-downs to secure equipment in open areas of the deck, with four (4) mounts in the bow area, four (4) in the mid-ships area, and four (4) in the aft deck area;
- (b) Additional attachment points for the Auxiliary Fuel Storage bladder (Section 5.3.11.1) in the aft transom area as follows:
  - i. Sufficient to secure the bladder flat on the deck such that its position is securely maintained while full of fuel in conditions up to and including SS5; and
  - ii. Positioned such that the seat mounting positions are not affected (i.e., fuel bladder in place with full seating capacity installed).
- (c) Tie-downs flush-mounted to eliminate tripping and snagging hazards; and
- (d) Tie-down capacity (each) of 230 kg (506 lbs) axial load.

#### 5.3.3 Lazarette Box

The DND RHIB shall have a Lazarette box as follows:

- (a) Comprise a rectangular structure located at the aft portion of the deck as follows:
  - i. Spans the width of the deck and is nominally 70 cm (28 in) deep;
  - ii. Have channels on each outer end that provide flush contact with the inboard surface of the buoyancy tube set;
  - iii. Be 5 cm (2 in) higher than the top of the buoyancy tube set;
  - iv. Have two (2) aft-facing vents sized to permit sufficient air flow to the outboard snorkel inlets in accordance with Section 5.3.10 (c); and
  - v. Has a top cover as follows:
    - a. Sufficient structural strength, equivalent to the deck, to support occupants moving about on the upper surface when closed in accordance with Section 5.3.2;
    - b. Has a non-slip coating on the upper surface in accordance with Section 5.3.2.1;
    - c. Hinged at the rear such that it opens to the vertical position (minimum);
    - d. Has two (2) lockable hydraulic arms (one on either side) to assist in opening the lid and permit locking it in the open position; and
    - e. Has two (2) locking mechanisms that are recessed into the top of the lid to secure the lid in the closed position;
- (b) External fittings and features as follows:
  - i. Cleats in accordance with Section 5.3.1(e)i;
  - ii. Auxiliary Fuel Storage bladder fuel line male quick connect in accordance with Section 5.3.11.1 (b); and

- iii. NEMA 15 accessory receptacle in accordance with Section 5.3.13 (d)iii;
- (c) Provide secure, protected watertight storage for the following:
  - i. Dive bottles in accordance with Section 5.3.5.1 (a)ii.a;
  - ii. Fill lines in accordance with Section 5.3.5.1 (c);
  - iii. Removable section inflation hose in accordance with Section 5.3.5.1 (d);
  - iv. Engine inlet air snorkels in accordance with Section 5.3.10 (c);
  - v. Power steering pump and isolation valve in accordance with Section 5.3.12 (c);
  - vi. Batteries in accordance with Section 5.3.13.1 (b)iv;
  - vii. Manually operated bilge pump in accordance with Section 5.3.14 (a)ii; and
  - viii. Red and white dome lights in accordance with Section 5.3.7.1(b)ii.d.2.

#### 5.3.4 Radar Arch

The DND RHIB shall have a Radar Arch as follows:

- (a) An angular structure with not less than five (5) exterior sides at the transom area of the boat that is of a heavy duty construction sufficient to support one person and a secure mounting platform as follows:
  - i. Raked to the rear such that it does not interfere with personnel movement on the after portion of the boat;
  - ii. Be the full width of the boat at the base and narrow towards the top;
  - iii. Have sufficient side clearance from an adjacent vertical structure (e.g., ship's side) contacting the boat tube set bumper such that a boat roll of less than 45° does not contact the arch;
  - iv. Include cleats that meet the standards requirements of TP1332E at the base of each support to enable mooring of the boat; and
  - v. Be of sufficient height to permit mounting the radar dome and antennas on the mounting plate on the aft centerline at a height that prevents interference from personnel in the standing position on the deck, including:
    - a. Enclosed radar dome (Radome) (Section 5.3.7 (e)v);
    - b. GPS Receiver (Section 5.3.7 (e)vi);
    - c. VHF marine band radio antenna (Section 5.3.8 (b)i.a);
    - d. V/UHF multiband antenna (Section 5.3.8 (b)iii.d.1);
    - e. Primary UHF TacSat antenna (Section 5.3.8 (b)iii.d.2);
    - f. Future Capability Antenna location (Section 5.3.8 (b)iii.d.3);
    - g. Iridium phone antenna (Section 5.3.8 (b)iii.d.4);
- (b) Includes all cabling, junction boxes and other accessories required to connect antennas and sensors to the Console mounted equipment in accordance with TP 1332E and CSA C22.2;
- (c) Include an all-around visible anchor light showing clear above the radar dome in accordance with Section 5.3.7.1 (b)ii.a; and
- (d) Have a forward folding capability that permits mounted electronic components to fit into deck area voids in the lowered (folded down) position such that the height of the boat with the arch in the lowered position and mounted on the trailer does not exceed the limit for transport on a C130 aircraft of 2.74m (9 ft).

#### 5.3.5 Air Inflatable Components

The air inflatable components (i.e., buoyancy tubes and removable sections) shall be as follows:

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- (a) Consist of the following inflatable components:
  - i. A fixed forward bow to mid-ships multi-compartmental U-shaped buoyancy tube with a minimum of five (5) separate chambers of approximately equal volume;
  - ii. Two (2) removable sections, located on the Port and Starboard side of the boat aft of the forward buoyancy tube; and
  - iii. Two (2) fixed stern buoyancy tubes located on the Port and Starboard side of the boat aft of the removable sections;
  
- (b) Tubes construction as follows:
  - i. Nominal diameter of 63.5 cm (25 in);
  - ii. Be constructed of a three-layer material consisting of:
    - a. Grey neoprene/Hypalon™ on the exterior (minimum 1670 dtex, 545 grams per m<sup>2</sup> (0.11 lbs per ft<sup>2</sup>));
    - b. A central layer (core) of a durable material that provides strength and durability such as polyester or another polyamide (minimum 1880 dtex); and
    - c. An internal liner of neoprene (minimum 520 grams per m<sup>2</sup> (0.1 lbs per ft<sup>2</sup>));
  - iii. Utilize polyurethane sealant on all interior seams and baffle edges;
  - iv. Have all seams smoothly bonded with surface irregularities or deformities not to exceed +/- 2mm (+/- 3/32 in);
  - v. Maintain pressure in accordance with the manufacturer's standard requirements;
  - vi. Incorporate over-pressure relief valves for each inflation compartment, calibrated at the appropriate relief pressure (27.5 - 31.0 kpa (4 - 4.5 psi) (Halkey Roberts, LeeField, and Mirada models are acceptable));
  - vii. Have intercommunicating inflation/deflation fill valves with grey fabric covers on all fixed inflatable compartments;
  - viii. Have the manufacturer's standard external wear protection to prevent abrasion and puncture of the buoyancy tube constructed of extruded rubber (neoprene or equivalent) that is securely attached to the buoyancy tube along the entire length of the outboard sides of the buoyancy tube covering 1/6 of the circumference centered on the outermost horizontal points where the tube would first contact an external object; and
  - ix. Have grey Non-skid full-length step tread on tube set top center
  
- (c) Removable sections as follows:
  - i. Maintain watertight integrity of the boat when removed;
  - ii. Be 100 cm (40 in) in length each;
  - iii. Incorporate deflectors that limit the ingress of water when the removable section is removed;
  - iv. Not have securing or retrieval lines provided;
  - v. Have an overpressure relief valve and a manual inflation/ deflation valve with a grey fabric cover to allow deflation for storage on deck; and
  - vi. Have two (2) tube handles located approximately 45 degrees inboard of the top of the removable section to support removal and replacement;
  
- (d) Fixed sections as follows:
  - i. Attach to the hull by one piece longitudinal or lengthwise connectors augmented with other devices as appropriate to ensure a robust connection capable of withstanding the forces experienced when operating at the maximum operational performance that is:
    - a. Watertight;
    - b. Flush mounted to the inside of the hull to eliminate snagging or tripping hazards;
    - c. Permits removal of the tubes by qualified personnel; and

- d. Permits repair of minor damage to the tubes including small punctures or scrapes without complete removal of the tube from the boat;
  - ii. Bow tube attachment flat bar flanges attached with Flat Head Machine Screws and no protrusions providing potential tube pinch points;
- (e) Include a readily removable and replaceable tube set skirt protector to prevent front end damage from initial contact with large boats and docks as follows:
- i. Be constructed of 1100 dtex grey neoprene/Hypalon™ with grey lacing cuff for skirt attachment;
  - ii. Extends from the console area forward to the bow; and
  - iii. Attaches to the flange at the outer bottom of the buoyancy tube;
- (f) Include five (5) equally spaced stainless steel D rings fitted along the top of the tube sets on both the Port and Starboard sides with the lower edge butted to top of the haze grey rubber bumper strakes capable of supporting 12 mm (0.5 inch) diameter nylon braided rope.

#### 5.3.5.1 Inflation System

The on-board inflation system shall:

- (a) Consists of a primary system augmented by a back-up system utilizing dive bottles as follows:
  - i. Electrically powered primary system permits inflation of all fixed buoyancy tube compartments from one location in not more than thirty (30) minutes;
  - ii. Secondary (dive cylinder) system as follows:
    - a. Include two (2) 2.8 cubic meter (100 cubic feet) aluminum dive cylinders with a 200 bar (3000 psi) capacity each secured in the Lazarette box with 3-point ratchet straps
    - b. Dive cylinders with standard scuba tank fittings (SVB-5000-48 valve, SRB 5105 regulator with HP pressure gauge or equivalent);
    - c. Permits re-inflation of any two compartments concurrently when 50% depleted; and
    - d. Permit inflation of a deflated or partially deflated tube section while underway;
- (b) Include one-way check valves at all fill points, and banjo fittings with restricting orifices on aft tube section fill points to prevent tube rupture during rapid inflation;
- (c) Route all fill lines from the Lazarette box to the destination fill point locations such that they are protected from puncture and do not pose a tripping hazard to the occupants;
- (d) Include an inflation hose for the removable section that can be stored in a location so as not to present a snagging or tripping hazard, (e.g., Lazarette box); and
- (e) Include isolation valves on forward and aft tube sections, and removable sections, which enable continued inflation where any single valve or fill line fails.

#### 5.3.6 Console

The Console shall:

- (a) Comprise a single two-position Console constructed of a robust light-weight material (e.g., marine grade aluminum, carbon fiber, etc.) that includes the Coxswain Station and the Navigator Station;

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- (b) Permit connection of electronic components in the sub-console Communication Station that is integrated into the center seat in the second row;
- (c) Provide an enclosed waterproof mounting location that is readily accessible to facilitate repair and replacement for the following equipment:
  - i. VHF Marine Radio (Section 5.3.8 (b)i);
  - ii. Two (2) V/UHF radios (Section 5.3.8 (b)iii.a) and mounting trays (Section 5.3.8 (b)iii.b); and
  - iii. Two multiband V/UHF RF amplifiers (Section 5.3.8 (b)iii.c);
- (d) Provide flush mounting of all electronic displays, with protective covers to prevent inadvertent activation of controls and securely fitting sun covers that remain in place in all operating conditions when installed and are readily removed without tools;
- (e) Include a Master Switch Control Panel as follows:
  - i. Located in the center of the Console to permit access by both the Coxswain and Navigator;
  - ii. A single panel housing all switches in a top row and related push button breakers in a lower row as appropriate; and
  - iii. Locate all switches in a logical sequence as enclosed in protective plates that recess the switches and push button breakers to protect from inadvertent selection;
- (f) Provide a human control interface that gives the Coxswain and Navigator ready access to all equipment and systems including:
  - i. The Master Switch Control Panel (see above);
  - ii. Navigation Equipment (Section 5.3.7);
  - iii. Propulsion System (Section 5.3.10);
  - iv. Fuel System (Section 5.3.11);
  - v. Steering System (Section 5.3.12);
  - vi. Electrical Systems (Section 5.3.13); and
  - vii. Pumping and Drainage System (Section 5.3.14);
- (g) Provide the Coxswain and Navigator unencumbered forward visibility while in the seated or standing positions;
- (h) Provide not less than 12.7 cm (5 in) of clear deck space between the console and the tube set mounting interface on both sides of the Console for walk around access to bow and transom;
- (i) Provide a center windshield at the front of the Console that does not occlude the view of the Coxswain and Navigator as follows:
  - i. Raised/lowered manually, to protect the Coxswain and Navigator from wind and spray off the bow when required, from a position level with the top of the Console to a maximum height of 38 cm (15 in) in 3.8 cm (1.5 in) increments;
- (j) Have full length hand rails securely attached around the perimeter of the console exterior (front and sides);
- (k) Include holders located on both outer sides of the Console for storage of the sea strobe emergency light beacons (Section 5.5 vii) in the near vertical position as follows:
  - i. Provide secure storage in a vibrating environment; and
  - ii. Canted rearward sufficiently to enable ready access by the Coxswain and Navigator;

- (l) Include recessed cavities on the outside of both sides of the Console for storage of two Class B fire extinguishers (Section 5.5 vi); and
- (m) Include labels and notices for the vessel in accordance with TP -1332E.

#### 5.3.6.1 Coxswain Station

The Coxswain Station (Port side) shall:

- (a) Incorporate all gauges, instrumentation, and alarms required to fully monitor vessel systems and auxiliaries as well as permit the operator to control direction and engine speed while in the standing, sitting and reclining positions;
- (b) Situate engine controls on the Starboard side of the Coxswain Station positioned to minimize inadvertent activation or deactivation of adjacent controls when one control including the steering wheel is utilized with engine throttle controls;
- (c) Incorporate keyed ignition and push button switch, and one Master kill dead man switch for each engine, mounted adjacent to each other;
- (d) Have an Intercom System connection point (Section 5.3.8 (b)ii.b.8);
- (e) Include a direct read graduated marine compass in accordance with Section 5.3.7 (d);
- (f) Include a flush mounted electric horn on the front of the Console operated by a spring-loaded push-button switch that meets the requirements of Canada Shipping Act - Collision Regulations; and
- (g) Have ready access to the controls for the VHF marine radio (Section 5.3.8 (b)i).

#### 5.3.6.2 Navigator Station

The Navigator Station (Starboard side) shall:

- (a) Have an Intercom System connection point (Section 5.3.8 (b)ii.b.8);
- (b) Have one (1) NEMA-15 accessory power receptacle (Section 5.3.13 (d)i) to service the Starboard deck area;
- (c) Have one (1) satellite short data burst Iridium beacon (EMS Satcom PDT-300i);
- (d) Have a primary navigation display in accordance with Section 5.3.7 (e)i; and
- (e) Have a secondary navigation display in accordance with Section 5.3.7 (e)ii.

#### 5.3.6.3 Communication Station

The Communication Station shall:

- (a) Be integrated into the center seat in the first row of seats immediately behind and between the Coxswain and Navigator seats;
- (b) Have two (2) Intercom System connection points (Section 5.3.8 (b)ii.b.8);



- (c) Include two (2) serial cables for control of the Multiband V/UHF radios (Section 5.3.8 (b)iii.a); and
- (d) Include one (1) IPX6 or equivalent Mil Std breakout cable set.

#### 5.3.7 Navigation Equipment

The DND RHIB shall:

- (a) Be fitted with navigation equipment sufficient in all respects for the safe handling of the vessel and to meet the requirements of the Canada Shipping Act - "Collision Regulations" (COLREGS);
- (b) Include components that are compliant with IPX6 (ANSI/IEC 60529-2004) to withstand jets of water;
- (c) Be wired and interfaced in accordance with the approved manufacturer's schematic drawings and instructions;
- (d) Include a 15 cm (6 in) direct read graduated marine compass that is adjustable for deviation, mounted at the center of the Coxswain Station (Section 5.3.6.1 (e)), with a dedicated light and waterproof marine grade dimmer switch (Ritchie SS 5000 or equivalent);
- (e) Have all components of the navigation system integrated within a distributed marine parameter reporting system (Raymarine Seatalk multi-station network or equivalent) as follows:
  - i. Include a primary 30 cm (12 in) integrated navigation display (Raymarine e127 Hybrid Touch Multifunction/Sonar Display Part# E70024 or equivalent) in the Console dash centered on the Navigator's position that includes:
    - a. Data display capabilities for all on board systems including radar and external video;
    - b. A navigational display pre-loaded with Canadian charts (Coastal and inland waterways);
    - c. Resolution of not less than 1280 x 800 pixels WVGA;
    - d. Multi-function configurable display;
    - e. Chart-plotter with the provision for scaling from 1/32 to 4000 nautical miles;
    - f. Provide 3000 possible waypoints with waypoint transfer and track history for 15 tracks;
    - g. AIS overlay for target symbols and information;
    - h. Sunlight and night viewable by contrast and color scheme adjustment; and
    - i. Touch screen control;
  - ii. Include a secondary 23 cm (9 in) integrated navigation display (Raymarine e97 Multifunction/Sonar Display Part# E70022 or equivalent) in the Console dash adjacent to the primary display that includes:
    - a. Functionality matching the primary integrated navigation display; and
    - b. Resolution of not less than 800 x 480 pixels WVGA.
  - iii. Include a high speed multi-station network switch (Raymarine HS5 Network Switch Part# A80007 or equivalent) interfaced as follows:
    - a. Primary and secondary navigation displays; and
    - b. Radar scanner (Section 5.3.7(e)v) via a crossover coupler (Raymarine SeaTalk High Speed Crossover Coupler Part# E55060 or equivalent);
  - iv. Include an AIS receiver (Raymarine AIS350 Dual Channel AIS Receiver Part# E32157 or equivalent) interfaced as follows:



- a. Via a splitter (Raymarine SeaTalk NG T-Piece Part# A06028 or equivalent) to the following:
  - 1. Via a multi-connector (Raymarine SeaTalk NG 5-Way Connector Part# A06064 or equivalent) to the following:
    - a. Primary and secondary navigation displays;
    - b. GPS receiver (Section 5.3.7(e)vi; and
    - c. Depth/Temperature transducer (Section 5.3.7(e)vii.a);
  - 2. Via a splitter (Raymarine AIS 100 Active Antenna Splitter Part# A80190 or equivalent) to the following:
    - a. Marine VHF radio (Section 5.3.8 (b)i); and
    - b. VHF Marine antenna (Section 5.3.8 (b)i.a);
- b. To the Iridium Beacon (Section 5.3.6.2 (c));
- v. Include an FCC compliant radar scanner (Raymarine RD424HD 24 inch Digital Radome Part# E92143 or equivalent) as follows:
  - a. Minimum 4 kW output at the antenna; and
  - b. Have a ruggedized GRP radome cover;
- vi. Include a Global Positioning System (GPS) receiver (Raymarine Raystar 130 GPS Receiver Part# E32153 or equivalent);
- vii. Include a transom mounted HD Transducer bracket with a bottom surface parallel to the hull bottom for maximum depth performance with the following transducers:
  - a. A retractable depth and temperature sensor (Raymarine Plastic Depth/Temperature Retractable SmartTransducer with 12 Degree Tilt Part# A22112 or equivalent); and
  - b. A low profile through-hull style depth sounder (Raymarine Plastic Low Profile Thru-hull Depth Transducer Part# A80171 or equivalent) interfaced to the primary navigation display;
- viii. A heading sensor (Raymarine Heading Sensor Part# T70132 or equivalent) interfaced to the primary navigation display.

#### 5.3.7.1 Navigation Lighting

The DND RHIB shall:

- (a) Be fitted with navigation lighting and equipment sufficient in all respects for the safe handling of the vessel and to meet the requirements of the Canada Shipping Act - "Collision Regulations" (COLREGS), unless otherwise specifically stated as for the vertical separation;
- (b) Include the following:
  - i. Permanently mounted Navigation lighting fixtures that:
    - a. Display the arc and range of visibility as defined in the Canada Shipping Act, Collision Regulations (COLREGS);
    - b. Resist the effects of vibration and moisture and incorporate adequate protection from damage projected to occur when lying alongside another boat or a pier;
    - c. Do not interfere with the vision and sight lines of the Coxswain and Navigator; and
    - d. Includes high performance lighting with low power consumption and no residual illumination when extinguished;
  - ii. Lighting as follows:
    - a. One (1) all around arch/anchor light (Perko LED Anchor light part # 1345-DP1WHT or equivalent) on the radar arch that is within 17.8 cm (7in) of the overall height and visible 360° around the boat;

- b. Waterproof navigation lights (Perko LED P&S Navigation lights part # 602-DP1BLK or equivalent) permanently attached to either side of the Radar Arch that are wired together on a separate breaker of the 12 volt DC electrical system;
  - c. One (1) rear facing following light (Microstar LED or equivalent) at the top center rearmost point of the engine guard with dimming functionality provided to enable a following resource to maintain a position behind the boat;
  - d. Three (3) selectable red or white dome lights (Hella LED or equivalent) for local area illumination located as follows:
    - 1. One (1) inside the console; and
    - 2. Two (2) inside the Lazarette box, one (1) on each side port and starboard;
- (c) Include protected wiring to prevent chaffing or snagging;
- (d) Incorporate fuses on the switch connections to the battery; and
- (e) Include lighting switches on the Master Switch Control Panel located on the Console (Section 5.3.6 (e)) as follows:
- i. Navigation Switch - Three-way switch for control of the Arch /Anchor light and Port and Starboard sidelights with positions as follows:
    - a. Anchor and Navigation;
    - b. Off; and
    - c. Anchor Only;
  - ii. Additional switches for the quick disconnect anchor light, following light, and deck and dome lights as appropriate.

#### 5.3.8 Communications System

The DND RHIB shall be fitted with communication equipment that provides for inter-personnel internal and external communication as follows:

- (a) Compliant in all respects for the safe handling of the vessel and to meet the requirements of the Canada Shipping Act - "Collision Regulations" (COLREGS):
- (b) Includes the following:
  - i. A waterproof fixed mount VHF Marine radio (ICom IC-M424 or equivalent) for commercial communications with variable reactance frequency modulation including:
    - a. A VHF Marine antenna (Shakespeare 36 inch VHF antenna 5215-AIS or equivalent) with AIS capability and not less than 3dBi gain, shared with the AIS receiver (Section 5.3.7 (e)iv) mounted on the Radar Arch (Section 5.3.4 (a)v.c);
    - b. Interfaces to the following:
      - 1. The primary navigation display (Section 5.3.7(e)i); and
      - 2. A loudspeaker (Whelen SA315P or equivalent) flush mounted on the forward side of the Console;
  - ii. A ruggedized multi-channel Intercom System (ICS) (SAVOX IMP 4M3R Fixed or equivalent) as follows:
    - a. Permits simultaneous operation of both multiband V/UHF radios (See below);
    - b. Includes four (4) waterproof belt connection stations as follows:
      - 1. Selector switch for radio transmission and intercom mode;
      - 2. Permits single and dual channel reception modes;
      - 3. Selectable Voice Operated Exchange (VOX) hands free operation for intercom mode;

4. Push to Talk (PTT) operation for radio transmissions;
  5. Compatible with Peltor headsets;
  6. Permits quick disconnect from ICS and connect to personnel hand held radios (AN/PRC-148 MBITR);
  7. Underwater rated connectors to ICS connection points; and
  8. Located as follows:
    - a. Two (2) mounted at the Communication Station; and
    - b. Two (2) mounted on the Console;
- iii. A V/UHF radio system as follows:
- a. Two (2) multiband V/UHF radios are to be fitted for but not with utilizing the two (2) GFE supplied AN/PRC 117F radios (SOW Appendix 1) mounted in the Console (Section 5.3.6 (c)ii);
  - b. Two (2) mounting trays (Ultralife McDowell Research RMT2 or equivalent physical mounting interfaces) for the V/UHF radios mounted in the Console (Section 5.3.6 (c)ii);
  - c. Two (2) 50 Watt 30-512 MHz multiband RF amplifiers with integrated LNAs (AR Modular AR-50 or equivalent) shock mounted in the Console (Section 5.3.6 (c)iii) that includes:
    1. DC power for the amplifiers;
    2. RF connections (two in and two out) to the radios in the Console utilizing LMR-400 Ultraflex RF cable; and
    3. A method of heat dissipation;
  - d. Antennas, mounted on the Radar Arch (Section 5.3.4 (a)v), as follows:
    1. One (1) Multiband V/UHF whip antenna (Cobham GD2013-2221P15 or equivalent), no longer than 122 cm (48 in) that supports 100 Watts of input power with the following minimum gains:
      - a. -16 to -4 dBi at 30 to 88 MHz;
      - b. -4 dBi at 118 to 174 MHz; and
      - c. 0 dBi at 225 to 512 MHz;
    2. One (1) RHCP UHF TacSat antenna (Cobham GV2432 or equivalent) with a hemispheric antenna pattern optimized for low elevations as follows:
      - a. No larger than 38 cm (15 in) in diameter and 38 cm (15 in) in height;
      - b. Transmission frequencies between 290-318 MHz;
      - c. Receive frequencies between 242-270 MHz;
      - d. Supports 100 W of input power with the following minimum gains:
        - i. 3 dBi gain peak; and
        - ii. 0 dBiC average gain between 10 and 25 degree elevation.
      - e. A physical mounting interface; and
      - f. Connection to the radios in the Console with N type female connectors;
    3. One (1) location for a Future Capability Antenna no larger than 38 cm (15 in) in diameter and 38 cm (15 in) in height; and
    4. One (1) Iridium phone connection point on the console connected to the Iridium phone antenna (Aero Antenna Iridium Fixed Mast Pole Mount Antenna Model AT1621-73W-TNCF-000-00-00-NM or equivalent).

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#### 5.3.9 Seating

The DND RHIB seating shall be as follows:

- (a) Include seats as follows:
  - i. Two (2) fixed first row of side by side individual crew seats for the Coxswain and Navigator; and
  - ii. Ten (10) foldable/moveable/removable passenger seats;
- (b) Include seating in the deck area that permits, without the use of tools, installation, movement and removal of individual passenger seats;
- (c) Permit the following seating arrangements
  - i. Second row of three (3) seat mounts side by side directly behind the crew (Coxswain and Navigator) fixed seats;
  - ii. Third row of three (3) seat mounts side by side directly behind the second row seat mounts;
  - iii. Fourth row of three (3) seat mounts side by side directly behind the third row seat mounts; and
  - iv. Fifth row of three (3) seat mounts side by side directly behind the fourth row seat mounts;
- (d) Permit, through folding, moving and removing seats in the Third and Fourth rows, creation of a minimum clear deck spaces as follows:
  - i. Nominal 102 cm (40 in) by the full width of the interior of the hull (between the buoyancy tubes on either side of the boat) forward of the last (fifth) row; and
  - ii. Nominal 75 cm (30 in) by 102 cm (40 in) wide between the Third row seats immediately forward of the clear deck space above;
- (e) Have maximum and minimum design seat configurations as follows:
  - i. A Maximum Seat Configuration of fourteen (14) seats (additional two (2) passenger seats are obtained separately) to include:
    - a. Two (2) first row crew seats;
    - b. Three (3) second row passenger seats;
    - c. Three (3) third row passenger seats;
    - d. Three (3) fourth row passenger seats; and
    - e. Three (3) fifth row passenger seats;
  - ii. A Minimum Seat Configuration of two (2) seats to include:
    - a. Two (2) first row crew seats; and
    - b. All other seats removed from the boat;
- (f) Seat mounting locations to provide enhanced safety as follows:
  - i. Located to and prevent striking contact with hard and sharp objects at rest and while underway; and
  - ii. Seat spacing such that occupants do not interfere with other seated occupants or any boat equipment or fixtures.

##### 5.3.9.1 Seats (General)

The seats (fixed and removable) shall be as follows:

- (a) Designed to support occupants in the seated position to minimize fatigue with sufficient strength to withstand the lateral and vertical impact-loading that equates to the conditions of the Design Mission as follows:

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- i. Shock mitigation that does not bottom out in the Design Mission with instantaneous loads of 10 - 13 Gs; and
  - ii. Heavy duty shock absorption with linear travel of 20-25 cm (8-10 in). Pivoting rotational seats systems are not acceptable;
- (b) Constructed as follows:
- i. Include aluminum frames capable to support persons in full gear weighing 120 kg (264 pounds);
  - ii. Include anodized aluminum finish where exposed to elements;
  - iii. Include grey seat cushions with a ballistic nylon cover (1600 denier nylon minimum) of a suitable thickness such that they contribute to the shock mitigation of the seating system and are resistant to tearing, puncture and deterioration in marine environmental conditions; and
  - iv. Include seat adjustments to the weight of the occupant to provide a similar range of mitigation without reaching the full range of motion limits (bottoming out) for any occupant.

#### 5.3.9.2 Crew Seats

The (fixed) crew seats shall be as follows:

- (a) Positioned at the Port and Starboard stations of the console and mounted directly to the deck to provide support to persons in the standing, reclining and seated positions;
- (b) Provide a stowed (i.e., seat folded) configuration that permits operation of the boat while in the standing and reclining positions;
- (c) Provide adjustability such that the seats are readily configured while the occupant is in the standing, seated or reclining positions (i.e., raised, lowered and moved fore and aft) without impacting the user's activity while providing full comfort and lateral support and no possible contact with hard surfaces; and
- (d) Include a data collection system to record accelerations in multiple axes (i.e., horizontal, lateral and vertical).

#### 5.3.9.3 Passenger Seats

The (moveable/removable) passenger seats shall be as follows:

- (a) A foldable seat that can be attached to the deck mounts to support the occupant in the sitting and straddling positions;
- (b) Include a supporting back rest, handholds and integrated foot rest for both feet;
- (c) Foldable as follows:
  - i. When folded, the seat remains balanced and centered over the mounting area such that an unsecured seat stands upright on a level stable surface; and
  - ii. The folding mechanism shall require between 4.5 and 9 kg (10 and 20 pounds) to lock or unlock the seat in the folded position;
- (d) Include removable seat attachment points (second, third, fourth and fifth rows) as follows:
  - i. Include mounting points in deck with no part protruding above the surface of the deck by more than 2 mm (0.08 in) when the seats are not in place; and

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- ii. Incorporate guided mechanisms for mounting seats to the deck such that placement of the seat within an area +/- 2.5 cm (1 in) and within 3° of rotation above the intended location is sufficient to enable the seat to settle into place for attachment and securing;
- (e) Positioning of removable seats (second, third, fourth and fifth rows) as follows:
  - i. Installation by two trained persons in less than 5 minutes for each row;
  - ii. Removal from the boat by two trained persons in less than 5 minutes for each row; and
  - iii. Reconfiguration by two trained persons in less than 5 minutes alongside or underway to clear deck space by folding seats with those seats remaining securely connected to the deck.
- (f) Seat attachment mechanisms as follows:
  - i. Be readily accessible in any installed configuration (i.e., side or center seat);
  - ii. Not require tools to operate (i.e., lock, un-lock); and
  - iii. Require between 4.5 and 9 kg (10 and 20 pounds) to lock or unlock the seat in the deck mount.

#### 5.3.10 Propulsion System

The DND RHIB propulsion system shall comprise the engines and propellers, hull engine mounting interface, engine controls, and engine auxiliary equipment as follows:

- (a) Engines (two (2) per DND RHIB) will be Government Supplied Material (GSM) in accordance with the Statement of Work Appendix 1, and installed as follows:
  - i. Engines securely mounted to the hull to support the motor weight and available thrust in a configuration that best complements hull design and affords maximum control and stability
  - ii. Engine installation and pre-startup service to be completed in accordance with the engine manufacture's recommendations by an OEM trained and certified technician to ensure that equipment and components are properly installed for use that does not void the engine manufacture's warranties in any way;
- (b) Propellers provided and installed that are capable of meeting the Operational Performance (Section 4.1) as follows:
  - i. Right Hand propeller (such as the Mercury Rev 4 17P 4 blade Right Hand part number 857024A46); and
  - ii. Left Hand Propeller (such as the Mercury Rev 4 17P 4 blade Left Hand part number 857025A46);
- (c) High-throughput air inlet snorkels (Mercury Snorkel Kit part number 8M80244668 or equivalent) with reusable conical air filters located within the Lazarette box designed to avoid water ingestion;
- (d) Engine controls as follows:
  - i. An instrumentation package for each engine complete with wiring harness, and an integrated digital display (Mercury Vessel View Display part number 79898277K16 or equivalent) at the Coxswain Station for performance parameters including engine rpm, hours powered, speed, trim, fuel available, battery status, water pressure, and water temperature;
  - ii. Audible alarms and warning indication to indicate critical parameters are outside of normal operating ranges to include high coolant temperature and low lubricating oil pressure; and

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- iii. Dual binnacle type throttles (Mercury Console kit part number 877775K31 or equivalent) with shift harness (at the Coxswain station) that incorporates a group engine trim and tilt control to integrate the two drive leg trim controls on one switch;
- (e) Controls, hydraulic and electrical cables from the boat to the outboard engines installed in UV resistant pipes (LOOM) with these pipes installed in such a manner that no cable is immersed in water; and
- (f) A rear engine guard installed as follows:
  - i. Protects the outboard engines and propellers from impact with external objects at deck level and above in all ranges of extension and retraction; and
  - ii. Incorporates welded aluminum pipe construction suitable for salt water.

#### 5.3.11 Fuel System

The fuel system shall

- (a) Be in compliance with all requirements of TP 1332E as amplified by the ABYC standards;
- (b) Provide a supply rate as required by the twin Mercury Verado 350 HP engines;
- (c) Include the following:
  - i. An internal (built-in) fuel tank of not less than one thousand (1000) liters (225 Gal) that:
    - a. Is sufficiently baffled or otherwise designed to minimize free surface effects;
    - b. Has isolation valves at the filter and manifold system to permit maintenance and repair;
    - c. Has a flow-through ventilation system, with a flow-through in accordance with TP 1332E, as follows:
      - 1. Two selectable fuel vents, one forward and one aft, with an interlock that ensures one vent is always open; and
      - 2. Ball check valves on each ventilation inlet/outlet;
    - d. Has a fuel filling system as follows:
      - 1. Sized to provide a fuel filling rate of at least 35 liters (7.7 Imperial gallons) per minute; and
      - 2. Has a fill cap for the fuel filling pipes as follows:
        - a. Stands proud of the deck to avoid contamination entering the fuel system when open; and
        - b. Has a permanent label denoting type of fuel;
    - e. Includes an electronic level sensor and a dip Port accessible through a deck access plate;
    - f. Includes an inspection hatch in the deck to allow access to the fuel pick-ups and fuel vent control levers;
    - g. Is hydrostatically or pressure (air) tested to twenty-four (24) kpa (3.5 psi) in accordance with TP 1332E;
    - h. Has the manufacturers' name, capacity, and testing data clearly identified in a conspicuous location; and
    - i. Is labeled in accordance with TP 1332E (including labeling of all valves);
  - ii. A fuel-water separator filter mounted "in-line" to each engine with ready access to drain the sediment bowl;
  - iii. Fuel lines and fittings as required with sufficient protection from damage due to chafing, wear and vibration;



- iv. Electrical components installed in fuel tank spaces, and any other spaces that are not open to the atmosphere where fuel tank connections are provided, ignition protected in accordance TP 1332E;
- v. Foam where appropriate to enhance buoyancy and minimize the potential for accumulation of explosive vapors that does not impede fill or supply rate;
- vi. A selector manifold (e.g., three-way valve) for connection of the on-deck Auxiliary Fuel Storage bladder;
- vii. A fuel metering device that measures total fuel consumption; and
- viii. A fuel tank pump-out connection constructed of rigid tube that extends into the lowest part of the tank with a brass quick connect at the upper end compatible with a Safeway BS105-4 connector.

#### 5.3.11.1 Auxiliary Fuel Storage

The DND RHIB shall have auxiliary fuel storage as follows:

- (a) A portable fuel bladder (SEI Industries Inc. part number 006423 or equivalent) as follows:
  - i. Constructed of a suitable fabric material (i.e., non-collapsible hard containers are not acceptable);
  - ii. Minimum 200 liters (44 Imperial gallons) capacity;
  - iii. Nominal dimensions (not including tie downs) as follows:
    - a. 61 cm (24 in) wide;
    - b. 152 cm (60 in) long; and
    - c. 33 cm (13 in) high (full);
  - iv. Include a lifting (crane) and tie-down harness;
- (b) Include a readily accessible fuel line 1.27 cm (0.5 in) male quick connect brass coupling inside a recessed cup with 10 cm (4 in) plastic threaded hatch cover on the Port or Starboard upper forward face of the Lazarette box for connection of the auxiliary fuel storage bladder to the Fuel System.

#### 5.3.12 Steering System

The DND RHIB steering system shall:

- (a) Have a remote electrical over hydraulic dual cylinder power assisted steering system (Mercury part # 892558A02 and supporting kits, or equivalent) that incorporates a self-contained oil reservoir with a 50 cubic centimeter (3 cubic inch) capacity and replaceable seals on the rams;
- (b) Incorporate a stainless steel steering wheel (Mercury part # 892761A05 or equivalent) with a non-slip padded surface for gripping, mounted in the Console at the Coxswain Station in a manner that prevents fore and aft or lateral movement of the wheel and steering shaft with a maximum of 6.5 turns from stop to stop (hard-over to hard-over);
- (c) Include a power steering pump (Mercury part # 892440A08 and supporting kits or equivalent) mounted in the Lazarette box that receives electrical power from either engine, with a readily accessible isolation valve located within the Lazarette box that disables the steering and locks the engines at their current position;
- (d) Include a steering cylinder kit (Mercury part # 896500A01 or equivalent) mounted to each engine to actuate steering hydraulics;
- (e) Include a tie bar to interconnect the two engines; and



- (f) Have all hydraulic steering hoses routed below deck that are readily accessible for maintenance inspections and repair.

#### 5.3.13 Electrical System

The DND RHIB electrical system shall:

- (a) Have a switch to turn off all lights and audible warnings/alarms (i.e., blackout) while maintaining all engine and boat operating functions;
- (b) Have one 12 volt DC distribution system to power the engine starting and boat service loads including:
  - i. Navigation lighting;
  - ii. Navigational equipment;
  - iii. Instrumentation, communications, and other electrical equipment in accordance with this specification;
  - iv. Bilge Pumps; and
  - v. Propulsion and steering;
- (c) Have a power management system that provides power consumption and availability information, and manages power distribution at idle and underway with provisions included to provide required power utilizing increased engine idle speeds where necessary;
- (d) Include three NEMA 15 accessory receptacles (with screw on watertight caps) installed in the following locations:
  - i. One at the navigator console position for access from the Starboard deck area;
  - ii. One at the bow for access in the bow area; and
  - iii. One at the Port side of the forward face of the Lazarette box for access in the aft Port area;
- (e) Incorporate electrical system design, component selection, and installation in accordance CSA C22.2 No. 183.2-M1983 (R1999), TP 1332E, and applicable ABYC standards;
- (f) Have all electrical equipment and hardware installed in accordance with the manufacturer's specifications;
- (g) Have all electric connections sealed from the atmosphere with heat shrink material or equivalent to ensure a moisture resistant seal;
- (h) Have a flush mounted 12 volt circuit breaker panel that is sheltered from the weather on the Console for ready access by the Coxswain and Navigator as follows:
  - i. Include breakers for all fitted electrical equipment and spare breakers (minimum six (6)) for future equipment installation
  - ii. All breakers labeled; and
  - iii. Permits access to electrical wiring service spaces via weather tight hatches at the console and elsewhere as appropriate;
- (i) Support simultaneous operation of all fitted electrical equipment without causing interference to any electronic equipment or to the magnetic compass; and

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- (j) Have a charging system that enables battery charging from either the engine alternators or a fitted 120 volt AC 30 amps automatically regulated charger (shore power charger) as follows:
  - i. Charging from one system at a time, with an interlock to prevent interconnection or shorting between the systems; and
  - ii. Include three (3) output circuits with breakers and two spares to support three 12 volt DC output circuits.

#### 5.3.13.1 Batteries

The DND RHIB battery system shall:

- (a) Provide power to the boat electrical system when the engines are not operating, and for engine start up;
- (b) Include the following:
  - i. Four (4) marine grade dual-purpose absorbed glass mat (AGM) maintenance free (group 34) 12 volt batteries (Odyssey 34M-PC1500MS or equivalent), two for the Console and one for each engine, each with a minimum of 1000 marine cranking amps;
  - ii. An isolator such that the engine batteries will not discharge due to the boat electrical system load and remain available for starting the engines;
  - iii. A battery selector switch mounted in a protected location on/in the Console to prevent snagging or accidental switching that enables:
    - a. Using the console batteries for engine starting; and
    - b. Cross connection of engine batteries to permit starting of either engine from either battery with a minimum reserve of 25 amps for 135 minutes;
  - iv. A watertight battery compartment within the Lazarette box fitted with a suitable means of gas venting.

#### 5.3.14 Pumping and Drainage

The DND RHIB pumping and drainage shall include the bilge system and hull and deck drainage as follows:

- (a) A bilge system as follows:
  - i. Include two (2) marine grade electric bilge pumps (Rule® 2000 Model 02 Submersible Bilge Pump or equivalent) with a minimum capacity of 9090 liters per hour (2000 Imperial gallons per hour) each;
  - ii. Have one (1) manually operated diaphragm type bilge pump with a minimum capacity of 105 liters per minute (23 Imperial gallons per minute) located astern of the Lazarette box that provides ready access when the aft of the boat is partially submerged and permits vertical pumping;
  - iii. Locate bilge pumps to evacuate from the lowest points of the aft compartment;
  - iv. Have an electric bilge pump control switch located on the Console for each of the two electric pumps with settings for 'Automatic', 'Off', and 'Manual' operation with an associated red indicator light that illuminates when that bilge pump is operating;
  - v. Provide through-hull bilge pump discharges above water level that enable the bilge pumps to discharge directly overboard aft and prevent back flow into the hull;
  - vi. Incorporate automatic float switch controls (Ultra® Pump switch Junior JR Model UPS-02 Float Switch or equivalent) to initiate the electric bilge pumps (in Automatic mode) when water is present in the bilge;
  - vii. Have a non-corrosive aluminum threaded plug at the hull drainage point; and

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- viii. Have a bilge blower (Atwood Turbo 3000 or equivalent) to expel fuel fumes with a minimum 2.8 m<sup>3</sup> per minute (120 ft<sup>3</sup> per minute) flow rate (The flow rate of the bilge blower to be confirmed with a certificate of Proof Test);
- (b) A hull and deck drainage system as follows:
  - i. Permit water taken on deck and within the hull to drain quickly and efficiently without manual intervention;
  - ii. Provide for self-bailing in accordance with TP 1332E and ISO 11812:2001 with all scuppers fitted with anti-backflow mechanisms;
  - iii. Provide for self-draining by means of suitable self-draining freeing ports in the transom;
  - iv. Include transom deck drainage scuppers of a size to ensure sufficient drainage of forward and aft sections of exposed deck surfaces in accordance with TP 1332E and ISO 11812:2001;
  - v. Provide adequate limber holes at the transom and in the keel beam to provide assured Port and Starboard drainage to the bilge; and
  - vi. Provide one drainage point at the lowest point within the DND RHIB to drain all hull compartments when the DND RHIB is out of the water and on a level surface.

#### 5.4 Colour, Painting, and Corrosion Protection

The DND RHIB is to be prepared and painted as per the following:

- (a) All external components that support paint bonding shall be finished in a Haze Grey colour, FED-STD-595C, colour 26270 (low sheen) except as noted otherwise in this section, to include and not limited to:
  - i. Hull, engine guard, deck, Lazarette box, radar arch, and console;
  - ii. Fastener heads;
  - iii. Tube Set D-Rings;
  - iv. GRP radome cover;
  - v. Inside of console;
  - vi. Seats (inside and out, including frames, and bases); and
  - vii. Engines above gear cases with all decals and logos removed prior to painting;
- (b) Colour scheme, to be confirmed with the TA during the Contract Kickoff Meeting and/or during the production phase as appropriate, shall be as follows:
  - i. Incorporate a haze grey colour on:
    - a. Seat Upholstery;
    - b. Tube Set; and
    - c. Bow skirt;
  - ii. Incorporate a black colour on items that are black as supplied (e.g. switches);
  - iii. Incorporate an original or natural colour on:
    - a. Arch pins;
    - b. Inflation valves; and
    - c. Fire extinguishers;
- (c) The primary transom mounting bracket, trim cylinder assemblies, lower SS cheek plates, and gear case **shall not** be painted;
- (d) All exposed surfaces shall be non-reflective and subdued colours where haze grey is not possible;
- (e) All exposed aluminum and stainless steel shall be free of cosmetic blemishes, including all construction marks, gouges, scratches, and stains, prior to finishing;

- (f) All externally visible components shall be powder coated and anodized or equivalent and painted haze grey to facilitate low profile operation in day time and night time operations, unless not possible or otherwise specified;
- (g) All exposed aluminum surfaces that are in high wear locations shall be anodized;
- (h) Where powder coating or anodizing is not possible (or practical), the surfaces shall be prepared in a manner to ensure long lasting and blister free adhesion, then primed and painted with manufacturers matte (non-glare) marine type haze grey paint as follows:
  - i. Two (2) coats of etch-primer; and
  - ii. One (1) coat (minimum) of paint for a finished dry thickness of at least 0.1 mm (4 mils);
- (i) Fabric covers (grey) shall be provided for stainless steel components where practical (e.g., inflation valves).

#### 5.5 Safety Equipment

Each DND RHIB shall include all equipment required by the Canada Shipping Act- Small Vessel Regulations for a boat of this size as follows:

- (a) Safety equipment expiration dates of not less than one year after delivery;
- (b) Installed within appropriate stowage/securing arrangements in accordance with Section 5.3.2.2; and
- (c) Safety equipment to include (as a minimum):
  - i. One (1) bottom anchor (Fortress FX11 anchor part # H-S-85001 or equivalent) with not less than thirty (30) meters (100 ft) of double braided nylon rope and chain as follows:
    - a. The first three (3) meters (10 ft) from the anchor attachment point shall be chain (stainless steel or zinc plated for corrosion resistance); and
    - b. The remaining length shall be double braided nylon rope;
  - ii. One (1) sea anchor (Paratech Sea Anchor part number 80621 or equivalent) with not less than thirty (30) meters (100 ft) of double braided nylon rope;
  - iii. One (1) rescue quoit with buoyant heaving line of not less than fifteen (15) meters (50 ft) in length (Kwik Tec Heaving Line LL-1 or equivalent), with a carrying bag;
  - iv. One (1) signal kit (Orion C12T-A/L (#598) Signal Kit from CIL or equivalent) containing the following:
    - a. 12 Gauge Launcher;
    - b. Bandolier with 12 Gauge Red Signal Flares (Quantity 6);
    - c. Spare 12 Gauge Red Signal Flares (Quantity 3);
    - d. Handheld Signals (Quantity 3 Red, Quantity 1 Orange Smoke);
    - e. Safety Whistle and Mirror;
    - f. Orange Distress Flag; and
    - g. Floating Storage Container (Florescent colour);
  - v. One (1) 10X power marine binocular set (Bushnell H2O model 130105 or equivalent) with a field of view of at least 90 m (300 ft) at 900 m (1000 yards);
  - vi. Two (2) Class B fire extinguishers located in a recessed cavity on each outward side of the Console (West Marine 50 part number 253460 or equivalent);
  - vii. Two (2) sea water or user activated marker strobe lights, yellow in colour (Multi Spec Model SS1TD or equivalent);

- viii. One (1) Emergency Position Indicator Radio Beacon (ACR Electronics Global Fix iPro 406 MHz GPS EPIRB part # RLB-36 Cat II or equivalent);
- ix. One (1) medical spine board (Laerdal BaXstrap green spine-board part # 982600 or equivalent); and
- x. Twelve (12) grey, winterized, fleece-lined, waterproof ponchos (USIA part # DJ1TP or equivalent).

#### 5.5.1 Hoisting

The DND RHIB shall have a complete hoisting system as follows:

- (a) Boat lift points rated for lift of the DND RHIB in the Normal Load Configuration with a minimum safety factor of two (2);
- (b) A lifting harness (sling and shackles), with each DND RHIB, with a certified Safe Working Load (SWL) of not less than the Normal Load Configuration with a minimum safety factor of ten (10);
- (c) Quantity six (6) lifting harnesses in addition to the lifting harnesses delivered with each boat with a certified Safe Working Load (SWL) of not less than the Normal Load Configuration with a safety factor of fourteen (14);
- (d) Provide not less than three boat lift points with minimum two aft at the stern and one forward at the bow for a balanced level lift, as follows:
  - i. Lifting points compatible with the hoisting sling and shackles; and
  - ii. Lifting point located to allow unobstructed access to shackle pins;
- (e) Lifting harnesses constructed of corrosion-resistant materials (preferably non-metallic) with a simplistic design that enables rigging and stowage by no more than two (2) persons in SS3.

#### 5.6 Trailer

A trailer shall be provided with each DND RHIB (registration information to be provided with each trailer) as follows:

- (a) Permit the trailer with the DND RHIB embarked to be loaded, pulled by a prime mover without the use of an aircraft pallet, on a C130 Hercules aircraft in accordance with MIL-STD-1366E;
- (b) Supports the weight of the boat in the Normal Load Configuration condition (less crew and passengers) from stem to transom on rollers plus 15% reserve weight capacity;
- (c) Support the centered weight of the boat such that the tongue weight is no more than 8% of the total load;
- (d) Be certified in accordance with Canadian Motor Vehicle Safety Standards for use on all Canadian roadways;
- (e) Incorporate the following:
  - i. Hot dipped galvanized all welded construction perimeter style frame;
  - ii. A suspension system with radial tires and corrosion-resistant wheels capable of carrying the trailer and boat (including the 15% reserve weight capacity). The suspension configuration shall be approved by the DND TA;
  - iii. A spare tire mounted on the trailer;

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- iv. Pintle hitch coupler as part of the trailer for attachment to a Pintle hook with an adjustable height channel augmented with safety chains;
- v. Include a pintle hook hitch on a 5 cm (2 in) receiver with a minimum towing capacity of 9090 kg (20,000 lbs) and a minimum tongue load of 1820 kg (4000 lbs);
- vi. Two galvanized safety chains complete with shackles of suitable size and rating to secure trailer to towing vehicle in case of hitch failure;
- vii. Swivel mount minimum 3175 kg (6985 lbs) capacity Tongue Jack with Pad foot;
- viii. Stainless steel bearing buddies;
- ix. 12 volt "Grote" brand LED Lighting, with plug in connectors;
- x. Two heavy-duty enclosed galvanized steel fenders sufficient to support the weight of a person (100 kg (220 lbs)) complete with mud flaps to prevent road damage to the boat;
- xi. Manual crank and strap with hook (for boat launch/recovery) rated for the trailer design load and a strap length of not less than 8.25 m (27 feet);
- xii. Waterproof electrical connections;
- xiii. Heavy duty rubber yoke adjustable to fit bow of boat with a safety chain and shackle provided on the front of yoke assembly to secure bow of boat to trailer;
- xiv. Trailer roller beds of not less than 1.2 m (4 feet) in length;
- xv. Hydraulic articulating tongue to support aircraft ramp loading/unloading;
- xvi. Standard overall width for all Canadian roadways (not to exceed 2.6 m (8.5 ft));
- xvii. Electric over Hydraulic Brakes (Carlisle Hydrostar or equivalent) with weather cover;
- xviii. Stainless Steel Disc Brakes;
- xix. 10 "D-Ring" re-locatable tie-down brackets to secure the boat to the trailer and the trailer to an aircraft;
- xx. 7 Blade round trailer connector;
- xxi. Incorporate a break-away switch to engage the trailer brakes in case of dislocation from the towing vehicle;
- xxii. High visibility tape along the full length of the trailer on both sides, and across the rear; and
- xxiii. Include one (1) complete bearing and hub assembly.

#### 5.7 Cover

A cover shall be provided with each DND RHIB as follows:

- (a) Covers the entire hull form and tube set in the deflated condition;
- (b) Permits transport at speeds of up to 120 km/hr (75 mph);
- (c) Constructed of a water resistant synthetic material (such as Nylon) that remains flexible in temperatures of -40 °C to +35 °C (-40 °F to 95 °F); and
- (d) Resistant to mold, mildew and harsh climates including freezing rain with ice accumulations of up to 12 mm (1/2 in) on the entire surface of the cover when installed on the boat.

#### 5.8 Cradle

A portable folding cradle shall be provided with each DND RHIB as follows:

- (a) Designed and constructed in accordance with Naval Engineering Test Establishment drawing DWG-ZT-4028-S-2 (*Schedule C*);
- (b) Modified to fit the lines of the DND RHIB; and

- (c) Have a locking mechanism or straps that secure the frames together when folded such that the entire system can be carried in one piece.

#### 5.9 Standards of Construction

The DND RHIB shall be constructed in accordance with, and be compliant to:

- (a) TP 1332E Transport Canada Marine Safety Regulation - Construction Standards for Small Vessels;
- (b) CSA W59.2-M1991 Welded Aluminum Construction;
- (c) CSA W47.2 M 1987 Certification of Companies for Fusion Welding of Aluminum;
- (d) CSA W47.1 M 1987 Certification of Companies for Fusion Welding of Steel; and
- (e) ABS Rules for Building and Classing Aluminum Vessels.

##### 5.9.1 Welding Certifications

All welds (aluminum or otherwise) shall be inspected by a Canadian Welding Bureau certified Welding Inspector in accordance with the above standards (or equivalent for boats manufactured outside of Canada). Copies of all welding certifications shall be provided with each DND RHIB.

##### 5.9.2 Design Factors

The DND RHIB design shall:

- (a) Provide redundancy for sensors and actuators with identified single points of failure such that the loss of any single electro-mechanical component permits continued operation of the boat (with degraded capability where necessary);
- (b) Standardize on equipment, fittings, and fabrication methods for all boats to facilitate replacement and inter-changeability of parts, as well as maintenance procedures and operator training;
- (c) Adhere to ABCD-TR-08-01 V1.0 High Speed Craft Human Factors Engineering Design Guide where practical;
- (d) Provide equivalent or superior equipment wherever brand or model names are referenced, with supporting documentation provided to validate that the installed performance is equivalent or superior to the equipment specified;
- (e) Minimize or reduce vibrations that have the potential to:
  - i. Endanger boat personnel;
  - ii. Damage boat structure, machinery, and systems; and
  - iii. Interfere with the operation or maintenance of boat machinery and systems;
- (f) Minimize or reduce rattles through the provision of mounts for movable components constructed of material sufficiently resilient to prevent rattling.

##### 5.9.3 Construction Materials

All components, equipment and material used in the construction of the DND RHIB shall be new material consistent with current production models in accordance with the following:



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- (a) Corrosion resistant marine grade quality, suitable for use in fresh and salt water environments and capable of withstanding a severe marine environment consistent with current production models;
- (b) Handled and installed in accordance with the manufacturer's guidelines, recommendations, and requirements;
- (c) Resist degradation from ultraviolet radiation (items exposed to sunlight);
- (d) Any dissimilar metals employed in close proximity from each other to prevent galvanic interaction;
- (e) Aluminum used in the construction with appropriate material certification as follows:
  - i. All substantial structures, extruded shapes, and welded tubing and pipe constructed of aluminum alloy 5086, 6061-T6 (anodized grade) or 6063-T54, suitable for type 5356 filler alloy;
  - ii. All plates constructed of aluminum alloy types 5086, H116 or equivalent;
  - iii. All extruded shapes and welded tubing and pipe constructed of aluminum alloy 6061-T6 (anodized grade) or 6063-T54, suitable for type 5356 filler alloy, or equivalent; and
  - iv. Non-structural items of trim and outfit including hatch frames, castings, consoles, and hardware items constructed of aluminum alloys suitable for commercial marine salt water use (e.g., dual rated 5083/86 or 5052);
- (f) Stainless steel as follows:
  - i. Welded applications: Stainless Steel type 316 or 316L; or
  - ii. Non-Welding applications: Stainless Steel type 316L;
- (g) Hydraulic hoses of suitable size and length to prevent pulsing, routed below deck as much as possible.

#### 5.9.4 Construction Fasteners

All fasteners used in the construction of the DND RHIB shall be in accordance with the following:

- (a) Fasteners include nuts and bolts, and aluminum or stainless steel washers or backing plates when directly threaded into aluminum alloys;
- (b) All fasteners are constructed of corrosion resistant materials;
- (c) Stainless steel fasteners as follows:
  - i. ASTM-A 276 type 316 throughout for fasteners 1/4" diameter or greater; and
  - ii. ASTM-A 276 type 304 (18-8) for fasteners smaller than 1/4" diameter;
- (d) **Not** incorporate interconnections of alloys containing copper to aluminum, except for electrical bonding straps;
- (e) Self-locking fasteners employed, as applicable, to prevent loosening under shock and vibration; and
- (f) Fasteners accessible for inspection and replacement, either directly or with the removal of interference equipment where necessary.



#### 5.9.5 Cabling

Cable installation in the boat shall:

- (a) Provide the safest, direct and efficient routing for all installed cables as follows:
  - i. Route communications cables on the Starboard side in under-deck wiring conduit between the radios, amps, and antennas using an HF and VHF/UHF capable stranded center highly flexible 50 Ohm conductor cable (Times Microwave Systems LMR-400 Ultraflex or equivalent) for the following:
    - a. VHF Marine radio to the VHF Marine antenna;
    - b. HF antenna;
    - c. Multiband V/UHF radio to the amplifier and amplifier to the Multiband V/UHF Antenna;
    - d. Multiband V/UHF radio to the amplifier and amplifier to the UHF TacSat antenna;
  - ii. Route engine cabling on the Port side of the console and hull; and
  - iii. Route other cabling on the Starboard side of the console and hull;
- (b) Incorporate proper sealant compound applied to protect the exposed solder joints of connectors including the U/283 connectors;
- (c) Utilize appropriately sized marine grade tinned boat cables for all power and lighting applications in accordance with TP 1332E and CSA C22.2;
- (d) Group cables into wiring harnesses wherever possible with all wiring harnesses and cables routed below deck and all below deck cabling routed through rigid conduit pipe (preferably aluminum);
- (e) Cabling and conductors passing through watertight boundaries, decks, bulkheads and other exposed surfaces include watertight marine glands to maintain the watertight integrity of the structure and ensure that all electrical equipment is readily accessible;
- (f) Support cables and conductors with appropriately sized metallic clamps or straps at least every six (6) in (15 cm) on both horizontal and vertical runs;
- (g) Protect cabling and conductors passing through structures without watertight glands from chafing with the use of abrasive resistant grommets;
- (h) Cables routed through foamed spaces, where routing through foamed spaces cannot be avoided, in conduit pipe to prevent water from becoming entrapped in the pipe; and
- (i) Be numbered, identified and colour coded to facilitate easy maintenance.

**DEPARTMENT OF NATIONAL DEFENCE  
RIGID HULL INFLATABLE BOAT  
(DND RHIB)  
CERTIFICATION AND TRIALS PROGRAM**

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**CERTIFICATION AND TRIALS PROGRAM  
FOR THE  
DEPARTMENT OF NATIONAL DEFENCE (DND) RIGID HULL INFLATABLE BOAT**

**1.0 SCOPE**

**1.1 Purpose**

The purpose of the Contractor conducted Certification and Trials Program is:

- (a) To complete static load tests and provide lifting certifications for all DND RHIBs;
- (b) To complete a failure mode analysis to define critical failures and degraded operating parameters;  
and
- (c) To confirm that the DND RHIB can meet or exceed all the Operational Performance requirements detailed in Annex B.

**2.0 APPLICABLE DOCUMENTS**

**2.1 Applicability**

Unless otherwise noted herein or in the articles of agreement, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained. In the event of a conflict between any of the standards, then the more appropriate requirement shall prevail as determined by the DND Technical Authority

- CFTO C-28-020-001/TB-001 In-Service Certification Requirements for Shipboard Lifting Equipment Applicable to All Classes of Ships (Available upon request)
- ANSI/NCIS Z540-1 Calibration Laboratories and Measuring and Test Equipment - General Requirements ([www.ansi.org](http://www.ansi.org))
- ISO 10012-1 Quality Assurance Requirements for Measuring Equipment - Part 1: Metrological Confirmation System for Measuring Equipment ([www.iso.org](http://www.iso.org))

**2.2 Acronyms**

CA	Contract Authority
CDRL	Contractor Data Requirements List
CFTO	Canadian Forces Technical Order
DID	Data Item Description
DND	Department of National Defence
FMEA	Failure Modes and Effects Analysis
RHIB	Rigid Hull Inflatable Boat
TA	Technical Authority

**3.0 CERTIFICATIONS**

**3.1 Static Load Tests**

The purpose of the static load tests are to certify that the lifting points and harness are safe for the intended use. The Contractor shall conduct Static Load Tests, in accordance with CFTO 28-020-001/TB-001, for every DND RHIB prior to conducting sea trials as follows;

- (a) DND RHIB lifting points - Each lifting point tested to a factor of safety (FOS) of two (2) of that expected when lifting the boat at Normal Load Configuration; and
- (b) Lifting Harness (Annex B Section 5.5.1 (b) each boat) - Each lifting harness tested to a certified Safe Working Load (SWL) of not less than Normal Load Configuration (Annex B, Section 5.2) with a FOS of ten (10). The axis for the tested load shall be at the same angle as the harness would be at if lifting the DND RHIB.

*Note: The additional six (6) harnesses provided at Annex B Section 5.5.1 (c) will be tested/certified by DND. Each harness is to be provided with a testing certification from the manufacturer to meet a certified Safe Working Load (SWL) of not less than Normal Load Configuration (Annex B, Section 5.2) with a FOS of fourteen (14)*

### 3.2 Test Certification

The Contractor shall provide test certificates in the Contractor's format as follows:

- (a) Include the following information (minimum):
  - i. Hull serial number;
  - ii. Date of testing;
  - iii. Contractor's representative signature;
  - iv. QA signature; and
  - v. Test conducted;
- (b) Boat Weight – Certifies the weight of the boat at a specified configuration of the boat including equipment onboard (all SOLAS gear as a minimum unless otherwise stated by TA) and state of the fuel tank (full fuel required unless otherwise approved in writing from the TA);
- (c) Lifting Points - Testing information for each lifting point specifying the date tested and the safe working load to include:
  - i. A test certificate with each DND RHIB; and
  - ii. An identification plate, in the Contractor's format, placed in each DND RHIB;
- (d) Lifting Harness - Testing information specifying the date tested and the safe working load to include:
  - i. A test certificate with each DND RHIB; and
  - ii. An identification plate, in the Contractor's format, attached to the lifting harness.

Comment [c1]: ????

### 4.0 **TRIALS**

The trials program includes 1<sup>st</sup> Article Trials and Fleet Acceptance Trials as follows:

- (a) 1<sup>st</sup> Article Sea Trials - The purpose of the 1<sup>st</sup> Article Trials is to confirm that the DND RHIB can meet or exceed all of the Operational Performance requirements detailed in Annex B. The trials shall be conducted by the Contractor on the first completed DND RHIB prior to delivery to DND, and the outcome of the trials shall be used to make modifications and/or alterations to the design of the DND RHIB where operational deficiencies are found. In addition, the outcome of the 1<sup>st</sup> Article Sea Trials is used to establish the Operational Performance Parameters for the fleet of vessels as published in the Operator Technical Manual; and

- (b) Fleet Acceptance Trials - The purpose of the Fleet Acceptance Trials is to confirm that each DND RHIB has the same performance and capabilities as the first completed DND RHIB as established in the 1<sup>st</sup> Article Trials. Each DND RHIB, prior to delivery and acceptance by DND, will be subjected to a subset of the trials conducted for the first boat.

#### 4.1 Trial and Evaluation Master Plan

The Contractor shall prepare a Trial and Evaluation Master Plans (TEMPs) in accordance with CDRL and DID SE-110. The TEMP shall include the trial program for the 1st Article Sea Trials and a recurring program for the Fleet Acceptance Trials. The TEMP shall be approved by DND prior to the commencement of any trials

#### 4.2 Trial Description and Test Procedures

The Contractor shall prepare a Trial Description and Test Procedure for each trial included in the 1st Article Sea Trials and the Fleet Acceptance Trials in accordance with CDRL and DID SE-111. The Trial Descriptions and Test Procedures shall be approved by DND prior to the commencement of any trials.

#### 4.3 Trials Notification

DND shall be notified of trials in accordance with CDRL and DID SE-112 no less than twenty (20) working days prior to the conduct of each trial or group of trials. DND reserves the right to send representation to observe any and all trials and failure to notify DND of a trial may result in the requirement for the Contractor to repeat the trial at the Contractor's expense with DND representatives present. Furthermore, absence of DND representation at sea trials does not relieve the Contractor of its responsibility to conduct and record sea trials, and to submit Trial Reports (in accordance with CDRL and DID SE-113) for DND approval prior to delivery of the boat. The DND representative(s) shall be given full access to the trial site, data, test results, etc. prior to, during and following the conduct of all trials.

#### 4.4 Preparation

All tests and trials shall be conducted by the Contractor in accordance with the DND approved Trial Description and Test Procedures (CDRL and DID SE-111). For each trial, the Contractor shall provide:

- (a) All personnel, resources and support necessary for the conduct of the trials;
- (b) Installation, operation and removal of all trial instrumentation including all required fittings, cables, etc; and
- (c) The appropriate test area including transport and any additional programmatic requirements (e.g., support vessels, housing for trial staff, food, etc.).

All expenses incident to trials shall be borne by the Contractor unless otherwise specified or agreed by DND. All expenses related to the attendance of DND personnel at any trial will be borne by DND.

##### 4.4.1 Instrumentation and Calibration

The Contractor shall:

- (a) Utilize trial instrumentation, where applicable, that does not replace the boat's instruments (e.g. engine tachometer, pressure gauges, and thermometers); and
- (b) Provide calibration data and certification of the accuracy of the instrumentation in accordance with ISO 10012-1 and ANSI/NCSL Z 540.1.

#### 4.5 Conduct of Trials (1st Article Sea Trials and Fleet Acceptance Trials)

The Contractor shall conduct all sea trials in any Canadian coastal or inland waterway, with the preferred locations being either Halifax or Victoria, to confirm that the DND RHIB can meet or exceed all of the Operational Performance requirements detailed in Annex B. Prior to conducting any trials, the Contractor shall:

- (a) Weigh the complete boat, in the Normal Load Configuration, and record the weight on the trial test sheets where required;
- (b) Inspect and test all equipment and systems on board to ensure all are fully functional. Care shall be taken to ensure that all items are properly serviced with fluids (e.g., coolant and lubricants) before testing; and
- (c) Complete “break-in” of the engine in accordance with the engine OEM recommendations.

##### 4.5.1 Normal Load Configurations

All sea trials shall be conducted with the DND RHIB in the Normal Load Configuration unless otherwise specified. The Normal Load Configuration is as follows:

- (a) The fully equipped boat including hull and tube set, engine, controls, etc. as specified in Annex B;
- (b) Safety equipment (as per Section 5.5 of Annex B);
- (c) Full fuel load (as per Section 5.3.11 of Annex B) not including auxiliary fuel storage bladder;
- (d) Navigation and communication equipment;
- (e) Two operators (Coxswain & Navigator) (120 kg (264 lbs) each) for a total weight of 240 kg (528 lbs);
- (f) Ten (10) passengers with equipment (120 kg (264 lbs) each) for a total of 1200 kg (2640 lbs); and
- (g) Additional equipment and supplies weighing 230 kg (506 lbs) maximum.

##### 4.5.2 Sea State

All sea trials shall be conducted in Sea State Two (2) or better unless otherwise specified.

##### 4.5.3 Operators

All sea trials shall be conducted under the control of experienced and qualified Contractor personnel (i.e., Coxswain and Navigator).

#### 4.6 Sea Trials

The trial descriptions in the following sections are to be used by the Contractor to develop the trial procedures of the Trial Description and Test Procedures (DID SE-111) for both the 1st Article Sea Trials and the Fleet Acceptance Trials. The 1st Article boat shall be trialed in accordance with the 1st Article Trial Plan which is to include all components of the trials detailed in the following sections. The remaining boats, upon completion of fabrication and certification, shall be trialed in accordance with the Fleet Acceptance Trial Plan which is to include the Stability, Speed, Endurance, Astern Propulsion and Steering Trials as detailed in the following sections. During the conduct of sea trials, the Contractor shall be responsible for the collection and accuracy of all data related to the trial.

#### 4.6.1 Stability Trial

The DND RHIB shall perform the following tests:

- (a) Tracking:
  - i. Performance Requirement: Annex B Section 4.2 (a)i; and
  - ii. Trial: The DND RHIB to take a heading in open water at a speed of 25 knots (or more). The DND RHIB shall remain on that heading within  $\pm 3^\circ$  for a period of thirty (30) minutes. The test is to be repeated three (3) times by three different operators. For the trial to be successful, the test must be successful for all three operators;
- (b) Station Keeping:
  - i. Performance Requirement: Annex B Section 4.2 (a)ii; and
  - ii. Trial: DND RHIB to take station 1 m (3.3 ft) off the Port side of a vessel with a displacement of at least twice that of the DND RHIB moving at a speed of 25 knots on a fixed bearing. The DND RHIB shall maintain station for a period of ten (10) minutes with a displacement of no more than 50 cm (20 in) forward or aft (i.e., 100 cm (40 in) total travel). The test shall be repeated five (5) times on the Port side and five (5) times on the Starboard side of the larger vessel under the same conditions. For the trial to be successful, the test must be successful for all ten runs.

*Note: During the Station Keeping tests, contact between the DND RHIB and the larger vessel is permitted.*

#### 4.6.2 Speed Trial

The DND RHIB shall perform the following tests:

- (a) Maximum Speed:
  - i. Performance Requirement: Annex B Section 4.2 (c)i; and
  - ii. Trial: The DND RHIB to traverse a measured course of one (1) nautical mile at maximum speed, once in each direction. The speed, as determined by the time to transit the course, shall be averaged for the two runs. For the trial to be successful, the average speed shall be no less than forty-five (45) knots. The use of GPS data for determining the average speed is acceptable;
- (b) Acceleration:
  - i. Performance Requirement: Annex B Section 4.2 (d)i; and
  - ii. Trial: The DND RHIB starts with zero forward motion through the water then accelerates under maximum throttle. Time starts when throttle is engaged and stops when the hull is on level plane. The test is to be repeated three (3) times by three different operators. For the trial to be successful, the time to achieve full plane (each run) shall be no more than twelve (12) seconds for all three operators.

#### 4.6.3 Endurance Trial

The DND RHIB shall perform the following tests:

- (a) Full Throttle Endurance:
  - i. Performance Requirement: Annex B Section 4.2 (c)ii; and
  - ii. Trial: The DND RHIB to accelerate to full throttle and maintain maximum throttle for a period of not less than two hours. For the trial to be successful, there shall be sufficient fuel capacity to complete the test without refueling;



- (b) Acceleration:
  - i. Performance Requirement: Annex B Section 4.2 (c)iii; and
  - ii. Trial: The DND RHIB to accelerate to a speed of not less than 25 knots and maintain this speed to a range of thirty (30) nautical miles. At no time shall the instantaneous speed of the DND RHIB be less than 25 knots. For the trial to be successful the fuel consumption projected to a range of 180 nautical miles must result in a minimum of 10% fuel reserve.

Note: During the conduct of the Endurance Trial, the following shall be observed:

- (a) The boat shall be at maximum speed for not more than the maximum time recommended by the engine manufacturer;
- (b) Operation of all boat systems shall be monitored by observers and/or monitoring functions to ensure proper continuous operation to verify correct installation and integration; and
- (c) Fuel consumption shall be recorded continuously during all tests.

#### 4.6.4 Astern Propulsion Trial

The DND RHIB shall perform the following tests:

- (a) Astern Propulsion:
  - i. Performance Requirement: Annex B Section 4.2 (c)iv; and
  - ii. Trial: The DND RHIB to be operated and maneuvered using astern propulsion to with the throttles set to provide up to 1/3 of the rated engine horsepower. This trial is to establish the operational performance parameters and there are no pass/fail criteria.

#### 4.6.5 Steering Trial

The DND RHIB shall perform the following tests:

- (a) Shallow Water Maneuvering
  - i. Performance Requirement: Annex B Section 4.2 (d) ii & iii; and
  - ii. Trial: The draft of DND RHIB will be measured at stand still (0 knots) in calm water. For the trial to be successful, the DND RHIB draft at the lowest point (including the motors) with the outboard motors fully lowered must be less than 1.0 m (3.3 ft);
- (b) Turning:
  - i. Performance Requirement: Annex B Section 4.2 (d) v & vi; and
  - ii. Trial: The DND RHIB will be taken through a series of turns at increasing speeds with the boat maneuvered through a complete series of turns to port and starboard to capture the overall steering capability. For the trial to be successful, the DND RHIB must complete the following:
    - a. A 90° turn at 75% full throttle; and
    - b. A 360° turn at 50% full throttle within a turning radius of 30 m (98 ft).

#### 4.6.6 Weight Distribution Trial

The purpose of the Weight Distribution Trial is to determine the operating parameters of the DND RHIB under varying load conditions. Components of each of the preceding Speed, Endurance, Astern Propulsion, and Steering Trials, necessary to establish the variations in performance from Normal Load Configuration, shall be repeated in the following configurations (as departures from the Normal Load Configuration) :

- (a) A Maximum Seat Configuration of fourteen seats (additional two passenger seats are obtained separately) to include:
  - i. Two (2) first row crew seats;
  - ii. Three (3) second row passenger seats;
  - iii. Three (3) third row passenger seats;
  - iv. Three (3) fourth row passenger seats; and
  - v. Three (3) fifth row passenger seats;
- (b) A Minimum Seat Configuration of five seats to include:
  - i. Two (2) first row crew seats; and
  - ii. Three (3) fifth row passenger seats with all other seats removed from the boat;

Note: Each installed seat that is not in a folded condition shall have an equivalent load of 120 kg (264 lbs) each representative of the Crew/Passenger occupant with equipment and all seats, other than those specified, shall be removed from the boat.

#### 4.6.7 Sea Keeping Trial

The purpose of the Sea Keeping Trial is to determine the operating parameters of the DND RHIB under severe environmental conditions. Components of each of the preceding Speed, Endurance, Astern Propulsion, and Steering Trials, necessary to establish the variations in performance from the baseline condition (at Sea State 2 or better), shall be repeated in Sea State three or worse.

#### 4.7 Post-Trial Servicing

On completion of trials, prior to delivery to DND, the Contractor shall conduct a thorough cleaning of the DND RHIB, flush salt water contaminated systems (e.g., engine cooling system) with fresh water, and visually examine all equipment for signs of mechanical damage, electrical damage, etc. All defects and deficiencies shall be noted in the trials report, and shall, where possible, be corrected prior to final delivery acceptance by DND. Defects and deficiencies that are not rectified prior to delivery acceptance by DND shall be noted in delivery inspection report for future rectification by the Contractor.

#### 4.8 Trial Reports

The Contractor shall prepare a detailed Trial Report in accordance with CDRL and DID SE-113. All trial records shall be retained for each boat for two years.

## APPENDIX 1 CONTRACT DATA REQUIREMENTS LISTS (CDRLS)

### Contract Data Requirements List (CDRL) Format (DND Form 1413)

The following section defines the various blocks of information found on the Contract Data Requirements List (CDRL) form:

**Block A – Annex Description** – Provides the name of the System or Item for which the CDRL applies.

**Block B – Contract or RFP Number**– Identifies the Contract or RFP for which the CDRL applies.

**Block C - SOW Identifier** – Identifies the SOW for which the CDRL applies.

**Block D - Data Category** – Identifies the general category of the data for which the CDRL is being prepared.

**Block E – Contractor** – Identifies the contractor responsible for the delivery of the CDRL.

**Block 1 - Item Number** –Denotes the sequential alphanumerical number assigned to the CDRL. This identification number is composed of a WBS alpha code supplemented by a sequential number (e.g. CDRL-PM-001). The abbreviation codes used for the prefix are:

"PM" for Project Management  
"SE" for Systems Engineering

**Block 2 – Title or Description of Data** - Denotes the title of the data to which the CDRL refers.

**Block 3 - Subtitle** – A subtitle is used only if the title requires further identification.

**Block 4 – Authority (DID)** - Indicates the number of the DID to which the CDRL refers.

**Block 5 - Contract Reference** – Refers to the specific paragraph number of the Statement of Work that will assist in identifying the work effort associated with the data item.

**Block 6 – Requiring Office** – Refers to the technical office of primary interest responsible for defining the data requirement, and for ensuring the adequacy of the delivered data.

**Block 7 - Inspection** - This block indicates the requirement for INSPECTION and ACCEPTANCE of the data. Enter the appropriate code, if applicable; otherwise enter N/A:

SS = Source, Source  
DD = Destination, Destination  
SD = Source, Destination  
DS = Destination, Source

**Block 8 - APP Code** - denotes whether the data is to be submitted for approval or information. Block 8 indicates items of critical data requiring specific advanced written approval, such as test plans, identified by placing an "A" in this field. These data may require submission of a preliminary draft prior to publication of a final document. When a preliminary draft is required, Block 16 shall show the length of time for Government approval/disapproval and when final is to be delivered. Block 16 also indicates the extent of the approval requirements, e.g. approval of technical content and/or format.  
Unless otherwise specified in Block 16 of the CDRL, an "I" or a blank in Block 8 means that the deliverable will be reviewed by Canada for acceptability of format, clarity and completeness. Once accepted, the Deliverable shall be considered for information only. The approval code in Block 8 of the CDRL is intended for deliverable end items submitted after contract award and not for deliverables submitted with the bid. If advance approval is not required, this block is marked as "N/A"

**Block 9 – Input – An “X”** indicates that data is the integrated results of specific inputs from associated contractors. If otherwise, this block is blank.

**Block 10 - Frequency** - Denotes the frequency of delivery of the data. The following frequency codes are used:

ASREQ	As required
BID	With bid submission
ONE/R	One time with revisions

Note: For Blocks 10 to 13 the date(s) and frequencies may be expressed as Day/Month/year or in relation to specific events using the above listed codes.

**Block 11 - As of Date – As specified in Block 16.**

**Block 12 - Date of First Submission –** The initial submission date or constraint for the 1st submission of the data item is indicated in this block using typical abbreviations listed under Block 11 above. The word "BID" in this block indicates that subject deliverable is to be submitted with the contractor's submission in response to the RFP.

**Block 13 - Date of Subsequent Submission -** If data is to be submitted more than once, specifies any subsequent data deliveries dates, (to be read in conjunction with Block 12), otherwise enter "N/A" . If submittal is constrained by a specific event or milestone, the constraint is entered such as 15 day after EOQ.

**Block 14 Distribution** – This block indicates the addressees/office and number of copies (hard/soft) to be provided to Canada during implementation of Contract. Note: Bidders must be aware that, in those cases when a deliverable is requested with bid submission, the quantities of deliverables shown in Blocks 14 and 15 are not applicable. Blocks 14 and 15 are showing quantities required during project implementation only.

**Block 15 - TOTAL** – Indicates the total number of copies (hard copies and soft copies separately) required for both the original submission and the final submission.

**Block 16 – Remarks** - Where other blocks refer to Block 16, then the associated block number is indicated with the information, and a “See Block 16” note would be entered in the referring block.

**Block - Prepared By** – This block identifies the CDRL originator’s name and designation.

**Block – Prepared Date** – This block indicates the date of the CDRL preparation.

**Block – Approved By** – This block contains the identification information, such as name and designation, of the person approving the CDRL.

**Block – Approved Date** – This block indicates the date of the CDRL approval.

**Blocks 17 –19** – These blocks are for Contractor input as required as part of the RFP or Contract. These blocks are not used by the TA.

CDRL List

The following section lists the CDRLs (Block 2 – Title or Description of Data) as well as their associated Data item Description (DID) number (Block 4 – Authority: Data Item Number):

CDRL #	Title	DID #
CDRL SE-110	Trial and Evaluation Master Plan (TEMP)	DID SE-110
CDRL SE-111	Trial Description and Test Procedures	DID SE-111
CDRL SE-112	Trial Notification	DID SE-112
CDRL SE-113	Trial Report	DID SE-113

CDRL-SE-110 TRIAL AND EVALUATION MASTER PLAN (TEMP)									
A. SYSTEM/ITEM DND Rigid Hull Inflatable Boat			B. CONTRACT/RFP NUMBER C6399-12-DD09						
C. IDENTIFIER		D. DATA CATEGORY Systems Engineering Data		E. CONTRACTOR TBD					
1. ITEM NUMBER SE-110		2. TITLE OR DESCRIPTION OF DATA Trial and Evaluation Master Plan (TEMP)		3. SUBTITLE N/A					
4. AUTHORITY (Data Item Number) SE-110		5. CONTRACT REFERENCE Section 4.1		6. REQUIRING OFFICE DND TA					
7. INSPECTION DD		9. INPUT		10. FREQUENCY ONE/R		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE A		11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		a. ADDRESS		b. COPIES	
						INITIAL		FINAL	
						Hard Copy		Soft Copy	
						1		1	
						PWGSC CA		1	
						DND TA		1	
								1	
PREPARED BY:		DATE		APPROVED BY					
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL		2	
						1		2	
								2	

CDRL-SE-111 TRIAL DESCRIPTION AND TEST PROCEDURES									
A. SYSTEM/ITEM DND Rigid Hull Inflatable Boat						B. CONTRACT/RFP NUMBER C6399-12-DD09			
C. IDENTIFIER		D. DATA CATEGORY Systems Engineering Data				E. CONTRACTOR TBD			
1. ITEM NUMBER SE-111		2. TITLE OR DESCRIPTION OF DATA Test Description and Test Procedures				3. SUBTITLE N/A			
4. AUTHORITY (Data Item Number) SE-111		5. CONTRACT REFERENCE Section 4.1				6. REQUIRING OFFICE DND TA			
7. INSPECTION DD		9. INPUT		10. FREQUENCY ONE/R		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		a. ADDRESS	
16. REMARKS Block 12. The Trial Description and Test Procedures shall be submitted with the TEMP. Block 13. The updated Trial Descriptions and Test Procedures addressing the comments from Canada shall be submitted for acceptance within ten (10) working days of receipt of comments. A revised final version shall be presented not later than fifteen (15) working days prior to the commencement of any formal trial.								PWGSC CA	
								DND TA	
PREPARED BY:		DATE		APPROVED BY					
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL		b. COPIES	
						1		2	

CDRL-SE-112 TRIAL NOTIFICATION									
A. SYSTEM/ITEM DND Rigid Hull Inflatable Boat							B. CONTRACT/RFP NUMBER C6399-12-DD09		
C. IDENTIFIER		D. DATA CATEGORY Systems Engineering Data						E. CONTRACTOR TBD	
1. ITEM NUMBER SE-112		2. TITLE OR DESCRIPTION OF DATA Trial Notification						3. SUBTITLE N/A	
4. AUTHORITY (Data Item Number) SE-112		5. CONTRACT REFERENCE Section 4.3						6. REQUIRING OFFICE DND TA	
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION N/A		14. DISTRIBUTION and ADDRESSEES	
8. APP CODE				11. AS OF DATE See Block 16		13. DATE OF SUBSEQUENT SUBMISSION/EVENT N/A		b. COPIES	
16. REMARKS Blocks 11. Trial Notifications shall be submitted no later than twenty (20) working days prior to each trial or group of trials.									
PREPARED BY:		DATE		APPROVED BY					
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL		2	



CDRL-SE-113 TRIAL REPORT															
A. SYSTEM/ITEM DND Rigid Hull Inflatable Boat						B. CONTRACT/RFP NUMBER C6399-12-DD09									
C. IDENTIFIER		D. DATA CATEGORY Systems Engineering Data			E. CONTRACTOR TBD										
1. ITEM NUMBER SE-113		2. TITLE OR DESCRIPTION OF DATA Trial Report			3. SUBTITLE N/A										
4. AUTHORITY (Data Item Number) SE-113		5. CONTRACT REFERENCE Section 4.8			6. REQUIRING OFFICE DND TA										
7. INSPECTION DD		9. INPUT		10. FREQUENCY ASREQ		12. DATE OF 1st SUBMISSION See Block 16		14. DISTRIBUTION and ADDRESSEES							
8. APP CODE A				11. AS OF DATE		13. DATE OF SUBSEQUENT SUBMISSION/EVENT See Block 16		a. ADDRESS		b. COPIES					
16. REMARKS Block 12. The Trial Reports shall be submitted f or review within twenty (20) working days following each trial or group of trials. Block 13. The updated Trial Reports addressing the comments from Canada shall be submitted for approval within five (5) working days of receipt of comments.								INITIAL		FINAL					
								Hard Copy		Soft Copy		Hard Copy		Soft Copy	
								1		1		1		1	
								1		1		1		1	
								PWGSC CA		1					
								DND TA		1					
PREPARED BY:		DATE		APPROVED BY											
17. CONTRACT FILE/DOCUMENT NUMBER		18. ESTIMATED NO OF PAGES		19. ESTIMATED PRICE		15. TOTAL		2		2					

**APPENDIX 2 DATA ITEM DESCRIPTIONS (DIDS)**

Data Item Description Format

The following section defines the various blocks of information found on the Data Item Description (DID) blocks form:

**Block 1 – Title:** Denotes the title of the Data Item (DI).

**Block 2 - Identification Number:** Denotes the sequential alphanumerical number assigned to the DID. The numbering convention is the same as that described in paragraph 1.3.6 for CDRL Items.

**Block 3 – Description/Purpose:** Provides a description of the data content requirements.

**Block 4 - Approval Date:** Not used.

**Block 5 – OPI:** Denotes Canada's Office of Primary Interest (OPI) designation responsible for the data requirement.

**Block 6 – GIDEP Applicable:** Not used.

**Block 7 – Application/Interrelationship:** Identifies the DOORS® Identifier (ID) in the SOW that calls up the CDRL associated with the DID.

**Block 8 – Originator:** Denotes Canada's designation of the DID originator.

**Block 9 – Applicable Forms:** Not used.

**Block 10 - Preparation Instructions:** This block identifies the format and content requirements for data to be prepared for use by Canada under the terms of the Contract.

DID List

The following section lists the DIDs attached to this document. Unless specified in the DID, all data shall be delivered in formats compatible with office software in the current DND MS Office baseline (Word, PowerPoint, Visio, Project, etc.) that permits viewing, modifying, selecting, copying and pasting of information from the files to other DND software files.

DID #	Title
DID SE-110	Trial and Evaluation Master Plan (TEMP)
DID SE-111	Trial Description and Test Procedures
DID SE-112	Trial Notification

DID SE-113	Trial Report
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DID-SE-110 TRIAL AND EVALUATION MASTER PLAN (TEMP)			
1. TITLE Trial and Evaluation Master Plan (TEMP)		2. IDENTIFICATION NUMBER DID-SE-110	
3. DESCRIPTION The Trial and Evaluation Master Plan (TEMP) describes in detail the Trial & Evaluation (T&E) Program to be conducted to ensure that the DND RHIB can meet or exceed all the Operational Performance requirements detailed in Annex B.			
4. APPROVAL DATE		5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION/INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Trial and Evaluation Master Plan (TEMP) shall be in the Contractor's format and as further described herein.			
CONTENT The Trial and Evaluation Master Plan shall address the overall trial philosophy (General description of the trial program), concept and methodology to be followed in the course of the trials. It shall describe sea trials, first article qualification and recurring acceptance trials. In addition, the TEMP shall describe all trial events and processes to be conducted by the Contractor. The TEMP shall include an electronic Master Trial Schedule (MS Project compatible) and shall be integrated into the Project Master Schedule. The Master Trials Schedule shall reflect dates, duration, dependencies, critical path and WBS code of accounts all against a calendar time base. In addition to the schedule details, the Master Trial Schedule shall also include the associated network diagram (activity-on-node) showing network logic, mandatory, discretionary and external activity dependencies, and activity description.			

DID-SE-111 TRIAL DESCRIPTION AND TEST PROCEDURES			
1. TITLE Trial Description and Test Procedures		2. IDENTIFICATION NUMBER DID-SE-111	
3. DESCRIPTION The Trial Description and Test Procedures identify and describe all of the trial details and information for Qualification Trial or Acceptance Trial to be conducted as part of the T&E Program.			
4. APPROVAL DATE		5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Trial Description and Test Procedures shall be in the Contractor's format and as further described herein.			
<p><u>CONTENT</u></p> <p>The Trial Description and Test Procedures shall identify and describe the trial details and associated test procedures, based on the trial description at Section 4.6, including the scheduling, planning, organizing, conduct, controlling and coordination for both the 1st Article Sea Trials and the recurring Fleet Acceptance Trials for the follow-on boats. The Trial Description and Test Procedures shall address the above points and include the details described below.</p> <p>The Trial Description shall identify and describe the general trial information to include:</p> <ul style="list-style-type: none"> <li>a. Applicable Trial;</li> <li>b. List of applicable definitions, references, documents and standards;</li> <li>c. Purpose of Trials (for both 1st Article and Fleet Acceptance Sea Trials);</li> <li>d. Items to be trialed;</li> <li>e. Environmental conditions;</li> <li>f. Quality Assurance procedures; and</li> <li>j. Participants, Roles and Responsibilities.</li> </ul> <p>The Test Procedures shall include as a minimum the following details:</p> <ul style="list-style-type: none"> <li>a. Actual trial procedures, instructions and methods;</li> <li>b. Physical layout of the equipment under trial;</li> <li>c. Pre-requisite conditions;</li> </ul>			

d. Trial Conditions and environments; e. Modes of operation; f. Schedule of events ; g. Test and Measurement equipment and tools, including hardware, software and associated operating conditions; h. Parameters to be measured; i. Design parameters and tolerances; j. Pass/Fail criteria; k. Expected Trial results and data; l. Procedures, methods and formats for Data Collection; and m. Data Reduction and Results Analysis Techniques.	
The Test Sheets shall include the following headings: a. Boat serial number; b. Transport Canada registration number; c. Serial number of engines; d. Weight and condition of the boat; e. Results of each test; f. Name and signature of Contractor's test supervisor; and g. Name and signature of DND representative (if present).	

DID-SE-112 TRIAL NOTIFICATION			
1. TITLE Trial Notification		2. IDENTIFICATION NUMBER DID-SE-112	
3. DESCRIPTION The Trial Notification provides the trial schedule and participation information prior to each trial or group of trials conducted as part of the T&E Program.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Trial Notifications shall be in the Contractor's format and as further described herein.  CONTENT Trial Notifications shall include and detail the following: a. Applicable Trial or Group of Trials; b. Applicable Trial Procedures; c. Participating organizations and personnel; d. Names and positions of DND and other government attendees and witnesses, including QAR; and e. Any additional information as required.			

DID-SE-113 TRIAL REPORT			
1. TITLE Trial Report		2. IDENTIFICATION NUMBER DID-SE-113	
3. DESCRIPTION The Trial Reports shall document the proceedings, results, recommendations and action items of the Trials conducted as part of the T&E Program.			
4. APPROVAL DATE	5. OFFICE OF PRIMARY INTEREST DND TA	6. GIDEP APPLICABLE N/A	
7. APPLICATION / INTERRELATIONSHIP			
8. ORIGINATOR DND TA		9. APPLICABLE FORMS N/A	
10. PREPARATION INSTRUCTIONS FORMAT The Trial Reports shall be in the Contractor's format and as further described herein.			
<p><u>CONTENT</u>  Each Trial Report shall include and describe the following:</p> <ul style="list-style-type: none"> <li>a. Organizations and personnel which conducted the applicable trial;</li> <li>b. Organizations and personnel witnessing, participating and present;</li> <li>c. Associated Trial Procedures;</li> <li>d. Details of corrections to any information originally contained in the associated Trial Procedures;</li> <li>e. Calibration data and certification of the accuracy of the instrumentation used in the trials;</li> <li>f. Results of tests, including test sheets, logs and digital pictures and/or video recordings of tests and set-up;</li> <li>g. Explanations, recommendations, decisions and follow-on actions for partially met requirements;</li> <li>h. Explanations, recommendations, decisions and follow-on actions for failed tests; and</li> <li>i. Authority accepting responsibility for the testing.</li> </ul> <p>Certified copies of the completed tests procedures, analysis and any other supporting documentation shall be appended to the Trial Reports. The Trial Report shall indicate the requirements tested against, whether they were met, partially met or failed, as well as all supporting explanations, recommendations, decisions and follow-on actions.</p>			



**PROPOSAL REQUIREMENTS AND EVALUATION PLAN  
FOR THE  
DEPARTMENT OF NATIONAL DEFENCE (DND) RIGID HULL INFLATABLE BOAT**

**1.0 GENERAL**

**1.1 Purpose**

This document details the proposal requirements and evaluation process for the Department of National Defence (DND) Rigid Hull Inflatable Boat (DND RHIB).

**1.2 Instructions**

Bidders will be assessed in accordance with the criteria detailed in this document. Mandatory requirements are identified by the word "shall". All mandatory requirements must be met.

**2.0 PROPOSAL REQUIREMENTS**

The Bidder shall provide the following documentation:

- (a) A completed Compliance Matrix as set out in Table 1 at Article 4.0 below. For the purposes of this RFP:
  - i. A Written Attestation is a written statement from the Bidder, signed by an authorized company representative, guaranteeing it will fully comply with the requirement identified in the "Requirement" column of Table 1. Canada reserves the right to verify the statements made in the Written Attestation; and
  - ii. Within Table 1 certain specified products are identified as permitting an equivalent, identified by the wording "or equivalent". Products that are equivalent in form, fit, function and quality to the item(s) specified in the bid solicitation will be considered where the Bidder provides A Certificate of Compliance (C of C) for each equivalent product that is offered. Canada reserves the right to verify the statements made in the C of C. A C of C shall:
    - a. Designate the brand name, model and/or part number of the substitute product;
    - b. State that the substitute product is fully interchangeable with the item specified;
    - c. Include a complete technical data package including specifications and descriptive literature of the substitute product;
    - d. Provide compliance statements that include technical specifics showing the substitute product meets all mandatory performance criteria that are specified in the bid solicitation; and
    - e. Clearly identify those areas in the specifications and descriptive literature that support the substitute product's compliance with any mandatory performance criteria.
- (b) Engineering drawings that are clearly labeled to indicate the boat perspective, the type of drawing, and details to clearly indicate that requirements are satisfied with boat dimensions providing a frame of reference for all drawings, to include the following:
  - i. Fore and Aft Centerline Section;

- ii. Mid-ship Section;
- iii. Fore and Aft profile;
- iv. General arrangement for all proposed layouts and multiple seat configurations;
- v. Lines plan;
- vi. Conceptual/schematic electrical and electronic wiring diagram;
- vii. Fuel Tank(s) location, including filling and venting arrangements; and
- viii. Conceptual Radar Arch layout;

Note: The drawings may be conceptual/schematic in nature with sufficient detail to provide DND with a clear understanding of what the proposed boat comprises against the technical and performance specifications. Where a technical description is required for clarity, it shall also be included on the drawing or as an attachment to the drawing.

- (c) Information required to evaluate the Experience and Capability requirements in Table 2 including:
  - i. Boats of a similar size (8-11 m (26-36 ft)) designed in the last ten (10) years including
    - a. Contract details;
    - b. A Power Management Survey including power consumption and availability information, power distribution at idle and underway with provisions included to provide required power utilizing increased engine idle speeds where necessary; and
    - c. A Test Plan consistent with the Trial and Evaluation Master Plan specified in Annex C;
  - ii. Boats of a similar size (8-11 m (26-36 ft)) constructed in the last two (2) years;
  - iii. Resumes and certifications of the Professional Engineer and Naval Architect, including professional status and education; and
  - iv. A Project Management Plan and Schedule for a previously constructed boat of a similar size (8-11 m (26-36 ft)).

### 3.0 EVALUATION APPROACH

#### 3.1 Phase I – Technical Evaluation

DND will assemble a Technical Evaluation Team who will evaluate the proposals in accordance with the Mandatory Requirements in Section 4.0 Table 1. The evaluation will be conducted on the supplied information only. All mandatory criteria must be met or the bid submission will be deemed non-compliant. Failure to provide sufficient detail in the bid submission to evaluate the proposal against the mandatory criteria will also deem the bid non-compliant. Even if a bid fails to meet as few as one mandatory criterion that bid will be non-compliant and will be given no further consideration.

#### 3.1.1 Evaluation of Equivalent Products

Products offered as equivalent in form, fit, function and quality will not be considered if:

- (a) The bid fails to provide all the information requested to allow Canada to fully evaluate the equivalency of each substitute product; or
- (b) The substitute product fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item

In conducting its evaluation of the bids, Canada may, but will have no obligation to, request Bidders offering a substitute product to demonstrate, at the sole cost of the Bidders, that the substitute product is equivalent to the item specified in the bid solicitation. For the purpose of this RFP, form, fit, and function are defined as follows:

- (a) Form is the overall design, engineering and intended use of an item (features, etc.);
- (b) Fit is a item's ability to integrate into the intended system; and
- (c) Function is the item's ability to meet the specifications of an intended design and purpose (orientation and access to features and controls, etc.).

### 3.2 Phase II - Experience and Capability Assessment

All proposals that meet all of the Mandatory requirements will be further assessed by the DND evaluation team for Experience and Capability of the Bidder as it relates to construction, and the capacity to construct, RHIBs in accordance with Section 5.0. The minimum requirement in each category must be achieved for the Bidder to be found compliant. Failure to achieve the minimum requirement in each category will result in the bid being deemed non-compliant and will be given no further consideration.

## 4.0 MANDATORY REQUIREMENTS

Table 1: Compliance Matrix

Item #	Annex B Reference Para.	Requirement	Proof of Compliance	Bid Reference
1	4.1	Proven Design The DND RHIB shall be based upon a proven (tested) design that is in current production and is currently in use with an ABCA member force or a Canadian/US Police/Law Enforcement agency for at least six (6) months at time of bid submission.	The Bidder shall provide: (1) Contract number, award date, model and quantities delivered;  AND  (2) Written Attestation that the DND RHIB will be based upon a proven (tested) design that is in current production and is currently in use with an ABCA member force or a	

2	4.2	<p><b>Operational Performance</b></p> <p>The DND RHIB, with a qualified operator in an environment of Sea State 2 or less (unless stated otherwise) at Normal Load Configuration, shall:</p> <p>(a) Be designed to have directional stability and be capable of maintaining course with nominal steering input as follows:</p> <ul style="list-style-type: none"> <li>i. Tracking a continuous bearing within +/- 3°; and</li> <li>ii. Within 1 meter (3.3 ft) or less lateral displacement and 50 cm (20 in) or less fore/aft displacement of a larger vessel (minimum twice the displacement of the DND RHIB) with intermittent to continuous inflatable collar contact with the larger vessel in SS2 at speeds up to 25 knots;</li> </ul> <p>(b) Have stability in maneuvers such that induced momentary lateral gravitational forces do not vary more than 5%;</p> <p>(c) Have speed and endurance as follows:</p> <ul style="list-style-type: none"> <li>i. Maximum speed of at least 45 knots with GFE supplied engines;</li> <li>ii. Endurance at full throttle of at least two (2) hours;</li> <li>iii. Range of 180 nautical miles with 10% fuel reserve at not less than 25 knots; and</li> <li>iv. Capable of astern maneuvering with the throttles set to provide up to 1/3 of the rated engine horsepower;</li> </ul> <p>(d) Be capable of:</p> <ul style="list-style-type: none"> <li>i. Achieving, at Normal Load Configuration from standstill, full plane within twelve (12) seconds or less;</li> <li>ii. Operating in water depths of 1.0 m (3.3 ft) with outboard motors lowered;</li> <li>iii. Perform basic maneuvering in water depths of 0.8 m (2.6 ft) with outboard motors in a partially raised position;</li> <li>iv. Beaching at Normal Load Configuration without</li> </ul>	<p>Canadian/US Police/Law Enforcement agency for at least six (6) months at time of bid submission.</p> <p>The Bidder shall provide Written Attestation that the RHIB being offered is capable of meeting the Operational Performance requirements specified.</p>	
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		damaging the hull or degrading the operational capability of the boat as follows; a. Beach on soft (sand, loam, or clay) surfaces at a speed of not more than 5 knots; and b. Beach on hard (stone or concrete) surfaces at a speed of not more than 3 knots; v. Completing a 90 degree turn to Port or Starboard at 75% throttle; vi. Completing a 360 degree turn at not less than 50% throttle within a turning radius of 30 m (98 ft); and vii. Operating and maintaining stability in accordance with ISO 12217-1 (stability and buoyancy assessment) in the following conditions: a. Air temperature: -15 °C to +35 °C (5 °F to 95 °F); b. Water temperature: - 5 °C to + 25 °C (23 °F to 77 °F); c. Wave heights: 0-4 m (0-13 ft) (i.e., up to SS 5); d. Wind speeds: 0-48 km/hr (0-26 knots); and e. Freezing spray or freezing rain with ice accumulations of up to 6 mm (1/4 in) on the surface of the boat.		
3	4.3	<p><b>Safety</b></p> <p>The following applies to the DND RHIB:</p> <p>(a) All systems and components shall be safe and easy to use by a 5-95<sup>th</sup> percentile male or female, in accordance with the DCIEM Report 98-CR-15 Anthropometric Survey of the Land Forces (as per SAE Rule B3.9.3), under all operating conditions;</p> <p>(b) Locking and release mechanisms shall be operable with one hand;</p> <p>(c) Construction shall be free from sharp edges and protruding objects capable of snagging clothing or impeding occupants moving in and around the vessel;</p> <p>(d) Seating positions shall be free from hard surfaces and</p>	The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Safety requirements.	

		sharp/protruding objects that would present a striking hazard to the occupants when transiting in rough waters; (e) Safety critical system functionality (e.g., propulsion system) shall be attended directly by a person at all times or is otherwise disabled (e.g., by a dead man switch); and (f) Deck and transom areas shall be free from obstructions as much as possible to permit usage of safety and emergency equipment including the spine board.		
4	4.4	<u>Durability</u> The boat design and construction shall enable a projected service life of the complete boat system of not less than seven (7) years.	The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to have a projected service life of not less than seven (7) years.	
5	4.5	<u>Maintainability</u> The DND RHIB design and construction shall enable ready access to all equipment for inspection, cleaning and maintenance. Ready access is defined as requiring no more than two (2) minutes to gain access.	The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Maintainability requirements.	
6	4.6	<u>Reliability</u> The following applies to the DND RHIB reliability: (a) Systems shall be designed to minimize the chance of critical failures that result in the loss of maneuverability and/or propulsion; and (a) Removable components shall have a calculated Mean Time Between Failure (MTBF), using a standard reliability model under normal operating conditions up to and including the Design Mission (See Annex B, Section 3.2), as follows: i. Not less than 500 hours for easily removable components (e.g., those that can be removed and replaced during operations); and ii. Not less than 2000 hours for fixed components (e.g., those that require special tools, removal from the water, extensible removal of interference items, etc.).	The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Reliability requirements.	
7	5.1	<u>Dimensions</u> The DND RHIB shall have the following dimensions: (a) Length of rigid hull (bow to stern engine guard): 10.0 +/- 0.5	The Bidder shall provide: (1) Written Attestation that the DND RHIB will be/has been designed and	

		<p>m (32.8 +/- 1.6 ft);</p> <p>(b) Width of rigid hull: no more than 2.6 m (8.5 ft);</p> <p>(c) Overall length (tube set inflated, engines raised): no more than 10.5 +/- 0.5 m (34.4 +/- 1.6 ft);</p> <p>(d) Overall width (Beam) of inflated tube set: no more than 3.25 +/- 0.2 m (10.7 +/- 0.7 ft);</p> <p>(e) Overall height (arch folded and stowed): no more than 2.7 m (8.9 ft);</p> <p>(f) Deadrise at transom: minimum 21 degrees, maximum 24 degrees;</p> <p>(g) Hull angle at transom: 24 +/- 4 degrees;</p> <p>(h) Hull angle at mid-ships: 36 +/- 4 degrees;</p> <p>(i) Draft (Mercury Verado™ 350 hp outdrive motors lowered): no more than 0.9 +/- 0.1 m (3 +/- 0.3 ft); and</p> <p>(j) Draft (Mercury Verado™ 350 hp outdrive motors raised): no more than 0.6 +/- 0.1 m (2 +/- 0.3 ft).</p>	<p>constructed to meet the Dimension requirements;</p> <p>AND</p> <p>(2) The engineering drawings detailed in Section 2.0 (b) of this Annex.</p> <p>The drawings shall clearly show the dimensions of the DND RHIB at Section 5.1 (a) through (j).</p>	
8	5.2	<p><u>Weight</u></p> <p>The DND RHIB shall have a weight at Normal Load Configuration, in accordance with Annex B, Section 3.1, of no more than 6590 kg (14,500 lbs).</p>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Weight requirement.</p>	
9	5.3.1	<p><u>Hull</u></p> <p>The DND RHIB shall:</p> <p>(a) Have an aluminum hull as follows:</p> <ul style="list-style-type: none"> <li>i. Incorporates the performance and draft characteristics of a general deep V design that promotes increased water flow to the propulsion unit and at the same time directs spray away from onboard personnel;</li> <li>ii. Incorporates welding that as a minimum is double continuous and/or full penetration in areas subject to corrosion or vibration including the outboard motor bracket;</li> <li>iii. Presents a reduced radar signature;</li> <li>iv. Provides secure attachment for an inflatable tube set;</li> <li>v. Supports the outboard engines and interfaces (section 5.3.10);</li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Hull requirements;</p> <p>AND</p> <p>(2) The engineering drawings detailed in Section 2.0 (b) of this Annex.</p> <p>The drawings shall clearly demonstrate that the hull structure is in accordance with the Hull requirements at Section 5.3.1 (a) through (e).</p>	



			<p>vi. Includes a center line full length keel that is flat to support mounting in a cradle on a flat surface;</p> <p>vii. Hull scantlings include transverse and longitudinal framing to provide the necessary strength and stiffness for the intended use of the hull while minimizing the overall weight;</p> <p>viii. Incorporates chines and strakes to provide optimum shallow water accessibility;</p> <p>ix. Include a zinc anode mounted on the aft plate for hull corrosion prevention; and</p> <p>x. Includes sufficient watertight compartments to ensure adequate stability and positive buoyancy in a flooded condition in accordance with TP 1332E and ISO 12217-1 including the following;</p> <p>a. Hull compartments with fire rated low smoke and flame spread flotation or fire retardant flotation; and/or</p> <p>b. Fixed flotation devices;</p> <p>xi. Include (20) D-ring tie downs on the outer side of the hull below the buoyancy tube, ten (10) on each side port and starboard for attaching the cover in accordance with Section 5.7, and to secure the boat to the trailer;</p> <p>xii. Permit operator/passenger seating in accordance with Section 5.3.9;</p> <p>(b) Have a non-corrosive attachment point for a plate bow eye of not less than 32 mm (1.25 in) diameter in the bow stem area to permit ready attachment of a bow line or trailer hook that has sufficient capacity to support towing of three DND RHIBS in line;</p> <p>(c) Have a towing bollard of an appropriate size (in accordance with TP1332E) located in the transom area to enable mooring, towing and anchoring with the bollard;</p> <p>(d) Have four (4) 25 cm (9.8 in) cleats that meet the requirements of TP 1332E to enable mooring and anchoring with the cleats and cleat mounts capable of withstanding the</p>		
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		<p>force applied by the propulsion system at 25% throttle from rest, located as follows:</p> <ul style="list-style-type: none"> <li>i. One on the top of each side of the Lazarette box; and</li> <li>ii. One on each side of the Console ;</li> </ul> <p>(e) Include an integrated Lazarette box at the transom area, in accordance with Section 5.3.3;</p> <p>(f) Have all interior rough edges and sharp angled corners rounded and ergonomically adapted for safe and efficient occupation;</p> <p>(g) Include a non-reflective capacity plate permanently affixed to the boat (either on the console or the transom) that lists the following information (metric and imperial units):</p> <ul style="list-style-type: none"> <li>i. Length;</li> <li>ii. Beam;</li> <li>iii. Builder;</li> <li>iv. Model and year;</li> <li>v. Maximum engine rating;</li> <li>vi. Maximum weight capacity; and</li> <li>xiii. Maximum number of occupants.</li> </ul>		
10	5.3.2	<p><b>Deck</b></p> <p>The deck shall:</p> <ul style="list-style-type: none"> <li>(a) Safely and securely support the occupants, shock mitigation seating and equipment without noticeable and measureable deformation;</li> <li>(b) Incorporate construction in accordance with Section 5.9;</li> <li>(c) Incorporate a flat deck that: <ul style="list-style-type: none"> <li>i. Is level at the beam, declining to the stern, and above the waterline with no obstructions or steps;</li> <li>ii. Attaches to the hull by bolts only above the watertight compartments to enable access to the compartments;</li> <li>iii. Supports shock mitigation seating in accordance with Section 5.3.9;</li> <li>iv. Provides a deck surface area free of tripping and snagging hazards, including flush-mounted fasteners, with sufficient footing and traction for the occupants</li> </ul> </li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Deck requirements:</p> <p>AND</p> <p>(2) The engineering drawings detailed in Section 2.0 (b) of this Annex.</p> <p>The drawings shall clearly demonstrate that the deck structure is rigidly attached to the aluminum hull (i.e., stationary and non-flexible) and is capable of supporting the equipment and occupants as specified at Section</p>	

		<p>v. to access any area of the boat; and Provide clear deck space with no protrusions or recesses large enough to catch foot wear (nominally 25 cm<sup>2</sup> (4 in<sup>2</sup>) area that is no deeper than 2.5 cm (1in)) for the width of the boat from gunwale to gunwale for a length of 162 cm (64 in) from the aft immovable object forward to a point in line with the removable tube sections, available by on-board reconfiguration to clear the area of all equipment including stowing the seats in the forward-most position.</p>	5.3.2 (b) through (d).	
11	5.3.2.1	<p><u>Deck Finish</u> The deck shall be finished as follows:</p> <p>(a) Shock mitigating flooring at the Coxswain and Navigator position sufficient to support footing when sitting, standing or reclining;</p> <p>(b) Light-weight durable grey rubber matting for shock absorption that does not absorb water and provides traction when wet on all remaining deck areas larger than 25 cm<sup>2</sup> (4 in<sup>2</sup>); and</p> <p>(c) Light grey non-slip deck covering (Treadmaster deck covering (part number TU008342) or equivalent) on all deck areas where it is not practicable to install grey rubber matting.</p>	<p>The Bidder shall provide: (1) Written Attestation that the deck finish will be supplied and installed in accordance with the Deck Finish requirements;  AND (2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.2.1.</p>	
12	5.3.2.2	<p><u>Stowage</u> The following stowage shall be provided;</p> <p>(a) Deck compartment stowage as follows:</p> <p>i. Secure and accessible stowage of an anchor and cable (Section 5.5 (c)i) in the bow area;</p> <p>ii. Secure and accessible stowage of additional safety equipment (Section 5.5) in a weatherproof compartment in the bow area (excluding the anchor, fire extinguishers and sea beacons);</p> <p>iii. Under deck stowage with ventilation and drainage in the forward well deck area;</p> <p>iv. Weather tight stowage for small items of equipment</p>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Stowage requirements.</p>	

		<p>provided in void spaces where practicable; and</p> <p>v. All stowage compartment hatches and hinges flush-mounted and operable by gloved and reduced sensitivity (i.e., cold and wet) hands;</p> <p>(b) Bow deck stowage as follows:</p> <p>i. Three (3) removable storage containers that attach to the deck by the same mechanisms in which the removable seats attach to the deck;</p> <p>ii. Deck mounting points in the bow area to permit attachment of one (1) container; and</p> <p>iii. Storage containers capable of being installed side by side with 15 cm (6 in) of separation to replace a row of removable seats, with nominal dimensions as follows:</p> <p>a. Length: 91 cm (36 in);</p> <p>b. Width: 69 cm (24 in); and</p> <p>c. Height: 69 cm (24 in).</p>		
13	5.3.2.3	<p><b>Tie-Downs</b></p> <p>The deck shall incorporate tie-downs as follows:</p> <p>(a) Twelve (12) tie-downs to secure equipment in open areas of the deck, with four (4) mounts in the bow area, four (4) in the mid-ships area, and four (4) in the aft deck area;</p> <p>(b) Additional attachment points for the Auxiliary Fuel Storage bladder (Section 5.3.1.1) in the aft transom area as follows:</p> <p>i. Sufficient to secure the bladder flat on the deck such that its position is securely maintained while full of fuel in conditions up to and including SS5; and</p> <p>ii. Positioned such that the seat mounting positions are not affected (i.e., fuel bladder in place with full seating capacity installed).</p> <p>(c) Tie-downs flush-mounted to eliminate tripping and snagging hazards; and</p> <p>(d) Tie-down capacity (each) of 230 kg (506 lbs) axial load.</p>	The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Tie-Down requirements.	
14	5.3.3	<p><b>Lazarette Box</b></p> <p>The DND RHIB shall have a Lazarette box as follows:</p> <p>(a) Comprise a rectangular structure located at the aft portion of</p>	The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed	

		<p>the deck as follows:</p> <ul style="list-style-type: none"> <li>i. Spans the width of the deck and is nominally 70 cm (28 in) deep;</li> <li>ii. Have channels on each outer end that provide flush contact with the inboard surface of the buoyancy tube set;</li> <li>iii. Be 5 cm (2 in) higher than the top of the buoyancy tube set;</li> <li>iv. Have two (2) aft-facing vents sized to permit sufficient air flow to the outboard snorkel inlets in accordance with Section 5.3.10 (c); and</li> <li>v. Has a top cover as follows: <ul style="list-style-type: none"> <li>a. Sufficient structural strength, equivalent to the deck, to support occupants moving about on the upper surface when closed in accordance with Section 5.3.2;</li> <li>b. Has a non-slip coating on the upper surface in accordance with Section 5.3.2.1;</li> <li>c. Hinged at the rear such that it opens to the vertical position (minimum);</li> <li>d. Has two (2) lockable hydraulic arms (one on either side) to assist in opening the lid and permit locking it in the open position; and</li> <li>e. Has two (2) locking mechanisms that are recessed into the top of the lid to secure the lid in the closed position;</li> </ul> </li> </ul> <p>(b) External fittings and features as follows:</p> <ul style="list-style-type: none"> <li>i. Cleats in accordance with Section 5.3.1(e);</li> <li>ii. Auxiliary Fuel Storage bladder fuel line male quick connect in accordance with Section 5.3.1.1 (b); and</li> <li>iii. NEMA 15 accessory receptacle in accordance with Section 5.3.13 (d)iii;</li> </ul> <p>(c) Provide secure, protected watertight storage for the following:</p> <ul style="list-style-type: none"> <li>i. Dive bottles in accordance with Section 5.3.5.1 (a)ii.a;</li> </ul>	to meet the Lazarette Box requirements.	
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		<ul style="list-style-type: none"> <li>ii. Fill lines in accordance with Section 5.3.5.1 (c);</li> <li>iii. Removable section inflation hose in accordance with Section 5.3.5.1 (d);</li> <li>iv. Engine inlet air snorkels in accordance with Section 5.3.10 (c);</li> <li>v. Power steering pump and isolation valve in accordance with Section 5.3.12 (c);</li> <li>vi. Batteries in accordance with Section 5.3.13.1 (b)iv;</li> <li>vii. Manually operated bilge pump in accordance with Section 5.3.14 (a)ii; and</li> <li>viii. Red and white dome lights in accordance with Section 5.3.7.1(b)ii.d.2.</li> </ul>	
15	5.3.4	<p><b>Radar Arch</b></p> <p>The DND RHIB shall have a Radar Arch as follows:</p> <p>(a) An angular structure with not less than five (5) exterior sides at the transom area of the boat that is of a heavy duty construction sufficient to support one person and a secure mounting platform as follows:</p> <ul style="list-style-type: none"> <li>i. Raked to the rear such that it does not interfere with personnel movement on the after portion of the boat;</li> <li>ii. Be the full width of the boat at the base and narrow towards the top;</li> <li>iii. Have sufficient side clearance from an adjacent vertical structure (e.g., ship's side) contacting the boat tube set bumper such that a boat roll of less than 45° does not contact the arch;</li> <li>iv. Include cleats that meet the standards requirements of TP1332E at the base of each support to enable mooring of the boat; and</li> <li>v. Be of sufficient height to permit mounting the radar dome and antennas on the mounting plate on the aft centerline at a height that prevents interference from personnel in the standing position on the deck, including: <ul style="list-style-type: none"> <li>a. Radar Scanner (Section 5.3.7 (e)v);</li> <li>b. GPS Receiver (Section 5.3.7 (e)vi);</li> </ul> </li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Radar Arch requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing.</p> <p>The drawing shall include a layout of the Radar Arch and the surrounding area with indication of the location of all components at Section 5.3.4 (a) through (d).</p>

		<p>c. VHF marine band radio antenna (Section 5.3.8 (b)i.a);</p> <p>d. V/UHF multiband antenna (Section 5.3.8 (b)iii.d.1);</p> <p>e. Primary UHF TacSat antenna (Section 5.3.8 (b)iii.d.2);</p> <p>f. Future Capability Antenna location (Section 5.3.8 (b)iii.d.3);</p> <p>g. Iridium phone antenna (Section 5.3.8 (b)iii.d.4);</p> <p>(b) Includes all cabling, junction boxes and other accessories required to connect antennas and sensors to the Console mounted equipment in accordance with TP 1332E and CSA C22.2;</p> <p>(c) Include an all-around visible anchor light showing clear above the radar dome in accordance with Section 5.3.7.1 (b)ii.a; and</p> <p>(d) Have a forward folding capability that permits mounted electronic components to fit into deck area voids in the lowered (folded down) position such that the height of the boat with the arch in the lowered position and mounted on the trailer does not exceed the limit for transport on a C130 aircraft of 2.74m (9 ft).</p>		
16	5.3.5	<p><u>Air Inflatable Components</u></p> <p>The air inflatable components (i.e., buoyancy tubes and removable sections) shall be as follows:</p> <p>(a) Consist of the following inflatable components:</p> <p>i. A fixed forward bow to mid-ships multi-compartmental U-shaped buoyancy tube with a minimum of five (5) separate chambers of approximately equal volume;</p> <p>ii. Two (2) removable sections, located on the Port and Starboard side of the boat aft of the forward buoyancy tube; and</p> <p>iii. Two (2) fixed stern buoyancy tubes located on the Port and Starboard side of the boat aft of the</p>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Air Inflatable Component requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing;</p> <p>The drawing shall include a layout of the Air Inflatable Components with indication of the location of all</p>	

		<p>removable sections; Tubes construction as follows:</p> <ul style="list-style-type: none"> <li>i. Nominal diameter of 63.5 cm (25 in);</li> <li>ii. Be constructed of a three-layer material consisting of: <ul style="list-style-type: none"> <li>a. Grey neoprene/Hypalon™ on the exterior (minimum 1670 dtex, 545 grams per m<sup>2</sup> (0.11 lbs per ft<sup>2</sup>));</li> <li>b. A central layer (core) of a durable material that provides strength and durability such as polyester or another polyamide (minimum 1880 dtex); and</li> <li>c. An internal liner of neoprene (minimum 520 grams per m<sup>2</sup> (0.1 lbs per ft<sup>2</sup>));</li> </ul> </li> <li>iii. Utilize polyurethane sealant on all interior seams and baffle edges;</li> <li>iv. Have all seams smoothly bonded with surface irregularities or deformities not to exceed +/- 2mm (+/- 3/32 in);</li> <li>v. Maintain pressure in accordance with the manufacturer's standard requirements;</li> <li>vi. Incorporate over-pressure relief valves for each inflation compartment, calibrated at the appropriate relief pressure (27.5 - 31.0 kpa (4 - 4.5 psi) (Halkey Roberts, Lee-field, and Mirada models are acceptable));</li> <li>vii. Have intercommunicating inflation/deflation fill valves with grey fabric covers on all fixed inflatable compartments;</li> <li>viii. Have the manufacturer's standard external wear protection to prevent abrasion and puncture of the buoyancy tube constructed of extruded rubber (neoprene or equivalent) that is securely attached to the buoyancy tube along the entire length of the outboard sides of the buoyancy tube covering 1/6 of the circumference centered on the outermost</li> </ul>	<p>components at Section 5.3.5 (a) through (f).</p> <p>AND</p> <p>(3) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.5.</p>	
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		horizontal points where the tube would first contact an external object; and ix. Have grey Non-skid full-length step tread on tube set top center (c) Removable sections as follows: i. Maintain watertight integrity of the boat when removed; ii. Be 100 cm (40 in) in length each; iii. Incorporate deflectors that limit the ingress of water when the removable section is removed; iv. Not have securing or retrieval lines provided; v. Have an overpressure relief valve and a manual inflation/ deflation valve with a grey fabric cover to allow deflation for storage on deck; and vi. Have two (2) tube handles located approximately 45 degrees inboard of the top of the removable section to support removal and replacement; (d) Fixed sections as follows: i. Attach to the hull by one piece longitudinal or lengthwise connectors augmented with other devices as appropriate to ensure a robust connection capable of withstanding the forces experienced when operating at the maximum operational performance that is: a. Watertight; b. Flush mounted to the inside of the hull to eliminate snagging or tripping hazards; c. Permits removal of the tubes by qualified personnel; and d. Permits repair of minor damage to the tubes including small punctures or scrapes without complete removal of the tube from the boat; ii. Bow tube attachment flat bar flanges attached with Flat Head Machine Screws and no protrusions providing potential tube pinch points; (e) Include a readily removable and replaceable tube set skirt		
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		<p>protector to prevent front end damage from initial contact with large boats and docks as follows:</p> <ul style="list-style-type: none"> <li>i. Be constructed of 1100 dtex grey neoprene/Hypalon™ with grey lacing cuff for skirt attachment;</li> <li>ii. Extends from the console area forward to the bow; and</li> <li>iii. Attaches to the flange at the outer bottom of the buoyancy tube;</li> </ul> <p>(f) Include five (5) equally spaced stainless steel D rings fitted along the top of the tube sets on both the Port and Starboard sides with the lower edge butted to top of the haze grey rubber bumper strakes capable of supporting 12 mm (0.5 inch) diameter nylon braided rope.</p>		
17	5.3.5.1	<p><u>Inflation System</u></p> <p>The on-board inflation system shall:</p> <p>(a) Consists of a primary system augmented by a back-up system utilizing dive bottles as follows:</p> <ul style="list-style-type: none"> <li>i. Electrically powered primary system permits inflation of all fixed buoyancy tube compartments from one location in not more than thirty (30) minutes;</li> <li>ii. Secondary (dive cylinder) system as follows: <ul style="list-style-type: none"> <li>a. Include two (2) 2.8 cubic meter (100 cubic feet) aluminum dive cylinders with a 200 bar (3000 psi) capacity each secured in the Lazarette box with 3-point ratchet straps</li> <li>b. Dive cylinders with standard scuba tank fittings (SVB-5000-48 valve, SRB 5105 regulator with HP pressure gauge or equivalent);</li> <li>c. Permits re-inflation of any two compartments concurrently when 50% depleted; and</li> <li>d. Permit inflation of a deflated or partially deflated tube section while underway;</li> </ul> </li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Inflation System requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing;</p> <p>The drawing shall include a layout of the Inflation System with indication of the location of all components at Section 5.3.5.1 (a) through (d).</p> <p>AND</p> <p>(3) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in</p>	

		<p>(b) Include one-way check valves at all fill points, and banjo fittings with restricting orifices on aft tube section fill points to prevent tube rupture during rapid inflation;</p> <p>(c) Route all fill lines from the Lazarette box to the destination fill point locations such that they are protected from puncture and do not pose a tripping hazard to the occupants;</p> <p>(d) Include an inflation hose for the removable section that can be stored in a location so as not to present a snagging or tripping hazard, (e.g., Lazarette box); and</p> <p>(e) Include isolation valves on forward and aft tube sections, and removable sections, which enable continued inflation where any single valve or fill line fails.</p>	Section 5.3.5.1.	
18	5.3.6	<p>Console</p> <p>The Console shall:</p> <p>(a) Comprise a single two-position Console constructed of a robust light-weight material (e.g., marine grade aluminum, carbon fiber, etc.) that includes the Coxswain Station and the Navigator Station;</p> <p>(b) Permit connection of electronic components in the sub-console Communication Station that is integrated into the center seat in the second row;</p> <p>(c) Provide an enclosed waterproof mounting location that is readily accessible to facilitate repair and replacement for the following equipment:</p> <ul style="list-style-type: none"> <li>i. VHF Marine Radio (Section 5.3.8 (b)i);</li> <li>ii. Two (2) V/UHF radios (Section 5.3.8 (b)iii.a) and mounting trays (Section 5.3.8 (b)iii.b); and</li> <li>iii. Two multiband V/UHF RF amplifiers (Section 5.3.8 (b)iii.c);</li> </ul> <p>(d) Provide flush mounting of all electronic displays, with protective covers to prevent inadvertent activation of controls and securely fitting sun covers that remain in place in all operating conditions when installed and are readily removed without tools;</p> <p>(e) Include a Master Switch Control Panel as follows:</p> <ul style="list-style-type: none"> <li>i. Located in the center of the Console to permit access</li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Console requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing.</p> <p>The drawing shall include a layout of the console and the surrounding area with indication of the location of all components at Section 5.3.6 (a), and (c) through (l).</p>	

			<p>by both the Coxswain and Navigator;</p> <p>ii. A single panel housing all switches in a top row and related push button breakers in a lower row as appropriate; and</p> <p>iii. Locate all switches in a logical sequence as enclosed in protective plates that recess the switches and push button breakers to protect from inadvertent selection;</p> <p>(f) Provide a human control interface that gives the Coxswain and Navigator ready access to all equipment and systems including:</p> <ul style="list-style-type: none"> <li>i. The Master Switch Control Panel (see above);</li> <li>ii. Navigation Equipment (Section 5.3.7);</li> <li>iii. Propulsion System (Section 5.3.10);</li> <li>iv. Fuel System (Section 5.3.11);</li> <li>v. Steering System (Section 5.3.12);</li> <li>vi. Electrical Systems (Section 5.3.13); and</li> <li>vii. Pumping and Drainage System (Section 5.3.14);</li> </ul> <p>(g) Provide the Coxswain and Navigator unencumbered forward visibility while in the seated or standing positions;</p> <p>(h) Provide not less than 12.7 cm (5 in) of clear deck space between the console and the tube set mounting interface on both sides of the Console for walk around access to bow and transom;</p> <p>(i) Provide a center windshield at the front of the Console that does not occlude the view of the Coxswain and Navigator as follows:</p> <ul style="list-style-type: none"> <li>i. Raised/lowered manually, to protect the Coxswain and Navigator from wind and spray off the bow when required, from a position level with the top of the Console to a maximum height of 38 cm (15 in) in 3.8 cm (1.5 in) increments;</li> </ul> <p>(j) Have full length hand rails securely attached around the perimeter of the console exterior (front and sides);</p> <p>(k) Include holders located on both outer sides of the Console for storage of the sea strobe emergency light beacons (Section 5.5 (c)vii) in the near vertical position as follows:</p>	
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		<p>i. Provide secure storage in a vibrating environment; and</p> <p>ii. Canted rearward sufficiently to enable ready access by the Coxswain and Navigator;</p> <p>(l) Include recessed cavities on the outside of both sides of the Console for storage of two Class B fire extinguishers (Section 5.5 (c)vi); and</p> <p>(m) Include labels and notices for the vessel in accordance with TP -1332E.</p>		
19	5.3.6.1	<p><u>Coxswain Station</u> The Coxswain Station (Port side) shall:</p> <p>(a) Incorporate all gauges, instrumentation, and alarms required to fully monitor vessel systems and auxiliaries as well as permit the operator to control direction and engine speed while in the standing, sitting and reclining positions;</p> <p>(b) Situate engine controls on the Starboard side of the Coxswain Station positioned to minimize inadvertent activation or deactivation of adjacent controls when one control including the steering wheel is utilized with engine throttle controls;</p> <p>(c) Incorporate keyed ignition and push button switch, and one Master kill dead man switch for each engine, mounted adjacent to each other;</p> <p>(d) Have an Intercom System connection point (Section 5.3.8(b)ii.b.8);</p> <p>(e) Include a direct read graduated marine compass in accordance with Section 5.3.7 (d);</p> <p>(f) Include a flush mounted electric horn on the front of the Console operated by a spring-loaded push-button switch that meets the requirements of Canada Shipping Act - Collision Regulations; and</p> <p>(g) Have ready access to the controls for the VHF marine radio (Section 5.3.8 (b)i).</p>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Coxswain Station requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing.</p> <p>The drawing shall include a layout of the Coxswain Station that demonstrates that the controls and switches required by the Coxswain are located on that side of the console and in such a manner that the Coxswain has access to the controls and switches at Section 5.3.6.1 (a) through (g).</p>	
20	5.3.6.2	<p><u>Navigator Station</u> The Navigator Station (Starboard side) shall:</p> <p>(a) Have an Intercom System connection point (Section 5.3.8(b)ii.b.8);</p>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Navigator</p>	

		<p>(b) Have one (1) NEMA-15 accessory power receptacle (Section 5.3.13 (d)i) to service the Starboard deck area;</p> <p>(c) Have one (1) satellite short data burst Iridium beacon (EMS Satcom PDT-300i);</p> <p>(d) Have a primary navigation display in accordance with Section 5.3.7 (e)i; and</p> <p>(e) Have a secondary navigation display in accordance with Section 5.3.7 (e)ii.</p>	<p>Station requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing;</p> <p>The drawing shall include a layout of the Navigator Station that demonstrates that the controls and switches required by the Navigator are located on that side of the console and in such a manner that the Navigator has access to the controls and switches at Section 5.3.6.2 (a) through (e).</p> <p>AND</p> <p>(3) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.6.2.</p>	
21	5.3.6.3	<p><u>Communication Station</u></p> <p>The Communication Station shall:</p> <p>(a) Be integrated into the center seat in the first row of seats immediately behind and between the Coxswain and Navigator seats;</p> <p>(b) Have two (2) Intercom System connection points (Section 5.3.8 (b)ii.b.8);</p> <p>(c) Include two (2) serial cables for control of the Multiband V/UHF radios (Section 5.3.8 (b)iii.a); and</p> <p>(d) Include one (1) IPX6 or equivalent Mil Std breakout cable set.</p>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Communication Station requirements;</p>	
22	5.3.7	<p><u>Navigation Equipment</u></p> <p>The DND RHIB shall:</p> <p>(a) Be fitted with navigation equipment sufficient in all respects</p>	<p>The Bidder shall provide: (1) Written Attestation that the DND RHIB will be/has been designed and</p>	

		<p>for the safe handling of the vessel and to meet the requirements of the Canada Shipping Act - "Collision Regulations" (COLREGS);</p> <p>(b) Include components that are compliant with IPX6 (ANSI/IEC 60529-2004) to withstand jets of water;</p> <p>(c) Be wired and interfaced in accordance with the approved manufacturer's schematic drawings and instructions;</p> <p>(d) Include a 15 cm (6 in) direct read graduated marine compass that is adjustable for deviation, mounted at the center of the Coxswain Station (Section 5.3.6.1 (e)), with a dedicated light and waterproof marine grade dimmer switch (Ritchie SS 5000 or equivalent);</p> <p>(e) Have all components of the navigation system integrated within a distributed marine parameter reporting system (Raymarine Seataalk multi-station network or equivalent) as follows:</p> <p>i. Include a primary 30 cm (12 in) integrated navigation display (Raymarine e127 Hybrid Touch Multifunction/Sonar Display Part# E70024 or equivalent) in the Console dash centered on the Navigator's position that includes:</p> <p>a. Data display capabilities for all on board systems including radar and external video;</p> <p>b. A navigational display pre-loaded with Canadian charts (Coastal and inland waterways);</p> <p>c. Resolution of not less than 1280 x 800 pixels WVG;</p> <p>d. Multi-function configurable display;</p> <p>e. Chart-plotter with the provision for scaling from 1/32 to 4000 nautical miles;</p> <p>f. Provide 3000 possible waypoints with waypoint transfer and track history for 15 tracks;</p> <p>g. AIS overlay for target symbols and information;</p>	<p>constructed to meet the Navigation Equipment requirements ;</p> <p>AND</p> <p>(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.7.</p>	
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		<p>h. Sunlight and night viewable by contrast and color scheme adjustment; and</p> <p>i. Touch screen control;</p> <p>ii. Include a secondary 23 cm (9 in) integrated navigation display (Raymarine e97 Multifunction/Sonar Display Part# E70022 or equivalent) in the Console dash adjacent to the primary display that includes:</p> <p>a. Functionality matching the primary integrated navigation display; and</p> <p>b. Resolution of not less than 800 x 480 pixels WVGa.</p> <p>iii. Include a high speed multi-station network switch (Raymarine HS5 Network Switch Part# A80007 or equivalent) interfaced as follows:</p> <p>a. Primary and secondary navigation displays; and</p> <p>b. Radar scanner (Section 5.3.7(e)v) via a crossover coupler (Raymarine SeaTalk High Speed Crossover Coupler Part# E55060 or equivalent);</p> <p>iv. Include an AIS receiver (Raymarine AIS350 Dual Channel AIS Receiver Part# E32157 or equivalent) interfaced as follows:</p> <p>a. Via a splitter (Raymarine SeaTalk NG T-Piece Part# A06028 or equivalent) to the following:</p> <p>1. Via a multi-connector (Raymarine SeaTalk NG 5-Way Connector Part# A06064 or equivalent) to the following:</p> <p>a. Primary and secondary navigation displays;</p> <p>b. GPS receiver (Section 5.3.7(e)vi); and</p> <p>c. Depth/Temperature</p>		
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		transducer (Section 5.3.7(e)vii.a);	
		<p>2. Via a splitter (Raymarine AIS 100 Active Antenna Splitter Part# A80190 or equivalent) to the following:</p> <ul style="list-style-type: none"> <li>a. Marine VHF radio (Section 5.3.8 (b)i); and</li> <li>b. VHF Marine antenna (Section 5.3.8 (b)i.a);</li> </ul> <p>v. To the Iridium Beacon (Section 5.3.6.2 (c)); Include an FCC compliant radar scanner (Raymarine RD424HD 24 inch Digital Radome Part# E92143 or equivalent) as follows:</p> <ul style="list-style-type: none"> <li>a. Minimum 4 kW output at the antenna; and</li> <li>b. Have a ruggedized GRP radome cover;</li> </ul> <p>vi. Include a Global Positioning System (GPS) receiver (Raymarine Raystar 130 GPS Receiver Part# E32153 or equivalent);</p> <p>vii. Include a transom mounted HD Transducer bracket with a bottom surface parallel to the hull bottom for maximum depth performance with the following transducers:</p> <ul style="list-style-type: none"> <li>a. A retractable depth and temperature sensor (Raymarine Plastic Depth/Temperature Retractable SmartTransducer with 12 Degree Tilt Part# A22112 or equivalent); and</li> <li>b. A low profile through-hull style depth sounder (Raymarine Plastic Low Profile Thru-hull Depth Transducer Part# A80171 or equivalent) interfaced to the primary navigation display;</li> </ul> <p>viii. A heading sensor (Raymarine Heading Sensor Part# T70132 or equivalent) interfaced to the primary navigation display.</p>	
23	5.3.7.1	<u>Navigation Lighting</u>	The Bidder shall provide:



	<p>The DND RHIB shall:</p> <p>(a) Be fitted with navigation lighting and equipment sufficient in all respects for the safe handling of the vessel and to meet the requirements of the Canada Shipping Act - "Collision Regulations" (COLREGS), unless otherwise specifically stated as for the vertical separation;</p> <p>(b) Include the following:</p> <ol style="list-style-type: none"> <li>i. Permanently mounted Navigation lighting fixtures that: <ol style="list-style-type: none"> <li>a. Display the arc and range of visibility as defined in the Canada Shipping Act, Collision Regulations (COLREGS);</li> <li>b. Resist the effects of vibration and moisture and incorporate adequate protection from damage projected to occur when lying alongside another boat or a pier;</li> <li>c. Do not interfere with the vision and sight lines of the Coxswain and Navigator; and</li> <li>d. Includes high performance lighting with low power consumption and no residual illumination when extinguished;</li> </ol> </li> <li>ii. Lighting as follows: <ol style="list-style-type: none"> <li>a. One (1) all around arch/anchor light (Perko LED Anchor light part # 1345-DP1WHT or equivalent) on the radar arch that is within 17.8 cm (7in) of the overall height and visible 360° around the boat;</li> <li>b. Waterproof navigation lights (Perko LED P&amp;S Navigation lights part # 602-DP1BLK or equivalent) permanently attached to either side of the Radar Arch that are wired together on a separate breaker of the 12 volt DC electrical system;</li> <li>c. One (1) rear facing following light (Microstar LED or equivalent) at the top center rearmost point of the engine guard</li> </ol> </li> </ol>	<p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Navigation Lighting requirements;</p> <p>AND</p> <p>(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.7.1.</p>	
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		<p>with dimming functionality provided to enable a following resource to maintain a position behind the boat;</p> <p>d. Three (3) selectable red or white dome lights (Hella LED or equivalent) for local area illumination located as follows:</p> <ol style="list-style-type: none"> <li>1. One (1) inside the console; and</li> <li>2. Two (2) inside the Lazarette box, one (1) on each side port and starboard;</li> </ol> <p>(c) Include protected wiring to prevent chaffing or snagging;</p> <p>(d) Incorporate fuses on the switch connections to the battery; and</p> <p>(e) Include lighting switches on the Master Switch Control Panel located on the Console (Section 5.3.6 e(e)) as follows:</p> <ol style="list-style-type: none"> <li>i. Navigation Switch - Three-way switch for control of the Arch /Anchor light and Port and Starboard sidelights with positions as follows: <ol style="list-style-type: none"> <li>a. Anchor and Navigation;</li> <li>b. Off; and</li> <li>c. Anchor Only;</li> </ol> </li> <li>i. Additional switches for the quick disconnect anchor light, following light, and deck and dome lights as appropriate.</li> </ol>		
24	5.3.8	<p><u>Communications System</u></p> <p>The DND RHIB shall be fitted with communication equipment that provides for inter-personnel internal and external communication as follows:</p> <ol style="list-style-type: none"> <li>(a) Compliant in all respects for the safe handling of the vessel and to meet the requirements of the Canada Shipping Act - "Collision Regulations" (COLREGS);</li> <li>(b) Includes the following: <ol style="list-style-type: none"> <li>i. A waterproof fixed mount VHF Marine radio (ICom IC-M424 or equivalent) for commercial communications with variable reactance frequency modulation including:</li> </ol> </li> </ol>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Communication System requirements;</p> <p>AND</p> <p>(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in</p>	

			<p>a. A VHF Marine antenna (Shakespeare 36 inch VHF antenna 5215-AIS or equivalent) with AIS capability and not less than 3dBi gain, shared with the AIS receiver (Section 5.3.7 (e)iv) mounted on the Radar Arch (Section 5.3.4 (a)v.c);</p> <p>b. Interfaces to the following:</p> <ol style="list-style-type: none"> <li>1. The primary navigation display (Section 5.3.7 (e)i); and</li> <li>2. A loudspeaker (Whelen SA315P or equivalent) flush mounted on the forward side of the Console;</li> </ol> <p>ii. A ruggedized multi-channel Intercom System (ICS) (SAVOX IMP 4M3R Fixed or equivalent) as follows:</p> <ol style="list-style-type: none"> <li>a. Permits simultaneous operation of both multiband V/UHF radios (See below);</li> <li>b. Includes four (4) waterproof belt connection stations as follows; <ol style="list-style-type: none"> <li>1. Selector switch for radio transmission and intercom mode;</li> <li>2. Permits single and dual channel reception modes;</li> <li>3. Selectable Voice Operated Exchange (VOX) hands free operation for intercom mode;</li> <li>4. Push to Talk (PTT) operation for radio transmissions;</li> <li>5. Compatible with Peltor headsets;</li> <li>6. Permits quick disconnect from ICS and connect to personnel hand held radios (AN/PRC-148 MBITR); and</li> <li>7. Underwater rated connectors to ICS connection points; and</li> <li>8. Located as follows: <ol style="list-style-type: none"> <li>a. Two (2) mounted at the</li> </ol> </li> </ol> </li> </ol>	Section 5.3.8.	
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			<p>iii. A V/UHF radio system as follows:</p> <ol style="list-style-type: none"> <li>a. Two (2) multiband V/UHF radios are to be fitted for but not with utilizing the two (2) GFE supplied AN/PRC 117F radios (SOW Appendix 1) mounted in the Console (Section 5.3.6 (c)iii);</li> <li>b. Two (2) mounting trays (Ultralife McDowell Research RMT2 or equivalent physical mounting interfaces) for the V/UHF radios mounted in the Console (Section 5.3.6 (c)iii);</li> <li>c. Two (2) 50 Watt 30-512 MHz multiband RF amplifiers with integrated LNAs (AR Modular AR-50 or equivalent) shock mounted in the Console (Section 5.3.6 (c)iv) that includes: <ol style="list-style-type: none"> <li>1. DC power for the amplifiers;</li> <li>2. RF connections (two in and two out) to the radios in the Console utilizing LMR-400 Ultraflex RF cable; and</li> <li>3. A method of heat dissipation;</li> </ol> </li> <li>d. Antennas, mounted on the Radar Arch (Section 5.3.4 (a)v), as follows: <ol style="list-style-type: none"> <li>1. One (1) Multiband V/UHF whip antenna (Cobham GD2013-2221P15 or equivalent), no longer than 122 cm (48 in), that supports 100 Watts of input power with the following minimum gains: <ol style="list-style-type: none"> <li>a. -16 to -4 dBi at 30 to 88 MHz;</li> <li>b. -4 dBi at 118 to 174 MHz; and</li> </ol> </li> </ol> </li> </ol>		
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			<p>c. 0 dBi at 225 to 512 MHz; One (1) RHCP UHF TacSat antenna (Cobham GV2432 or equivalent) with a hemispheric antenna pattern optimized for low elevations as follows:</p> <p>a. No larger than 38 cm (15 in) in diameter and 38 cm (15 in) in height;</p> <p>b. Transmission frequencies between 290-318 MHz;</p> <p>c. Receive frequencies between 242-270 MHz;</p> <p>d. Supports 100 W of input power with the following minimum gains:</p> <p>i. 3 dBi gain peak; and</p> <p>ii. 0 dBiC average gain between 10 and 25 degree elevation.</p> <p>e. A physical mounting interface; and</p> <p>f. Connection to the radios in the Console with N type female connectors;</p> <p>3. One (1) location for a Future Capability Antenna no larger than 38 cm (15 in) in diameter and 38 cm (15 in) in height; and</p> <p>4. One (1) Iridium phone connection point on the console connected to the Iridium phone antenna (Aero Antenna Iridium Fixed Mast Pole Mount Antenna Model AT1621-73W-TNCF-000-00-00-NM or equivalent).</p>		
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25	5.3.9	<p><b>Seating</b> The DND RHIB seating shall be as follows:</p> <p>(a) Include seats as follows:</p> <ul style="list-style-type: none"> <li>i. Two (2) fixed first row of side by side individual crew seats for the Coxswain and Navigator; and</li> <li>ii. Ten (10) foldable/moveable/removable passenger seats;</li> </ul> <p>(b) Include seating in the deck area that permits, without the use of tools, installation, movement and removal of individual passenger seats;</p> <p>(c) Permit the following seating arrangements</p> <ul style="list-style-type: none"> <li>i. Second row of three (3) seat mounts side by side directly behind the crew (Coxswain and Navigator) fixed seats;</li> <li>ii. Third row of three (3) seat mounts side by side directly behind the second row seat mounts;</li> <li>iii. Fourth row of three (3) seat mounts side by side directly behind the third row seat mounts; and</li> <li>iv. Fifth row of three (3) seat mounts side by side directly behind the fourth row seat mounts;</li> </ul> <p>(d) Permit, through folding, moving and removing seats in the Third and Fourth rows, creation of a minimum clear deck spaces as follows:</p> <ul style="list-style-type: none"> <li>i. Nominal 102 cm (40 in) by the full width of the interior of the hull (between the buoyancy tubes on either side of the boat) forward of the last (fifth) row; and</li> <li>ii. Nominal 75 cm (30 in) by 102 cm (40 in) wide between the Third row seats immediately forward of the clear deck space above;</li> </ul> <p>(e) Have maximum and minimum design seat configurations as follows:</p> <ul style="list-style-type: none"> <li>i. A Maximum Seat Configuration of fourteen (14) seats (additional two (2) passenger seats are obtained separately) to include: <ul style="list-style-type: none"> <li>a. Two (2) first row crew seats;</li> </ul> </li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Seating requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing;</p> <p>The drawing shall include a layout of the Seating and the surrounding area with indication of the location of all components and the seating configurations at Section 5.3.9 (a) through (e).</p>
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26	5.3.9.1	<p>b. Three (3) second row passenger seats;</p> <p>c. Three (3) third row passenger seats;</p> <p>d. Three (3) fourth row passenger seats; and</p> <p>e. Three (3) fifth row passenger seats;</p> <p>ii. A Minimum Seat Configuration of two (2) seats to include:</p> <p>a. Two (2) first row crew seats; and</p> <p>b. All other seats removed from the boat;</p> <p>(f) Seat mounting locations to provide enhanced safety as follows:</p> <p>i. Located to and prevent striking contact with hard and sharp objects at rest and while underway; and</p> <p>i. Seat spacing such that occupants do not interfere with other seated occupants or any boat equipment or fixtures.</p>		
		<p>Seats (General)</p> <p>The seats (fixed and removable) shall be as follows:</p> <p>(a) Designed to support occupants in the seated position to minimize fatigue with sufficient strength to withstand the lateral and vertical impact-loading that equates to the conditions of the Design Mission as follows:</p> <p>i. Shock mitigation that does not bottom out in the Design Mission with instantaneous loads of 10 - 13 Gs; and</p> <p>ii. Heavy duty shock absorption with linear travel of 20-25 cm (8-10 in). Pivoting rotational seats systems are not acceptable;</p> <p>(b) Constructed as follows:</p> <p>i. Include aluminum frames capable to support persons in full gear weighing 120 kg (264 pounds);</p> <p>ii. Include anodized aluminum finish where exposed to elements;</p> <p>iii. Include grey seat cushions with a ballistic nylon cover (1600 denier nylon minimum) of a suitable thickness such that they contribute to the shock mitigation of the seating system and are resistant to</p>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Seat (General) requirements.</p>	

27	5.3.9.2	<p>tearing, puncture and deterioration in marine environmental conditions; and</p> <p>iv. Include seat adjustments to the weight of the occupant to provide a similar range of mitigation without reaching the full range of motion limits (bottoming out) for any occupant.</p> <p><u>Crew Seats</u></p> <p>The (fixed) crew seats shall be as follows:</p> <p>(a) Positioned at the Port and Starboard stations of the console and mounted directly to the deck to provide support to persons in the standing, reclining and seated positions;</p> <p>(b) Provide a stowed (i.e., seat folded) configuration that permits operation of the boat while in the standing and reclining positions;</p> <p>(c) Provide adjustability such that the seats are readily configured while the occupant is in the standing, seated or reclining positions (i.e., raised, lowered and moved fore and aft) without impacting the user's activity while providing full comfort and lateral support and no possible contact with hard surfaces; and</p> <p>(d) Include a data collection system to record accelerations in multiple axes (i.e., horizontal, lateral and vertical).</p>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Crew Seat requirements.</p>	
28	5.3.9.3	<p><u>Passenger Seats</u></p> <p>The (moveable/removable) passenger seats shall be as follows:</p> <p>(a) A foldable seat that can be attached to the deck mounts to support the occupant in the sitting and straddling positions;</p> <p>(b) Include a supporting back rest, handholds and integrated foot rest for both feet;</p> <p>(c) Foldable as follows:</p> <p>i. When folded, the seat remains balanced and centered over the mounting area such that an unsecured seat stands upright on a level stable surface; and</p> <p>ii. The folding mechanism shall require between 4.5 and 9 kg (10 and 20 pounds) to lock or unlock the seat in the folded position;</p> <p>(d) Include removable seat attachment points (second, third,</p>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Passenger Seat requirements.</p>	



		<p>fourth and fifth rows) as follows:</p> <ul style="list-style-type: none"> <li>i. Include mounting points in deck with no part protruding above the surface of the deck by more than 2 mm (0.08 in) when the seats are not in place; and</li> <li>ii. Incorporate guided mechanisms for mounting seats to the deck such that placement of the seat within an area +/- 2.5 cm (1 in) and within 3° of rotation above the intended location is sufficient to enable the seat to settle into place for attachment and securing;</li> </ul> <p>(e) Positioning of removable seats (second, third, fourth and fifth rows) as follows:</p> <ul style="list-style-type: none"> <li>i. Installation by two trained persons in less than 5 minutes for each row;</li> <li>ii. Removal from the boat by two trained persons in less than 5 minutes for each row; and</li> <li>iii. Reconfiguration by two trained persons in less than 5 minutes alongside or underway to clear deck space by folding seats with those seats remaining securely connected to the deck.</li> </ul> <p>(f) Seat attachment mechanisms as follows:</p> <ul style="list-style-type: none"> <li>i. Be readily accessible in any installed configuration (i.e., side or center seat);</li> <li>ii. Not require tools to operate (i.e., lock, un-lock); and</li> <li>iii. Require between 4.5 and 9 kg (10 and 20 pounds) to lock or unlock the seat in the deck mount.</li> </ul>		
29	5.3.10	<p><u>Propulsion System</u></p> <p>The DND RHIB propulsion system shall comprise the engines and propellers, hull engine mounting interface, engine controls, and engine auxiliary equipment as follows:</p> <p>(a) Engines (two (2) per DND RHIB) will be Government Supplied Material (GSM) in accordance with the Statement of Work Appendix 1, and installed as follows:</p> <ul style="list-style-type: none"> <li>i. Engines securely mounted to the hull to support the motor weight and available thrust in a configuration that best complements hull design and affords</li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Propulsion System requirements;</p> <p>AND</p> <p>(2) Where an equivalent item is offered, a Certificate of Compliance</p>	

		<p>maximum control and stability</p> <p>ii. Engine installation and pre-startup service to be completed in accordance with the engine manufacturer's recommendations by an OEM trained and certified technician to ensure that equipment and components are properly installed for use that does not void the engine manufacturer's warranties in any way;</p> <p>(b) Propellers provided and installed that are capable of meeting the Operational Performance (Section 4.1) as follows:</p> <p>i. Right Hand propeller (such as the Mercury Rev 4 17P 4 blade Right Hand part number 857024A46); and</p> <p>ii. Left Hand Propeller (such as the Mercury Rev 4 17P 4 blade Left Hand part number 857025A46);</p> <p>(c) High-throughput air inlet snorkels (Mercury Snorkel Kit part number 8M80244668 or equivalent) with reusable conical air filters located within the Lazarette box designed to avoid water ingestion;</p> <p>(d) Engine controls as follows:</p> <p>i. An instrumentation package for each engine complete with wiring harness, and an integrated digital display (Mercury Vessel View Display part number 79898277K 16 or equivalent) at the Coxswain Station for performance parameters including engine rpm, hours powered, speed, trim, fuel available, battery status, water pressure, and water temperature;</p> <p>ii. Audible alarms and warning indication to indicate critical parameters are outside of normal operating ranges to include high coolant temperature and low lubricating oil pressure; and</p> <p>iii. Dual binnacle type throttles (Mercury Console kit part number 87775K31 or equivalent) with shift harness (at the Coxswain station) that incorporates a group engine trim and tilt control to integrate the two</p>	that confirms the item offered is equal to or better than the item specified in Section 5.3.10.
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30		<p>(e) Controls, hydraulic and electrical cables from the boat to the outboard engines installed in UV resistant pipes (LOOM) with these pipes installed in such a manner that no cable is immersed in water; and</p> <p>(f) A rear engine guard installed as follows:</p> <ol style="list-style-type: none"> <li>Protects the outboard engines and propellers from impact with external objects at deck level and above in all ranges of extension and retraction; and</li> <li>Incorporates welded aluminum pipe construction suitable for salt water.</li> </ol>		
30	5.3.11	<p><u>Fuel System</u></p> <p>The fuel system shall</p> <ol style="list-style-type: none"> <li>Be in compliance with all requirements of TP 1332E as amplified by the ABYC standards;</li> <li>Provide a supply rate as required by the twin Mercury Verado 350 HP engines;</li> <li>Include the following: <ol style="list-style-type: none"> <li>An internal (built-in) fuel tank of not less than one thousand (1000) liters (225 Gal) that: <ol style="list-style-type: none"> <li>Is sufficiently baffled or otherwise designed to minimize free surface effects;</li> <li>Has isolation valves at the filter and manifold system to permit maintenance and repair;</li> <li>Has a flow-through ventilation system, with a flow-through in accordance with TP 1332E, as follows: <ol style="list-style-type: none"> <li>Two selectable fuel vents, one forward and one aft, with an interlock that ensures one vent is always open; and</li> <li>Ball check valves on each ventilation inlet/outlet;</li> </ol> </li> </ol> </li> <li>Has a fuel filling system as follows: <ol style="list-style-type: none"> <li>Sized to provide a fuel filling rate of</li> </ol> </li> </ol> </li> </ol>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Fuel System requirements.</p>	

			<p>at least 35 liters (7.7 Imperial gallons) per minute; and</p> <p>Has a fill cap for the fuel filling pipes as follows:</p> <ul style="list-style-type: none"> <li>a. Stands proud of the deck to avoid contamination entering the fuel system when open; and</li> <li>b. Has a permanent label denoting type of fuel;</li> <li>e. Includes an electronic level sensor and a dip Port accessible through a deck access plate;</li> <li>f. Includes an inspection hatch in the deck to allow access to the fuel pick-ups and fuel vent control levers;</li> <li>g. Is hydrostatically or pressure (air) tested to twenty-four (24) kpa (3.5 psi) in accordance with TP 1332E;</li> <li>h. Has the manufacturers' name, capacity, and testing data clearly identified in a conspicuous location; and</li> <li>i. Is labeled in accordance with TP 1332E (including labeling of all valves);</li> <li>ii. A fuel-water separator filter mounted "in-line" to each engine with ready access to drain the sediment bowl;</li> <li>iii. Fuel lines and fittings as required with sufficient protection from damage due to chafing, wear and vibration;</li> <li>iv. Electrical components installed in fuel tank spaces, and any other spaces that are not open to the atmosphere where fuel tank connections are provided, ignition protected in accordance TP 1332E;</li> <li>v. Foam where appropriate to enhance buoyancy and minimize the potential for accumulation of explosive</li> </ul>		
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		<p>vapors that does not impede fill or supply rate; A selector manifold (e.g., three-way valve) for connection of the on-deck Auxiliary Fuel Storage bladder; A fuel metering device that measures total fuel consumption; and A fuel tank pump-out connection constructed of rigid tube that extends into the lowest part of the tank with a brass quick connect at the upper end compatible with a Safeway BS105-4 connector.</p>		
31	5.3.11.1	<p><u>Auxiliary Fuel Storage</u> The DND RHIB shall have auxiliary fuel storage as follows: (a) A portable fuel bladder (SEI Industries Inc. part number 006423 or equivalent) as follows: i. Constructed of a suitable fabric material (i.e., non-collapsible hard containers are not acceptable); ii. Minimum 200 liters (44 Imperial gallons) capacity; iii. Nominal dimensions (not including tie downs) as follows: a. 61 cm (24 in) wide; b. 152 cm (60 in) long; and c. 33 cm (13 in) high (full); iv. Include a lifting (crane) and tie-down harness; (b) Include a readily accessible fuel line 1.27 cm (0.5 in) male quick connect brass coupling inside a recessed cup with 10 cm (4 in) plastic threaded hatch cover on the Port or Starboard upper forward face of the Lazarette box for connection of the auxiliary fuel storage bladder to the Fuel System.</p>	<p>The Bidder shall provide: (1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Auxiliary Fuel Storage requirements; AND (2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.11.1.</p>	
32	5.3.12	<p><u>Steering System</u> The DND RHIB steering system shall: (a) Have a remote electrical over hydraulic dual cylinder power assisted steering system (Mercury part # 892558A02 and supporting kits, or equivalent) that incorporates a self-contained oil reservoir with a 50 cubic centimeter (3 cubic inch) capacity and replaceable seals on the rams;</p>	<p>The Bidder shall provide: (1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Steering System requirements; AND</p>	

		<p>(b) Incorporate a stainless steel steering wheel (Mercury part # 892761A05 or equivalent) with a non-slip padded surface for gripping, mounted in the Console at the Coxswain Station in a manner that prevents fore and aft or lateral movement of the wheel and steering shaft with a maximum of 6.5 turns from stop to stop (hard-over to hard-over);</p> <p>(c) Include a power steering pump (Mercury part # 892440A08 and supporting kits or equivalent) mounted in the Lazarette box that receives electrical power from either engine, with a readily accessible isolation valve located within the Lazarette box that disables the steering and locks the engines at their current position;</p> <p>(d) Include a steering cylinder kit (Mercury part # 896500A01 or equivalent) mounted to each engine to actuate steering hydraulics;</p> <p>(e) Include a tie bar to interconnect the two engines; and</p> <p>(f) Have all hydraulic steering hoses routed below deck that are readily accessible for maintenance inspections and repair.</p>	<p>(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.12.</p>	
33	5.3.13	<p><u>Electrical System</u></p> <p>The DND RHIB electrical system shall:</p> <p>(a) Have a switch to turn off all lights and audible warnings/alarms (i.e., blackout) while maintaining all engine and boat operating functions;</p> <p>(b) Have one 12 volt DC distribution system to power the engine starting and boat service loads including:</p> <ul style="list-style-type: none"> <li>i. Navigation lighting;</li> <li>ii. Navigational equipment;</li> <li>iii. Instrumentation, communications, and other electrical equipment in accordance with this specification;</li> <li>iv. Bilge Pumps; and</li> <li>v. Propulsion and steering;</li> </ul> <p>(c) Have a power management system that provides power consumption and availability information, and manages power distribution at idle and underway with provisions included to provide required power utilizing increased engine</p>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Electrical System requirements;</p> <p>AND</p> <p>(2) A conceptual layout drawing;</p> <p>The drawing shall include a layout of the Electrical System and the surrounding area with indication of the location of all components at Section 5.3.13 (a) through (j).</p> <p>AND</p>	

		<p>idle speeds where necessary;</p> <p>(d) Include three NEMA 15 accessory receptacles (with screw on watertight caps) installed in the following locations:</p> <ul style="list-style-type: none"> <li>i. One at the navigator console position for access from the Starboard deck area;</li> <li>ii. One at the bow for access in the bow area; and</li> <li>iii. One at the Port side of the forward face of the Lazarette box for access in the aft Port area;</li> </ul> <p>(e) Incorporate electrical system design, component selection, and installation in accordance CSA C22.2 No. 183.2-M1983 (R1999), TP 1332E, and applicable ABYC standards;</p> <p>(f) Have all electrical equipment and hardware installed in accordance with the manufacturer's specifications;</p> <p>(g) Have all electric connections sealed from the atmosphere with heat shrink material or equivalent to ensure a moisture resistant seal;</p> <p>(h) Have a flush mounted 12 volt circuit breaker panel that is sheltered from the weather on the Console for ready access by the Coxswain and Navigator as follows:</p> <ul style="list-style-type: none"> <li>i. Include breakers for all fitted electrical equipment and spare breakers (minimum six (6)) for future equipment installation</li> <li>ii. All breakers labeled; and</li> <li>iii. Permits access to electrical wiring service spaces via weather tight hatches at the console and elsewhere as appropriate;</li> </ul> <p>(i) Support simultaneous operation of all fitted electrical equipment without causing interference to any electronic equipment or to the magnetic compass; and</p> <p>(j) Have a charging system that enables battery charging from either the engine alternators or a fitted 120 volt AC 30 amps automatically regulated charger (shore power charger) as follows:</p> <ul style="list-style-type: none"> <li>i. Charging from one system at a time, with an interlock to prevent interconnection or shorting between the systems; and</li> </ul>	<p>(3) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.13.</p>
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34	5.3.13.1	<p>ii. Include three (3) output circuits with breakers and two spares to support three 12 volt DC output circuits.</p> <p><b>Batteries</b> The DND RHIB battery system shall: (a) Provide power to the boat electrical system when the engines are not operating, and for engine start up; (b) Include the following: i. Four (4) marine grade dual-purpose absorbed glass mat (AGM) maintenance free (group 34)12 volt batteries (Odyssey 34M-PC1500MS or equivalent), two for the Console and one for each engine, each with a minimum of 1000 marine cranking amps; ii. An isolator such that the engine batteries will not discharge due to the boat electrical system load and remain available for starting the engines; iii. A battery selector switch mounted in a protected location on/in the Console to prevent snagging or accidental switching that enables: a. Using the console batteries for engine starting; and b. Cross connection of engine batteries to permit starting of either engine from either battery with a minimum reserve of 25 amps for 135 minutes; iv. A watertight battery compartment within the Lazarette box fitted with a suitable means of gas venting.</p>	<p>The Bidder shall provide: (1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Batteries requirements;  AND (2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.13.1.</p>	
35	5.3.14	<p><b>Pumping and Drainage</b> The DND RHIB pumping and drainage shall include the bilge system and hull and deck drainage as follows: (a) A bilge system as follows:: i. Include two (2) marine grade electric bilge pumps (Rule® 2000 Model 02 Submersible Bilge Pump or equivalent) with a minimum capacity of 9090 liters per hour (2000 Imperial gallons per hour) each;</p>	<p>The Bidder shall provide: (1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Pumping and Drainage requirements;  AND</p>	



			<p>(2) A conceptual layout drawing;</p> <p>The drawing shall include a layout of the Pumping and Drainage system and the surrounding area with indication of the location of all components at Section 5.3.14 (a) through (c).</p> <p>AND</p> <p>(3) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.3.14.</p>	
ii.	Have one (1) manually operated diaphragm type bilge pump with a minimum capacity of 105 liters per minute (23 Imperial gallons per minute) located astern of the Lazarette box that provides ready access when the aft of the boat is partially submerged and permits vertical pumping;			
iii.	Locate bilge pumps to evacuate from the lowest points of the aft compartment;			
iv.	Have an electric bilge pump control switch located on the Console for each of the two electric pumps with settings for 'Automatic', 'Off', and 'Manual' operation with an associated red indicator light that illuminates when that bilge pump is operating;			
v.	Provide through-hull bilge pump discharges above water level that enable the bilge pumps to discharge directly overboard aft and prevent back flow into the hull;			
vi.	Incorporate automatic float switch controls (Ultra® Pump switch Junior JR Model UPS-02 Float Switch or equivalent) to initiate the electric bilge pumps (in Automatic mode) when water is present in the bilge;			
vii.	Have a non-corrosive aluminum threaded plug at the hull drainage point; and			
viii.	Have a bilge blower (Atwood Turbo 3000 or equivalent) to expel fuel fumes with a minimum 2.8 m <sup>3</sup> per minute (120 ft <sup>3</sup> per minute) flow rate (The flow rate of the bilge blower to be confirmed with a certificate of Proof Test);			
(b)	A hull and deck drainage system as follows:			
i.	Permit water taken on deck and within the hull to drain quickly and efficiently without manual intervention;			
ii.	Provide for self-bailing in accordance with TP 1332E and ISO 11812:2001 with all scuppers fitted with anti-backflow mechanisms;			
iii.	Provide for self-draining by means of suitable self-			

		<p>draining freeing ports in the transom;</p> <p>iv. Include transom deck drainage scuppers of a size to ensure sufficient drainage of forward and aft sections of exposed deck surfaces in accordance with TP 1332E and ISO 11812:2001;</p> <p>v. Provide adequate limber holes at the transom and in the keel beam to provide assured Port and Starboard drainage to the bilge; and</p> <p>vi. Provide one drainage point at the lowest point within the DND RHIB to drain all hull compartments when the DND RHIB is out of the water and on a level surface.</p>		
36	5.4	<p>Colour, Painting, and Corrosion Protection</p> <p>The DND RHIB is to be prepared and painted as per the following:</p> <p>(a) All external components that support paint bonding shall be finished in a Haze Grey colour, FED-STD-595C, colour 26270 (low sheen) except as noted otherwise in this section, to include and not limited to:</p> <ul style="list-style-type: none"> <li>i. Hull, engine guard, deck, Lazarette box, radar arch, and console;</li> <li>ii. Fastener heads;</li> <li>iii. Tube Set D-Rings;</li> <li>iv. GRP radome cover;</li> <li>v. Inside of console;</li> <li>vi. Seats (inside and out, including frames, and bases); and</li> <li>vii. Engines above gear cases with all decals and logos removed prior to painting;</li> </ul> <p>(b) Colour scheme, to be confirmed with the TA during the Contract Kickoff Meeting and/or during the production phase as appropriate, shall be as follows:</p> <ul style="list-style-type: none"> <li>i. Incorporate a haze grey colour on: <ul style="list-style-type: none"> <li>a. Seat Upholstery;</li> <li>b. Tube Set; and</li> <li>c. Bow skirt;</li> </ul> </li> <li>ii. Incorporate a black colour on items that are black as</li> </ul>	<p>The Bidder shall provide Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Colour, Painting, and Corrosion Protection requirements.</p>	

		<p>supplied (e.g. switches):</p> <p>iii. Incorporate an original or natural colour on:</p> <ol style="list-style-type: none"> <li>Arch pins;</li> <li>Inflation valves; and</li> <li>Fire extinguishers;</li> </ol> <p>(c) The primary transom mounting bracket, trim cylinder assemblies, lower SS cheek plates, and gear case <b><u>shall not</u></b> be painted;</p> <p>(d) All exposed surfaces shall be non-reflective and subdued colours where haze grey is not possible;</p> <p>(e) All exposed aluminum and stainless steel shall be free of cosmetic blemishes, including all construction marks, gouges, scratches, and stains, prior to finishing;</p> <p>(f) All externally visible components shall be powder coated and anodized or equivalent and painted haze grey to facilitate low profile operation in day time and night time operations, unless not possible or otherwise specified;</p> <p>(g) All exposed aluminum surfaces that are in high wear locations shall be anodized;</p> <p>(h) Where powder coating or anodizing is not possible (or practical), the surfaces shall be prepared in a manner to ensure long lasting and blister free adhesion, then primed and painted with manufacturers matte (non-glare) marine type haze grey paint as follows:</p> <ol style="list-style-type: none"> <li>Two (2) coats of etch-primer; and</li> <li>One (1) coat (minimum) of paint for a finished dry thickness of at least 0.1 mm (4 mils);</li> </ol> <p>(i) Fabric covers (grey) shall be provided for stainless steel components where practical (e.g., inflation valves).</p>		
37	5.5	<p><b>Safety Equipment</b></p> <p>Each DND RHIB shall include all equipment required by the Canada Shipping Act- Small Vessel Regulations for a boat of this size as follows:</p> <ol style="list-style-type: none"> <li>Safety equipment expiration dates of not less than one year after delivery;</li> <li>Installed within appropriate stowage/securing arrangements</li> </ol>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Safety Equipment requirements;</p> <p>AND</p>	

	(c)	<p>in accordance with Section 5.3.2.2; and Safety equipment to include (as a minimum):</p> <ol style="list-style-type: none"> <li>i. One (1) bottom anchor (Fortress FX11 anchor part # H-S-85001 or equivalent) with not less than thirty (30) meters (100 ft) of double braided nylon rope and chain as follows: <ol style="list-style-type: none"> <li>a. The first three (3) meters (10 ft) from the anchor attachment point shall be chain (stainless steel or zinc plated for corrosion resistance); and</li> <li>b. The remaining length shall be double braided nylon rope;</li> </ol> </li> <li>ii. One (1) sea anchor (Paratech Sea Anchor part number 80621 or equivalent) with not less than thirty (30) meters (100 ft) of double braided nylon rope;</li> <li>iii. One (1) rescue quoit with buoyant heaving line of not less than fifteen (15) meters (50 ft) in length (Kwik Tec Heaving Line LL-1 or equivalent), with a carrying bag;</li> <li>iv. One (1) signal kit (Orion C12T-A/L (#598) Signal Kit from CIL or equivalent) containing the following: <ol style="list-style-type: none"> <li>a. 12 Gauge Launcher;</li> <li>b. Bandolier with 12 Gauge Red Signal Flares (Quantity 6);</li> <li>c. Spare 12 Gauge Red Signal Flares (Quantity 3);</li> <li>d. Handheld Signals (Quantity 3 Red, Quantity 1 Orange Smoke);</li> <li>e. Safety Whistle and Mirror;</li> <li>f. Orange Distress Flag; and</li> <li>g. Floating Storage Container (Florescent colour);</li> </ol> </li> <li>v. One (1) 10X power marine binocular set (Bushnell H2O model 130105 or equivalent) with a field of view of at least 90 m (300 ft) at 900 m (1000 yards);</li> </ol>	(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.5.	
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		<p>vi. Two (2) Class B fire extinguishers located in a recessed cavity on each outward side of the Console (West Marine 50 part number 253460 or equivalent);</p> <p>vii. Two (2) sea water or user activated marker strobe lights, yellow in colour (Multi Spec Model SS1TD or equivalent);</p> <p>viii. One (1) Emergency Position Indicator Radio Beacon (ACR Electronics Global Fix iPro 406 MHz GPS EPIRB part # RLB-36 Cat II or equivalent);</p> <p>ix. One (1) medical spine board (Laerdal BaXstrap green spine-board part # 982600 or equivalent); and</p> <p>x. Twelve (12) grey, winterized, fleece-lined, waterproof ponchos (USIA part # DJ1TP or equivalent).</p>	
38	5.5.1	<p><b>Hoisting</b></p> <p>The DND RHIB shall have a complete hoisting system as follows:</p> <p>(a) Boat lift points rated for lift of the DND RHIB in the Normal Load Configuration with a minimum safety factor of two (2);</p> <p>(b) A lifting harness (sling and shackles), with each DND RHIB, with a certified Safe Working Load (SWL) of not less than the Normal Load Configuration with a minimum safety factor of ten (10);</p> <p>(c) Quantity six (6) lifting harnesses in addition to the lifting harnesses delivered with each boat with a certified Safe Working Load (SWL) of not less than the Normal Load Configuration with a safety factor of fourteen (14);</p> <p>(d) Provide not less than three boat lift points with minimum two aft at the stern and one forward at the bow for a balanced level lift, as follows:</p> <ol style="list-style-type: none"> <li>Lifting points compatible with the hoisting sling and shackles; and</li> <li>Lifting point located to allow unobstructed access to shackle pins;</li> </ol> <p>(e) Lifting harnesses constructed of corrosion-resistant materials (preferably non-metallic) with a simplistic design that enables rigging and stowage by no more than two (2) persons</p>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the DND RHIB will be/has been designed and constructed to meet the Hoisting requirements;</p> <p>AND</p> <p>(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.5.1.</p>

		in SS3.	
39	5.6	<p><u>Trailer</u> A trailer shall be provided with each DND RHIB (registration information to be provided with each trailer) as follows:</p> <p>(a) Permit the trailer with the DND RHIB embarked to be loaded, pulled by a prime mover without the use of an aircraft pallet, on a C130 Hercules aircraft in accordance with MIL-STD-1366E;</p> <p>(b) Supports the weight of the boat in the Normal Load Configuration condition (less crew and passengers) from stem to transom on rollers plus 15% reserve weight capacity;</p> <p>(c) Support the centered weight of the boat such that the tongue weight is no more than 8% of the total load;</p> <p>(d) Be certified in accordance with Canadian Motor Vehicle Safety Standards for use on all Canadian roadways;</p> <p>(e) Incorporate the following:</p> <ul style="list-style-type: none"> <li>i. Hot dipped galvanized all welded construction perimeter style frame;</li> <li>ii. A suspension system with radial tires and corrosion-resistant wheels capable of carrying the trailer and boat (including the 15% reserve weight capacity). The suspension configuration shall be approved by the DND TA;</li> <li>iii. A spare tire mounted on the trailer;</li> <li>iv. Pintle hitch coupler as part of the trailer for attachment to a Pintle hook with an adjustable height channel augmented with safety chains;</li> <li>v. Include a pintle hook hitch on a 5 cm (2 in) receiver with a minimum towing capacity of 9090 kg (20,000 lbs) and a minimum tongue load of 1820 kg (4000 lbs);</li> <li>vi. Two galvanized safety chains complete with shackles of suitable size and rating to secure trailer to towing vehicle in case of hitch failure;</li> <li>vii. Swivel mount minimum 3175 kg (6985 lbs) capacity Tongue Jack with Pad foot;</li> </ul>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation that the Trailer will be/has been designed and constructed to meet the Trailer requirements;</p> <p>AND</p> <p>(2) A conceptual drawing;</p> <p>The drawing shall include the layout, dimension and location of all features of the trailer at Section 5.6 (a) through (e).</p> <p>AND</p> <p>(3) Written Attestation that the trailer with the DND RHIB embarked can be loaded, pulled by a prime mover without the use of an aircraft pallet, on a C130 Hercules aircraft in accordance with MIL-STD-1366E;</p> <p>AND</p> <p>(4) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.6.</p>

		<p>viii. Stainless steel bearing buddies;</p> <p>ix. 12 volt "Grote" brand LED Lighting, with plug in connectors;</p> <p>x. Two heavy-duty enclosed galvanized steel fenders sufficient to support the weight of a person (100 kg (220 lbs)) complete with mud flaps to prevent road damage to the boat;</p> <p>xi. Manual crank and strap with hook (for boat launch/recovery) rated for the trailer design load and a strap length of not less than 8.25 m (27 feet);</p> <p>xii. Waterproof electrical connections;</p> <p>xiii. Heavy duty rubber yoke adjustable to fit bow of boat with a safety chain and shackle provided on the front of yoke assembly to secure bow of boat to trailer;</p> <p>xiv. Trailer roller beds of not less than 1.2 m (4 feet) in length;</p> <p>xv. Hydraulic articulating tongue to support aircraft ramp loading/unloading;</p> <p>xvi. Standard overall width for all Canadian roadways (not to exceed 2.6 m (8.5 ft);</p> <p>xvii. Electric over Hydraulic Brakes (Carlisle Hydrostar or equivalent) with weather cover;</p> <p>xviii. Stainless Steel Disc Brakes;</p> <p>xix. 10 "D-Ring" re-locatable tie-down brackets to secure the boat to the trailer and the trailer to an aircraft;</p> <p>xx. 7 Blade round trailer connector;</p> <p>xxi. Incorporate a break-away switch to engage the trailer brakes in case of dislocation from the towing vehicle;</p> <p>xxii. High visibility tape along the full length of the trailer on both sides, and across the rear; and</p> <p>xxiii. Include one (1) complete bearing and hub assembly.</p>		
40	5.7	<p><u>Cover</u></p> <p>A cover shall be provided with each DND RHIB as follows:</p> <p>(a) Covers the entire hull form and tube set in the deflated condition;</p>	<p>The Bidder shall provide Written Attestation that demonstrates that the cover will be supplied in accordance with the Cover requirements.</p>	

		<p>(b) Permits transport at speeds of up to 120 km/hr (75 mph);</p> <p>(c) Constructed of a water resistant synthetic material (such as Nylon) that remains flexible in temperatures of -40 °C to +35 °C (-40 °F to 95 °F); and</p> <p>(d) Resistant to mold, mildew and harsh climates including freezing rain with ice accumulations of up to 12 mm (1/2 in) on the entire surface of the cover when installed on the boat.</p>		
41	5.8	<p><u>Cradle</u></p> <p>A portable folding cradle shall be provided with each DND RHIB as follows:</p> <p>(a) Designed and constructed in accordance with Naval Engineering Test Establishment drawing DWG-ZT-4028-S-2;</p> <p>(b) Modified to fit the lines of the DND RHIB; and</p> <p>(c) Have a locking mechanism or straps that secure the frames together when folded such that the entire system can be carried in one piece.</p>	The Bidder shall provide Written Attestation that demonstrates that the cradle will be supplied in accordance with the Cradle requirements.	
42	5.9	<p><u>Standards of Construction</u></p> <p>The DND RHIB shall be constructed in accordance with, and be compliant to:</p> <p>(a) TP 1332E Transport Canada Marine Safety Regulation - Construction Standards for Small Vessels;</p> <p>(b) CSA W59.2-M1991 Welded Aluminum Construction;</p> <p>(c) CSA W47.2 M 1987 Certification of Companies for Fusion Welding of Aluminum;</p> <p>(d) CSA W47.1 M 1987 Certification of Companies for Fusion Welding of Steel; and</p> <p>(e) ABS Rules for Building and Classing Aluminum Vessels.</p>	The Bidder shall provide Written Attestation of compliance with the Standards of Construction requirements.	
43	5.9.1	<p><u>Welding Certifications</u></p> <p>All welds (aluminum or otherwise) shall be inspected by a Canadian Welding Bureau certified Welding Inspector in accordance with the above standards (or equivalent for boats manufactured outside of Canada). Copies of all welding certifications shall be provided with each DND RHIB.</p>	The Bidder shall provide Written Attestation of compliance with the Welding Certification requirements.	
44	5.9.2	<p><u>Design Factors</u></p> <p>The DND RHIB design shall:</p>	The Bidder shall provide Written Attestation of compliance with the	



		<p>(a) Provide redundancy for sensors and actuators with identified single points of failure such that the loss of any single electro-mechanical component permits continued operation of the boat (with degraded capability where necessary);</p> <p>(b) Standardize on equipment, fittings, and fabrication methods for all boats to facilitate replacement and inter-changeability of parts, as well as maintenance procedures and operator training;</p> <p>(c) Adhere to ABCD-TR-08-01 V1.0 High Speed Craft Human Factors Engineering Design Guide where practical;</p> <p>(d) Provide equivalent or superior equipment wherever brand or model names are referenced, with supporting documentation provided to validate that the installed performance is equivalent or superior to the equipment specified;</p> <p>(e) Minimize or reduce vibrations that have the potential to:</p> <ol style="list-style-type: none"> <li>Endanger boat personnel;</li> <li>Damage boat structure, machinery, and systems; and</li> <li>Interfere with the operation or maintenance of boat machinery and systems;</li> </ol> <p>(f) Minimize or reduce rattles through the provision of mounts for movable components constructed of material sufficiently resilient to prevent rattling.</p>	Design Factor requirements.	
45	5.9.3	<p>Construction Materials</p> <p>All components, equipment and material used in the construction of the DND RHIB shall be new material consistent with current production models in accordance with the following:</p> <ol style="list-style-type: none"> <li>Corrosion resistant marine grade quality, suitable for use in fresh and salt water environments and capable of withstanding a severe marine environment consistent with current production models;</li> <li>Handled and installed in accordance with the manufacturer's guidelines, recommendations, and requirements;</li> <li>Resist degradation from ultraviolet radiation (items exposed to sunlight);</li> <li>Any dissimilar metals employed in close proximity from each other to prevent galvanic interaction;</li> </ol>	The Bidder shall provide Written Attestation of compliance with the Standards of Construction Materials requirements.	

		<p>(e) Aluminum used in the construction with appropriate material certification as follows:</p> <ul style="list-style-type: none"> <li>i. All substantial structures, extruded shapes, and welded tubing and pipe constructed of aluminum alloy 5086, 6061-T6 (anodized grade) or 6063-T54, suitable for type 5356 filler alloy;</li> <li>ii. All plates constructed of aluminum alloy types 5086, H116 or equivalent;</li> <li>iii. All extruded shapes and welded tubing and pipe constructed of aluminum alloy 6061-T6 (anodized grade) or 6063-T54, suitable for type 5356 filler alloy, or equivalent; and</li> <li>iv. Non-structural items of trim and outfit including hatch frames, castings, consoles, and hardware items constructed of aluminum alloys suitable for commercial marine salt water use (e.g., dual rated 5083/86 or 5052);</li> </ul> <p>(f) Stainless steel as follows:</p> <ul style="list-style-type: none"> <li>i. Welded applications: Stainless Steel type 316 or 316L; or</li> <li>ii. Non-Welding applications: Stainless Steel type 316L;</li> </ul> <p>(g) Hydraulic hoses of suitable size and length to prevent pulsing, routed below deck as much as possible.</p>		
46	5.9.4	<p>Construction Fasteners</p> <p>All fasteners used in the construction of the DND RHIB shall be in accordance with the following:</p> <ul style="list-style-type: none"> <li>(a) Fasteners include nuts and bolts, and aluminum or stainless steel washers or backing plates when directly threaded into aluminum alloys;</li> <li>(b) All fasteners are constructed of corrosion resistant materials;</li> <li>(c) Stainless steel fasteners as follows: <ul style="list-style-type: none"> <li>i. ASTM-A 276 type 316 throughout for fasteners 1/4" diameter or greater; and</li> <li>ii. ASTM-A 276 type 304 (18-8) for fasteners smaller than 1/4" diameter;</li> </ul> </li> </ul>	The Bidder shall provide Written Attestation of compliance with the Construction Fasteners requirements.	

47	5.9.5	<p>(d) <b><u>Not</u></b> incorporate interconnections of alloys containing copper to aluminum, except for electrical bonding straps;</p> <p>(e) Self-locking fasteners employed, as applicable, to prevent loosening under shock and vibration; and</p> <p>(f) Fasteners accessible for inspection and replacement, either directly or with the removal of interference equipment where necessary.</p>		
		<p><b>Cabling</b></p> <p>Cable installation in the boat shall:</p> <p>(a) Provide the safest, direct and efficient routing for all installed cables as follows:</p> <ul style="list-style-type: none"> <li>i. Route communications cables on the Starboard side in under-deck wiring conduit between the radios, amps, and antennas using an HF and VHF/UHF capable stranded center highly flexible 50 Ohm conductor cable (Times Microwave Systems LMR-400 Ultraflex or equivalent) for the following: <ul style="list-style-type: none"> <li>a. VHF Marine radio to the VHF Marine antenna;</li> <li>b. HF antenna;</li> <li>c. Multiband V/UHF radio to the amplifier and amplifier to the Multiband V/UHF Antenna;</li> <li>d. Multiband V/UHF radio to the amplifier and amplifier to the UHF TacSat antenna;</li> </ul> </li> <li>ii. Route engine cabling on the Port side of the console and hull; and</li> <li>iii. Route other cabling on the Starboard side of the console and hull;</li> </ul> <p>(b) Incorporate proper sealant compound applied to protect the exposed solder joints of connectors including the U/283 connectors;</p> <p>(c) Utilize appropriately sized marine grade tinned boat cables for all power and lighting applications in accordance with TP 1332E and CSA C22.2;</p> <p>(d) Group cables into wiring harnesses wherever possible with all wiring harnesses and cables routed below deck and all</p>	<p>The Bidder shall provide:</p> <p>(1) Written Attestation of compliance with the Cabling requirements;</p> <p>AND</p> <p>(2) Where an equivalent item is offered, a Certificate of Compliance that confirms the item offered is equal to or better than the item specified in Section 5.9.5.</p>	

		below deck cabling routed through rigid conduit pipe (preferably aluminum); (e) Cabling and conductors passing through watertight boundaries, decks, bulkheads and other exposed surfaces include watertight marine glands to maintain the watertight integrity of the structure and ensure that all electrical equipment is readily accessible; (f) Support cables and conductors with appropriately sized metallic clamps or straps at least every six (6) in (15 cm) on both horizontal and vertical runs; (g) Protect cabling and conductors passing through structures without watertight glands from chafing with the use of abrasive resistant grommets; (h) Cables routed through foamed spaces, where routing through foamed spaces cannot be avoided, in conduit pipe to prevent water from becoming entrapped in the pipe; and (i) Be numbered, identified and colour coded to facilitate easy maintenance.		
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## 5.0 EXPERIENCE AND CAPABILITY ASSESSMENT

### 5.1 DND Assessment

The DND Evaluation Team will conduct an assessment of the Bidder's experience and capabilities related to the design and construction of aluminum hull RHIBs in accordance with the requirements column of Table 2. The assessment will be on the information provided by the Bidder only.

Table 2: Experience and Capability Assessment

Requirements	Proof of Compliance	Minimum Requirement	Y/N
Design Experience: Design of aluminum hull RHIBs of a similar size (8-11 m (26-36 ft)) in the last ten (10) years.	The Bidder shall provide detailed information for previously designed boats in support of the assessment including all of the following: (1) Contract numbers, award dates, models and quantity delivered; (2) A Power Management Survey; and	<b>2 Boat Designs</b>	
		<b>1 Boat</b>	

	(3) A Test Plan.	1 Boat
	(4) Photos of completed boats of different design.	2 Boat Designs
Recent Production Experience: Construction of RHIBs of a similar size (8-11 m (26-36 ft)) in the last (2) two years.	The Bidder shall provide detailed information in support of the assessment including (1) Contract numbers; (2) Award dates; (3) Models; and (4) Quantity delivered.	10 Boats constructed in last 2 years
Project Management Support: Aluminum hull RHIB projects of a similar size (8-11 m (26-36 ft)) completed within the last two (2) years.	The Bidder shall provide detailed information for previously constructed boats in support of the assessment including: (1) A Project Management Plan; and (2) A Project Schedule.	2 Projects
Professional Engineer, either in-house or through a contractual arrangement, with minimum two (2) years' experience in design of aluminum hull RHIBs.	The Bidder shall provide detailed information in support of the assessment including the following for the proposed individual: (1) Resume; (2) Education; (3) Certifications; and (4) Professional status.	1 Engineer
Naval Architect, either in-house or through a contractual arrangement, with minimum two (2) years' experience in design of aluminum hull RHIBs.	The Bidder shall provide detailed information in support of the assessment including the following for the proposed individual: (1) Resume; (2) Education; (3) Certifications; and (4) Professional status.	1 Naval Architect
Annex A Section 5.2 - Project Management Program	The Bidder shall provide the initial Project Management Plan (PMP) prepared in accordance with CDRL and DID PMP-001 as per Annex A Section 5.2 - Project Management Program.	1 PMP
Annex A Section 5.2.1 - Project Master Schedule	The Bidder shall provide the initial Project Master Schedule (PMS) prepared in accordance with CDRL and DID PMP-002 as per Annex A Section 5.2.1 - Project Master Schedule.	1 PMS
Annex A Section 8.1 - Service Locations. The Contractor must have a minimum of two (2) service centers, with at least one within 150 km (94 miles)	The Bidder shall provide locations for all authorized repair facilities within the regions specified including business names, addresses (both mailing and civic) and contact	2 Locations (1 on each coast as specified)

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<p>of Halifax/Dartmouth, Nova Scotia and one within 150 km (94 miles) of Esquimalt, British Columbia, which the Technical Authority may choose from depending on the types of repairs needed and operational requirements. The Contractor must also have certified service facilities to carry out specialized work as required by the Technical Authority as follows:</p> <p>(a) At each service location, the Contractor must service and repair the propulsion system using only mechanics/technicians that have an OEM (Mercury Marine) certification for the system/engines being serviced and repaired; and</p> <p>(b) At each service location, the Contractor must repair all structural defects in accordance with CSA 47.2 M 1987 using new materials. All welds (aluminum or otherwise) must be inspected by a Canadian Welding Bureau certified Welding Inspector, in accordance with CAS W47.2 M 1987, and copies of all welding certificates must be provided with each repair task. All welds must meet or exceed standards approved for the current configuration baseline, to the standards for each joint/weld as prescribed by the vessel manufacturer for each specific joint/weld.</p>	<p>information. The Bidder shall also demonstrate each facility meets the requirements of Annex A Section 8.1 as follows:</p> <p>(a) The Bidder shall include as part of the bid Mercury Marine certifications for at least one (1) mechanic/technician in each service location;</p> <p>(b) The Bidder shall include as part of the bid the certifications in accordance with CSA 47.2 M 1987 for at least one (1) welder and one (1) Welding Inspector in each location; and</p> <p>(c) If any of these facilities is not owned and operated by the Contractor, the Contractor must provide the written acknowledgement of the owner-operator of the facility addressed to both Canada and the Contractor, confirming that the facility is under subcontract to the Contractor, under which subcontract, the facility will be fully available to the Contractor throughout the term of this Contract, as extended and renewed, for performance of the work of this Contract in accordance with the Contract terms.</p>	
<p>Annex A Section 8.2 - Quality Assurance (QA) Program. The Contractor shall establish, implement, document and maintain a quality system that ensures conformance to contractual requirements and meets the objectives of the ISO 9001 or equivalent quality system model during performance of this contract.</p>	<p>The Bidder shall provide certifications for current ISO 9001 or equivalent compliance.</p>	<p><b>1 Certification</b></p>
<p>Annex A Section 8.3 (a) - Configuration</p>	<p>The Bidder shall provide a CM Plan with complete process</p>	<p><b>1 CM Plan</b></p>

Management. The Contractor shall implement and maintain a DND QAR verifiable Configuration Management (CM) Program in accordance with MIL-HDBK-61A that ensures the management of engineering data is closely coordinated with the project-wide functions of Configuration, Data and Information Management.	description that verifies compliance with the requirements of Annex A Section 8.3.	
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## **Annex E: BASIS OF PAYMENT**

### **1. General**

- 1.1.1 The Bases of Payments for the Special Operations Craft are detailed below. Where an item number includes a ceiling price for that work, only Canada at its sole discretion may revise the ceiling price
- 1.1.2 Subcontracts, parts, and material used in the performance of work are reimbursable by Canada, as permitted by Annex C of the Basis of Payment.
- 1.1.3 *The Firm Hourly Rates as per **Table 8. In Service - Support:** below include profit, overheads, G&A, fees and expenses.*
- 1.1.4 Any relocation expenses incurred by the Contractor as a consequence of satisfying the Contract are not reimbursable by Canada.
- 1.1.5 If Canada exercises the Options for In service Support the rates will be computed as per the process outlined in 6.23 Economic Price Adjustment.
- 1.1.6 In-Service Support option years will not be included in the bid evaluation price, Option In Service Support rate(s) will be calculated as per 6.23 to account for Actual fluctuations in the economy during the term of the Contract.

#### **1.1.7 Travel and Living Expenses:**

Contractor personnel may be required to travel to NDHQ or other military establishments, to other Contractor's plants, and to other locations within Canada as may be designated by the Technical Authority.

At such time the Contractor personnel may be provided service transportation and, on a cost reimbursable basis, accommodation and messing equivalent to that of an officer in the Canadian Forces.

If service transportation, accommodation and messing if not provided, the Contractor will be reimbursed for the authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance With the meal, private vehicle and incidental expense allowances specified in Appendices B, C and D of the Treasury Board Travel Directive, and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

There will be no travel time or travel and living expenses payable for services rendered within 75 kilometres from where the Work will be performed.

For services rendered further than 75 kilometres from where the Work is performed, the Contractor will be paid its actual travel time in accordance with the hourly rates detailed above.

All travel conducted by the employees of \_\_\_\_\_ will be invoiced in accordance with \_\_\_\_\_ rates and Terms and Conditions for the applicable year.

All travel must have the prior authorization of the Contracting Authority.

All payments are subject to government audit.



## **2 SO RHIBS, Background IP and Spares packages**

For all Items below, the values are GST/HST extra, Customs Duty Exempt, FOB Destination.

**2.1** Special Operations Rigid Hull Inflatable Boat 1,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Halifax \$ \_\_\_\_\_

**2.2** Special Operations Rigid Hull Inflatable Boat 2,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Halifax \$ \_\_\_\_\_

**2.3** Special Operations Rigid Hull Inflatable Boat 3,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Halifax \$ \_\_\_\_\_

**2.4** Special Operations Rigid Hull Inflatable Boat 4,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Halifax \$ \_\_\_\_\_

**2.5** Special Operations Rigid Hull Inflatable Boat 5,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Halifax \$ \_\_\_\_\_

**2.6** Special Operations Rigid Hull Inflatable Boat 6,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Esquimault \$ \_\_\_\_\_

**2.7** Special Operations Rigid Hull Inflatable Boat 7,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Esquimault \$ \_\_\_\_\_

**2.8** Special Operations Rigid Hull Inflatable Boat 8,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Esquimault \$ \_\_\_\_\_

**2.9** Special Operations Rigid Hull Inflatable Boat 9,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Esquimault \$ \_\_\_\_\_

**2.10** Special Operations Rigid Hull Inflatable Boat 10,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to CFB Esquimault \$ \_\_\_\_\_

**2.11** Special Operations Rigid Hull Inflatable Boat 11,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to Dwyer Hill Training Centre, Ontario \$ \_\_\_\_\_

**2.12** Special Operations Rigid Hull Inflatable Boat 12,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to Dwyer Hill Training Centre, Ontario \$ \_\_\_\_\_

**2.13** Special Operations Rigid Hull Inflatable Boat 13,

Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to Dwyer Hill Training Centre, Ontario \$ \_\_\_\_\_

**2.14** Special Operations Rigid Hull Inflatable Boat 14,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to Dwyer Hill Training Centre, Ontario \$ \_\_\_\_\_

**2.15** Special Operations Rigid Hull Inflatable Boat 15,  
Plus Trailer , Plus Initial Spares Package,  
Plus Transportation Costs to Dwyer Hill Training Centre, Ontario \$ \_\_\_\_\_

**3.0** Technical Data Package \$ \_\_\_\_\_

**4.0** Initial spares and specialized tools package as detailed in Section 7.0 SOW \$ \_\_\_\_\_

**5.0** Option Price for an additional Special Operations Rigid Hull Inflatable Boat,  
Plus Trailer , Plus Initial Spares Package, Plus Transportation  
Costs to CFB Esquimault \$ \_\_\_\_\_

**5.1** Option Price for an additional Special Operations Rigid Hull Inflatable Boat,  
Plus Trailer , Plus Initial Spares Package, Plus Transportation  
Costs to CFB Halifax \$ \_\_\_\_\_

**5.2** Option Price for an additional Special Operations Rigid Hull Inflatable Boat,  
Plus Trailer , Plus Initial Spares Package, Plus Transportation  
Costs to CFB Esquimault \$ \_\_\_\_\_

**5.3** Option Price for an additional Special Operations Rigid Hull Inflatable Boat,  
Plus Trailer , Plus Initial Spares Package, Plus Transportation  
Costs to CFB Halifax \$ \_\_\_\_\_

**5.4** Option Price for an additional Special Operations Rigid Hull Inflatable Boat,  
Plus Trailer , Plus Initial Spares Package, Plus Transportation  
Costs to CFB Esquimault \$ \_\_\_\_\_

**5.5** Option for Additional spares and specialized tools based on the initial  
spares and specialize tools detailed in Section 7.0 of Annex A \$ \_\_\_\_\_

**5.6** Total (1 through 5.6) (A) = \$ \_\_\_\_\_

**5.7** GST/HST (B) = \$ \_\_\_\_\_

**5.8** Price (A+B) = \$ \_\_\_\_\_

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**6.0 Additional Work including Design Change as per Article 6.1.2**

Estimated labour hours at a firm Charge-out Labour Rate, profit, overheads,  
G&A, fees and expenses for - evaluation purpose only:

**6500** person hours X \$ \_\_\_\_\_ per hour for a PRICE of: = \$ \_\_\_\_\_



ROW	Year	Category	Hours	Rate	Total Cost
		Level II Mechanic/Technician			
1	1	Level II Mechanic/Technician	200	\$ /hr	\$
2	2	Level II Mechanic/Technician	200	\$ /hr	\$
3	3	Level II Mechanic/Technician	200	\$ /hr	\$
4	4	Level II Mechanic/Technician	200	\$ /hr	\$
5	5	Level II Mechanic/Technician	200	\$ /hr	\$

**8.13** Level II Mechanic/Technician = (C1xD1)+(C2xD2)+(C3xD3)+(C4xD4))+(C5xD5) = \$ \_\_\_\_\_

Colou mn	A	B	C	D	E
ROW	Year	Category	Hours	Rate	Total Cost
		Level III Support Staff			
1	1	Level III Support Staff	50	\$ /hr	\$
2	2	Level III Support Staff	50	\$ /hr	\$
3	3	Level III Support Staff	50	\$ /hr	\$
4	4	Level III Support Staff	50	\$ /hr	\$
5	5	Level III Support Staff	50	\$ /hr	\$

**8.14** Level III Support Staff = (C1xD1)+(C2xD2)+(C3xD3)+(C4xD4))+(C5xD5) = \$ \_\_\_\_\_

**8.15 Additional Work Request = 8.11 + 8.12 + 8.13 + 8.14 =** \$ \_\_\_\_\_

**8.2 Repair and Overhaul Services as detailed in Appendix 2, A2.6:**

Colou mn	A	B	C	D	E
ROW	Year	Category	Hours	Rate	Total Cost
		Level I Marine Engineer/Technician			
1	1	Level I Marine Engineer/Technician	100	\$ /hr	\$
2	2	Level I Marine Engineer/Technician	100	\$ /hr	\$
3	3	Level I Marine Engineer/Technician	100	\$ /hr	\$
4	4	Level I Marine Engineer/Technician	100	\$ /hr	\$
5	5	Level I Marine Engineer/Technician	100	\$ /hr	\$

**8.21** Level I Marine Engineer/Technician = (C1xD1)+(C2xD2)+(C3xD3)+(C4xD4))+(C5xD5) = \$ \_\_\_\_\_

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Colou mn	A	B	C	D	E
ROW	<u>Year</u>	<u>Category</u> Naval Architect 1	<u>Hours</u>	<u>Rate</u>	<u>Total Cost</u>
1	1	Naval Architect 1	50	\$ /hr	\$
2	2	Naval Architect 1	50	\$ /hr	\$
3	3	Naval Architect 1	50	\$ /hr	\$
4	4	Naval Architect 1	50	\$ /hr	\$
5	5	Naval Architect 1	50	\$ /hr	\$

**8.22** Naval Architect 1= (C1xD1)+(C2xD2)+(C3xD3)+(C4xD4)+(C5xD5) = \$ \_\_\_\_\_

Colou mn	A	B	C	D	E
ROW	<u>Year</u>	<u>Category</u> Level II Mechanic/Technician	<u>Hours</u>	<u>Rate</u>	<u>Total Cost</u>
1	1	Level II Mechanic/Technician	300	\$ /hr	\$
2	2	Level II Mechanic/Technician	300	\$ /hr	\$
3	3	Level II Mechanic/Technician	300	\$ /hr	\$
4	4	Level II Mechanic/Technician	300	\$ /hr	\$
5	5	Level II Mechanic/Technician	300	\$ /hr	\$

**8.23** Level II Mechanic/Technician = (C1xD1)+(C2xD2)+(C3xD3)+(C4xD4)+(C5xD5) = \$ \_\_\_\_\_

Colou mn	A	B	C	D	E
ROW	<u>Year</u>	<u>Category</u> Level III Support Staff	<u>Hours</u>	<u>Rate</u>	<u>Total Cost</u>
1	1	Level III Support Staff	100	\$ /hr	\$
2	2	Level III Support Staff	100	\$ /hr	\$
3	3	Level III Support Staff	100	\$ /hr	\$
4	4	Level III Support Staff	100	\$ /hr	\$
5	5	Level III Support Staff	100	\$ /hr	\$

**8.24** Level III Support Staff = (C1xD1)+(C2xD2)+(C3xD3)+(C4xD4)+(C5xD5) = \$ \_\_\_\_\_

**8.25 Repair and Overhaul Services = 8.21 + 8.22 + 8.23 + 8.24 = \$ \_\_\_\_\_**

**8.3 Field Service Representative Support as detailed in Appendix 2, A2.16:**

Colou mn	A	B	C	D	E
ROW	<u>Year</u>	<u>Category</u>	<u>Hours</u>	<u>Rate</u>	<u>Total Cost</u>

		FSR			
1	1	FSR	10	\$ /hr	\$
2	2	FSR	15	\$ /hr	\$
3	3	FSR	20	\$ /hr	\$
4	4	FSR	25	\$ /hr	\$
5	5	FSR	30	\$ /hr	\$

**8.31** FSR = E1 + E2 + E3 + E4 + E5 = \$ \_\_\_\_\_

-

**9.0** Total ( 7.0 + 8.15+ 8.25 + 8.31) = \$ \_\_\_\_\_

\_\_\_\_\_

**9.1** GST/HST = \$ \_\_\_\_\_

**9.2** Total Price = \$ \_\_\_\_\_

-

## 10.0 Material and Replacement parts

The prices of material and replacement parts are subject to the Contractor's certification in the Contract as to price. Material and replacement parts will be charged to Canada at the lower of list price and most favoured customer price (or other lower price to which the Contractor's certification relates) for material and replacement parts supplied by the contractor and for parts supplied by any affiliate of the Contractor, at list price. The Contractor will also provide a discount against all such prices, of \_\_\_\_\_ percent.

Material and replacement parts from other suppliers shall be supplied at the Contractor's laid-down cost of acquiring same, plus mark-up of 10 percent. All prices for parts and material are FOB destination. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax (GST/HST) is extra, if applicable.

The mark-up rate will remain firm for the term of the Contract and any subsequent amendments

## 11. Sub-Contractors:

All subcontracts cost must be pre-approved by the Contracting Authority. For subcontracts other than with affiliates of the Contractor and to the facilities specified at Article \_\_\_\_\_, the Contractor will be paid the laid down cost of the subcontracted work plus mark-up of 10 percent..

However, for payment purposes, subcontracts to affiliates (as defined in the Canada Business Corporations Act) of the Contractor and to the facilities specified at Article \_\_\_\_\_, will treated as specified above for Material and Replacement Parts, and for other Work, shall be priced and paid in accordance with the firm hourly rates set out in the Contract and in accordance with the basis of payment specified in the applicable Task Authorization. There will be no mark-up/profit to the Contractor.

The mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

**12.0**

**MILESTONE SCHEDULE For CONSTRUCTION**

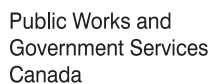
<b><u>Milestone</u></b>	<b><u>Description</u></b>	<b><u>% of Milestone</u></b>	<b><u>Contract Value HST Included</u></b>
1.1 to 1.15	Hull Materials delivered to Contractor	25% / 15	\$
2.1 to 2.15	Completion of Metal Work	30% / 15	\$
3.1 to 3.15	Boat delivered and Crown Acceptance	30% / 15	\$
4.1	Special Tools and Equipment and Technical Data Package	5%/1	\$
5.1 to 5.15	Manuals delivered	8% / 15	\$
6.1 to 6.15	Completion of twelve (12) month warranty period	2% / 15	\$

*The Milestones shown above will be included and identified in all production schedules.*

*The Payment for the Vessel delivered, Milestones 3.1 to 3.15 inclusive shall be payable by Canada upon delivery of each Vessel to the Crown, minus the holdback for double the total estimated value of any outstanding Work items.*

*The Holdback for outstanding Work shall be payable by Canada upon completion of the outstanding Work.*

*The payment for completion of Warranty Milestones 6.1 to 6.15 inclusive (completion of the warranty period) shall be payable by Canada upon completion of the warranty period of each Vessel, minus the total cost of any Work undertaken by the Crown to repair any defects subject to warranty.*



Travaux publics et  
Services gouvernementaux  
Canada

**PWGSC File No.; W6399-12DDO9**

## **WARRANTY CLAIM** **Réclamation De Garantie**

Vessel Number – Numero de navire	File No. – No de dossier	Contract No. –No de Contrat
Client Department – Ministere client		Warranty Claim Serial No. Numéro de série de réclamation de Garantie
Contractor – Entrepreneur		Effect on Vessel Operations Effet sur des operations de navire  Critical      Degraded      Operational  Non-operational  Critique      Dégradé      Opérationnel  Non-opérationnel
1. Description of Complaint – Description de plainte		
Contact Information – l’information de contact		
Name-Nom	Tel.No – No Tel	Signature/Date
2. Contractor’s Investigative Report – Le rapport de l’entrepreneur		



**WARRANTY CLAIM**  
**Réclamation De Garantie**

2/2

**2. Contractor's Investigative Report – Le rapport de l'entrepreneur**

**3. Contractor's Corrective Action – La modalite de reprise de l'entrepreneur**

\_\_\_\_\_  
Contractors Name and Signature-Nom et signature de l'entrepreneur

\_\_\_\_\_  
Date of Corrective Action-Date de modalite de reprise

\_\_\_\_\_  
Client Name and Signature-Nom et signature de client

\_\_\_\_\_  
Date

**4. PWGSC Review of Warranty Claim Action – Examen d'action de reclamation de garantie par TPSGC**

\_\_\_\_\_

\_\_\_\_\_

Contract Authority

\_\_\_\_\_

Date

**TASK AUTHORIZATION  
AUTORISATION DES TÂCHES**

All invoices/progress claims must show the reference Contract and Task numbers. Toutes les factures doivent indiquer les numéros du contrat et de la tâche.		Contract no. – N° du contrat <hr/> Task no. – N° de la tâche
Amendment no. – N° de la modification	Increase/Decrease – Augmentation/Reduction	Previous value – Valeur précédente
To – À   Delivery location – Expédiez à   Delivery/Completion date – Date de livraison/d'achèvement	<p><b>TO THE CONTRACTOR</b></p> <p>You are requested to supply the following services in accordance with the terms of the above reference contract. Only services included in the contract shall be supplied against this task.</p> <p>Please advise the undersigned if the completion date cannot be met. Invoices/progress claims shall be prepared in accordance with the instructions set out in the contract.</p> <p><b>À L'ENTREPRENEUR</b></p> <p>Vous êtes prié de fournir les services suivants en conformité des termes du contrat mentionné ci-dessus. Seuls les services mentionnés dans le contrat doivent être fournis à l'appui de cette demande.</p> <p>Prière d'aviser le signataire si la livraison ne peut se faire dans les délais prescrits. Les factures doivent être établies selon les instructions énoncées dans le contrat.</p> <p style="text-align: right;">           Date _____ for the Department of National Defence            pour le ministère de la Défense nationale         </p>	
Contract item no. N° d'article du contrat	Services	Cost Prix
	<b>GST/HST TPS/TVH</b>	
	<b>Total</b>	
<p><b>APPLICABLE ONLY TO PWGSC CONTRACTS:</b> The Contract Authority signature is required when the total value of the DND 626 exceeds the threshold specified in the contract.</p> <p><b>NE S'APPLIQUE QU'ÀUX CONTRATS DE TPSGC :</b> La signature de l'autorité contractante est requise lorsque la valeur totale du formulaire DND 626 est supérieure au seuil précisé dans le contrat.</p> <p style="text-align: center; margin-top: 20px;">           _____            for the Department of Public Works and Government Services            pour le ministère des Travaux publics et services gouvernementaux         </p>		

## **Insurance Requirements Annex H**

### ***Commercial General Liability Insurance(G2001C):***

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
  - A. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
  - B. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
  - C. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
  - D. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
  - E. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
  - F. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
  - G. Employees and, if applicable, Volunteers must be included as Additional Insured.
  - H. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
  - I. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
  - J. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.

K. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

For the province of Quebec, send to:  
Director Business Law Directorate,  
Quebec Regional Office (Ottawa),  
Department of Justice,  
284 Wellington Street, Room SAT-6042,  
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:  
Senior General Counsel,  
Civil Litigation Section,  
Department of Justice  
234 Wellington Street, East Tower  
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

### ***Ship Builders Risk Insurance***

The Contractor shall enter into a contract of insurance issued in the joint names of the Contractor and Canada as their respective interests may appear in the standard form of Marine Builder's Risk Policy to provide full indemnification to Canada for any loss or damage to the vessel or any other materials which are the property of Canada for installation in the vessel in the custody of the Contractor or any claim or expenses to Canada as aforesaid for which the Contractor assumes responsibility hereunder, and the premium or cost of such insurance coverage shall be incorporated into and form part of the purchase price.

*Notice of Cancellation:* The insurer shall provide to the Contracting Authority at least thirty (30) days prior written notice of any policy cancellation or any adverse material changes in the policy coverage.

*Settlement of Claims:* Insurance proceeds from any loss or damage to government property must be payable to the appropriate party, as directed by the Contracting Authority.

### ***Marine Liability Insurance G5003C 2008-05-12***

1. The Contractor must obtain Protection & Indemnity (P&I) insurance that must include excess collision liability and pollution liability. The insurance must be placed with a member of the International Group of Protection & Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the Marine Liability Act, S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by Worker's Compensation as detailed in paragraph (2.) below.
2. The Contractor must obtain Worker's Compensation insurance covering all employees engaged in the Work in accordance with the statutory requirements of the Territory or Province or state of nationality, domicile, employment, having jurisdiction over such employees. If the Contractor is assessed any additional levy, extra assessment or super-assessment by a Worker's Compensation Board, as a result of an accident causing injury or death to an employee of the Contractor or subcontractor, or due to unsafe working conditions, then such levy or assessment must be paid by the Contractor at its sole cost.
3. The Protection and Indemnity insurance policy must include the following:
  - (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
  - (b) Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by The Department of National Defence and Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.
  - (c) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.
  - (d) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
  - (e) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of

receipt.

For the province of Quebec, send to:  
Director Business Law Directorate,  
Quebec Regional Office (Ottawa),  
Department of Justice,  
284 Wellington Street, Room SAT-6042,  
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:  
Senior General Counsel,  
Civil Litigation Section,  
Department of Justice  
234 Wellington Street, East Tower  
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

## **ANNEX I**

### **WARRANTY PROCEDURES**

#### **1. Scope**

a. The following are the procedures that suit the particular requirements for warranty considerations for a vessel on completion of a refit.

#### **2. Reporting Failures With Warranty Potential**

a. The initial purpose of a report of a failure is to facilitate the decision as to whether or not to involve warranty and to generate action to effect repairs. Therefore in addition to identification, location data, etc. the report must contain details of the defect. Warranty decisions as a general rule are to be made locally and the administrative process is to be in accordance with procedures as indicated.

b. These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions. Since the QAR has the closest and most active involvement of the contracted work completed this agency must assume this role.

#### **3. Procedures**

a. Immediately it becomes known to the Ship's Staff that an equipment/system is performing below accepted standards or has become defective, the procedures for the investigation and reporting are as follows:

i. The vessel advises the Technical Authority when a defect, which is considered to be directly associated the refit work, has occurred.

ii. On review of the Specification and the Acceptance Document, the Technical Authority in consort with Ship's Staff is to complete the Tombstone Data and section 1 of the Warranty Claim Form Appendix 1 of Annex "D" and forward the original to the Contractor for review with a copy to the PWGSC contracting Authority. If the PWGSC Contracting or QAR is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

Warranty defect claims may be forwarded in hard copy, by fax or by e-mail whichever format is the most convenient.

iii.. Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the QAR who confirms corrective action has been completed, and who then distributes the form to the Technical Authority and the PWGSC Contracting Authority.

b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 and 3 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.

c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and manhours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty

defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.

d. Defective equipment associated with potential warranty should not normally be dismantled until the Contractor's representative has had the opportunity to observe the defect. The necessary work is to be undertaken through normal repair methods and costs must be segregated as a possible charge against a contractor by PWGSC action.

#### **4. Liability**

a. Agreement between the Contracting Authority, QAR, Technical Authority and the Contractor will result in one of the following conditions:

i. The Contractor accepts full responsibility for costs to repair or overhaul under the warranty provisions of the contract;

ii. The Technical Authority accepts full responsibility for repair and overhaul of item concerned; or

iii. The Contractor and the Technical Authority agree to share responsibility for the costs to repair or overhaul the unserviceable item, in such cases the PWGSC Contracting Authority will negotiate the best possible sharing arrangement.

b. In the event of a disagreement as in paragraph 5c, PWGSC will take necessary action with the Contractor while the Technical Authority informs its Senior Management including pertinent data and recommendations.

c. The total cost of processing warranty claims must include accommodation and travel costs of the Contractor's employees as well as equipment/system down time and operational constraints. Accordingly, the cost to remediate the defect, in manhours and material, will be discussed between the Contracting/Inspection Authorities and the Technical Authority to determine the best course of action.

#### **5. Alongside Period For Warranty Repairs and Checks**

a. If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the contractor.

b. In respect to the underwater paint, should it become defective during the associated warranty period the contractor is only liable to repair to a value determined as follows:

"Original cost to Canada for painting and preservation of the underwater section of the hull, divided by 365 days and multiplied by the number of days remaining in the 365 days warranty period. The resultant would represent the 'Dollar Credit' due to Canada from the Contractor."

c. The Underwater paint system, before expiration of the warranty, should be checked by divers. The Technical Authority is to arrange the inspection and ensure that a representative of the Contractor will attend. The Technical Authority will inform the Contracting Authority of any adverse results.



***Annex J:***  
***Equipment, Material and Services Source List And***  
***Subcontractor's List***

[illegible]

The Bidder shall include but not be limited to the following list of Equipment, Material and Services:

- MARINE ALUMINUM ALLOY
- HATCHES
- TOWLINE REELS
- STEERING GEAR
- HELM AND CREW CHAIRS
- THERMAL AND ACOUSTIC INSULATION
- PAINT
- ENGINES
- REVERSE REDUCTION GEARS
- EXHAUST SYSTEM
- PROPULSION CONTROL SYSTEM
- BACKUP PROPULSION CONTROL SYSTEM
- CONTROL ALARM AND MONITORING SYSTEM
- STERN TUBE SEALS
- PROPELLERS " BILGE PUMPS
- FIXED CO2 FLOODING SYSTEM
- BATTERIES
- BATTERY CHARGERS
- CABLING
- POWER DISTRIBUTION SYSTEM
- AC GENERATOR SYSTEM
- DC ALTERNATORS
- SEARCHLIGHT
- NAVIGATION LIGHTS
- MAGNETIC COMPASS
- HIGH FREQUENCY (HF) RADIO SYSTEM
- VHF-FM MARINE RADIOTELEPHONE
- VHF-FM WIDEBAND TRANSCEIVER
- VHF-FM PORTABLE TRANSCEIVER
- CELLULAR/AUTOTEL ANTENNA & CABLING
- NAVIGATION RADAR
- ELECTRONIC CHART
- ECHO SOUNDERS
- DGPS
- GYRO COMPASS
- AUTO PILOT
- LOUDHAILER/INTERCOM/ANNOUNCING SYSTEM
- EPIRB
- DC SUPPLIES
- VHF DIRECTION FINDER
- NAVTEX RECEIVER

**ANNEX K: Procedure for Implementing Additional Work**  
**Special Operations Rigid Hull Inflatable Boat**

***1. Purpose***

The Additional Work Procedure has been instituted for the following purposes:

- (a) To establish a uniform method of dealing with requests for Additional Work;
- (b) To obtain the necessary Technical Authority approval and Contracting Authority authorization before Additional work commences; and
- (c) To provide a means of maintaining a record of Additional Work requirements including Serial Numbers, dates, and accumulated cost.

***2. Definitions***

- (a) An Additional Work Procedure is a contractual procedure whereby changes to the scope of Work under the Contract may be defined, priced and contractually agreed to;
- (b) The procedure does not allow for the correction of deficiencies in the Contractor's Proposal.

***3. Procedures***

- (a) The procedure involves the form PWGSC-TPSGC 1379 for new construction. This form is to be used when the work has been fully defined, and the final cost has been agreed to and/or negotiated. It will be the form for authorizing all Additional Work to be followed by Contract Amendment.
- (b) Emergency measures required to prevent loss or damage to the Vessel, which would occur if this procedure is followed, shall be taken by the Contractor on its own authority. The responsibility for the cost of such measures shall be determined in accordance with the terms and conditions of the contract.
- (c) The Technical Authority will initiate a work estimate request by defining the Additional Work requirement. It will attach drawings, sketches, additional Specification, other clarifying details as appropriate, and allocate their Serial Number for the request.
- (d) Notwithstanding the foregoing, the Contractor may propose to the Technical Authority in writing, either by letter or some type of Defect Advice Form (this is the Contractor's own form) that certain Additional Work should be carried out. The Technical Authority will either reject or accept such proposal, and advise the Contractor and Contracting Authority. Acceptance of the proposal is not to be construed as authorization for the work to proceed. If required, the Technical Authority will then define the Additional Work requirement in accordance with subparagraph 3(c).
- (e) After the Additional Work requirement is defined, the original and one

(1) copy with all attachments, will be passed by the Technical Authority to the Contracting Authority.

(f) The Contracting Authority will retain the original with attachments and submit a copy with attachments to the Contractor.

(g) The Contractor will submit its Proposal (Paragraph 6 - Form Of Proposal and Supporting Documentation) to the Contracting Authority together with any qualifications, remarks or other information requested.

(h) After discussion between the Contracting Authority and the Contractor and if no negotiation is required, the Contractor will then complete the PWGSC-TPSGC 1379 including the agreed costs, allocate a Serial Number, sign the form and pass it to the Contracting Authority. If the Technical Authority wishes to proceed, the form will be signed then. The Contracting Authority will then sign and Authorize the Additional Work to proceed.

(i) In the event negotiation is required, the Contracting Authority will arrange for the negotiations. If negotiations are successful the Contractor will then complete the PWGSC-TPSGC 1379 form including the agreed costs, sign the form and pass it to the Contracting Authority. The Contracting Authority will then pass the form to the Technical Authority. If the Technical Authority wishes to proceed it will sign the form. The Contracting Authority will then sign and authorize the Additional Work to proceed.

(j) In the event the Technical Authority does not wish to proceed with the work, it will cancel the proposed Additional Work through the Contracting Authority in writing.

(k) In the event the negotiation involves a Credit, the appropriate PWGSCTPSGC form will be noted as "credit" accordingly.

(l) In the event that Additional Work of an urgent nature is required by the Technical Authority, or an impasse has occurred in negotiations, the commencement of the Additional work should not be unduly delayed and should be processed as follows, in either case. The Contractor will complete the appropriate PWGSC-TPSGC form indicating the offered cost and pass it to the Contracting Authority. If the Technical Authority wishes to proceed, the Technical Authority and the Contracting Authority will sign the completed PWGSC-TPSGC form with the notation, "CEILING PRICE SUBJECT TO DOWNWARD ADJUSTMENT", and allocate a Serial Number having the suffix "A". The work will proceed with the understanding that following an audit of the Contractor's actual costs for completing the described work, the cost will be finalized at the ceiling price or lower, if justified by the audit. A new PWGSCTPSGC form will then be completed with the finalized costs, signed and issued with the same Serial Number without the suffix "A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix

"A". PWGSC-TPSGC forms bearing Serial Numbers with a suffix "A" shall not to be included in any contract amendments, and therefore no payment shall be made until final resolution of the price and incorporation into the contract.

(m) No work may be undertaken by the Contractor without written authorization of the Contracting Authority except under emergency circumstances described in sub-paragraph 3(b). Additional Work undertaken without written Contracting Authority authorization will be considered the Contractor's responsibility and cost.

(n) The PWGSC-TPSGC 1379 form is the final summary of the definition of the Additional work requirement, and the costs negotiated and agreed to. The Contracting Authority will forward the original to the Contractor and distribute copies as required.

#### ***4. Amendment to Contract or Formal Agreement***

The Contract will be amended from time to time in accordance with the Contract terms to incorporate the costs authorized on the appropriate PWGSC-TPSGC 1379 forms.

#### ***5. Form of Description of Additional Work***

The Statement of Work for the Additional Work will be limited to a statement of what has to be done. It will state how conformance will be measured or inspected.

#### ***6. Form of Proposal and Supporting Documentation***

(a) The Contractor will be afforded an opportunity, prior to submitting a Proposal, to discuss any technical questions regarding the statement of work for the Additional Work item. If necessary, a meeting will be held, prior to the submission of a Proposal, to review the statement of work in order to ensure that there is a clear understanding of the technical and other requirements, including the effect on Annex "B" to schedules and supply of materials. Requests for such meetings will be made to the Contracting Authority who will also chair the meetings. Any additions or deletions to the statement of work agreed to at such meetings will be the subject of a formal amendment to the statement of work and processed by the Technical Authority through the Contracting Authority.

(b) The Contractor's Proposal for each Additional work item shall be broken down as to person hours by trade and material cost per item. These breakdowns shall accompany each submission by the Contractor to the Contracting Authority prior to any required negotiations.

(c) Prior to any required negotiation, the Contractor shall provide to the Contracting Authority, for its retention, the following:

- (i) A work plan and/or any sketches and marked-up drawings as appropriate or requested; and
- (ii) Copies of subcontractor and/or material suppliers' quotations

(including the Contractor's requests for such quotations). In the event telephone quotations are used to finalize the negotiations, these quotations would be subject to later verification by the Crown. The Contractor shall provide copies of purchase orders and paid invoices for subcontracts and/or materials, including stocked items, in either case.

(d) Subcontracts and materials - The Contractor shall provide a minimum of two quotations for subcontracts or materials. If other than the lowest, or sole source is being recommended for quality and/or delivery considerations, this shall be noted. On request to the Contractor, the Contracting Authority shall be permitted, to meet with any proposed subcontractor or material supplier for discussion of the price. These requests will generally be limited to major sole source situations and always with the Contractor's representative present.

(e) The selected Contractor shall have a cost accounting system that is capable of assigning job numbers for each Additional Work requirement so that each requirement can be audited individually. Prior to award of Additional Work, the selected Contractor shall provide written statements that a cost accounting system exists. The cost accounting system may be reviewed by the Contracting Authority prior to award of any Additional Work.

## ***7. Supply Of Forms***

On request, the Contracting Authority will supply the appropriate form .PWGSC-TPSGC 1379

## **ANNEX L**

### ***4007 Canada to Own Intellectual Property Rights in Foreground Information with License to Intellectual Property Rights in Background Information***

01 Interpretation

02 Records and Disclosure of Foreground Information

03 Ownership of Intellectual Property Rights in Foreground Information

04 License to Intellectual Property Rights in Background Information

05 Contractor's Right to Grant License

06 Waiver of Moral Rights

#### **4007 01 (2008-05-12) Interpretation**

1. In the Contract, unless the context otherwise requires:

*"Background Information"* means all Intellectual Property that is not Foreground Information that is incorporated into the Work or necessary for the performance of the Work, regardless of whether it is owned by the Contractor or a third party;

*"Firmware"* means computer programs that are stored in integrated circuits, read-only memory or other similar devices within the hardware or other equipment;

*"Foreground Information"* means all Intellectual Property first conceived, developed, produced or reduced to practice as part of the Work under the Contract;

*"General Conditions"* means the general conditions that form part of the Contract;

*"Intellectual Property"* means any information or knowledge of an industrial, scientific, technical, commercial, literary, dramatic, artistic or otherwise creative nature relating to the Work, whether oral or recorded in any form or medium and whether or not subject to copyright; this includes but is not limited to any inventions, designs, methods, processes, techniques, know-how, show-how, models, prototypes, patterns, samples, schematics, experimental or test data, reports, drawings, plans, specifications, photographs, manuals and any other documents, Software, and Firmware;

*"Intellectual Property Right"* means any intellectual property right recognized by law, including any intellectual property right protected by legislation such as patents, copyright, industrial design, integrated circuit topography, and plant breeders' rights, or subject to protection under the law as trade secrets and confidential information.

"Software" means any computer program whether in source or object code (including Firmware), any computer program documentation recorded in any form or upon any medium, and any computer database, including any modification.

2. Words and expressions defined in the General Conditions and used in these supplemental general conditions have the meanings given to them in the General Conditions. In the event of any inconsistency between the General Conditions and these supplemental general conditions, the applicable provisions of these supplemental general conditions will prevail.

3. If supplemental general conditions 4001 and 4003 are also incorporated in the Contract, the provisions of those supplemental general conditions concerning the ownership of Intellectual Property will prevail in relation to the subject matter of those supplemental general conditions.

#### **4007 02 (2008-05-12) Record and Disclosure of Foreground Information**

1. During and after the performance of the Contract, the Contractor must keep detailed records of the Foreground Information, including details of its creation. The Contractor must report and fully disclose to Canada all Foreground Information as required by the Contract. If the Contract does not specifically state when and how the Contractor must do so, the Contractor must provide this information if requested by the Contracting Authority, whether before or after the completion of the Contract.

2. Before and after final payment to the Contractor, the Contractor must provide Canada with access to all records and supporting data that Canada considers pertinent to the identification of Foreground Information.

3. For any Intellectual Property that was developed or created in relation to the Work, Canada will be entitled to assume that it was developed or created by Canada, if the Contractor's records do not list that Intellectual Property or do not indicate that it was created by the Contractor, or by someone on behalf of the Contractor, other than Canada.

#### **4007 03 (2008-05-12) Ownership of Intellectual Property Rights in Foreground Information**

1. All Intellectual Property Rights in the Foreground Information belong to Canada as soon as they come into existence. The Contractor has no right in or to any such Intellectual Property Rights in the Foreground Information, except any right that may be granted in writing by Canada.

2. The Contractor must incorporate the copyright symbol and one of the following notices, as appropriate into all Foreground Information that is subject to copyright regardless of the form or medium upon which it is recorded: © Her Majesty the Queen in Right of Canada (year), or © Sa Majesté la Reine du chef du Canada (année).

3. The Contractor must execute any documents relating to the Intellectual Property Rights in the Foreground Information as Canada may require. The Contractor must, at Canada's expense, provide Canada all reasonable assistance in the preparation of applications and in the prosecution



of any applications for registration of any Intellectual Property Rights in any jurisdiction, including the assistance of the inventor in the case on inventions.

#### **4007 04 (2008-05-12) License to Intellectual Property Rights in Background Information**

1. The Contractor grants to Canada a license to use the Background Information to the extent that it is reasonably necessary for Canada to exercise fully all its rights in the deliverables and in the Foreground Information. This license is non-exclusive, perpetual, irrevocable, worldwide, fully-paid and royalty-free. The license cannot be restricted in any way by the Contractor providing any form of notice to the contrary, including the wording on any shrink-wrapped license attached to any deliverable.

2. For greater certainty, Canada's license in the Background Information includes, but is not limited to:

A. the right to disclose the Background Information to third parties bidding on or negotiating contracts with Canada and to sublicense or otherwise authorize the use of that information by any contractor engaged by Canada solely for the purpose of carrying out such contracts. Canada will require these third parties and contractors not to use or disclose that information except as may be necessary to bid, negotiate or carry out those contracts;

B. the right reproduce, modify, improve, develop or translate the Background Information or have it done by a person hired by Canada. Canada, or a person designated by Canada, will own the Intellectual Property Rights associated with reproduction, modification, improvement, development or translation.

3. The Contractor agrees to make the Background Information, including in the case of Software, the source code, promptly available to Canada for any purpose mentioned above. The license does not apply to any Software that is subject to detailed license conditions that are set out elsewhere in the Contract. Furthermore, in the case of commercial off-the-shelf software, the Contractor's obligation to make the source code promptly available to Canada applies only to source code that is within the control of or can be obtained by the Contractor or any subcontractor.

#### **4007 05 (2008-05-12) Contractor's Right to Grant Licence**

The Contractor represents and warrants that it has the right to grant to Canada the license and any other rights to use the Background Information. If the Intellectual Property Rights in any Background Information are owned by a subcontractor or any other third party, the Contractor must have a license from that subcontractor or third party that permits compliance with section 4 or arrange, without delay, for the subcontractor or third party to grant promptly the required license directly to Canada.

#### **4007 06 (2008-05-12) Waiver of Moral Rights**

If requested by Canada, during and after the Contract, the Contractor must provide a written permanent waiver of moral rights, as defined in the Copyright Act, R.S., 1985, c. C-42, from every author that contributes to any Foreground Information subject to copyright protection that

is a deliverable to Canada under the Contract. If the Contractor is an author of the Foreground Information, the Contractor permanently waives the Contractor's moral rights in that Foreground Information.

**Annex M**  
**W6399-12DD09**

**BIDDERS QUESTIONS AND ANSWERS**

**SCHEDULE “A” DETAILED COST BREAKDOWN**  
**RFP NO: W6399-12DD09**

**COST BREAKDOWN - FOR ONE (1) VESSEL**

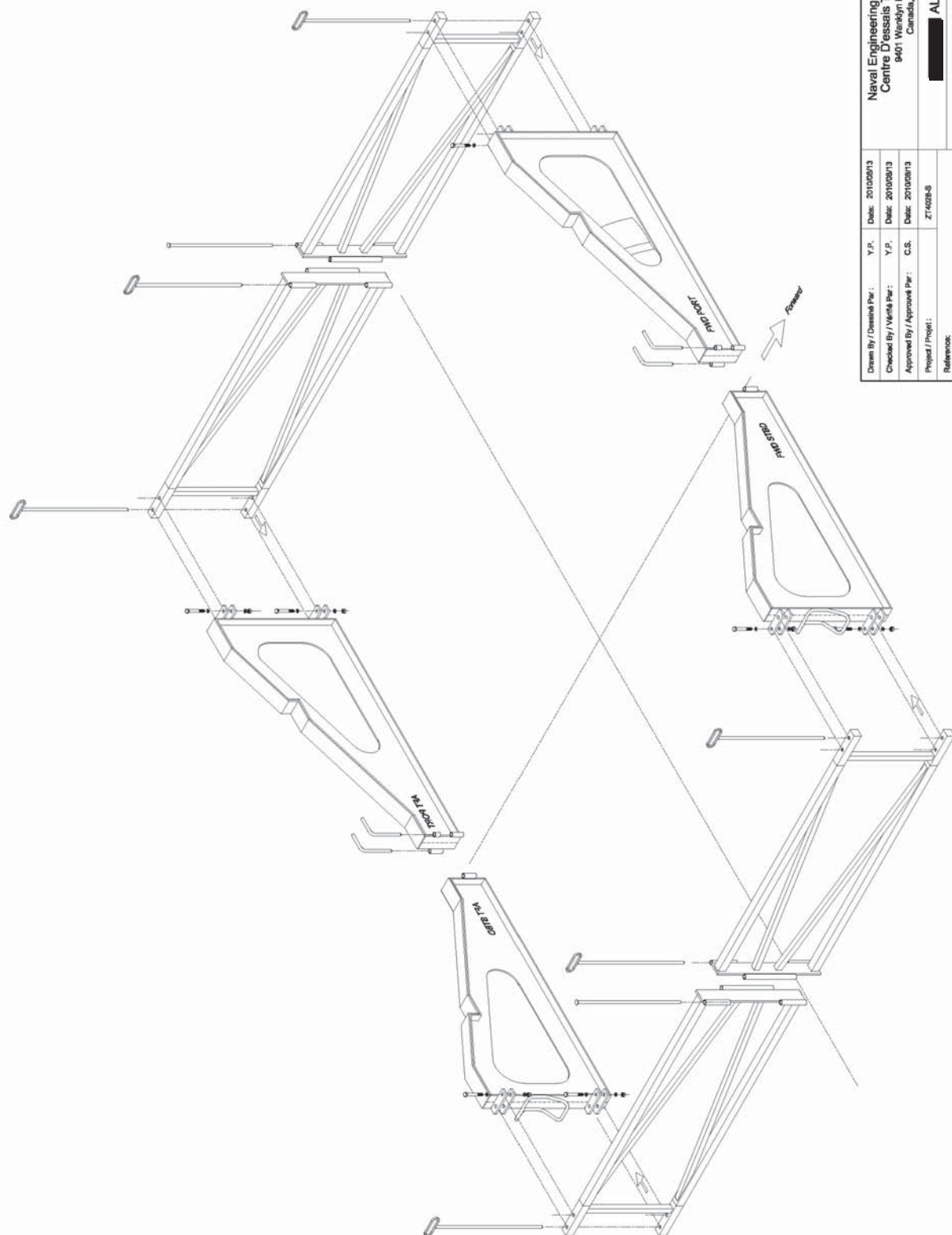
<b>Sect</b>	<b>Description</b>	<b>Labour</b>	<b>Material</b>	<b>Over head &amp; Profit</b>	<b>Total</b>
<b><u>ANNEX A</u></b>					
Annex A 6.1	TDP General				
Annex A 6.1b	TDP - As Built Drawings				
Annex A 7.0	Initial Spares and Specialized Tools Package				
Annex A 7.0a	Initial Spares and Specialized Tools Package				
Annex A 7.0b	Initial Spares and Specialized Tools Package				
Annex A 7.0c	Initial Spares and Specialized Tools Package				
Annex A 7.0d	Initial Spares and Specialized Tools Package				
<b><u>ANNEX B</u></b>					
Annex B 5.1	Dimensions				
Annex B 5.2	Weight				
Annex B 5.3.	Physical Features				
Annex B 5.3.1	Hull				
Annex B 5.3.2	Deck				
Annex B 5.3.2.1	Deck Finish				
Annex B 5.3.2.2	Stowage				
Annex B 5.3.2.3	Tie Downs				
Annex B 5.3.3	Lazarette Box				
Annex B 5.3.4	Radar Arch				
Annex B 5.3.5	Air Inflatable Components				
Annex B 5.3.5.1	Inflation System				
Annex B 5.3.6	Console				
Annex B 5.3.6.1	Coxswain Station				
Annex B 5.3.6.2	Navigator Station				
Annex B 5.3.6.3	Command and Control Station				
Annex B 5.3.7	Navigation Equipment				
Annex B 5.3.7.1	Navaigation Lighting				
Annex B 5.3.8	Communications System				
Annex B 5.3.9	Seating				
Annex B 5.3.9.1	Seats (General)				
Annex B 5.3.9.2	Crew Seats				
Annex B 5.3.9.3	Passenger Seats				
Annex B 5.3.10	Propulsion System				

**SCHEDULE “A” DETAILED COST BREAKDOWN**  
**RFP NO: W6399-12DD09**

<b>Sect</b>	<b>Description</b>	<b>Labour</b>	<b>Material</b>	<b>Over head &amp; Profit</b>	<b>Total</b>
Annex B 5.3.11	Fuel System				
Annex B 5.3.11.1	Auxillary Fuel Storage				
Annex B 5.3.12	Steering System				
Annex B 5.3.13	Electrical System				
Annex B 5.3.13.1	Batteries				
Annex B 5.3.14	Pumping and Drainage				
Annex B 5.4	Colour,Painting and Corrosion Protection				
Annex B 5.5	Safety Equipment				
Annex B 5.5.1	Hoisting				
Annex B 5.6	Trailer				
Annex B 5.7	Cover				
Annex B 5.8	Cradle				
Annex B 5.9	Standards of Construction				
Annex B 5.9.1	Welding Certifications				
Annex B 5.9.2	Design Factors				
Annex B 5.9.3	Construction Materials				
Annex B 5.9.4	Construction Fasteners				
Annex B 5.9.5	Cabling				

## Schedule “B” *Project Schedule*

[illegible]



ISOMETRIC VIEW

Drawn By / Dessiné Par : Y.P.		Date: 20100513	Naval Engineering Test Establishment	
Checked By / Vérifié Par : Y.P.		Date: 20100513	Centre D'essais Techniques (MER)	
Approved By / Approuvé Par : C.S.		Date: 20100513	9401 Wentwyn Lasalle - Quebec,	
Project / Projet : ZT4028-S			Canada, H8R 1Z2	
Reference:			ALUMINUM CRADLE	
			GENERAL ISOMETRIC VIEW	
			Revision No : 0	
			Drawing No / Dessin No : DWG-ZT4028-S-2	
			Scale	
			Echelle =	
			Sheet 1 of 14	
			Page 1 of 14	

MATERIAL LIST

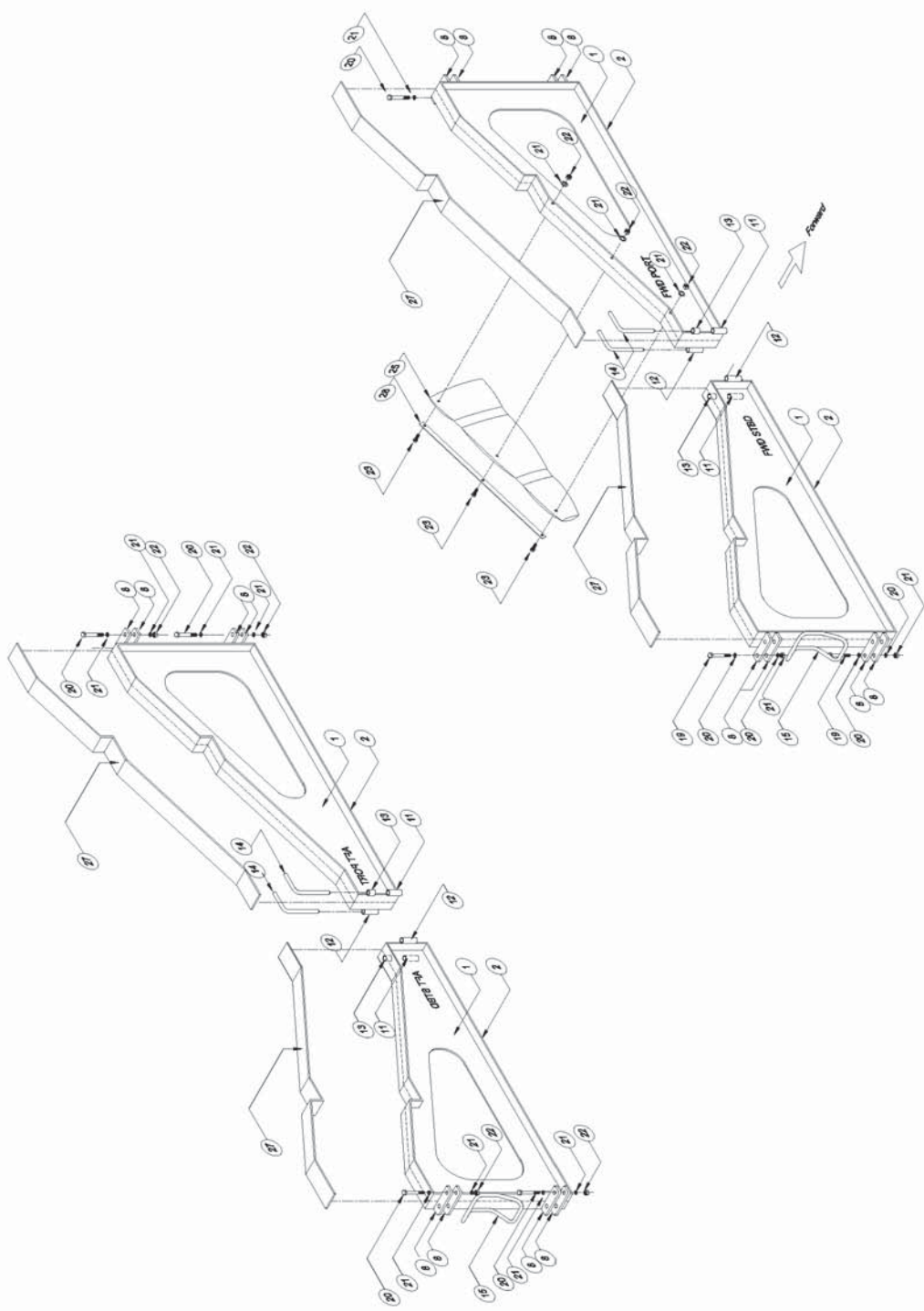
ITEM	QTY	DESCRIPTION	DIMENSIONS	MATERIAL	SUPPLIER	PART NO.
1	4	Web Plate	50-3/4" x 23-5/8" x 1/4"	Aluminum Alloy 6061, T6		
2	4	Flanged Perimeter Plate	3" x 1/4" F.B. - (140" long)	Aluminum Alloy 6061, T6		
3	8	Horizontal Bracing - (Long) frame	HSS 1-1/2" x 1-1/2" x 0.125" - (48-5/32" long)	Aluminum Alloy 6061, T6		
4	8	Diagonal Bracing - (Long) frame	HSS 1" x 1" x 0.125" - (48-1/16" long)	Aluminum Alloy 6061, T6		
5	4	Vertical Bracing - (long) frame	HSS 1" x 1" x 0.125" - (18-3/4" long)	Aluminum Alloy 6061, T6		
6	8	Solid Insert	Square bar 1-1/2" x 1-1/2" - (10" long)	Aluminum Alloy 6061, T6		
7	4	Vertical Hinge Plate (Long) Frame	2-1/2" x 3/8" F.B. - (20-1/4" long)	Aluminum Alloy 6061, T6		
8	16	Horizontal Hinge Plate (Transv. Cradle)	1-1/2" x 3/8" F.B. - (4-3/4" long)	Aluminum Alloy 6061, T6		
9	8	Hinge Pipe	1/2" Dia. x Sch 80. - (5" long)	Aluminum Alloy 6061, T6		
10	4	Hinge Pipe	1/2" Dia. x Sch 80. - (9-5/8" long)	Aluminum Alloy 6061, T6		
11	4	Hinge Pipe	1/2" Dia. x Sch 80. - (1-7/8" long)	Aluminum Alloy 6061, T6		
12	4	Hinge Pipe	1/2" Dia. x Sch 80. - (1-7/8" long)	Aluminum Alloy 6061, T6		
13	4	Hinge Pipe	1/2" Dia. x Sch 80. - (1-1/8" long)	Aluminum Alloy 6061, T6		
14	4	Locking "L" Pins (Port-Stbd)	1/2" Dia. Round Bar - (9-5/8" long)	Stainless Steel 304		
15	4	Rope Tie	1/2" Dia. Round Bar - (27-1/2" long)	Aluminum Alloy 6061, T6		
16	6	Locking Rod	1/2" Dia. Round Bar - (21-3/4" long)	Stainless Steel 316		
17	6	Locking Rod Handle	1/4" Dia. Round Bar - (10-1/4" long)	Stainless Steel 316		
18	2	Hinge Bar	1/2" Dia. Round Bar - (20-3/4" long)	Stainless Steel 316		
19	2	Hinge Bar Cap - (SS18-8 Washer)	O.D. 0.866", I.D. 0.512", 0.098" Thk	Stainless Steel 316	McMaster-Carr	93849A107
20	8	Hex Head Cap Screw	3/8" - 16 Partially Threaded (3" long)	Stainless Steel 18-8	McMaster-Carr	92186A636
21	16	Flat Washer	5/8" OD x 0.39" ID x 0.08" Thk	Stainless Steel 316	McMaster-Carr	98017A200
22	14	Nylon Insert Hex Lock Nut	3/8"-16 Thread x 9/16" Wide x 29/64" High	Stainless Steel 316	McMaster-Carr	90715A145
23	3	Hex Head Cap Screw	3/8" - 16 Fully Threaded (1-1/4" long)	Stainless Steel 316	McMaster-Carr	93190A626
24	3	Flat Washer	13/16" OD x 13/32" ID, 0.08" Thk	Stainless Steel 316	McMaster-Carr	91950A031
25	1	Fortress Stowaway Bag	28" long	Cordura	Fortress Anchors	SFX-11
26	2	Straight Cotter Pin	1-1/4" long, Diameter 3/32"	Stainless Steel 316	McMaster-Carr	98355A085
27	4	EPDM Rubber Padding	57" long, 3" wide, 1/4" thick	EPDM Rubber, 60 Shore A		
28	1	Aluminum Strip Inside the stowaway bag	1" x 1/8" F.B. - (26-1/4" long)	Aluminum Alloy 6061, T6		

GENERAL NOTES

- 1) THE CRADLE IS FABRICATED WITH MARINE 1/4" ALUMINIUM ALLOY 6061 T-6,
- 2) UNLESS OTHERWISE NOTED, ALL WELDS TO BE :  
 $\frac{3}{16}"$  OR  $\frac{3}{16}"$
- 3) BOLTS, NUTS AND WASHERS ARE STAINLESS STEEL, TO PREVENT SEIZING OF MOVING PARTS AND GALVANIC CORROSION WHERE STAINLESS STEEL SCREWS ARE IN CONTACT WITH ALUMINIUM PARTS, IT IS RECOMMENDED TO USE ANTI SEIZE LUBRICANT GEL.
- 4) EPDM RUBBER PADDING TO BE GLUED WITH LOCKTITE® 480 INSTANT ADHESIVE

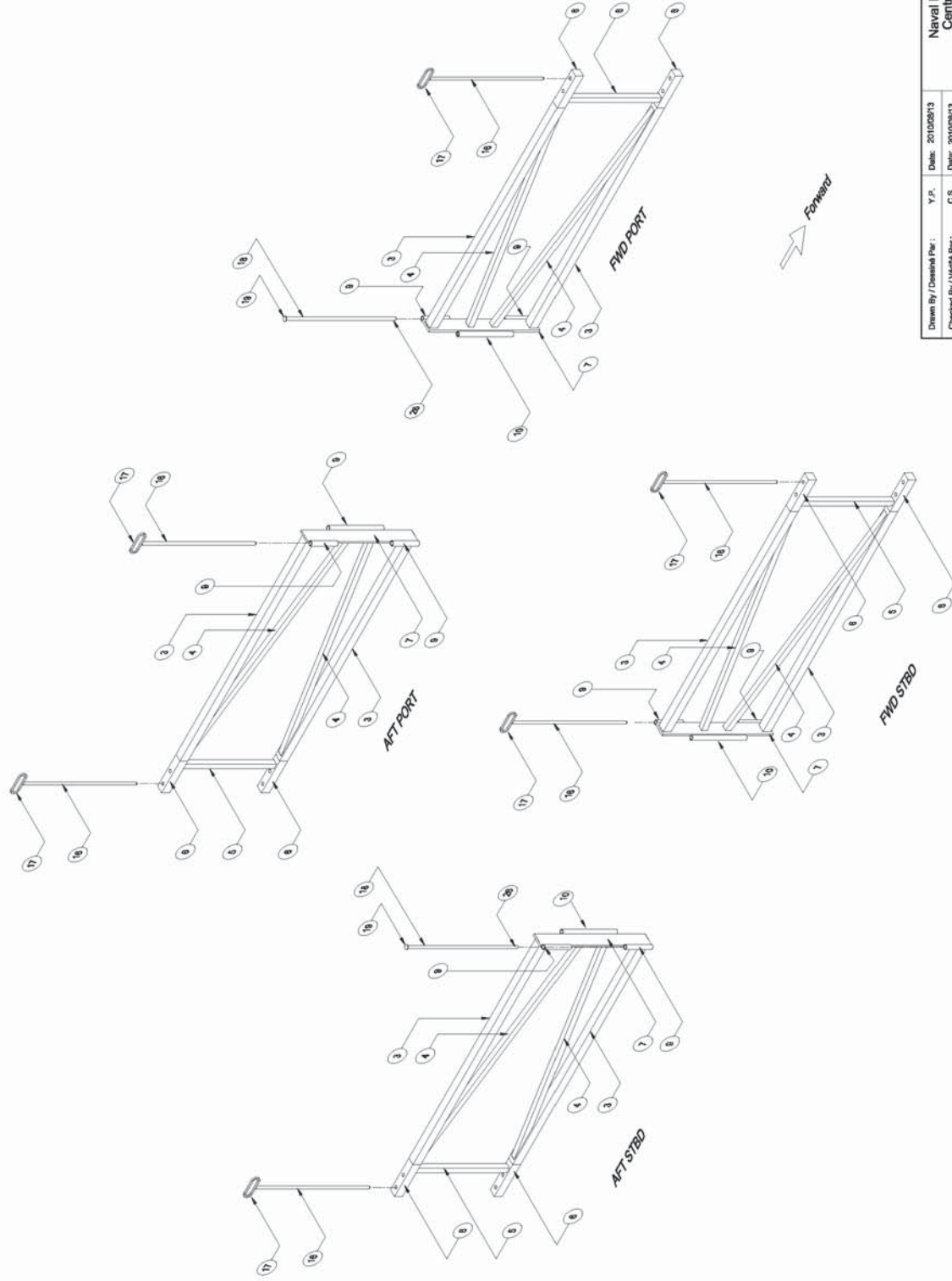
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Checked By / Vérifié par :	C.S	Date: 2010/09/13	9401 Waskdyn Lassalle, Québec, Canada, H8R 1Z2
Approved By / Approuvé par :	C.S	Date: 2010/09/13	
Project / Projet :		274028-S	ALUMINIUM CRADLE
Reference :			
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Sheet :	2 of 13		





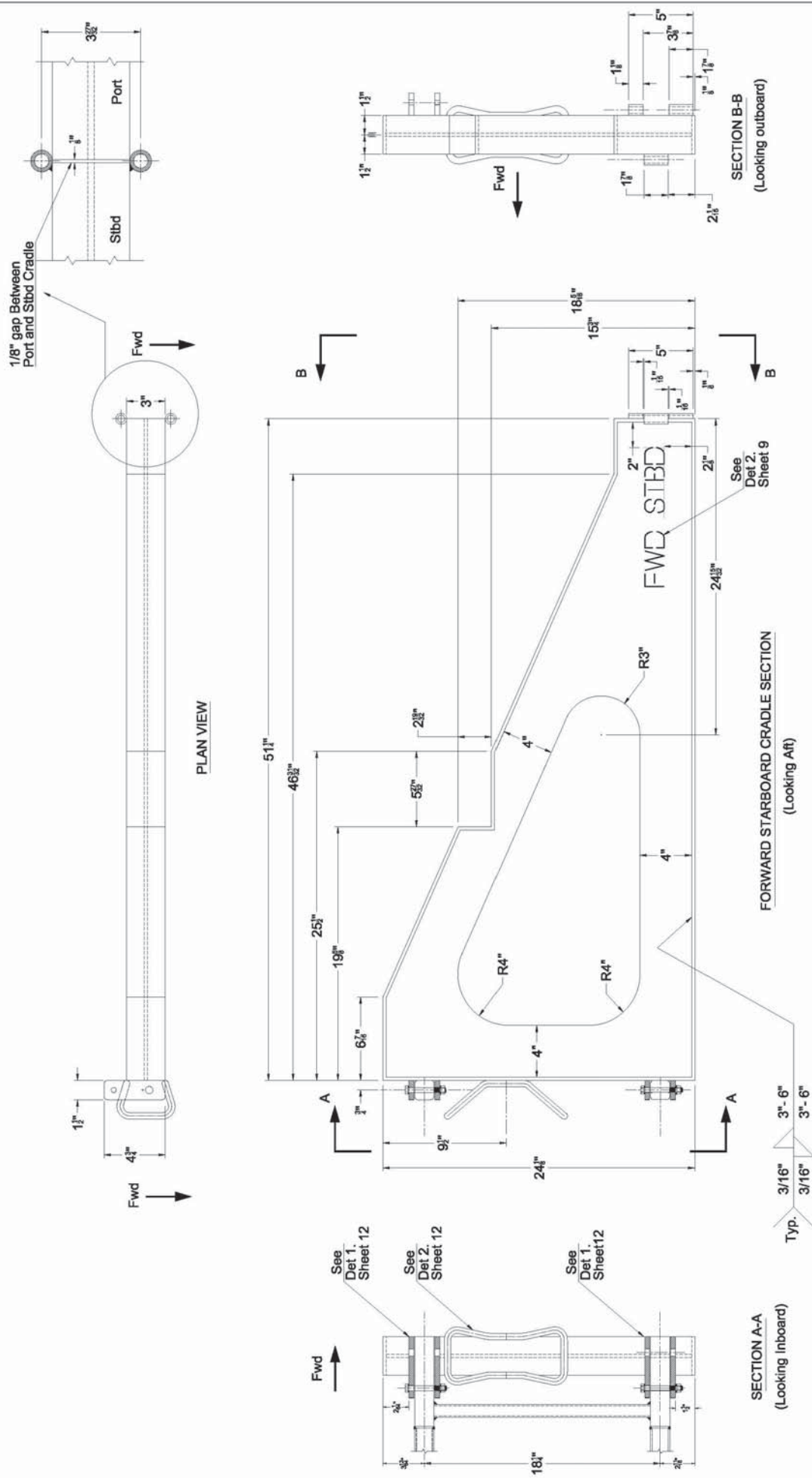
KEY PLAN - TRANSVERSE FRAMES

Drawn By / Checked Par : Y.P.	Date: 20100513	Naval Engineering Test Establishment Centre D'essais Techniques (MER) 9401 Wentwyn Lasalle - Quebec, Canada, H8R 1Z2	
Checked By / Verifié Par : C.S.	Date: 20100513	ALUMINUM CRADLE	
Approved By / Approuvé Par : C.S.	Date: 20100513	KEY PLAN	
Project / Projet : ZT4028-S	Reference:	Drawing No / Dessin No : DWG-ZT4028-S-2	
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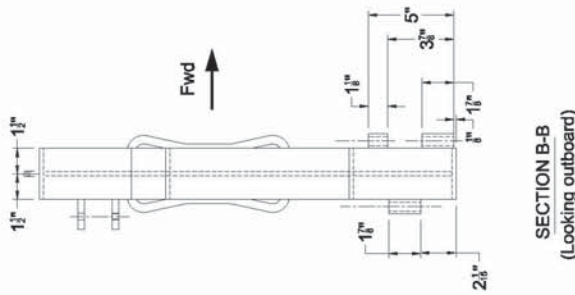
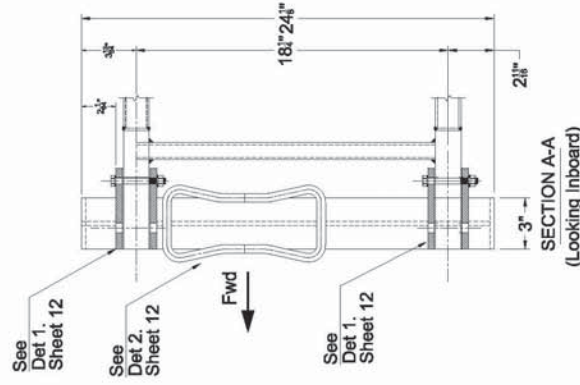
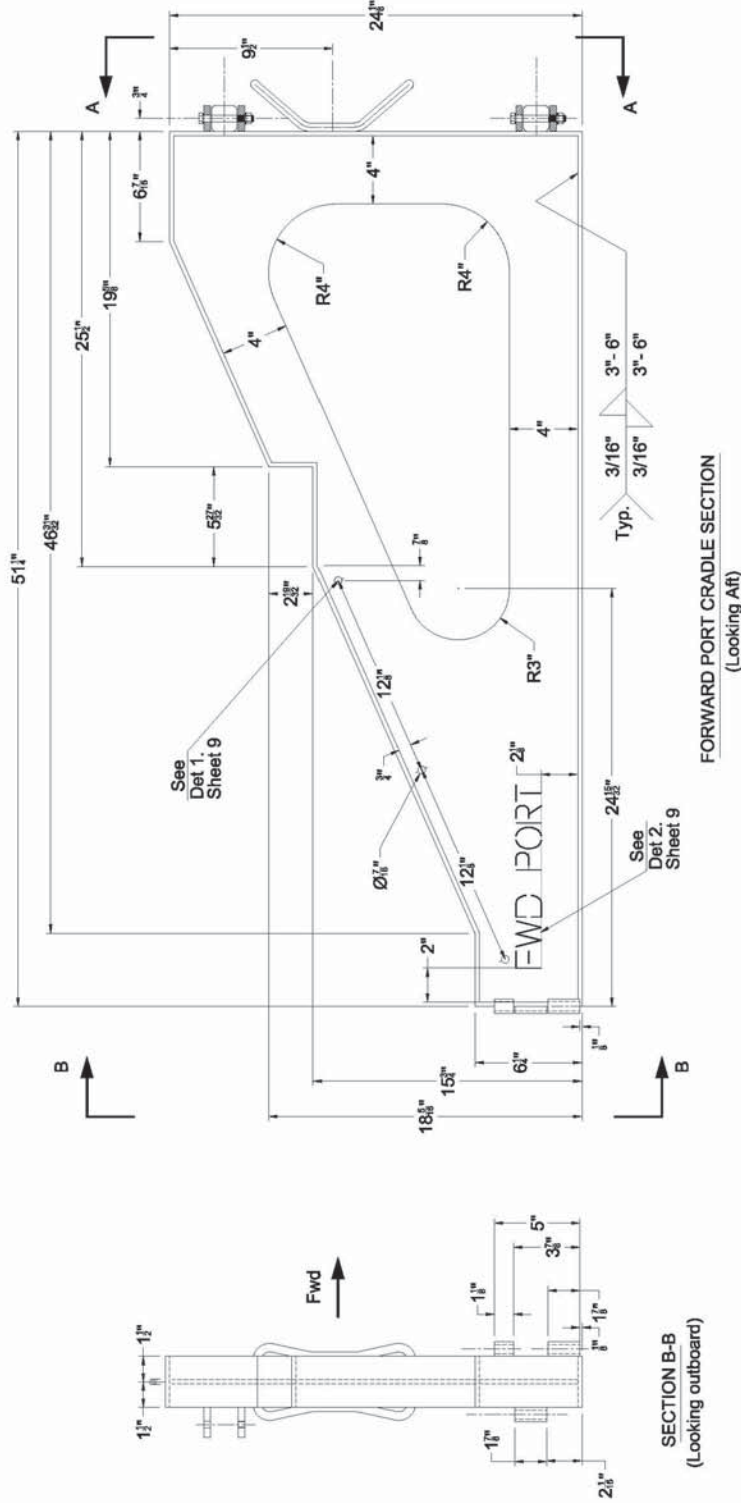
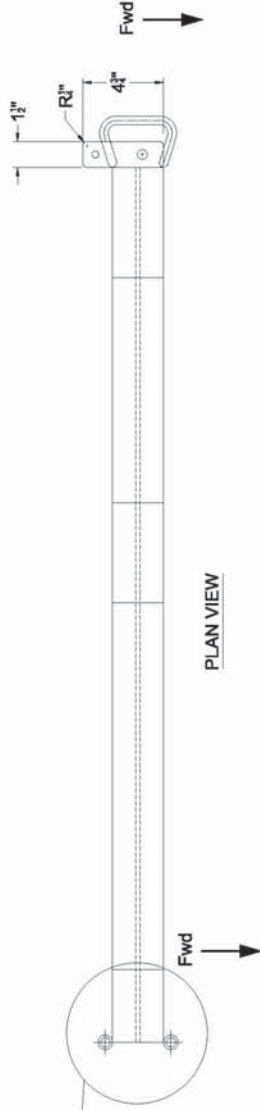
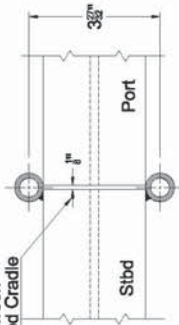
KEY PLAN - LONGITUDINAL FRAMES

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Checked By / Verified Per : C.S.	Date: 20100513	
Approved By / Approved Per : C.S.	Date: 20100513	
Project / Project :	ZT4028-S	
Reference:		
KEY PLAN		
ALUMINUM CRADLE		
Revision No : 0		
Drawing No / Detail No : DWG-ZT4028-S-2		
Scale		
Echelle =		
Sheet 4 of 14		
Page 4 of 14		



Naval Engineering Test Establishment Centre D'essais Techniques (MER) 9401 Winklyn Lasalle - Quebec, Canada, H8R 1Z2	
ALUMINUM CRADLE	
TRANSVERSE FRAME (FWD - STBD SIDE)	
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Revision No. : 0	
Scale Equals	
Sheet 14	
Of 14	

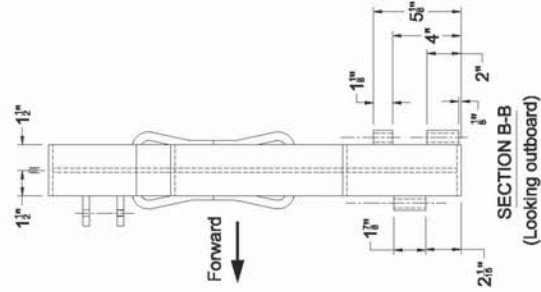
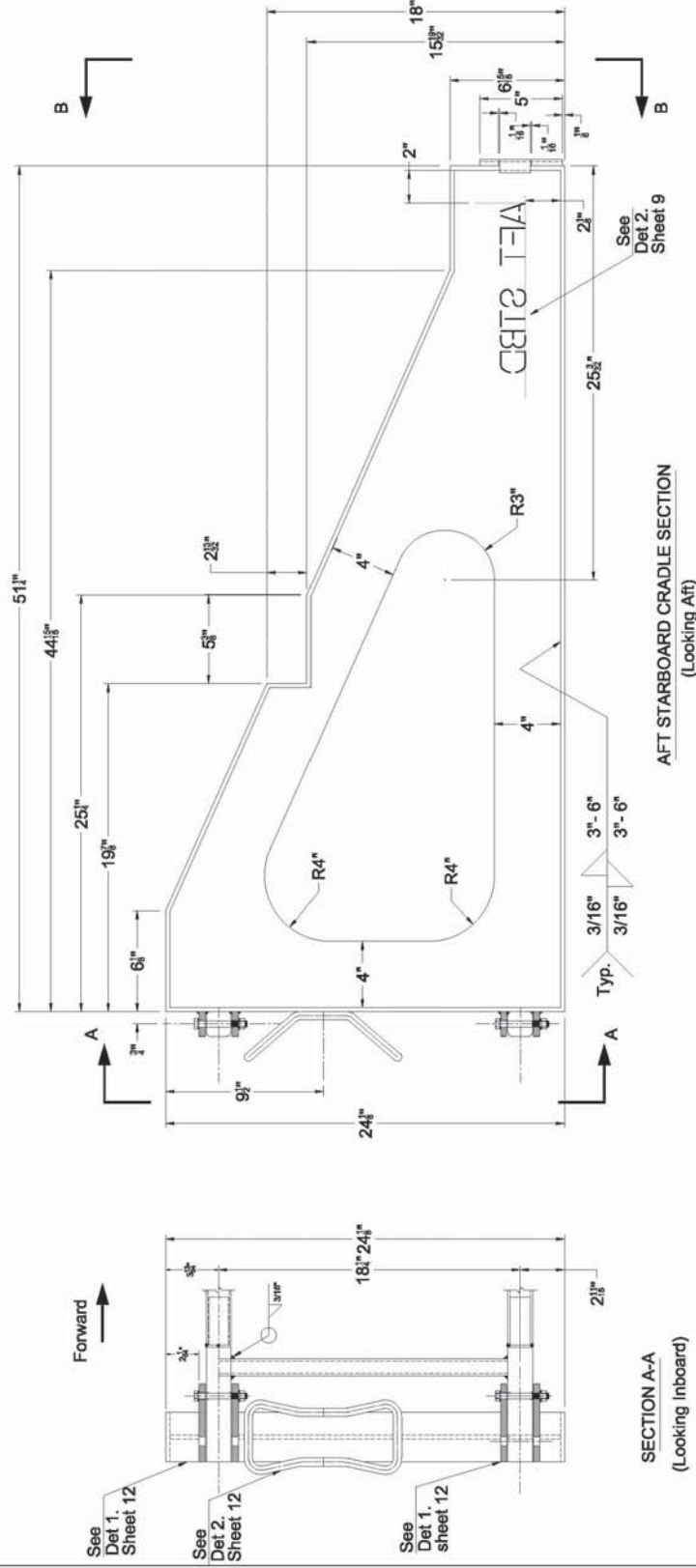
1/8" gap Between  
Port and Sibd Cradle



Drawn By / Checked Per :	Y.P.	Date:	20100613
Checked By / Verified Per :	C.S.	Date:	20100613
Approved By / Approval Per :	C.S.	Date:	20100613
Project / Project :			ZT4028-8
Reference:			

Naval Engineering Test Establishment Centre D'essais Techniques (MER) 9401 Winklyn Lasalle - Quebec, Canada, H8R 1Z2		ALUMINUM CRADLE	
TRANSVERSE FRAME (FWD - PORT SIDE)		Revision No : 0	
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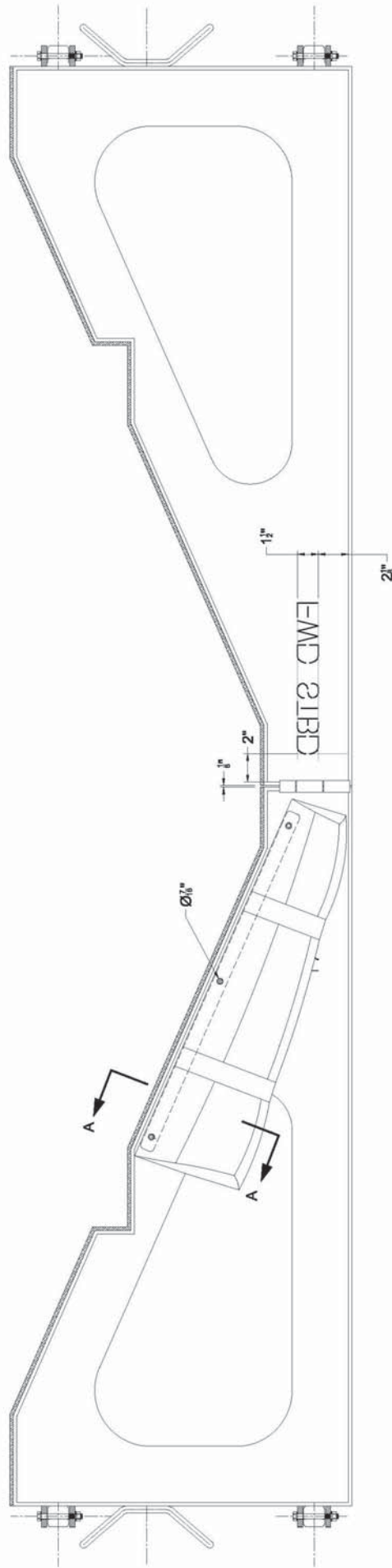
PLAN VIEW



Drawn By / Desired Per :	Y.P.	Date: 2010/06/13
Checked By / Vanta Per :	C.S.	Date: 2010/06/13
Approved By / Approval Per :	C.S.	Date: 2010/06/13
Project / Project :	ZT4028-S	
Reference: 1.-		







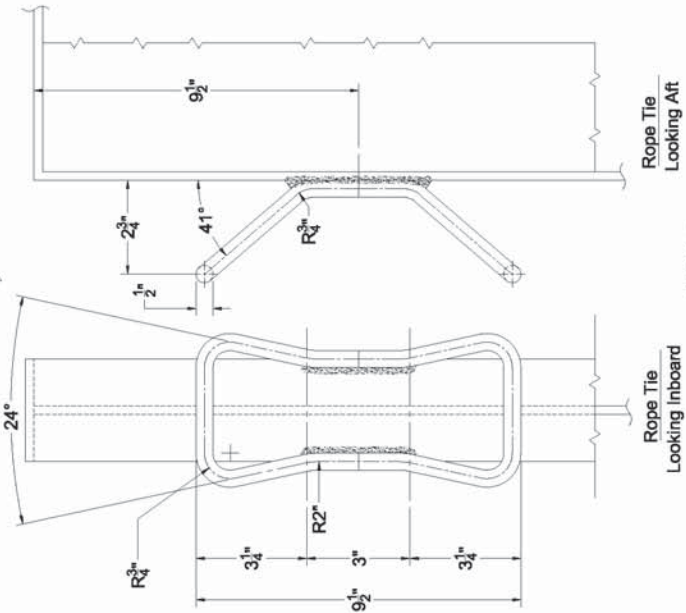
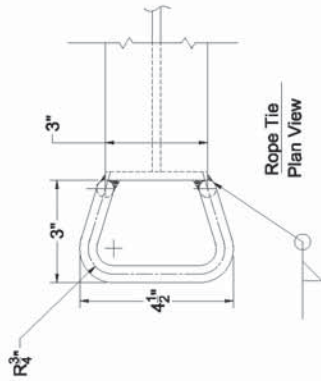
**FORWARD CRADLE SECTION**  
(Looking forward)

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Checked By / Verified Per :	C.S.	Date: 2010/06/13
Approved By / Approved Per :	C.S.	Date: 2010/06/13
Project / Project :	ZT4028-S	
Reference:		

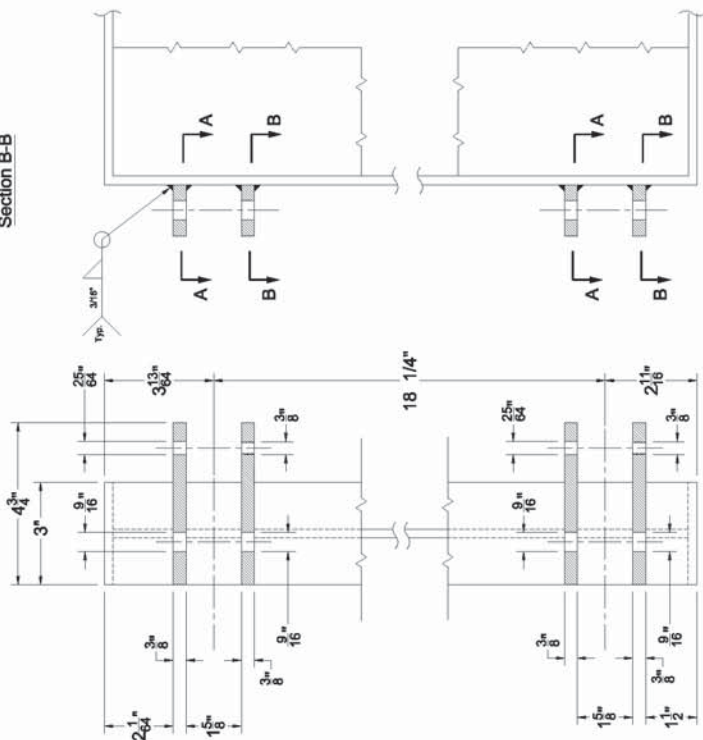
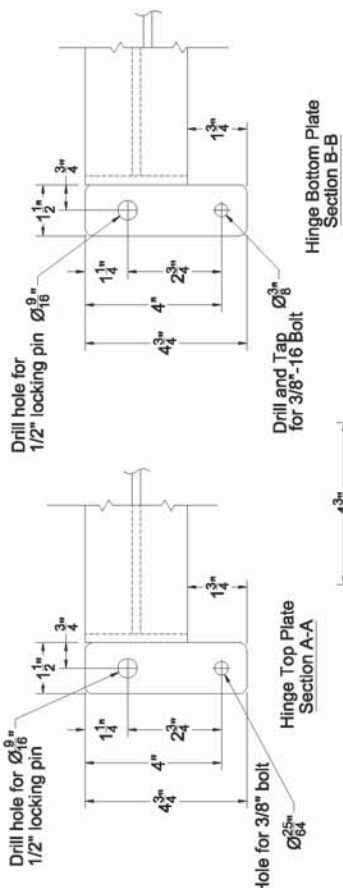






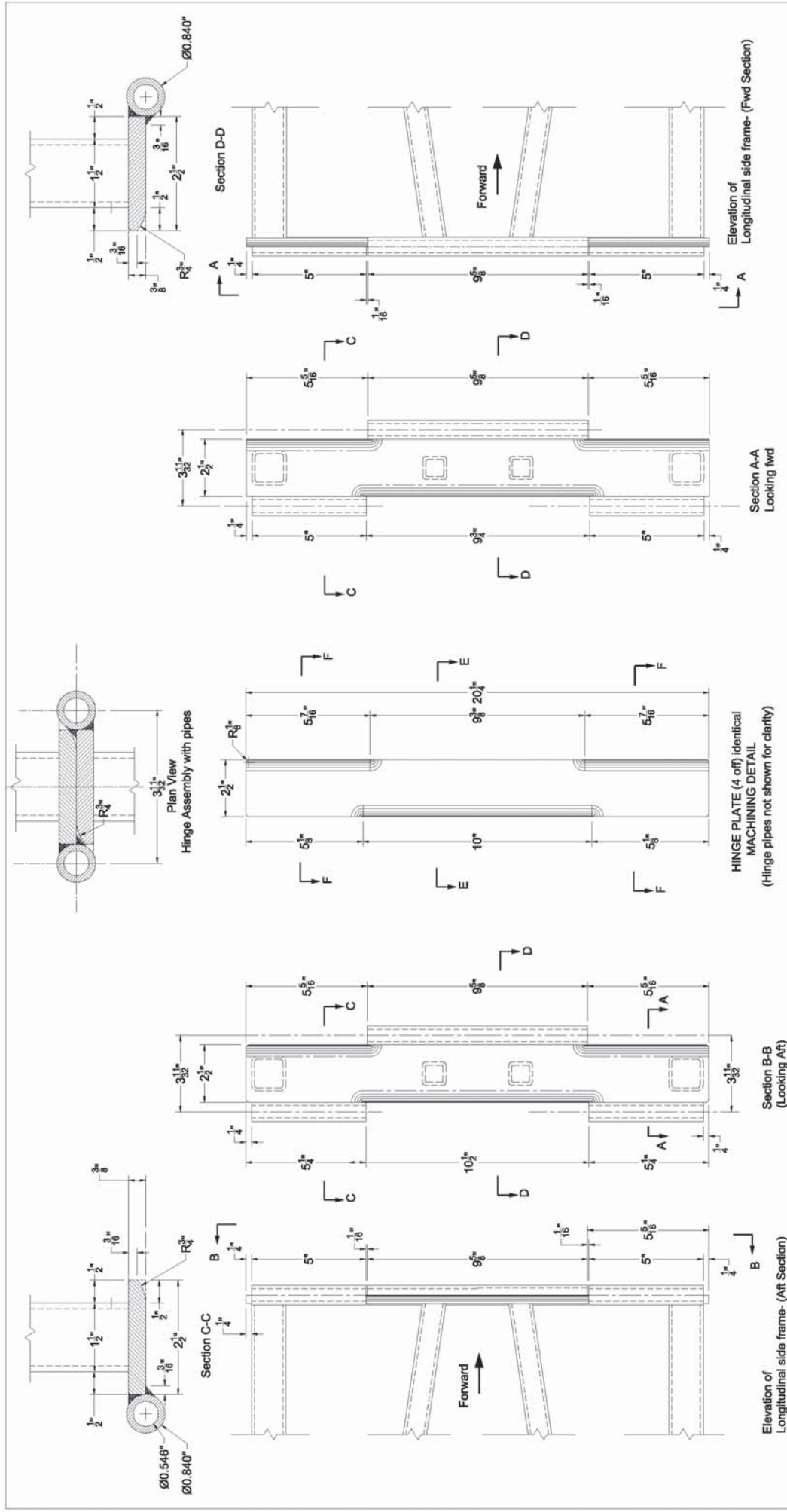


DETAIL 2  
ROPE TIE

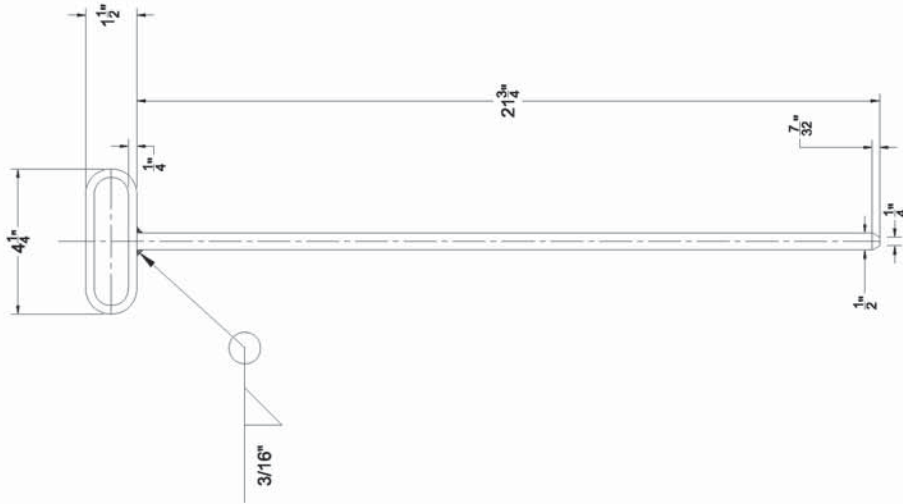


DETAIL 1  
HINGE PLATES ON TRANSVERSE FRAMES

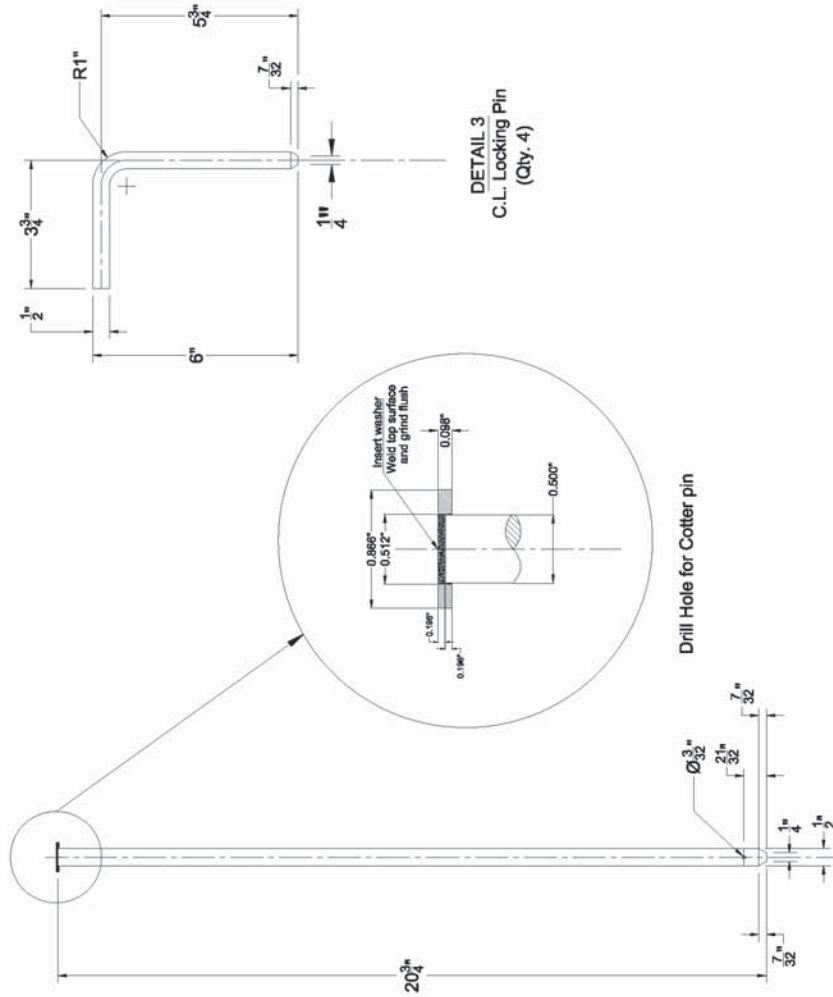
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Checked By / Verified Per : C.S.		Date: 20100613	
Approved By / Approved Per : C.S.		Date: 20100613	
Project / Project :		ZT4228-S	
Reference:			



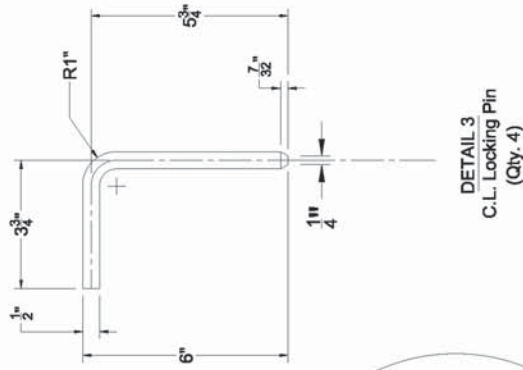
Naval Engineering Test Establishment Centre D'essais Techniques (MER) 9401 Winklyn Lasalle, Quebec, Canada, H8R 1Z2		
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LONGITUDINAL FRAME HINGE DETAILS		
Drawing No / Detail No.:		Revision No. : 0
DWG-Z1628-S-2		Scale English
		Sheet 13 of 14



DETAIL 1  
Locking Pin  
(Qty. 6)



DETAIL 2  
Vertical Hinge Pin  
(Qty. 2)



DETAIL 3  
C.L. Locking Pin  
(Qty. 4)

Drill Hole for Cotter pin

Drawn By / Checked Per :	Y.P.	Date:	20100913
Checked By / Verified Per :	C.S.	Date:	20100913
Approved By / Approved Per :	C.S.	Date:	20100913
Project / Project :	ZT4228-S		
Reference:			

Naval Engineering Test Establishment Centre D'essais Techniques (MER) 9401 Winklyn Lasalle - Quebec, Canada, H8R 1Z2		ALUMINUM CRADLE	
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