

**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

| | | |
|---|--|--|
| Title - Sujet 6.2 - 6.5m Aluminium Workboat and t | | |
| Solicitation No. - N° de l'invitation F7047-130044/A | Date 2014-09-19 | |
| Client Reference No. - N° de référence du client F7047-130044 | | |
| GETS Reference No. - N° de référence de SEAG PW-\$\$MC-024-24687 | | |
| File No. - N° de dossier 024mc.F7047-130044 | CCC No./N° CCC - FMS No./N° VME | |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-10-29 | | Time Zone Fuseau horaire Eastern Daylight Saving Time EDT |
| F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/> | | |
| Address Enquiries to: - Adresser toutes questions à: Pilon(MC DIV), Chantal | | Buyer Id - Id de l'acheteur 024mc |
| Telephone No. - N° de téléphone (819) 956-4308 () | | FAX No. - N° de FAX () - |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: See herein | | |

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 Construction, Refit and Related Services/Construction
navale, Radoubs et services connexes**

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau

Québec

K1A 0S5

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

**REQUEST FOR PROPOSALS (RFP) FOR
THE PURCHASE OF ONE (1) 6.2 TO 6.5M ALUMINUM
WORKBOAT WITH TRAILER FOR
THE DEPARTMENT OF FISHERIES AND OCEANS CANADA (DFO)**

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PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with this bid solicitation.

2. Requirement

The Department of Fisheries and Oceans Canada (DFO) has a requirement to purchase one (1), 6.2m to 6.5 meter aluminum workboat with trailer in accordance with the Technical Statement of Requirement (TSOR) - **Annex "A"** and Bidder Questions and Canada Responses – **Annex "D"**.

All deliverables must be delivered by **February 27, 2015**.

3. Debriefings

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.

4. Trade Agreements

"The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada - Chile Free Trade Agreement, the Canada - Perou Free Trade Agreement and the Canada - Panama Free Trade Agreement and the Agreement on Internal Trade (AIT)."

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 (2014-06-26) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

1.1 SACC Manual Clauses

B3000T, 2006-06-16, Equivalent Products

A9125T, 2007-05-25, Valid Labour Agreement

2. 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.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) 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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the **Province of 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 province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

5. Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least seven (7) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

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 (two (2) hard copies and two (2) soft copies on CDs)
- Section II - Financial Bid (one (1) hard copy and one (1) soft copy on CD)
- Section III - Certifications (one (1) hard copy and one (1) soft copy on CD)

Two (2) packages must be provided with the bid. The first package should include one (1) hard and one (1) soft copy of the Technical Bid, Section I. The other package should include all Sections as requested above.

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 (216mm 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.

By the submission of a bid, Bidders agree that all supplemental revisions, Addenda or deletions, including answers to questions raised by Bidders during the period prior to submission of bids, must be incorporated in the Bidder's Proposal together with the Bidder's Firm Price.

1.1 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 must 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.

The technical bid must demonstrate the crafts will be fully seaworthy, operable and fit in all regards for the purposes intended.

1.1.1 Government Supplied Material (GSM)

1. Two (2) E-Tec 115HP gasoline outboard motors will be supplied by DFO as Government Supplied Material (GSM).

2. Cruising speed:

Bidders must indicate the expected cruising speed in knots in normal load condition: _____

3. Maximum speed:

Bidders must indicate the maximum expected speed in knots in normal load condition: _____

4. The Contractor will be required to demonstrate that the outboard meet the speed specified above and the range and performance requirements of the TSOR during the test and trials.

Note: The engines will be shipped to the Contractor's facility within one (1) month of contract award.

1.1.2 Project Schedule

1. As part of its technical bid, the Bidder must propose its preliminary project schedule, in MS Project format or equivalent. The project schedule must include the Bidder's work breakdown structure, the scheduling of main activities and milestone events, and any potential problem areas involved in completing the Work.

2. The Bidder's schedule must also provide a target date for each of the following significant events for each boat:

- (a) hull materials delivered to Contractor and sustained construction commenced;
- (b) hull and deck completed, but not closed in to allow for full inspection of the structure and welding. The Contractor will be required to supply a hard copy of the material certs and construction drawings to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;
- (c) outfitting/electrical 75% complete but all equipment and components delivered to the Contractor and available for full inspection. The Contractor will be required to supply a hard copy of the list of equipment and electrical supplies to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;
- (d) technical manuals delivered to Canada for approval (no less than 14 days prior to the planned delivery date);
- (e) Contractor's tests and trial and final sea trials required by the TSOR;
- (f) boat and trailer delivered to Canada for approval;
- (g) the start and the end of the twelve (12) month warranty period.

Note: Technical Manuals will not be returned once approved.

3. The Contract is intended to be awarded at the beginning of **November 2014**.

1.1.3 Inspection and Test Plan (ITP)

1. Bidders must provide with their bid the inspection plan and testing procedures that will be used to verify, test and inspect all of the components and systems on the boat from initial construction to completion. The ITP must be in accordance with **Annex "E"** attached to this RFP.

2. Bidders must outline the process by which they will address and solve problems or delays with the fabrication, installations, testing and delivery of the boat.

1.1.4 Drawings and other documentation

The following must be included with the Bids:

- (a) calculated lightship weight;
- (b) general arrangement;
- (c) structural drawings showing deck plan, a centerline profile and frame station construction details;
- (d) detailed lines plan;
- (e) a drawing of the fuel supply arrangement.

1.1.5 Subcontractors

A list, in the form of the attached **Annex "C"** of subcontracts for labor and/or material must be included with the Bidder's Proposal, stating the name and address of each subcontractor, and a description (Make, Model No.) of the goods or services to be supplied by each.

1.1.6 Vessel Construction Experience

The Bidder must provide objective evidence that it has a proven capability in the construction of vessels of the size, type and complexity which is the subject to this RFP, by providing a detailed list of such boats built within the last five (5) years.

The technical bid must also demonstrate the firm has the facilities, management and the technical expertise.

1.1.7 Marine Drafting and Engineering Capability

The Bidder must provide objective evidence that it has either in-house capabilities, or has a written commitment for the duration of the Contract from a supplier to provide marine drafting and engineering services. The supplier must have the experience and capabilities on similar vessel construction projects (same size, type and complexity).

1.1.8 Contractor Quality Management System

1. The Bidder must provide objective evidence that it has a Quality Assurance Program, which must be in place during the performance of the Work, and which addresses the quality control elements below.

2. The objective evidence may be in the form of a copy of the Bidder's Quality Assurance Manual which addresses these elements. Proof of registration with a recognized quality assurance organization whose system addresses the minimum requirements below, may be submitted for consideration.

3. The Bidder must also provide a minimum of three (3) samples of completed quality records used on the most recent marine vessel construction at its facility.

4. The quality control elements must include, as a minimum:

- Management Representative
- Quality Assurance Manual
- Quality Assurance Program Descriptions
- Quality Reporting Organization
- Documentation
- Measuring and Testing Equipment
- Procurement
- Inspection and Test Plan
- Incoming Inspection
- In-Process Inspection
- Final Inspection
- Special Processes
- Quality Records
- Non Conformance
- Corrective Action

5. Bidder facilities may be audited by Canada, or its authorized representative, prior to award of contract to ensure that a system is in place in accordance with the foregoing requirement.

6. The Contractor will be required to submit completed quality assurance documentation with each claim for payment.

1.1.9 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 *Part 6 - Resulting Contract Clause 18*.

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.

1.2 Section II - Financial Bid

Bidders must submit their financial bid in accordance with the BASIS OF PAYMENT and the following articles. The total amount of the applicable taxes must be shown separately.

1.2.1 Exchange Rate Fluctuation

C3011T, 2013-11-06, Exchange Rate Fluctuation

1.2.2 Financial Capability

A9033T, 2012-07-16, Financial Capability

1.2.3 Firm Price

Bidders must indicate for each of the following Item, the Bid price excluding taxes.

| Description | Firm Price |
|---|----------------------|
| Item 1: One (1), 6.2m to 6.5 meter aluminum Workboat built in accordance with Annex "A" and Annex "D" | \$_____ (CAD) |
| Item 2: One (1) trailer built in accordance with Annex "A" and Annex "D" | \$_____ (CAD) |
| Item 3: Delivery of Workboat and trailer FOB Destination to Mont-Joli, Québec, Transportation Cost: | \$_____ (CAD) |
| TOTAL WITHOUT GST/HST | \$_____ (CAD) |

1.2.4 Cost Breakdown

1. Bidders must include with their financial bid a complete cost breakdown of its bid price for the Work. Each item of work or services in the TSOR is to be priced individually to indicate labour, material, overhead and profit. Each item of cost must be cross referenced to the matching article numbers of the TSOR.

2. The cost breakdown must itemize all costs included in its price for the Work in accordance with the Bidder's cost accounting or cost schedule system. Alternatively, Bidders may complete the attached **Annex "B"** which is the minimum amount of information required.

3. The information submitted as a mandatory item will be held as confidential business information. The details of this information may be used for contractual evaluation purposes and/or contract administration purposes.

1.2.5 Unscheduled Work

Bidders must provide the information requested in the Basis of Payment, *Part 6, Article 6.1 - Charge-out Rate / Material Mark-up*.

The unscheduled work rates will be included in the Basis of Payment, however it will not form part of the bid evaluation.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

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 Mandatory Technical Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements of the TSOR and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 1.1 Section I - Technical Bid.**

1.2 Financial Evaluation

SACC Manual Clause A0222T (2013-04-25), Evaluation of Price

2. Basis of Selection

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.

A mandatory requirement is described using the words "shall", "must", "will" "is required" or "is mandatory".

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

1. Certifications Required Precedent to Contract Award

1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labours website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

2. Additional Certifications Required 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 Welding Certification

1. 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:

(a) CSA W47.2-M1987(R2003), Certification of Companies for Fusion Welding of Aluminum division 2.1.

2. Before contract award and within five (5) calendar days of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its certification to the welding standards.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement applicable to this Contract.

2. Requirement

The Contractor must deliver to Department of Fisheries and Oceans Canada (DFO) one (1), 6.2 to 6.5 meter aluminum Workboat and trailer in accordance with the Technical Statement of Requirement (TSOR) - **Annex "A"** and Bidder Questions and Canada Responses – **Annex "D"**.

Delivery location:

Quantity one (1) Workboat and trailer to:

Maurice Lamontagne Institute
850 de la Mer Road
Mont-Joli, Québec
G5H 3Z4

(information will be provided at contract award)

Contact: _____ Phone number: _____

3. 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 (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2030, **2014-06-26**, Goods (Higher Complexity) apply to and form part of the Contract.

3.2 Supplemental General Conditions

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

Warranty

The Supplemental General Conditions 1028, Article 12 – Warranty, paragraph 3 is deleted and replaced with the following:

The warranty period for the propelling machinery and auxiliaries, fittings and equipment of all kinds (excluding GSM) is twelve (12) months and the warranty period for the hull is 24 months from the date of its delivery to and acceptance by Canada.

4. Term of Contract

4.1 Delivery Date

All the deliverables must be delivered on or before **February 27, 2015**.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Chantal Pilon, Supply Team Leader
Department of Public Works and Government Services Canada
Acquisitions Branch - Marine Sector
6C2, Place du Portage, Phase III
11 Laurier Street
Gatineau, QC. K1A 0S5
CANADA

Tel: (819) 956-4308

E-mail: chantal.pilon@pwgsc.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 Technical Authority *(information will be provided at contract award)*

The Technical Authority for the Contract is:

Name:

Title:

Address:

Telephone:

E-mail address:

The Technical Authority named above 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 *(information will be provided at contract award)*

The Inspection Authority for the Contract is:

Name:

Title:

Address:

Telephone:

E-mail address:

The Inspection Authority is the representative of the department or agency for whom the Work is being performed under the Contract and is responsible for inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada inspector who may from time to time be assigned in support of the designated Inspector.

6. Payment

6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ _____. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

Charge-out Rate / Material Mark-up

The following rates are included in the Basis of Payment and must remain valid for the duration of the contract:

1. The Charge-out Rate specified below includes all classes of labor, engineering and foreperson, and all overheads, supervision and profit. The Charge-out Rate will be used for pricing unscheduled work that results in an increase or decrease in the Work Period, except as noted in the clause entitled "Overtime."

Charge-out Rate - \$..... /person/hour

2. Overtime:

Occasionally, Canada may elect to authorize overtime, for Unscheduled Work only. If this is the case, and the rate is greater than the Charge-out Rate, cost of labor hours will be determined on the following basis;

Time and one-half rate: \$..... /person/hour

Double Time Rate: \$..... /person/hour

3. The cost of material must be the net laid-down cost of the material to which must be added a mark-up of 10% of the net laid-down cost of the material. For the purposes of pricing, Unscheduled Work and material must be deemed to include subcontracts.

6.2 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.

6.3 Field Engineering and Supervisory Services

If Field Service Representatives (FSR) and/or Supervisory Services are required for the Work, the cost of all such services is to be included in the price for the Work.

6.4 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.5 Milestone Payment

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

- (a) an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
- (c) all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

6.6 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

| Milestone No. | Description or deliverable(s) | % | Firm Amount |
|---------------|---|-----|-------------|
| A | Hull materials delivered to Contractor and sustained construction commenced | 30% | |
| B | Boat, trailer and technical manuals delivered and accepted by Canada | 65% | |
| C | End of the 12 month warranty period. Final acceptance | 5% | |

The milestones shown above must be included and identified in all production schedules.

The payment for the delivery, **Milestone "B"** must be payable by Canada upon delivery and acceptance of the boat, trailer and manuals by Canada, minus the holdback for double the total estimated value of any outstanding work items.

The holdback for outstanding work must be payable by Canada upon completion of the outstanding work and when the work is accepted by Canada.

The payment for completion of the twelve month warranty period, **Milestone "C"** must be payable by Canada upon completion of the warranty period of the vessel, minus the total cost of any work undertaken by Canada to repair any defects subject to warranty.

7. Invoicing Instructions

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) the description and value of the milestone claimed as detailed in the Contract;
- (d) Quality assurance documentation when applicable and/or as requested by the Contracting Authority.

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. The Contractor must prepare and certify one original and one (1) copy of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Contracting Authority will then forward the original of the claim to the Technical Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

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

8. Certifications

Compliance with the certifications 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 or 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 Welding Certification

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:

(a) CSA W47.2-M1987 (R2003), Certification for Companies for Fusion Welding of Aluminum division 2.1.

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

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 certification.

9. Project Schedule

1. The Contractor must provide an updated detailed project schedule in MS Project format or equivalent to the Contracting Authority and the Technical Authority **5 days after award of Contract**. This schedule must highlight the specific dates for the events listed below.

(a) hull materials delivered to Contractor and sustained construction commenced;

(b) hull and deck completed, but not closed in to allow for full inspection of the structure and welding. The Contractor must supply a hard copy of the material certs and construction drawings to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;

(c) outfitting/electrical 75% complete but all equipment and components delivered to the Contractor and available for full inspection. The Contractor must supply a hard copy of the list of equipment and electrical supplies to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;

(d) technical manuals delivered to Canada for approval (no less than 14 days prior to the planned delivery date);

(e) Contractor's tests and trial and final sea trials required by the TSOR;

(f) boat and trailer delivered to Canada for approval;

(g) the start and the end of the twelve (12) month warranty period.

Note: Technical Manuals will not be returned once approved.

2. The schedule is to be regularly updated and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

10. Progress Report

1. The Contractor must submit monthly reports on the progress of the Work in an electronic format to the Technical Authority and to the Contracting Authority.

2. The progress report must contain two (2) Parts:

(a) PART 1: The Contractor must answer the following three questions:

(i) is the project on schedule?

(ii) is the project within budget?

(iii) is the project free of any areas of concern in which the assistance or guidance of Canada may be required?

Each negative response must be supported with an explanation.

(b) PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:

(i) a description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.

(ii) an explanation of any variation from the schedule.

11. SACC Manual Clauses

B9035C - Progress Meetings, 2008-05-12

B5007C - Procedures for Design Change or Additional Work, 2010-01-11

D3015C - Dangerous Goods/Hazardous Products, 2007-11-30

D0018C - Delivery and Unloading, 2007-11-30

C0711C - Time Verification, 2008-05-12

H4500C - Lien - Section 427 of the Bank Act, 2010-01-11

12. Trade Qualifications

The Contractor must use qualified, certified (where applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Contracting Authority may request to view and record details of the certification and/or qualifications held by the Contractor's tradespeople. This request should not be unduly exercised but only to ensure qualified tradespeople are on the job.

13. Quality Management Systems

1. The Contractor must have in place a Quality Assurance Program approved by the Inspection Authority during the performance of the Work which addresses the quality control elements below.

2. The quality control elements must include, as a minimum:

- Management Representative
- Quality Assurance Manual
- Quality Assurance Program Descriptions
- Quality Reporting Organization
- Documentation
- Measuring and Testing Equipment
- Procurement
- Inspection and Test Plan
- Incoming Inspection
- In-Process Inspection
- Final Inspection
- Special Processes
- Quality Records
- Non Conformance
- Corrective Action

3. The Contractor's facilities may be audited by Canada, or its authorized representative, during the performance of the Work to ensure that the approved system is in place and in accordance with the foregoing requirement.

4. The Contractor will be required to submit completed quality assurance documentation with each claim for payment as applicable.

14. Post Contract Award/Pre-Production Meeting

Within three (3) working days of the receipt of the contract, the Contractor must contact the Contracting Authority to determine the details of a pre-production meeting. The meeting will be held at the Contractor's plant. Cost of holding such pre-production meeting must be included in the price of the bid. Please note that the travel and living expenses for Government Personnel will be arranged and paid for by the Canada.

15. Manuals

1. The Contractor must obtain and deliver to the Technical Authority, no later than fourteen calendar (14) days prior to delivery of each boat for approval all Data Books, Operating Instruction Books, Maintenance Manuals and Spare Parts Lists (including part numbers and ordering instructions) for all machinery and equipment fitted on the Vessel as required. Once approved by the TA, the Contractor will provide two (2) complete copies in accordance with and as specified in the **TSOR, Article 14.0 - Documentation**.

2. Where manuals are examined by Canada, such examination does not relieve the Contractor of any responsibility under the Contract for ensuring the correctness of all details and adequacy of performance of the Vessel, nor does it obligate Canada to accept, in part or in whole, an item of Work completed in accordance with such manual, nor does it mean such an item of Work meets the requirements of the TSOR.

16. Inspection, Test & Trials

1. During Construction of the vessel, the Contractor must arrange for regular inspections and upon completion of the construction of the vessel, the Contractor must arrange trials. All Inspections and test and trials performed must be in accordance with the TSOR and the **Annex "E"** - Inspection/Quality Assurance/Quality Control. The Inspection Authority must approve any additional testing not specified in the TSOR.

2. The Contractor must update as required the Inspection and Test Plan (ITP) provided with its bid and submit to the Contracting Authority and the Inspection Authority seven (7) days after contract award for review and amended by the Contractor to the satisfaction of the Inspection Authority.

3. Once approved, any modification to the ITP must be pre-approved by the Inspection Authority. A revised ITP will be required should any modification be made.

17. Government Supplied Material

As per TSOR, **Article 9.1.1**, the Contractor must install as per manufacturer recommendations the following GSM:

- (a) Twin (2) 115 HP E-Tec gasoline outboard engines.

Note: The engines will be shipped to the Contractor's facility within one (1) month of contract award.

18. Insurance Requirements

The Contractor must comply with the insurance requirements specified in **Articles 18.1** and **18.2** 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.

18.1 General Commercial Insurance

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.

(l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

(m) Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.

(n), (o), (p), (q) not used.

(r) 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.

18.2 Marine Liability Insurance

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 and 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 Fisheries and Oceans Canada 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.

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4. 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.

19. Applicable Laws

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

20. Priority of Documents

If there is a discrepancy between the wordings 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.

1. The Articles of Agreement;
2. The Supplemental General Conditions 1028, **2010-08-16**, Ship Construction Firm Price;
3. The General Conditions 2030, **2014-06-26**, Goods (Higher Complexity);
4. Annex "A" - Technical Statement of Requirement;
5. Annex "B" - Cost Breakdown;
6. Annex "C" - Subcontractors;
7. Annex "D" - Bidder Questions and Canada Responses;
8. Annex "E" - Inspection/Quality Assurance/Quality Control;
9. The Contractor's bid dated _____.

21. Acceptance

1. Canada's provisional acceptance for delivery of the vessel must occur with the execution of a certificate in accordance with form **PWGSC 1105** upon satisfactory completion of the vessel and all trials. The execution of the certificates must in no way relieve the Contractor of any obligations under the Contract.
2. It is understood and agreed that where the work has been substantially completed and the parties have agreed upon the terms and conditions for the Contractor to make good any deficiencies, the certificate referred to above may be executed with a statement attached concerning the rectification of the deficiencies by the Contractor.
3. Canada's final acceptance must occur upon completion of the twelve (12) month warranty period and settlement of all accounts between the parties in relation to the Contract.



Fisheries and Oceans
Canada

Pêches et Océans
Canada



DEPARTMENT OF FISHERIES AND OCEANS

ANNEX A

Technical Statement of Requirements Requisition number F7047-13-0044, provision of Quantity One (1), 6.2 to 6.5 m Aluminium Work Boat with cabin and trailer

September 18, 2014 Revision 1

**TRANSPORT CANADA MARINE SAFETY BRANCH (TCMSB)
TP1332 APPROVED CONSTRUCTION**

Canada



Document Control

Record of Amendments

| # | Date | Description | Initials |
|---|--------------------|----------------|----------|
| 0 | September 9, 2014 | Original Issue | KA |
| 1 | September 18, 2014 | Minor changes | KA |
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1.0 OVERVIEW

The Department Of Fisheries and Oceans (DFO) buys, manages and operates numerous small craft in support of its Departmental programs and other missions.

1.1 REQUIREMENT

- 1.1.1 The Contractor must design, fabricate and supply quantity one (1) Aluminum, Work Boat with trailer based on the current Transport Canada Marine Safety Branch (TCMSB) Marine Safety Publication TP 1332 “Construction Standards for Small Vessels” (hereinafter referred to as TCMSB TP 1332). The vessel must be powered by dual gasoline ETEC 115hp outboard motors.
- 1.1.2 The primary role of this vessel will be as a tender and general purpose boat for the Geomatic section, operating along the St-Lawrence River, positioning navigation Aids.
- 1.1.3 The secondary roles will be search and rescue and other fisheries enforcement duties such as boarding and surveillance duties within the reasonable capabilities for this type and size of craft.
- 1.1.4 This vessel will be shore-based and launched and recovered by trailer.

2.0 DESIGN AND CONSTRUCTION REQUIREMENTS

Unless stated otherwise all components, equipment and material must be contractor supplied. The hull, deck, cabin and structure must be constructed of Aluminum.

2.1 ERGONOMIC DESIGN

- 2.1.1 Hazardous operating conditions must be prevented by arranging machinery and equipment in a safe manner; providing guards for all electrical, mechanical and thermal hazards to personnel; and providing guards or covers for any controls that might accidentally be activated by contact of personnel.
- 2.1.2 The vessel must be designed and constructed to accommodate both male and female crew from approx. 5-2’ to 6’-0” in height, wearing cold weather clothing and equipment in accordance with ASTM F1166-07 Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities.
- 2.1.3 Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort. All equipment must be accessible for use, inspection, cleaning and maintenance.
- 2.1.4 Equipment must be accessible for use, inspection, cleaning and maintenance as per ASTM F1166-07.

2.2 VIBRATION

- 2.2.1 The vessel and all components must be free of local vibration that could endanger vessel personnel, damage vessel structure, machinery or systems, or interfere with the operation or maintenance of vessel machinery or systems.
- 2.2.2 Mounts for movable components, including items moved for stowage, towing or transport must be provided with resilient material as necessary to prevent rattling.

2.2.3 Loosening of fasteners under vibration must be prevented by the use of self-locking fasteners.

2.3 MATERIALS

2.3.1 All materials must be corrosion resistant and suitable for use in a salt water environment as detailed in the Operational Requirements. All materials normally subjected to sunlight must resist degradation caused by ultraviolet radiation. Galvanized materials are unacceptable.

2.3.2 Dissimilar Metals: Direct contact of electrolytically dissimilar metals is not allowed. Electrolytic corrosion must be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, or bushings of suitable insulating material.

2.3.3 Aluminium: Aluminium alloy types 5086-H32 must be used for plate; aluminium alloy 6061-T6 (anodized grade), suitable for type 5356 filler alloy, must be used for extruded shapes and welded tubing and pipe. Non-structural items of trim and outfit such as hatch frames, castings, consoles, and hardware items may be of other aluminium alloys suitable for commercial saltwater marine use such as dual rated 5083 / 86 or 5052 or 6063-T54.

2.3.4 Stainless Steel: Stainless steel type 316L or 316 must be used for all stainless steel applications except as noted. Alloy 316L must be used in any welded underwater components.

2.3.5 Fittings and clamps must be stainless steel. Bolts used in all fittings must be Type 316 stainless steel.

2.3.6 Where flexible connections are required for steering and fuel systems, suitable hose with permanently crimped, detachable reusable type fittings must be used.

2.3.7 All materials and equipment must be stored installed and tested in accordance with the manufacturer's guidelines, recommendations and requirements.

2.4 FASTENERS

2.4.1 All fasteners must be of corrosion resistant materials.

2.4.2 Cadmium plated parts and fasteners, including washers, must not be used.

2.4.3 Direct attachment of alloys containing copper to aluminium is not permitted except for an electrical bonding strap.

2.4.4 No fasteners must be directly threaded into Aluminum. Aluminium or Stainless steel washers or backing plates must be used as appropriate.

2.4.5 Where nuts will become inaccessible after assembly of the vessel, nuts must be captured or anchored to allow reassembly and prevent backing off. Unless otherwise specified, self-locking nuts must be installed to prevent loosening of fasteners due to shock and vibration.

2.4.6 Fasteners in deck traffic areas must be flush-mounted to eliminate tripping and snagging hazards.

2.5 STANDARDS

- 2.5.1 The vessel constructed under this TSOR must be fabricated in accordance with the current TCMSB TP 1332 “Construction Standards for Small Vessels” and where applicable the American Boat & Yacht Council (ABYC)
- 2.5.2 CSA C22.2 No. 183.2-M1983 (R1999) Standards for DC Electrical Installations on vessels and ABYC ‘E’ Electrical Standards.
- 2.5.3 CWB CSA\ACNOR W47.2; Division 2.1 certification for Aluminum Welding—latest revision.”
- 2.5.4 The Contractor must construct the vessel as per this TSOR and where this TSOR interferes or contravenes the above standard; the above TCMSB TP 1332 standard will take precedence
- 2.5.5 The Contractor must arrange for Technical/Inspection Authority site visits, during all phases of the vessels construction. The site visits are required to insure that the vessel constructed under this TSOR comply with the standards addressed in this TSOR. The Contractor must supply an electronic copy and one (1) hard copies of all drawings for the vessel design to the Technical Authority/Inspection Authority during construction inspection.
- 2.5.6 The Contractor must supply a signed letter insuring the proposed landing Craft/Sea Truck complies with TCMSB TP 1332 and a completed Small vessel Compliance Form (available from the TCMSB web site), to ensure compliance with the current TCMSB requirements.
- 2.5.7 Electrical systems for the vessel must be in accordance with TCMSB TP 1332 Section 8 “Electrical Systems”.
- 2.5.8 Canadian Coast Guard Fleet Identity Color Standard – FC 08-2007, Appendix B.

3.0 OPERATIONAL REQUIREMENTS

Unless otherwise stated, performance must be for conditions of zero sea state and no wind, in salt water in normal load condition. The vessel must be designed and constructed for ease of maintenance and repair, long life, and are to be easily supportable in the location of the delivery address of the vessel, by local commercial facilities and suppliers. The vessel must be expected to have a service life of at least ten (10) years, with an expected usage of between 400 and 500 hours per year.

3.1 CRUISING SPEED

- 3.1.1 The Contractor must indicate expected speed in knots in normal load condition.

3.2 MINIMUM SPEED

- 3.2.1 25 knots. The Contractor must indicate expected speed in knots in normal load condition.

3.3 RANGE

- 3.3.1 Minimum 150 nautical miles with 10% reserve at cruising speed.

3.4 STEERING AND MANOEUVERING

3.4.1 Capable of steering 15° from heading, in Beaufort Force 5, with seas from any direction.

3.4.2 Steer and manoeuvre effectively at 3 knots in Beaufort Force 5.

3.4.3 Maintain course, made good over ground, when proceeding at 3 knots with relative crosswind of 15 knots.

3.4.4 Be able to operate fully in depths of 1.0 metre with outboards fully lowered and be capable of basic manoeuvring in depths of 0.8 metre with the outboard motors in the partially raised position.

3.5 BEACHING

3.5.1 Capable of beaching on soft (sand, earth or clay) surfaces at a speed of up to 5 knots without damage to the hull.

3.5.2 Capable of beaching on hard (stone or concrete) surfaces at speeds of up to 3 knots without damage to the hull.

3.6 ENVIRONMENTAL CONDITIONS

Capable of operating day or night in the following conditions:

3.6.1 Average ambient air temperature range: -5° C to + 30° C

3.6.2 Average water temperature: 0° C to +20° C.

3.6.3 Wave heights of 2 meters to 2.5 meters (WMO Sea-State 5).

3.6.4 Wind speeds of 17-21 knots minimum.

3.7 LAUNCHING, RECOVERY & TRANSPORTATION

The vessel must be readily road transportable on a trailer, must be able to be launched and recovered using the trailer at existing launch ramps.

3.8 MAINTENANCE

The vessel must be designed and constructed for ease of maintenance and repair, long life, and be easily supportable by local commercial facilities and suppliers.

4.0 PHYSICAL CHARACTERISTICS

4.1 VESSEL PARTICULARS

4.1.1 Length overall between - 6.2 & 6.5 metres (not including bolt on Motor well)

4.1.2 Breadth overall – between 2.4 & 2.6 metres maximum

4.1.3 Depth – Minimum 0.76 metres

4.1.4 Draft at propellers (max) – 1.0 metre (normal load condition)

4.1.5 Hull form – V - hull.

4.1.6 Deadrise measured at transom must be 16-18 degrees.

4.1.7 Vessel style – Work Boat with Cabin

4.1.8 Propulsion – Twin 115 hp E-Tec outboards with 25" shafts (GSM)

4.1.9 Fuel capacity = Minimum 200 litres in one (1) or two (2) tanks, (~175kg total weight)

4.1.10 Displacement (in normal load condition) between 2800kg and 3400kg.

4.1.11 Normal load condition:

4.1.11.1 Crew of 4 with Kit = 440kg

4.1.11.2 Fuel = Minimum 200 liters in one or two tanks, (Total 175kg)

4.1.11.3 Equipment & supplies = 200kg

4.1.12 Overall height on trailer for transport – NOT to exceed 3.50 metres.

5.0 VESSEL CONFIGURATION

5.1 GENERAL ARRANGEMENT

Large open forward working deck. Length of deck working space to be minimum 2.5m. Aft cabin arrangement with cabin offset to the starboard side. A deck passageway will be provided on the Port side of the cabin for ease of access from the aft deck to the forward deck. The aft cabin bulkhead will be located approximately 1m from inside edge of transom bulwark to allow for a 180 degree swing of the cabin door.

5.2 HULL

- 5.2.1 "V" style monohull with a reverse chine flat and hull bottom to incorporate minimum one substantial (~1" vertical, aft, located approx mid bottom panel) or two smaller spray strakes on the bottom, per side, which run out to the stem.
- 5.2.2 Minimum hull deadrise angle, measured at the transom, is to be 16 to 18 degrees. Deadrise angle, measured at 25% of Length overall aft from chine-at-stem, is to be not less than 24 degrees.
- 5.2.3 Hull shape must not impede water flow to the propulsion units and must direct spray and waves away from on board personnel.
- 5.2.4 Barge bow - The bow at top of bulwarks must be squared off athwartships, this will maximise the internal working deck area and facilitate ease of boarding. The hull must be flared to the top of the bulwark maximising sea spray dispersion away from on board personnel. Any railings or stanchions fitted must be completely removable with sockets flush to top of bulwark.

5.3 DECK LAYOUT

- 5.3.1 Forward working deck drainage scuppers must be of a size to allow sufficient drainage of exposed deck surfaces per TP 1332 and ISO.
- 5.3.2 Top of bulwarks must be flat across their width and be approximately 150 mm wide around the perimeter of the vessel.
- 5.3.3 A bolt on motor splash well with effective dam must be fitted at the stern to accommodate the two outboard engines. It must drain overboard. Not to be considered in length overall measurement.

5.4 CABIN

- 5.4.1 The cabin will be offset to the starboard side to allow for personnel egress from the aft deck to the forward deck on the port side.
- 5.4.2 Cabin minimum dimensions must be 1.5m wide and 2.0m long to accommodate four seated crew members and maximise cabin storage space. The cabin will have at least 183 centimetres of headroom, (6' 0").
- 5.4.3 The aft bulkhead of the cabin must be equipped with a lockable weather tight door aft with a vertical sliding aluminium framed window. The door must open to the aft deck and swing 180 degrees with positive retention in the open position. All locks and hardware must be 316 stainless steel construction.

6.0 OUTFITTING – GENERAL

The interior of the cabin must have an operator's console and a navigator's dash for a working area.

6.1 OPERATORS CONSOLE

An operators console must be located in the cabin on the starboard side of the vessel with a steering system capable of handling the horsepower of the vessel.

6.1.1 The console must be fitted with all appropriate gauges as recommended by the propulsion-system manufacturer, as a minimum the following gauges are to be provided on the console:

- 6.1.1.1 Fuel gauges as required.
- 6.1.1.2 Tachometer for each engine
- 6.1.1.3 Volt meter for each engine
- 6.1.1.4 Tilt/trim gauge for each motor
- 6.1.1.5 Hour Meters for both outboard motors
- 6.1.1.6 Battery condition/ voltage meters for each battery

Note: Bidders must design the console to incorporate the gauges and instruments they recommend for effective operation of the boat. The government will supply twin (2) 115hp gasoline outboards. Bidders must supply and install the controls and gauges that are recommended by the outboard manufacturer for operation of the engines.

6.1.2 The throttle (single lever) control station must be on the starboard side of the console.

6.1.3 The console top must be of sufficient size to accept mounting of a VHF radio and a top mount binnacle compass. The remainder of the console top must be sloped 30-45 degrees for operator ease and to accommodate the steering wheel, engine controls, switch panel, ignition system and gauges.

6.1.4 Alarms are to include: bilge compartment flood alarm, oil pressure alarm, engine temperature alarm.

6.1.5 Two (2) 12-volt cigarette lighter-style auxiliary power outlets (one on port dash and a second on the stbd dash.

6.2 STEERING SYSTEMS

Must be remote hydraulic with self-contained oil reservoir, and replaceable seals on the rams, with a maximum of 4.0 turns from hard over to hard over. (The SeaStar® and / or DayStar steering systems, depending on vessel horsepower, from Teleflex meet this requirement). Particular propulsion systems may have their own requirements for steering which must be adhered to.

6.2.1 All hydraulic steering hoses must be routed in such a manner that they are protected from physical damage and so that there is no pinch or chafing points on the hoses.

6.2.2 Hydraulic hoses must be of sufficient size and length to prevent pulsing. Hoses must be suitable for use in an exposed marine environment complete with stainless steel fittings.

6.2.3 The wheel / console connection must be of robust construction, to eliminate fore and aft or lateral movement of wheel / steering shaft fixture.

6.2.4 The Steering wheel must be stainless steel and may be rubber or plastic covered. The Steering wheel must be stiff enough that during rough water operations there is no flexing of the wheel and the wheel should be

padded to provide a comfortable non-slip surface for the operator to grip.
 (Momo Marine steering wheels meet these requirements)

6.3 CABIN SEATING

Seating must be provided for 4 personnel in the wheelhouse via Two (2) forward shock mitigation seats and two (2) standard seats.

 6.3.1 The shock mitigation seats must be grey in color, adjustable in height and from front to rear with foot, folding arm, back and head rests. Bentley brand Mariner seats or equivalent. The seats are to be designed to support a person of 150 kg and made of rugged Naugahyde or equivalent fabric resistant to tearing, punctures and suitable for a marine environment.

6.4 CABIN WINDOWS / ACCESS

The cabin must be fitted with proven manufacturers aluminium framed windows of Laminated-Tempered Safety glass sized to maximize visibility and as follows;

 6.4.1 Two (2) forward fixed windows, raked forward from deck, minimum 3/8" thick glass.

 6.4.2 Two (2) side sliding windows minimum 1/4" glass. One (1) port and one (1) STBD, opening from the forward side with positive retention when open or closed. Windows to be raked forward to maximise visibility.

 6.4.3 Two (2) aft fixed windows one on either side of the door minimum 1/4" glass.

 6.4.4 One (1) lockable weathertight door aft with a locking and vertical sliding aluminium framed window. The cabin door must have positive retention in the open position with lockset. All locks and hardware must be of stainless steel construction.

 6.4.5 One (1) Bomar 'ocean' class Lexan panel, aluminium framed hatch (approx 20" sq.) on the cabin top, located towards the aft. Hatch to open aft, hinged on forward side.

6.5 WIPERS

Two (2) wipers with pantograph arms and a wiper washer system are to be installed on each fore window. They are to be activated individually by a switch on the console - 4 positions (stop-slow-fast-intermittent).

6.6 GRAB HANDLES

Must be located in the following locations:

 6.6.1 Two (2) on the dash in way of the operator and navigator positions.

 6.6.2 One (1) overhead in the cabin running fore and aft on centerline of cabin.

 6.6.3 Two (2) on the exterior of the cabin on either side of the aft door.

 6.6.4 Around the exterior perimeter of the cabin top.

 6.6.5 On the exterior port and forward sides of the cabin for personnel egress from the aft deck to forward deck.

6.7 MOORING CLEATS

Must be fitted mounted port and stbd on the top of the bulwarks;

 6.7.1 Two (2) aft at the transom, two (2) just forward of the forward cabin bulkhead, two (2) just forward of midships and two (2) at the bow.

 6.7.2 Cleats must be of aluminum or stainless steel, with a doubler plate to increase strength.

6.8 TOW POST

A cruciform towing post must be fitted aft, at the transom (2500 pound tow capacity minimum) and must extend approximately 0.3 metre above the engines. Sufficient barrier protection must be provided to protect from potential recoil of the towline. The tow post to be stamped with the Safe Working Load (SWL) and the paint must be highlighted.

6.9 LIFTING LUGS

The vessel is to be fitted with four (4) lifting lugs, certified and tested at 150% of normal load condition and supplied with certified lifting bridles. The lugs and bridles must be capable of lifting the vessel when fully loaded with all the necessary safety equipment and full of fluids.

6.10 STOWAGE

Stowage for items of equipment must be provided in void spaces beneath seats, console, on deck below top of bulwark, and anywhere practicable to maximize storage space. In particular trays and clips for the storage of paddles, pike poles etc must be fitted along the inner sides under the top of bulwarks.

6.11 HANDRAILS

The vessel must be fitted with welded stainless steel, removable bow, side and stern rails, flush mounted to top of bulwark. Upon removal of the rails, the top of bulwark must be flat and free of any edges that may catch or impede loading or egress operations. In way of the cabin and on the port side the rails must allow for egress on and off the vessel with a chain and a snap hook to provide access to the passageway on the side of the cabin.

6.12 CABIN TOP ARCH

The cabin roof is to be equipped with an aluminium arch (U-shaped style, 8 inches wide), painted the same color as the cabin and according to the same procedure. This arch will serve as the basis to install the antennae for electronic equipment, radar and other equipment. The arch is to be installed on the fore section in such a manner as to pass wires for equipment without having to use an individual cable grommet.

6.13 CABLE TUNNELS

Tunnels / channels must be installed to pass electric cables are to be internally mounted, equipped with easy to remove covers and of adequate dimensions to pass other wires for future equipment.

7.0 HULL

All structures and components (hull, deck, seating, etc.) must be of sufficient strength to withstand when in the Normal Load Condition, the lateral and vertical impact-loading that equates to the conditions of the operational requirements.

7.1 Vessel to have a continuous exterior welded hull, deck, and cabin. Framing welds must be continuous in areas subject to vibration in the vicinity of machinery bed plates and bow areas subject to impact.

7.2 The hull and decks are to be transversely framed and longitudinally stringered, with minimum 1/4" bottom and chine plating and minimum 3/16" side plating.

7.3 Vessel to have a continuous exterior welded hull, deck, and cabin. Framing welds must be continuous in areas subject to vibration in the vicinity of machinery bed plates and bow areas subject to impact.

7.4 The hull design must be such that it has a sufficient number of watertight

compartments to maintain adequate stability and positive buoyancy when the vessel is swamped and in the loaded condition.

- 7.5 Watertight bulkheads must be fitted immediately forward and aft of the fuel tank.
- 7.6 The deck above the watertight compartments must have bolted, watertight access plates / hatches for easy removal to allow for repair of tanks and buoyancy compartments beneath, and separate cover plates (minimum 8" diameter) for inspection access to the fuel system components as well as quick accesses for utilities and as required by TP1332.
- 7.7 Beaching Shoe - An aluminum protective beaching shoe must be fitted the full length of the keel, extending a minimum of 100mm on both sides of the keel, to protect against damage from grounding or similar hazards. This shoe must not detract from performance or sea keeping capabilities, and it must be capable of withstanding the horizontal and vertical impact loading associated with the boats operational requirements.
- 7.8 A bow eye for towing/trailing to be fitted on the stem of the vessel.
- 7.9 Two (2) Transom eyes to be fitted for securing the vessel on the trailer.
- 7.10 "D" rubber fenders are to be installed around the exterior perimeter of the vessel at top of bulwarks and leading edge of bow.
- 7.11 A Transducer bracket must be installed for the sounder.

8.0 LIFESAVING & EMERGENCY EQUIPMENT

The following items must be provided with appropriate stowage / securing arrangements (as appropriate for each item). All fittings, contractor supplied, must be heavy duty, corrosion resistant 316 stainless steel fittings. All items must be readily accessible (the foot pump and the repair kits must be stowed in a stowage locker). All items must be readily accessible.

- 8.1 A water-resistant flashlight and a set of spare batteries.
- 8.2 Two (2) paddles.
- 8.3 One (1) extinguisher (Class 5BC, marine type) with mounting bracket installed on craft.
- 8.4 Anchor (Fortress FX7 model or equivalent) with 200 feet of $\frac{3}{4}$ line and a 5 meter galvanized chain.
- 8.5 Sea anchor and line.
- 8.6 Four (4) 25-foot mooring lines.
- 8.7 Four (4) 6 inch diameter fenders.
- 8.8 Transport Canada approved first aid kit
- 8.9 Air horn.
- 8.10 Buoyant heavy line of at least 15 meters.
- 8.11 Six (6) TCMSB approved flares, among which at least three (3) must be type A, B or C.

9.0 SYSTEMS GENERAL

9.1 PROPULSION

- 9.1.1 Outboard motors will be Government Supplied Materiel (GSM) twin (2) 115 HP E-Tec gasoline outboard engines. The Contractor must install the outboards, supply and install the controls for the outboards.

9.1.2 The engines must be installed, mounted and operated in accordance with the engine manufacturer's recommendations by the Contractor. The Contractor must supply and install the engine manufacturer's approved accessories and equipment. Equipment and components must not be used, or trials performed on the engines that would, in any way, void the engine manufacturer's warranties.

9.2 PROPELLER(S)

9.2.1 Four (4) identical propellers (two (2) spares) must be provided by the contractor (CFM) for the vessel built.

9.2.2 Propeller(s) must be properly sized and contractor installed.

9.2.3 The Contractor must inform the Technical Authority of appropriate pitch and diameter to meet the Performance Requirements as determined by the contractor developed design check.

9.2.4 The propellers must be of stainless steel.

9.3 CONTROLS

9.3.1 Propulsion control system installation must include a dual binnacle engine controls located on the starboard side of the helm console. The controls must conform to engine manufacturer's recommendations and must not interfere with any of the other controls.

9.3.2 Engine package must incorporate a lanyard style automatic shutdown feature (kill switch) for the engines, to be mounted near the ignition switch

9.4 ALARMS

Monitoring system for the engines must include the following alarms:

9.4.1 Oil level gauge, for the remote tank;

9.4.2 Coolant flow alarm, if applicable;

9.4.3 Engine overheat/high temperature alarm.

9.5 VERIFICATION OF INSTALLATION

Installation of the motors, controls, lubrication and fuel systems, manometers, battery connections, are to be verified by an authorized technician. The motors are to be started by the authorized technician, who must provide a written report with a copy for the Technical Authority.

9.6 ENGINE BREAK-IN

The Contractor is to respect the engine manufacturer's break-in procedures.

9.7 PROTECTION OF CONTROLS

All control cables, electrical wiring for the motors and the steering hydraulic hoses are to be installed in UV resistant plastic pipes (LOOM) or equal. These pipes are to be installed in such a manner as to ensure that no cable is immersed in water.

9.8 FUEL SYSTEM

The complete fuel systems must be supplied, installed, labeled and tested in accordance with Section 7 of TCMSB TP 1332 and ABYC specifications.

9.8.1 The fuel system must include two (2) Racor filter/separators with see-thru bowls, suitable for fuel supply to the twin gasoline outboard motors.

9.8.2 All fuel valves must be readily accessible and labeled as per TCMSB TP 1332.

- 9.8.3 Locking Fuel filler must be located in an accessible watertight / vented compartment designed to catch fuel from over filling or blow back, so that the fuel does not enter the vessel as per TCMSB TP 1332 requirements.
- 9.8.4 Remote fuel shutoff maintenance valves are to be installed at filter/ manifold system and be easily accessible by vessel operators.
- 9.8.5 shutoff valves must be installed in accordance with TP1332 and ABYC requirements, remote from the fuel tanks and engine compartments. Labeled as per TCMSB TP 1332 requirements.
- 9.8.6 The fuel tank must be equipped with an anti-syphon valve installed on the suction.
- 9.8.7 Fuel tank vent pipes are to be equipped with a non-return check valve.

9.9 Fuel Tank

- 9.9.1 The vessel must be fitted with one (1) or two (2) fuel tanks with baffles as necessary.
- 9.9.2 The tank must be aluminum and fitted below the deck.
- 9.9.3 The total capacity must be a minimum of two hundred liters (200) liters.
- 9.9.4 Fuel Tanks are to be hydrostatically tested, or air tested to 3.0 p.s.i. and be labelled per the requirements of TP1332.
- 9.9.5 Fuel tank(s) must be fitted with fuel level/capacity sender unit and a gauge on the dash of the console for the operator.
- 9.9.6 The fuel tank(s) is(are) to be equipped with anti-siphon valve(s) installed on motor inlet if flow rate meet the manufacturer's requirement.
- 9.9.7 In the event that the boat is fitted with two (2) fuel tanks, the vessel must be equipped with cross-over valves to allow the engines to procure fuel from any tank. These valves are to be clearly identified.

10.0 ELECTRICAL SYSTEM

The electrical system design, component selection and installation must be in accordance with Canadian Standards Association C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats", and TP1332 and/or ABYC 'E' as referenced by TP1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications. Electrical equipment identified as required to be waterproof (e.g. console switch panel) will be deemed acceptable if it meets with IP66. Incorporating a waterproof breaker panel with a minimum of ten (10) circuits fitted. The Contractor must ensure that the breaker panel has 10% expansion room or a minimum of two (2) spare breakers (whichever option is greater).

- 10.1 Twelve Volt (12V) DC distribution system must be provided to power the engines starting and vessel service loads including:
 - 10.1.1 Navigation lights;
 - 10.1.2 Exterior Lighting;
 - 10.1.3 Navigational equipment;
 - 10.1.4 Instrumentation;
 - 10.1.5 Bilge Pumps;
 - 10.1.6 Electronics; and
 - 10.1.7 Communications.

10.2 All fitted electrical equipment must be capable of operating simultaneously with any other fitted electronics equipment without causing interference to any electronic equipment or to the magnetic compass.

10.3 All electrical equipment must be readily accessible for performing maintenance.

10.4 Two (2) marine quality 12V power outlets must be installed on or near Operator's console.

10.5 CABLES

10.5.1 Cables must be grouped into wiring harnesses wherever possible. All wiring harnesses must be routed through protective conduit pipe. Where impractical cables and conductors must be supported with clamps or straps at least every 18 inches on horizontal runs and every 14 inches on vertical runs.

10.5.2 Cabling / conductors passing through watertight boundaries, decks, bulkheads or other exposed surfaces must be installed to maintain watertight integrity of the structure. Cable entry into watertight enclosures must be through watertight marine glands of suitable size.

10.5.3 Cabling / conductors passing through structures without watertight glands, must be protected against chafing by the use of abrasive resistant grommets.

10.5.4 Routing cables through foamed spaces must be avoided wherever possible. Cables that must be routed through foamed spaces must be run in PVC conduit pipe. The pipe must be arranged in a manner that prevents water from becoming entrapped in the pipe.

10.6 Batteries, Switches & Charger:

10.6.1 The vessel is to be equipped with a system of two type M30MF deep-cycle batteries with a selector switch and connected in accordance with the motor manufacturer's technical specifications.

10.6.2 Batteries must be marine grade glass mat or gel type maintenance free to eliminate leakage, and a minimum 800 deep-cycle cranking amps.

10.6.3 A battery charger is to be supplied and installed on the vessel. It must be used to charge both battery banks when the vessel is on shore power.

10.6.4 Battery switches must be recessed to prevent snagging or accidental switching.

10.6.5 Battery compartments must be watertight and fitted with a suitable means of gas venting.

10.7 Bilge Blower: The vessel must be fitted with a 12V DC bilge blower system in accordance with TCMSB TP 1332 "Construction Standards for Small Vessels" and ABYC specifications. The bilge blower system must be controlled by a separate watertight switch and fuse located at the operator's console.

10.8 Shore Power Service

10.8.1 A shore power connection must be fitted complete with a marine grade service rated 50-ft shore power cable, capable of supplying 120V AC, 30 ampere, single-phase service.

10.8.2 The vessel's shore power receptacle must be a marine-style locking 30-amp waterproof male receptacle in a location that is accessible with all hatches closed.

- 10.8.3 Shore power must be connected to an AC distribution panel on the vessel. Each AC circuit must have its own breaker. This distribution panel will supply the following:
 - 10.8.3.1 Battery charger;
 - 10.8.3.2 One domestic plug approve type, 15 A outside cabin;
 - 10.8.3.3 One cabin light; and
 - 10.8.3.4 Two spare circuits.
- 10.8.4 Cable Installation: Cables and conductors must be supported with clamps or straps at least every 12-18 inches on horizontal runs and every 14 inches on vertical runs. Cable runs in PVC fire retardant LOOM as deemed acceptable by TCMSB TP 1332 requirements.
- 10.9 Lighting:
 - 10.9.1 Backscatter of console lights must be minimized in the design. In all cases, progressive marine grade dimmers must be fitted wherever practicable, with the capability of dimming engine monitoring gauges and other indicators separately from compass illumination.
 - 10.9.2 Vessel must be fitted with three (3) marine grade floodlights suitable for illuminating two (2) forward and one (1) aft deck spaces. (The ITT Halogen Floodlight, Model 45900-0000 Bracket Mount, Trapezoidal beam, 12 volt, 15 cm x 10 cm, meets this requirement).
<http://www.jabsco.com/products/marine/index.htm>
 - 10.9.3 Navigation lighting must conform to CSA Collision Regulations.
 - 10.9.4 Navigation lights must be permanently fitted and must be waterproof.
 - 10.9.5 The fixtures must be of such a design as to resist the effects of vibration and moisture and must be provided with adequate protection from damage, which may occur when laying along side a vessel or a pier.
 - 10.9.6 The navigation lights must be mounted so as not to interfere with vision of the operator.
 - 10.9.7 Non-white lighting must be wired together on a separate breaker of the 12-volt DC electrical system. All around Mast /Anchor light must be on the cabin roof. Two switches on the dash to be provided and labelled: Nav 1 (masthead / anchor) and Nav 2 (sidelights).
 - 10.9.8 Fitted searchlights: one (1) required as a minimum and must have remote control slew/tilt/focus capability, allowing 360° coverage. Fitted searchlights must produce at a minimum 200,000 Candelas each. Mounting must minimize interference with operator's vision. Fixtures must be designed to resist the effects of vibration and moisture and must be protected from damage while laying alongside or while underway. Searchlight Jabsco 233SL, Model 60233-0000 will meet this requirement.
 - 10.9.9 Handheld rechargeable Searchlights: one (1) required as a minimum producing 2 million candelas at 12 volt.
- 10.10 Pumping and Drainage
 - 10.10.1 Electric bilge pump with 2000 gallons per hour (gph) capacity must be fitted in each watertight division as well as a fixed manual operated diaphragm type bilge pump. The bilge pump must be located so that it takes suction from the lowest point of the hull. Piping will allow the bilge

pump to discharge directly overboard. An automatic control must be fitted that turns on the electric bilge pump when water is present in the bilge. The electric bilge pump control switch must be located on the operator's console, with settings for 'on', 'off' and 'automatic' operation. An indicator light and an audible alarm must be installed at the console that lights when the bilge pump is operating. Bilge pump(s) must be wired direct to battery, so that it is constantly active as per TCMSB TP 1332 requirements.

10.10.2 Hull drainage - a non-corrosive threaded plug must be provided in the lowest point to drain the hull when out of the water.

10.10.3 Valves and handles must be bronze or stainless steel and must be located where they are readily accessible for operation, maintenance or removal.

10.11 Magnetic Compass

The Contractor is to supply and install a Ritchie-Helmsman 740 Series or equivalent – mounted in the Operator's console. Non-white (red or green) lighting connected to the 12 volt DC electrical system. System must be supplied with its own waterproof marine-grade dimmer switch. Compass must be adjustable for deviation.

11.0 ELECTRONIC AND NAVIGATION EQUIPMENT

The Contractor must supply and install the following electronics. All antennas must be mounted on cabin top arch with fold down connections for road travel. All cable penetrations must pass through a watertight gland.

11.1 NAVIGATION ELECTRONICS

The following must be contractor supplied and fitted:

11.1.1 Garmin GPSMAP 721xs complete with GPS receiver, depth sounder, G2 Bluechart map software, chart card and transducer.

11.1.2 ICOM M604 VHF with DSC capabilities radio. Complete with loud hailer/intercom function plumbed to Radio. VHF must be connected to GPS via NMEA to complete DSC capabilities.

11.1.3 External powered speaker for ICOM radio.

11.1.4 Shakespeare – 5247A VHF antenna.

11.1.5 Licensed charts for the area of operation; charts must be compatible with the system installed.

11.1.6 Horn – The Contractor must supply and install an electric horn that meets the requirements of the Collision Regulations, Rule 32 is met with a standard small vessel 'horn' audible 0.5 NM. The horn must be installed on the vessel exterior with the 'horn' facing forward. The horn must be operated by a spring-loaded switch located on the operator's console.

12.0 PAINTING AND CORROSION PROTECTION

See Appendix B for paint color definitions, FC 08-2007.

12.1 The craft's exterior hull above rub rail and cabin must be white: RAL 9003.

12.2 The hull must be coast guard red: RAL 3000.

12.3 The interior of the bulwarks and interior must be white: RAL 9003.

12.4 Aluminium components must have a painted finish on all specified exterior and interior surfaces, comprised of suitable etch, primers, and topcoat per the Vessel

Particulars. Typical single coat paint systems can be applied in the 5 mil thickness range per coating. Typical system components would be: a) etch-primer; b) two (2) coats of primer; and c) minimum single top coat.

- 12.5 Surface preparation and paint application must be in accordance with manufacturer's instructions.
- 12.6 Paint colors for the boat must be in accordance with Appendix B: FC 08-2007: Canadian Coast Guard Fleet Identity Color Standard.
- 12.7 All forward side deck, cleats, bollards, or fittings to be painted flat black (RAL9004), unless fold down stainless steel construction. As per Appendix B: FC 08-2007.
- 12.8 Prior to delivery the Contractor must ensure that all non-painted exposed aluminium is free of cosmetic blemishes, including all construction marks, scratches, gouges and stains.
- 12.9 The diagonal stripe, white: RAL 9003, must be applied at an angle of 60 degrees to the vertical. It must lean forward on both sides, and go from the lower left to the upper right on the starboard side of the vessel, and lower right to upper left on the port side of the vessel.
- 12.10 The stripe must be bordered on either side by a delineating fine black line, RAL 9004. The total width of this diagonal stripe (excluding the delineating black lines) must be approximately one fifteenth of the overall length of the vessel. The diagonal stripe must be normally located in the middle third of the diagonal hull length. The forward top corner of the diagonal stripe must start at a point on the edge of the deck in line with the most forward part of the superstructure at deck level.
- 12.11 The delineating black lines, RAL 9004, on each side of the white stripe must measure 1/30 of the horizontal width of the white stripe.
- 12.12 The hull must be protected with zinc anodes, bolted on as applicable to the craft.
- 12.13 Surface finish of the entire weather exposed decking and tops of bulwarks must be non-skid/non-slip.

13.0 TESTS & TRIALS

13.1 TESTS - GENERAL

The Contractor must inspect and test the following items, as a minimum, for adherence to the Contract requirements and proper operation (proper operation means that the equipment can be started, operated, connected together and demonstrated to function in a normal fashion, as applicable). All discrepancies must be corrected prior to delivery. The required inspections and tests are minimums and are not intended to supplant any controls, examinations, inspections or tests normally employed by the contractor to assure the quality of the vessel:

- 13.1.1 Weight;
- 13.1.2 Construction Quality;
- 13.1.3 Lifting Gear, if applicable;
- 13.1.4 Propulsion Engines, including starting;
- 13.1.5 Propulsion Controls;
- 13.1.6 Steering System;
- 13.1.7 Fuel System;

13.1.8 Electrical System;

13.1.9 Electronics.

13.2 SEA TRIALS - GENERAL

13.3 Sea trials must be conducted by the contractor to demonstrate the vessel and its equipment conform to the requirements as stated in the Contract. All expenses incident to the trials must be borne by the contractor, including fuel unless otherwise specified. A crew provided by the contractor must operate the vessel during sea trials.

13.4 All Sea Trial instrumentation and equipment must be furnished and operated by the contractor. Trial instrumentation, where applicable, must not replace the vessel's instruments (e.g., engine tachometer, pressure gauges, and thermometers). The Contractor must furnish all necessary hardware and fittings and must install the measuring devices. After satisfactory completion of the trials, all instrumentation must be removed and all systems restored to their original condition. The Contractor must provide two (2) copies of the calibration data certifying the accuracy of the instrumentation for the tests and include it in the technical publications (see section 9.6).

13.5 The Contractor must submit a Test & Trials Plan, including a description of all of the acceptance trials to be performed. As a minimum, Using Appendix A, modified to suit this vessel, the following trials must be conducted: (the vessel must operate in the Normal Load Condition.)

13.5.1 Speed Trials - The speed trials must be done over a course at least one (1) nautical mile in length. Two (2) runs must be made over the course, one (1) in each direction with the speeds for the two (2) runs averaged. The use of GPS data (averaged) is acceptable.

13.5.2 Endurance Trial - The vessel must operate at maximum speed for a minimum of ten (10) minute intervals in the Fully Loaded Condition over one (1) hour period considering the break in procedures of the equipment. During the endurance trials, it must be demonstrated that all parts of the propulsion system are in full operation. All systems must be operated to check for proper lubrication, control and alignment. Fuel consumption must be recorded for the one-hour trial

13.5.3 Astern Propulsion - The vessel must be operated and manoeuvred using astern propulsion to establish the astern performance. During the backing performance tests the throttles must be set to provide 1/3 of the rated engine horsepower. In order to demonstrate astern performance of the engines in an emergency stop and to test the strength of the foundations, the engines must be subjected to two stops from full power ahead at maximum speed to dead in the water using reverse thrust. Time required to perform this trial must be recorded.

13.5.4 Steering Gear - Tests must be conducted on the steering gear to demonstrate the adequacy of the steering system under all operations. Manoeuvring tests must be performed to ensure that the vessel meets the stated requirements. Manoeuvring trials must be conducted in the Normal Load Condition and repeated in the Full Load Condition.

13.5.5 The Contractor must provide a Tests & Trials Sheet, (Appendix A) and

- include this sheet in the technical publications (see section 9.6).
- 13.5.6 Public Works and Government Services Canada Contract Authority and Technical Authority must be notified no less than two (2) weeks prior to sea trials. The Technical Authority will witness and attend the sea trials. Sea trial results must be forwarded to the Technical Authority prior to delivery of the vessel.
- 13.5.7 At the conclusion of sea trials the vessel must be thoroughly cleaned and inspected. Engine cooling systems must be flushed through with fresh water. The Contractor must repair any damage to the vessel or ancillary equipment resulting from sea trials, to the satisfaction of the Technical Authority.
- 13.5.8 For the purpose of the trials, Normal Loaded Condition must be considered to be the basic vessel, fitted with all normal equipment, full fuel, with complement and loads per Vessel Particulars, (see section 4.1).
- 13.5.9 Final Inspection and Acceptance (PWGSC Acceptance Document) for delivery Final Inspection must not be performed until all tests have been satisfactorily completed with data available for review. The vessel must be ready for delivery in all respects, except for final preparation for shipment. The Contractor must provide personnel, as required, to resolve questions and to demonstrate equipment operation maintenance accessibility, removal and installation. The Contractor must document the results of the Final inspection and provide these results to the Contracting/Technical Authorities, a hard copy of the trial results must be shipped with the deliverables for the vessel. Where applicable, serial numbers and other identifying information must be recorded for the vessel and engines, supplied to the Contracting/Technical Authorities.
- 13.5.10 Stability examination per TCMSB TP1332 will require the Contractor to record all stability calculation and trial results and place a copy in the technical manual, and provide two (2) copies to the Technical Authority.
- 13.5.11 Final Acceptance upon delivery, the Technical Authority, or a representative of the Technical Authority will conduct the final delivery inspection. The Contractor must repair any damage to the vessel or ancillary equipment resulting from shipping, to the satisfaction of the Technical Authority.
- 13.5.12 Trial Records: The Contractor must maintain records of testing for a minimum of two (2) years. The Contractor must prepare a testing check sheet that certifies that each test has been completed. The check sheet must indicate the actual weight of the vessel in Light Condition. The check sheet must also indicate the total loaded weight.

14.0 DOCUMENTATION

All documentation must be provided in both official languages (French and English)

14.1 NATIONAL ASSET CODE

The National Asset Code for this vessel is as follows:

VZA83, delivery to:

Maurice Lamontagne Institute
850, route de la Mer
Mont-Joli, Quebec
G5H 3Z4

The Contractor must add this five (5) character code to the builder's plate with the prefix "National Asset Code".

14.2 BUILDER'S PLATE

14.2.1 A Builder's Plate must be affixed to each asset in a readily visible location, e.g. for a vessel, in way of the helm position, for a trailer on the left side of the tongue.

14.2.2 The plate must be made of a weather resistant material compatible with that to which it is affixed.

14.2.3 The dimensions of the plate must be not less than 200mm x 125mm

14.2.4 The plate must contain the following information, permanently etched:

- 14.2.4.1.1 National Asset Code;
- 14.2.4.1.2 Naval Architect/Designer;
- 14.2.4.1.3 Builder;
- 14.2.4.1.4 Hull Number;
- 14.2.4.1.5 Year of Construction;
- 14.2.4.1.6 Call Sign (if applicable); and
- 14.2.4.1.7 Lightship Weight in kilograms.

14.3 TECHNICAL PUBLICATIONS

The Contractor must provide, upon delivery of the vessel, complete sets of technical publications of a comprehensive owner/operator manual that provides a physical and functional description of the craft, its machinery and equipment, as well as delivery testing and sea trial result documentation. The manual must include but not be limited to sections such as: General Information, Technical Information, and Spare Parts List.

14.3.1 The Contractor is to provide copies of the technical publications as follows:

14.3.1.1 one (1) complete hard copy and one (1) complete CD electronic copy set of technical publications per vessel produced for the operator, to be delivered with the vessel.

14.3.1.2 one (1) complete hard copy and one (1) complete CD electronic copy set of technical publications per vessel produced for the Technical Authority, to be delivered to the same address identified for invoices.

14.4 GENERAL INFORMATION SECTION

The General Information Section must include a description of the arrangement and function of all structures, systems, fittings and accessories that comprise the vessel, with illustrations as appropriate:

14.4.1 Operating procedures;

14.4.2 Basic operating characteristics (such as temperatures, pressures, flow rates);

14.4.3 Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step;

14.4.4 Recommended planned maintenance; and

14.4.5 Complete troubleshooting procedures.

14.5 TECHNICAL INFORMATION SECTION

The Technical Information Section must include a complete set of detailed owners/operators manuals, drawings, parts lists and supplemental data for all components of the vessel (whether acquired from external sources or custom-manufactured), including:

- 14.5.1 Initial Spares Parts List; The list must include the name, part number and serial number if applicable of the parts, items or components and must indicate the supplier (name, address, phone number, email address) of this part, equipment or component and in which part of the specification the item appears.
- 14.5.2 Hull; including hull data, TEST and TRIAL results as per Appendix A, serial or manufacturers' numbers, and equipment warranty cards.
- 14.5.3 Pre-trial shop Testing Check Sheet.
- 14.5.4 Engines and equipment: including engine and propulsion serial numbers.
- 14.5.5 Electronics, (if applicable): including model and serial numbers.
- 14.5.6 Regulatory and Stability information: as required per TP 1332
- 14.5.6.1 All components fitted to the vessel must have the Maintenance Data Sheet, completed before acceptance of the vessel from the contractor. This information will be used to populate the data base for the maintenance of the vessel.
- 14.5.6.2 Acceptance Certificates, and compliance sheets or certificates distributed with equipment i.e. lifesaving appliances, lifting appliances, engine test reports, calibration certificates, Nav light certificates, Fire suppression material certificates, flotation foam rating sheets.
- 14.5.6.3 The Technical Publications must also include a list of recommended initial onboard spare parts to be stocked for the craft. At a minimum this list must include the following items (as applicable):
 - 14.5.6.3.1 Propulsion: Propellers, filters, water pump impeller, batteries, throttle and shift cables, special engine tools;
 - 14.5.6.3.2 Collar: air valve, foot pump, pressure gauge, patch kit, including applicable adhesive and 12 Volt (V) High Pressure Pump;
 - 14.5.6.3.3 Electrical: panel breakers, fuses, light bulbs;
 - 14.5.6.3.4 Vessel Structures and Fittings: Miscellaneous commonly used fasteners.

14.6 ADDITIONAL DELIVERABLE DOCUMENTATION

The following additional documentation must be provided with each set of manuals delivered:

- 14.6.1 Tonnage Registration Certificate in accordance with TP 13430 - <http://www.tc.gc.ca/eng/marinesafety/svcp-gt-3948.htm>
- 14.6.2 Registration to the Small Vessel Compliance Program SVCP Website: <http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm>
- 14.6.3 Two (2) sets of Bill of Sales for the vessel delivered, a set is comprised of one (1) for the vessel and a second for the trailer. One (1) set is to be delivered in the manuals with the vessel and the second set is to be provided with the manuals for the Technical Authority.
- 14.6.4 A valid Motor Vehicle Registration Certificate for the trailer relevant to the

Province of delivery.

14.6.5 Test & Trial results as per Appendix A.

14.6.6 Acceptance Certificates, i.e. lifesaving appliances, lifting appliances, engine test reports, calibration certificates, extinguishers, etc.

14.6.7 Builders testing and check Sheets during construction.

15.0 SHIPPING AND DELIVERY

Prior to shipping, the vessel is to be cleaned, appropriately protected and covered in accordance with the instructions specified in this section.

15.1 Prior to shipping, the vessel must be secured on their respective trailers, cleaned, preserved and covered in accordance with this section. All areas of the vessel are to be cleaned prior to covering for shipping. Bilges are to be dry and free of oil and debris. The fuel tanks must be full with fuel stabilizer added.

15.2 The propulsion system must be preserved in accordance with the manufacturer's recommendations for storage of up to one (1) year in an environment that will be subjected to freezing temperatures.

15.3 The batteries are to be disconnected. A warning plate is to be tied to the steering wheel with a wire indicating that the vessel has been protected for shipping and storage and must not be started until the propulsion machinery has been reactivated.

15.4 All contact points with the vessel are to be padded. A shrink wrap cover is to be provided to protect the vessel during shipping and storage.

16.0 TRAILER

16.1 A trailer to fit the vessel, must be provided by the Contractor, and must be welded galvanized construction and be rated at least 20% over the anticipated 'normal load' weight of the vessel. The trailer must be certified commercial requirements in accordance with Department of Transport regulations for towing the vessel, and be constructed and equipped with the following:

16.1.1 Trailer to be equipped with axle bearing protection, grease nipple, and flush out kit.

16.1.2 Four (4) welded lifting lugs for lifting the trailer during maintenance.

16.1.3 Brake and turn signal lighting, with 5-prong flat wiring connector. The lighting system must be submersible. (Note requirement for other connector if required for the equipment listed for trailer).

16.1.4 Hydraulic surge type, jurisdiction compliant Stainless steel braking system.

16.1.5 Manual bow winch assembly with winch strap and non-corroding snap hook, bow chock, and swivel tongue jack, with wheel. The winch must be of adequate size to launch and recover the vessel and fitted with anti-reverse mechanism.

16.1.6 Heavy-duty 'stand-on' fenders and hitch to accommodate a 2 5/16 inch ball;

16.1.7 Rollers and wheel mounted spare tire and carrier, with lug wrench; and side loading guides aft.

16.1.8 Class IV weight distributing hitch compliant.

16.2 The Contractor must record the trailer sales and registration information and provide the information in the vessel's manual.

APPENDIX A

Tests and Trials Sheet

APPENDIX A
SMALL CRAFT / VESSEL TESTS & TRIALS SHEET
CONTRACT # F7047-130044

| | | | |
|---|---|---------------------|---------------------|
| Small Craft / Vessel Builder: | | | |
| Small Craft / Vessel Description: | | | |
| Hull Identification Number: | | | |
| National Asset Code: | | | |
| Date of Trials: | | | |
| Personnel in Attendance: | | | |
| Builder | | | |
| PWGSC | | | |
| DFO | | | |
| DFO | | | |
| Time: _____ hrs Departing from _____ | | | |
| Small Craft / Vessel Weights: | Dry Weight of Hull with cabin: | | _____ lbs/ _____ kg |
| | Furnishings & Fittings: | | _____ lbs/ _____ kg |
| | Engines & Equipment: | | _____ lbs/ _____ kg |
| | Fuel: | Fuel: | _____ lbs/ _____ kg |
| | _____ Imp gal | _____ Litres | _____ lbs/ _____ kg |
| | Total Weight of Small Craft/Vessel: | | _____ lbs/ _____ kg |
| | Number of Crew _____ and operating equipment: | | _____ lbs/ _____ kg |
| | Test Total Laden Weight: | | _____ lbs/ _____ kg |
| | Trailer weight: | | _____ lbs/ _____ kg |
| Vessel & Trailer weight: | | _____ lbs/ _____ kg | |

| | | |
|--|---|---|
| Motors: Starting - Operation "IDENTIFY INBOARD/OUTBOARDS" | Port | <input type="radio"/> Immediate, Yes / No |
| | Starboard | <input type="radio"/> Immediate, Yes / No |
| Propellers/Impellers | Pitch | _____ |
| | Diameter | _____ |
| | No. of Blades | _____ |
| | Stainless Steel or Aluminum | <input type="radio"/> S/S ____ AL |
| Static Attitude & Trim: | | |
| Weather Conditions: Refer to attached Beaufort Wind Scale. BWS No. _____ | | |
| Speed Trials | Speed Required _____ - _____ knots | |
| | Cruising Speed: measured mile 1 way | _____ kts @ _____ rpm |
| | Cruising Speed: measured mile return | _____ kts @ _____ rpm |
| | Averaged Cruising Speed: | _____ kts @ _____ rpm |
| | Maximum Speed: measured mile 1 way | _____ kts @ _____ rpm |
| | Maximum Speed: measured mile return | _____ kts @ _____ rpm |
| | Average Maximum Speed _____ kts @ _____ rpm | |
| Full Throttle | From dead stop to plane | _____ seconds |
| | From dead stop to 30 knots | _____ seconds |
| Astern Propulsion: | Straight line to 2000 rpm | <input type="radio"/> Issues, Yes / No |
| | Hard a-port | <input type="radio"/> Issues, Yes / No |
| | Hard a-starboard | <input type="radio"/> Issues, Yes / No |
| | Emergency stop | _____ seconds |

| | | |
|---|---|---|
| Tubes (if applicable) | No. of Chambers | _____ |
| | Semi-auto fill system | <input type="radio"/> Yes / No |
| | Time to fill all chambers | _____ seconds |
| Endurance Trials: X = gallons or Litres | Fuel consumption | |
| | Port & Starboard Motor: at cruise: | _____ X/hr @ _____ rpm |
| | Port & Starboard Motor: at full throttle: | _____ X/hr @ _____ rpm |
| Steering: Acceptable Y /N | Straight line | <input type="radio"/> Yes / No |
| | Hard-Port radius of turn. Full Throttle | _____ feet |
| | Hard-Stbd radius of turn. Full Throttle | _____ feet |
| | Lock to lock = 35 degrees pt. & stbd | <input type="radio"/> Yes / No |
| | Effective steering 0-5 knots | <input type="radio"/> Yes / No |
| | 5-10 knots | <input type="radio"/> Yes / No |
| | 20-30 knots | <input type="radio"/> Yes / No |
| | Full speed | <input type="radio"/> Yes / No |
| Outboard/Inboard Leg Trim Control: | From fully raised to fully lowered. | <input type="radio"/> Acceptable Yes / No |
| Trim Tab Operation: | Fully raised, fully lowered. | <input type="radio"/> Acceptable Yes / No |
| Engine Controls: | Start | <input type="radio"/> Issues, Yes / No |
| | Shift | <input type="radio"/> Issues, Yes / No |
| | Throttle | <input type="radio"/> Acceptable Yes / No |
| Engine Gauges: | Tachometer | <input type="radio"/> Acceptable Yes / No |
| | Fuel gauges | <input type="radio"/> Acceptable Yes / No |
| | Trim gauges | <input type="radio"/> Acceptable Yes / No |

| | | |
|---|---------------------------------------|--|
| Engine Gauges: | Oil pressure | <input type="radio"/> Acceptable Yes / No |
| | Voltmeter | _____ volts |
| Cabin Sound Levels: | Cruising speed- door & windows closed | _____ dbA @ _____ rpm |
| | Cruising speed- door & windows open | _____ dbA @ _____ rpm |
| | Full speed- door & windows closed | _____ dbA @ _____ rpm |
| | Full speed- door and windows open | _____ dbA @ _____ rpm |
| Outboard/Inboard engine operation: | Starting | <input type="radio"/> Acceptable Yes / No |
| | Shifting | <input type="radio"/> Acceptable Yes / No |
| | Throttle | <input type="radio"/> Acceptable Yes / No |
| | Raise | <input type="radio"/> Acceptable Yes / No |
| | Lower | <input type="radio"/> Acceptable Yes / No |
| Loaded Vessel Drop Test: | If applicable | <input type="radio"/> Acceptable Yes / No |
| Lifting Bridle Certified: | If applicable | <input type="radio"/> Acceptable Yes / No |
| Rollover test | If applicable | <input type="radio"/> Acceptable Yes / No |

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|---------------------|
| <u>NOTES</u> |
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Beaufort Wind Scale Identifier

| Force | Wind Speed | | Descriptive Term | Effects Observed at Sea | Effects Observed on Land |
|-------|-------------|-------------|------------------|--|---|
| | Km/h | Knots | | | |
| 0 | Less than 1 | Less than 1 | Calm | Sea surface like a mirror, but not necessarily flat. | Smoke rises vertically. |
| 1 | 1 - 5 | 1 - 3 | Light air | Ripples with the appearance of scales are formed, but without foam crests. | Direction of wind shown by smoke drift, but not wind vanes. |
| 2 | 6 - 11 | 4 - 6 | Light breeze | Small wavelets, still short but more pronounced. Crests do not break. When visibility good, horizon line always very clear. | Wind felt on face. Leaves rustle. Ordinary vane moved by wind. |
| 3 | 12 - 19 | 7 - 10 | Gentle breeze | Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered whitecaps. | Leaves and small twigs in constant motion. Wind extends light flag. |
| 4 | 20 - 28 | 11 - 16 | Moderate breeze | Small waves, becoming longer. Fairly frequent whitecaps. | Raises dust and loose paper. Small branches are moved. |
| 5 | 29 - 38 | 17 - 21 | Fresh breeze | Moderate waves, taking a more pronounced long form. Many whitecaps are formed. Chance of some spray. | Small trees with leaves begin to sway. Crested wavelets form on inland waters. |
| 6 | 39 - 49 | 22 - 27 | Strong breeze | Large waves begin to form. The white foam crests are more extensive everywhere. Probably some spray. | Large branches in motion. Whistling heard in telephone wires. Umbrellas used with difficulty. |
| 7 | 50 - 61 | 28 - 33 | Near gale | Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind. | Whole trees in motion. Inconvenience felt in walking against wind. |
| 8 | 62 - 74 | 34 - 40 | Gale | Moderately high waves of greater length. Edges of crests begin to break into the spindrift. The foam is blown in well-marked streaks along the direction of the wind. | Breaks twigs off trees. Generally impedes progress. Walking into wind almost impossible. |
| 9 | 75 - 88 | 41 - 47 | Strong gale | High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility. | Slight structural damage occurs, e.g. roofing shingles may become loose or blow off. |
| 10 | 89 - 102 | 48 - 55 | Storm | Very high waves with long overhanging crests. Dense white streaks of foam. Surface of the sea takes a white appearance. The tumbling of the sea becomes heavy and shock-like. Visibility affected. | Trees uprooted. Considerable structural damage occurs. |
| 11 | 103 - 117 | 56 - 63 | Violent storm | Exceptionally high waves. Sea completely covered with long white patches of foam. Visibility affected. | Widespread damage. |
| 12 | 118 - 133 | 64 - 71 | Hurricane | Air filled with foam and spray. Sea entirely white with foam. Visibility seriously impaired. | Rare. Severe widespread damage to vegetation and significant structural damage possible. |



BEAUFORT FORCE 0
WIND SPEED: LESS THAN 1 KNOT
SEA: SEA LIKE A MIRROR



BEAUFORT FORCE 1
WIND SPEED: 1-3 KNOTS
SEA: WAVE HEIGHT 1M (.25FT), RIPPLES WITH THE APPEARANCE OF SCALES, BUT WITHOUT FOAM CRESTS



BEAUFORT FORCE 2
WIND SPEED: 4-6 KNOTS
SEA: WAVE HEIGHT 2-3M (.5-1FT), SMALL WAVELETS, CRESTS HAVE A GLASSY APPEARANCE AND DO NOT BREAK



BEAUFORT FORCE 4
WIND SPEED: 11-16 KNOTS
SEA: WAVE HEIGHT 1-1.5M (3.5-5FT), SMALL WAVES BECOMING LONGER, FAIRLY FREQUENT WHITE HORSES



BEAUFORT FORCE 5
WIND SPEED: 17-21 KNOTS
SEA: WAVE HEIGHT 2-2.5M (6-8FT), MODERATE WAVES TAKING MORE PRONOUNCED LONG FORM, MANY WHITE HORSES, CHANCE OF SOME SPRAY



BEAUFORT FORCE 6
WIND SPEED: 22-27 KNOTS
SEA: WAVE HEIGHT 3-4M (9.5-13 FT), LARGER WAVES BEGIN TO FORM, SPRAY IS PRESENT, WHITE FOAM CRESTS ARE EVERYWHERE



BEAUFORT FORCE 7
WIND SPEED: 28-33 KNOTS
SEA: WAVE HEIGHT 4-5.5M (13.5-19 FT), SEA HEAPS UP, WHITE FOAM FROM BREAKING WAVES BEGINS TO BE BLOWN IN STREAKS ALONG THE WIND DIRECTION



BEAUFORT FORCE 8
WIND SPEED: 34-40 KNOTS
SEA: WAVE HEIGHT 5.5-7.5M (18-25FT), MODERATELY HIGH WAVES OF GREATER LENGTH, EDGES OF CREST BEGIN TO BREAK INTO THE SPINDRIFT, FOAM BLOWN IN WELL MARKED STREAKS ALONG WIND DIRECTION.



BEAUFORT FORCE 9
WIND SPEED: 41-47 KNOTS
SEA: WAVE HEIGHT 7-10M (23-32FT), HIGH WAVES, DENSE STREAKS OF FOAM ALONG DIRECTION OF THE WIND, WAVE CRESTS BEGIN TO TOPPLE, TUMBLE, AND ROLL OVER. SPRAY MAY AFFECT VISIBILITY.



BEAUFORT FORCE 10
WIND SPEED: 48-55 KNOTS
SEA: WAVE HEIGHT 9-12.5M (29-41FT), VERY HIGH WAVES WITH LONG OVERHANGING CRESTS, THE RESULTING FOAM, IN GREAT PATCHES, IS BLOWN IN DENSE WHITE STREAKS ALONG WIND DIRECTION. ON THE WHOLE, SEA SURFACE TAKES A WHITE APPEARANCE, TUMBLING OF THE SEA IS HEAVY AND SHOCK-LIKE, VISIBILITY AFFECTED.



BEAUFORT FORCE 11
WIND SPEED: 56-63 KNOTS
SEA: WAVE HEIGHT 11.5-16M (37-52FT), EXCEPTIONALLY HIGH WAVES, SMALL-MEDIUM SIZED SHIPS MAY BE LOST TO VIEW BEHIND THE WAVES. SEA COMPLETELY COVERED WITH LONG WHITE PATCHES OF FOAM LYING ALONG WIND DIRECTION. EVERYWHERE, THE EDGES OF WAVE CRESTS ARE BLOWN INTO FROTH.



BEAUFORT FORCE 12
WIND SPEED: 64 KNOTS
SEA: SEA COMPLETELY WHITE WITH DRIVING SPRAY, VISIBILITY VERY SERIOUSLY AFFECTED. THE AIR IS FILLED WITH FOAM AND SPRAY

APPENDIX B

FC 08-2007: CANADIAN COAST GUARD FLEET IDENTITY COLOR STANDARD



FLEET CIRCULAR - CIRCULAIRE DE LA FLOTTE

| | | | |
|------------|---|------------|---|
| FC 08-2007 | CANADIAN COAST GUARD FLEET IDENTITY COLOR STANDARD | CF 08-2007 | NORME DES COULEURS D'IMAGE DE MARQUE DE LA FLOTTE DE LA GARDE CÔTIÈRE CANADIENNE |
| 2007-04-10 | Ref: Federal Identity Program | 2007-04-10 | Réf: Programme de coordination de l'image de marque |

Purpose

This Circular is issued to update the current standard and clarify the responsibilities for the application of the Federal Identity Program (FIP) as it relates to the Canadian Coast Guard (CCG) Fleet vessels.

This Circular replaces Fleet Circular 06-2005.

The goal of this Circular is to ensure a consistent application of the FIP standard throughout the Fleet.

Policy

All CCG employees involved in procurement activities as well as CCG Ships Commanding Officers shall ensure that the FIP standard is applied.

Paint Color Standard

The Canadian Government Specification Board Standard Paint Colors were withdrawn in April 1994.

Objet

La présente circulaire vise à mettre à jour la norme actuelle et à préciser les responsabilités quant à l'application du programme de coordination de l'image de marque (PCIM) des navires de la Flotte de la Garde côtière canadienne (GCC).

Cette Circulaire remplace la Circulaire de la Flotte 06-2005.

Le but de cette Circulaire est d'assurer l'uniformité d'application du PCIM par tous les navires de la Flotte.

Politique

Tous les employés intervenant dans le processus d'approvisionnement ainsi que tous les commandants des navires de la GCC doivent s'assurer que le PCIM est appliqué.

Norme des couleurs de peintures

La norme de l'Office des normes du gouvernement canadien, Couleurs étalons des peintures, a été retirée en avril 1994.

| | | |
|------------------|--|------------------------|
| Renseignements : | Directeur, Soutien des Opérations N° de téléphone: 613-990-0341 | Date d'expiration: S/O |
| Queries to: | Director, Operations Support Telephone: 613-990-0341 | Expiry Date: N/A |



Canada

EKME #683951

To ensure the consistent application of the FIP the Canadian Coast Guard Fleet chose to use the **European RAL and European RAL design system standards** to identify the colour to use to paint CCG vessels as follows :

- CCG Red: RAL3000
- White: RAL 9003
- Beige / Buff: RAL Design 070 7040
- Black: RAL9004
- Yellow: RAL1003
- Deck Grey: RAL7042
- Deck Red Brown: RAL3011

The number RAL 070 7040 represents a color with hue H = 070, lightness L = 70 and chroma C = 40.

The **hull and the maple leaf on the funnel** shall be painted in CCG Red.

The **diagonal stripe, superstructure / house, hull markings and lifting davits** shall be painted in white.

Lifting gear and masts shall be painted in beige, excepting where they are in close proximity to the stack and subject to continual sooting. In this case, the mast should be painted black from the height of the top of the stack to the top. If masts or goal posts are located such that their location and beige colour interferes with the proper lookout being stood on the bridge, the aft side should be painted a matt black.

Running blocks close to the hooks shall be painted with black and yellow 'tiger stripes'. Tiger stripes are meant to catch attention out the corner of an eye, as to a swinging hook. All other blocks should be painted in the colour of the ship's structure closest to the block. Therefore blocks hanging off the derrick, should be beige, and blocks located on the bridge front should be white.

Pour assurer l'uniformité d'application du PCIM, la Flotte de la Garde côtière canadienne a choisi d'utiliser **les normes mondiales européennes RAL et le RAL-Design-Système** suivantes pour identifier les couleurs à utiliser sur les navires de la flotte :

- Rouge GCC : RAL3000
- Blanc : RAL9003
- Beige / Buff : RAL Design 070 7040
- Noire : RAL9004
- Jaune : RAL1003
- Gris pont : RAL7042
- Rouge-brun pont : RAL3011

La nomenclature RAL 070 7040 représente la teinte H = 070, la clarté L = 70 et la chroma C = 40.

La coque et la feuille d'érable sur la cheminée doivent être peintes en rouge GCC.

La bande diagonale, la superstructure, le rouf, les marquages de la coque et les bossoirs de levage doivent être peints en blanc.

L'appareil de levage et les mâts doivent être peints en beige, sauf à proximité immédiate de la cheminée où ils sont constamment exposés à la suie. Les mâts doivent alors être peints en noir depuis la hauteur du sommet de la cheminée jusqu'à leur cime. Lorsque la position et la couleur beige des mâts ou des mâts à portiques gênent la vue de la passerelle, leur face arrière doit être peinte noir mat.

Les **poulies mobiles** à proximité des crochets doivent être peintes avec des stries tigrées noir et jaune. Ces stries sont destinées à attirer l'attention du coin de l'œil, comme un crochet pivotant. Toutes les autres poulies doivent être peintes de la couleur la plus proche de celle de la structure du bâtiment se trouvant à proximité. Par conséquent, les poulies du mât de charge doivent être peintes en beige et celles à l'avant de la passerelle doivent être peintes en blanc.

Bulwark rails (steel) and fairleads, bollards and capstan drums shall be painted in black.

Recommendations for modification to the standard should be directed to the Manager, Policies and Standard. Such requests / recommendations should include a description of the modification sought and the rationale for the change.

Les lisses de pavois (acier) et les chaumards, les bollards et les tambours de cabestan doivent être peints en noir.

Les recommandations concernant des modifications à apporter à la norme doivent être transmises au gestionnaire, Politique et normes. Ces demandes/recommandations doivent inclure une description de la modification recherchée et les raisons de ce changement.

Directeur général, Flotte



Gary B. Sidock
Director General, Fleet

ANNEX “B”

COST BREAKDOWN

| Sect. | Description | Labour | Material | Overhead & Profit | Total |
|-------------------|---|--------|----------|-------------------|-------|
| 5.2 - 5.3 - 7.0 | Hull & deck | | | | |
| 5.4 | Cabin | | | | |
| 6.1 | Operators console | | | | |
| 6.2 | Steering systems | | | | |
| 6.3 | Cabin seating | | | | |
| 6.4 | Cabin windows/access | | | | |
| 6.5 to 6.13 incl. | Wipers, grab handles, mooring cleats, tow post, lifting lugs, stowage, handrails, cabin top arch and cable tunnels. | | | | |
| 8.0 | Lifesaving & emergency equipment | | | | |
| 9.1 to 9.7 incl. | Propulsion, propellers, controls, alarms, verification of installation, engine break-in and protection of controls | | | | |
| 9.8 - 9.9 | Fuel System & Fuel tank | | | | |
| 10.0 | Electrical system | | | | |
| 11.0 | Electronic and navigation equipment | | | | |
| 12.0 | Painting and corrosion protection | | | | |
| 13.0 | Tests & Trials | | | | |
| 14.0 | Documentation | | | | |
| 15.0 | Shipping and delivery | | | | |
| 16.0 | Trailer | | | | |
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| | TOTAL | | | | |

ANNEX “C”

SUBCONTRACTORS

[illegible]

ANNEX “D”

BIDDER'S QUESTIONS AND CANADA RESPONSES

Solicitation # F7047-130044

REQUIREMENT: ONE (1) 6.2 TO 6.5M ALUMINIUM WORKBOAT AND TRAILER FOR THE DEPARTMENT OF FISHERIES AND OCEANS (DFO).

to be completed as required during bid solicitation.

ANNEX “E” - INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL

1. Conduct of Inspection

(a) Inspections will be conducted in accordance with the ITP provided and accepted by the Inspection Authority and as detailed in this Annex.

(b) The Contractor must provide its own staff or subcontractors to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.

(c) As applicable, the Contractor must ensure that the required conditions stated in the specification prevail at the commencement of, and for the duration of, each inspection/test/trial.

(d) The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.

(e) The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

2. Inspection Records and Reports

(a) The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records.

(b) The Contractor's Quality Control (QC) representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.

(c) Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

(d) Corrective action to remove cause of unsatisfactory inspections must be submitted to the Contracting Authority and to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Contracting Authority and to the Inspection Authority.

(e) The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.

(f) The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.

(g) Quality Control, Inspection and Test records that substantiate conformance 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 Contracting Authority and to the Inspection Authority upon request.

3. Inspection and Trials Process

3.1 Drawings and Purchase Orders

(a) Upon receipt of two (2) copies of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of the TSOR. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Government of Canada Authorities.

3.2 Inspection

(a) Upon receipt and acceptance of the Contractor's ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of the specification. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

(b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the specification and, where non-conformances are noted, will issue appropriate INSPECTION NON-CONFORMANCE REPORTS.

(c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the Inspection Authority.

(d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority

finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

(e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3.3 Inspection Non-conformance report

(a) An Inspection Non-conformance report 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.

(b) 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 Report by adding an applicable signed and dated notation.

(c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance documents before the Inspection Authority's certification of such documents.

3.4 Tests, Trials, and Demonstrations

(a) To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and specifications, the Contractor must schedule, co-ordinate, perform, and record all specified tests, trials and demonstrations required by the Inspection Authority and the Specifications and any additional tests and trials performed by the Contractor required by the Inspection Authority.

(b) Where the specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must 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 specifications.

(c) Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.

(d) Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.

(e) The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection, Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor must provide the Inspection Authority and other Government of Canada Authorities with a minimum of ten (10) working days notice of each scheduled test, trial, or demonstration.

(f) The Contractor must keep written records of all tests, trials, and demonstrations conducted required by the QA System.

(g) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

(h) The Contracting Authority and the Inspection/Technical Authority reserve 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 compliance with safety standards.