



REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

Proposal To: Transport 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 and services listed herein and on any attached sheets at the price(s) set out therefore.

Proposition à : Transports 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 et services énumérés ici et sur toute feuille ci-annexée, au(x) prix indique(s).

Comments - Commentaires

RETURN BIDS TO: RETOURNER LES SOUMISSIONS À :

By e-mail to: - Par courriel au :
maureen.mateush@tc.gc.ca

Attention: - Attention :
Maureen Mateush

Title - Sujet Auxiliary Machinery, Motor and Steam Propulsion Exam Questions and Answers	
Solicitation No. N° de l'invitation T8080-210523	Date of Solicitation Date de l'invitation 18 November - novembre 2022
Address enquiries to: - Adresser toute demande de renseignements à : Maureen Mateush Telephone No. - N° de telephone E-Mail Address - Courriel maureen.mateush@tc.gc.ca	
Destination See herein - Voir aux présentes	

Instructions: Municipal taxes are not applicable. Unless otherwise specified herein all prices quoted must include all applicable Canadian customs duties, GST/HST, excise taxes and are to be delivered Delivery Duty Paid including all delivery charges to destination(s) as indicated. The amount of the Goods and Services Tax/Harmonized Sales Tax is to be shown as a separate item.

Instructions : Les taxes municipales ne s'appliquent pas. Sauf indication contraire, les prix indiqués doivent comprendre les droits de douane canadiens, la TPS/TVH et la taxe d'accise. Les biens doivent être livrés « rendu droits acquittés », tous frais de livraison compris, à la ou aux destinations indiquées. Le montant de la taxe sur les produits et services/taxe de vente harmonisée doit être indiqué séparément.

Delivery required Livraison exigée See herein - Voir aux présentes	Delivery offered Livraison proposée Not applicable - Sans objet
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Person authorized to sign on behalf of Vendor/Firm (type or print): La personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie) :	
Name - Nom	Title - Titre
Signature	Date

Solicitation Closes - L'invitation prend fin

At - à :
2:00 PM - 14:00

On - le :
13 December 2022 - 13 decembre 2022

Time Zone - Fuseau Horaire :
Eastern Standard Time (EST)
Heure normale de l'Est (EST)

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PART 1 - GENERAL INFORMATION

1.1 Introduction

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

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

The Annexes include the Statement of Work, the Basis of Payment, the Security Requirements Checklist, Mandatory and Point-Rated criteria, and any other annexes.

1.2 Summary

Transport Canada has a requirement for the development of multiple-choice examination questions and answers to determine the manner by the competency of applicants is assessed.

The *Marine Personnel Regulations* requires the evaluation of an applicant's competency in marine engineering subjects before issuing a certificate of competency.

The Minister of Transport is mandated by the *Canada Shipping Act, 2001* to determine the manner by which the competency of applicants is assessed.

1.3 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 from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

2.1 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) (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](#) (2022-03-29) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 180 days

2.2 Submission of Bids

Bids must be submitted only to the Contracting Authority specified below by the date and time indicated on page 1 of the bid solicitation:

maureen.mateush@tc.gc.ca

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

2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "*former public servant*" is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;

-
- c. a partnership made of former public servants; or
 - d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"*lump sum payment period*" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"*pension*" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c. C-17, the [Defence Services Pension Continuation Act](#), 1970, c. D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c. R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S. 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes** () **No** ()

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2019-01](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes** () **No** ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;

- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 5 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.

2.5 Applicable Laws

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

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

2.6 Basis for Canada's Ownership of Intellectual Property

Transport Canada has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, for the following reasons, as set out in the [Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts](#): 6.4.1 To generate knowledge and information for public dissemination.

2.7 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:
 - Office of the Procurement Ombudsman (OPO)
 - Canadian International Trade Tribunal (CITT)
- (c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that the Bidder submits its bid in separately bound sections as follows:

- Section I: Technical Bid (1 soft copy)
- Section II: Financial Bid (1 soft copy)
- Section III: Certifications (1 soft copy)
- Section IV: Additional Information

The bids must be sent by e-mail to: maureen.mateush@tc.gc.ca

Due to the nature of the bid solicitation, bids transmitted by CPC Connect service and by facsimile will not be accepted.

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

Section I: Technical Bid

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

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

Section II: Financial Bid

3.1.1 Bidders must submit their financial bid in accordance with the "Basis of Payment" in Annex "B".

Bidders may bid on one or more parts of this solicitation. Up to a maximum of four (4) contracts may be awarded as a result of this solicitation process. Bidders may choose to bid on each of the four (4) Statement of Works located in Annex A and will be evaluated individually in Annex D. Bidders may be awarded a Contract for more than one Statement of Work.

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

Mandatory and point rated technical evaluation criteria are included in Annex "D".

4.1.2 Financial Evaluation

4.1.2.1 Mandatory Financial Criteria

SACC Manual Clause [A0220T](#) (2014-06-26), Evaluation of Price-Bid

4.2 Basis of Selection

4.2.1 Basis of Selection – Highest Combined Rating of Technical Merit (60%) and Price (40%)

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and
 - c. obtain the required minimum number of points specified in Annex "D" for the point rated technical criteria.
2. Bids not meeting (a), (b), and (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 60% for the technical merit and 40% for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 60%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$115/135 \times 60 = 51.11$	$89/135 \times 60 = 39.56$	$92/135 \times 60 = 40.89$
	Pricing Score	$45/55 \times 40 = 32.73$	$45/50 \times 40 = 36.00$	$45/45 \times 40 = 40.00$
Combined Rating		83.84	75.56	80.89
Overall Rating		1st	3rd	2nd

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default 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 will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the Integrity declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame specified will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Additional Certifications Precedent to Contract Award

5.2.2.1 Status and Availability of Resources

[A3005T](#) Status and Availability of Resources (2010-08-16)

5.2.3.1 Education and Experience

5.2.3.2 *SACC Manual* clause [A3010T](#) (2010-08-16) Education and Experience

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

1. At the date of bid closing, the following conditions must be met:
 - (a) the Bidder must hold a valid organization security clearance as indicated in Part 7 - Resulting Contract Clauses;
 - (b) the Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work sites must meet the security requirements as indicated in Part 7 - Resulting Contract Clauses;
 - (c) the Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;
 - (d) the Bidder's proposed location of work performance and document safeguarding must meet the security requirements as indicated in Part 7 - Resulting Contract Clauses;
 - (e) the Bidder must provide the addresses of proposed sites or premises of work performance and document safeguarding as indicated in Part 3 - Section IV Additional Information.
2. For additional information on security requirements, Bidders should refer to the [Contract Security Program](http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) of Public Works and Government Services Canada (<http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html>) website.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/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.

7.2.1 General Conditions

[2035](#) (2022-05-12), General Conditions - Higher Complexity - Services, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

[4007](#) (2010-08-16), Canada to Own Intellectual Property Rights in Foreground Information, apply to and form part of the Contract.

7.3 Security Requirements

7.3.1 The following security requirements (SRCL and related clauses provided by the Contract Security Program) apply and form part of the Contract:

1. The contractor/offeror personnel requiring access to protected information, assets or sensitive work site(s) must each hold a valid reliability status, granted or approved by Transport Canada;
2. The contractor/offeror must not remove any protected information or assets from the identified work site(s), and the contractor/offeror must ensure that its personnel are made aware of and comply with this restriction;
3. The contractor must abide by all security protocols identified within the Contractor's Obligations section of the Statement of Work to reduce the risk of compromise to the information; and
4. Subcontracts which contain security requirements are not to be awarded without the prior written permission of TC.

7.3.2 The Company Security Officer must ensure through the [Contract Security Program](#) that the Contractor and individuals hold a valid security clearance at the required level.

7.4 Period of the Contract

The period of the Contract is from date of Contract to January 31, 2024 inclusive.

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Maureen Mateush
Title: Procurement Specialist
Transport Canada, Procurement and Materiel Management
Address: 275 Sparks Street
Ottawa, ON K1A 0N5
E-mail address: maureen.mateush@tc.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.

7.5.2 Project Authority **[To be inserted at contract award]**

The Project Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____
E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however, the Project 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.

7.5.3 Contractor's Representative **[To be inserted at contract award]**

Name: _____
Title: _____
Organization: _____
Address: _____
Telephone: ___ - ___ - _____
E-mail address: _____

7.6 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a *Public Service Superannuation Act* (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2019-01](#) of the Treasury Board Secretariat of Canada.

7.7 Payment

7.7.1 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 as specified in Annex "B" for a cost of \$ [REDACTED] (amount to be inserted at contract award). Customs duties are included and Applicable Taxes are extra.

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.

7.7.2 Method of Payment (Multiple Payments)

Canada will pay the Contractor upon completion and delivery of units in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work delivered has been accepted by Canada.

7.7.3 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using the following Electronic Payment Instrument:

- Direct Deposit (Domestic and International)

7.8 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:
 - a. The original copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

7.9 Certifications and Additional Information

7.9.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

7.10 Applicable Laws

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

7.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions [4007](#) Canada to Own Intellectual Property Rights in Foreground Information (2010-08-16);
- (c) the general conditions [2035](#) (2022-05-12), General Conditions - Higher Complexity - Services;
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Security Requirements Check List;
- (g) Annex D, Mandatory and Point Rated Criteria; and
- (h) Appendix E, TPG10655 – Recognized Institutions and Approved Training Courses

7.12 Insurance

SACC *Manual* clause [G1005C](#) (2016-01-28) Insurance - No Specific Requirement

7.13 Dispute Resolution

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".

ANNEX "A"

STATEMENT OF WORK

STATEMENT OF WORK – PART 1

Part 1 – Development of Examination Questions and Answers in the subjects of Auxiliary Machinery and Systems 1 (AMS1), Motor Propulsion Systems 1 (MPS1), and Steam Propulsion Systems 1 (SPS1)

1.0 Scope

1.1 Title

Development of Examination Questions and Answers in the subjects of **Auxiliary Machinery and Systems 1 (AMS1), Motor Propulsion Systems 1 (MPS1), and Steam Propulsion Systems 1 (SPS1)**.

1.2 Introduction

The *Marine Personnel Regulations* requires the evaluation of an applicant's competency in marine engineering subjects before issuing a certificate of competency.

The Minister of Transport is mandated by the Canada Shipping Act, 2001 to determine the manner by which the competency of applicants is assessed.

1.3 Objectives of the Work

The objective of this project is to develop, in the English language, a bank of **405** questions in the subjects of Auxiliary Machinery and Systems 1 (AMS1), Motor Propulsion Systems 1 (MPS1), and Steam Propulsion Systems 1 (SPS1) to be used in the evaluation of applicants for an Engineer in Charge of the Watch certificate of competency.

2.0 Requirements

2.1 Requirements in Relation to Deliverables

2.1.1 The Contractor will prepare, in the English language, a bank of multiple-choice examination questions and their respective answers.

2.1.2 The questions must cover the knowledge, understanding, competencies and proficiencies described in the Table A-III/1 of the STCW Code broken down by the topics and sub-topics of the IMO Model Course 7.04 Officer in Charge of an Engineering Watch, 2014 edition, as modified and identified in the Tables AMS1, MPS1 and SPS1. These tables are to be read in conjunction with the IMO Model Course 7.04 Officer in Charge of an Engineering Watch, 2014 edition. The number of questions required per topic and sub-topic are indicated in each table. The Contractor will assign each question a unique alpha-numeric code in the manner described in each table.

2.1.3 Each question will require the candidate to draw upon a broad knowledge and understanding of the applied engineering principles, design features, construction and operation of the shipboard machinery, equipment, devices, and systems which are the topic of the question and to apply that knowledge and understanding to their safe and efficient operation, and maintenance at the operational level in one or more of the following ways:

-
1. Knowledge and understanding of the applied engineering principles and the ability to describe or explain the link between these principles and the construction, arrangement, function, action, operation, operating characteristics, or maintenance.
 2. Knowledge and understanding of the operating characteristics, the observable operating parameters and conditions, and the ability to interpret those observations for the recognition of correct functioning and typical malfunctioning or failure.
 3. Knowledge of the practices, procedures, and precautions to be taken for safe operation, pollution prevention and the ability to take appropriate action to remedy or mitigate failure and malfunctioning and in response to emergency situations.
 4. Practices, procedures, and precautions to be followed in the operation and fault finding of the associated control systems.
 5. Knowledge of the practices, procedures, and precautions to be taken in the performance of routine servicing, and the disassembly, repair, maintenance, reassembly, and return to service.
 6. describe the observable conditions/the state of disassembled components, explain the likely causes and possible remedies.
 7. Practices, procedures, and precautions to be taken to prevent pollution.
- 2.1.4** The questions shall be multiple choice and shall consist of a stem and alternatives. The alternatives will consist of the correct answer and distractors. The questions shall be written such that a person with a good command of the subject would be able to select the correct answer in 1 to 3 minutes. The Contractor shall provide an estimate of the time required with the answer.
- 2.1.5** The questions shall not be trivial.
- 2.1.6** The questions shall not rely on complex calculations for solution.
- 2.1.7** The stem shall be meaningful by itself and shall present a definite problem.
- 2.1.8** The stem shall be clearly and unambiguously worded using commonly understood technical terms when needed.
- 2.1.9** The stem shall not contain irrelevant material.
- 2.1.10** The stem and alternatives shall be free of errors in English usage.
- 2.1.11** The use of negatively worded stems shall be avoided and may be used only if negative wording format is preferable.
- 2.1.12** The stem should usually be a full and complete question. The use of partial sentence stems shall be avoided and may be used only if the partial sentence format is preferable.
- 2.1.13** The stem shall not be written as a “trick” question where the stem tends to lead the candidate to an incorrect answer.
- 2.1.14** The stem shall not be written such that the correct answer may be deduced directly from the stem.
- 2.1.15** In lower order cognitive questions, the stem must require understanding or comprehension of the topic. A stem which requires only the memorization of fact is not acceptable.
- 2.1.16** Each question shall have 3 to 5 distractors.
- 2.1.17** Distractors shall be plausible and mutually exclusive.

2.1.18 Alternatives shall be grammatically consistent with the stem.

2.1.19 If answer options can be ordered, then they should be ordered.

2.1.20 Alternatives shall not use “all of the above”, “none of the above” or combinations of alternatives such as “A and B”.

2.1.21 Choice of question command words shall be based on the types of action verbs given in the table to Annex 2 of HTW 5/3/13. A fresh choice of command words shall be made for each topic and subtopic so that the question meets the requirements of paragraph 2.1.3.

2.1.22 Each question will be assigned a level of difficulty according to the following criteria:

1. Level 1: Lower order cognitive questions (LO). Questions which test the *remembering and understanding* of concepts and facts.
2. Level 2: Intermediate order cognitive questions (IO). Questions which test *applying and analyzing* skills.
3. Level 3: Higher order cognitive questions (HO). Questions which test *evaluating and creating* abilities.

2.1.23 Within a given topic the distribution of the level of difficulty in the group of submitted questions on that topic shall be in the ratios given in the table.

Quantity of questions by topic and subtopic required in tables AMS1, MPS1, and SPS1	Ratio LO: IO: HO
1	0:1:0
2	0:1:1
3	1:1:1
5	1:2:2

2.1.24 Each question shall include an explanation as to why the correct answer is the best answer and include a relevant reference to a standard textbook or online resource when practicable.

2.1.25 Each question will include a technical sketch if one is needed to present the question or to select the correct answer. Sketches shall be either the Contractor’s own work or in the public domain.

Subject	Total Questions per subject
AMS1	195
MPS1	120
SPS1	90
Total number of questions	405

2.2 Acceptance Criteria

All submitted questions will be assessed for acceptance based on the following criteria:

1. The question meets the requirements of paragraphs 2.1.2 and 2.1.3.
2. The question fits within the required question type of paragraph 2.1.4.
3. The question meets the requirements of paragraphs 2.1.5 to 2.1.21.
4. The question difficulty level is assigned in accordance with paragraph 2.1.22.
5. The distribution of questions on a given topic meets the requirements of paragraph 2.1.23.
6. The model answer meets the requirements of paragraph 2.1.24 and 2.1.25.

2.3 Tasks, Activities, Deliverables and Milestones (Work Breakdown Structure)

The questions and answers will be delivered on the dates indicated below.

Each question will be submitted in the format given in Appendix B.

Milestone	Tasks/Activities	Due Date
1	Participate in a teleconference with the Project Authority to discuss coordination.	Within 1 week of contract award
2	The first set of 80 questions and answers are to be submitted to the Project Authority for review.	January 28, 2023
3	The second set of 80 questions and answers are to be submitted to the Project Authority for review.	March 4, 2023
4	The third set of 80 questions and answers are to be submitted to the Project Authority	April 8, 2023
5	The fourth set of 80 questions and answers are to be submitted to the Project Authority	May 20, 2023
6	The last set of 85 questions and answers are to be submitted to the Project Authority	July 1, 2023

2.4 Specifications and Standards

The Contractor will provide the questions and answer options in Microsoft Excel and Microsoft Word, in versions no earlier than 2013. The specific format of the questions and answer options, is given in Appendix B.

2.5 Method and Source of Acceptance

All deliverables and services rendered under any contract are subject to approval by the Project Authority.

2.6 Reporting Requirements

Delivery of the questions and answers will be according to the schedule given in Section 2.3. Feedback, if needed, will be given to the Contractor as per Section 2.3.

3.0 Contractor's Obligations

1. Questions and answers submitted for evaluation shall be submitted using the Transport Canada secure messaging server or a selected method as instructed by Transport Canada.
2. Transport Canada will issue a Transport Canada laptop to the resource to complete the Work. The Contractor will be required to:
 - a) Complete Security screening
 - b) Not use personal IT device to complete the deliverables.
 - c) Pick up TC laptop
 - d) Take proper care of laptop
 - e) Return laptop at the end of the contract

3. Questions and answers shall be in password protected MS-Word and MS-Excel files. If necessary, all discussions concerning the submitted questions and answers shall be conducted via telephone or teleconference. Questions and answers shall not be submitted via e-mail.
4. No copies of the questions and/or answers will be kept in any form or format on any storage medium after the end of the contract.
5. No hard copies of the questions and answers bank will exist at any time.
6. All documents and proprietary information are confidential, during and after the end of the Contract.
7. All documentation, electronic or otherwise, in the Contractor's possession will be deleted or destroyed after delivery and acceptance by Transport Canada.
8. The Contractor must meet all tasks, deliverables and milestones as identified in Section 2.3.
9. The Contractor must return all material belonging to Transport Canada to the Transport Canada Representative upon completion of the Contract.
10. The Contractor will attend meetings with the Transport Canada Representative on site or by teleconference and provide briefings, if requested.
11. The Contractor will provide updates on the progress every 15 days from the start of the Contract and/or as frequently as needed. Transport Canada aims to have an open dialogue with the Contractor to facilitate the development of the questions and answers.

3.1 Location of Work, Work Site and Delivery Point

The work will be performed at the Contractor's place of work. The Contractor will not have access to any Transport Canada offices or work computers.

3.2 Travel

There is no travel required for this Contract.

Appendices

Appendix A: Tables of Topics

Table: AMS1

Topic/sub-topic Number	Particularization or modification of Model Course 7.04	Quantity	Serial number starts at
1.4.1	Basic Construction and Operating Principles of Machinery and Systems		
1.4.1.4.4	Marine Boiler Mountings and steam distribution - auxiliary boilers	5	AMS1-00001
1.4.1.6.1.b	Details of construction, arrangement, operation, and maintenance of various pumps	5	AMS1-00006
1.4.1.6.2	Details of arrangement, operation, maintenance of refrigeration equipment and systems	5	AMS1-00011
1.4.1.6.2.1	Diagnosis and rectification of refrigeration system faults and malfunctions based on observable conditions and knowledge of refrigeration thermodynamic principles	5	AMS1-00016
1.4.1.6.5.1	Operating principles, design features, arrangement, and operation of freshwater makers: distillation units, flash evaporation units, reverse osmosis units	5	AMS1-00021
1.4.1.6.5.5	Control and elimination of pathogens and other contamination for potable water production, storage, and distribution	5	AMS1-00026
1.4.1.6.6.2.1	Design features and arrangement of air receivers	5	AMS1-00031
1.4.1.6.6.2.2	Design features and arrangement of air receiver mountings, valves, drains, safety valves	5	AMS1-00036
1.4.1.6.6.2.4	Materials and practices to prevent corrosion inside air receivers; describe practices and precautions performing hydrostatic tests on air receivers	5	AMS1-00041
1.4.1.6.7.1	Arrangement and operation of fully automated bowl type centrifugal clarifiers and purifiers, and the sequence of events in automated control	5	AMS1-00046
1.4.1.6.7.2	The observable operating parameters of fully automated bowl type centrifugal clarifiers and purifiers such as oil or water flows, pressures, temperatures, water content, rotational speed, vibration, sounds, and assessment of operating status and potential malfunction	5	AMS1-00051
1.4.1.6.8	Design features, arrangement, safety devices and features of thermal oil heating systems	5	AMS1-00056
1.4.1.7.1	Steering gear principles	5	AMS1-00061
1.4.1.7.2	Steering gear electrical control	5	AMS1-00066
1.4.1.8.1	Arrangement of process control devices and location of field instrumentation in systems for: diesel engine cooling, lubrication, fuel, and combustion air systems, describe action of process control devices to maintain desired values, state ranges of typical process values for these systems	5	AMS1-00071

Topic/sub-topic Number	Particularization or modification of Model Course 7.04	Quantity	Serial number starts at
1.4.1.9.1	Fluid flow of the listed systems in a diesel engine propulsion plant:	5	AMS1-00076
1.4.2.2	Auxiliary Boiler Auto-shut down auxiliary boilers and steam systems	5	AMS1-00081
1.4.3.2	Auxiliary Boiler and Associated Auxiliaries, and Steam Systems	5	AMS1-00086
1.4.3.3.1	Precautions and procedures to be taken before starting an engine such as confirming fuel oil supply, starting air-line, cooling, lubricating oil, sea/freshwater line established and amount of lubricating oil inside the sump tank	5	AMS1-00091
1.4.3.3.4	Necessary conditions/status for remote auto start of a diesel engine	5	AMS1-00096
1.4.3.3.6	Engine control system and its components including their function	5	AMS1-00101
1.4.3.3.8	Normal operating pressures and/or temperatures for: exhaust gas, inlet air, circulating water at inlet and outlet, lubricating oil, and fuel and assessment of operating status	5	AMS1-00106
1.4.3.3.2	Precautions before starting an auxiliary steam turbine such as confirming steam line, gland steam line, lubricating oil line, condensate water line and circulating line	5	AMS1-000111
1.4.3.4.1	Purifier and fuel oil treatment	5	AMS1-00116
1.4.3.5.1	Procedure for starting up and stopping positive displacement pumps, axial-flow pumps, and centrifugal pumps making reference to the suction valves, discharge valves, and priming	5	AMS1-00121
1.4.3.5.2	Reasons for a loss of performance of a pump	5	AMS1-00126
1.5.2	Pumping systems operation		
1.5.2.2.1	Operation of bilge systems	5	AMS1-00131
1.5.2.2.7	Operation of firefighting pumps and mains	5	AMS1-00136
1.5.2.2.8	Operation of fuel oil filling and transfer systems	5	AMS1-00141
1.5.3	Oily water separator equipment and systems	5	AMS1-00146
3.2.3	Maintenance and repair of machinery and equipment		
3.2.3.2	Centrifugal Pumps: Describe typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00151
3.2.3.3	Reciprocating Pumps: Describe typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00156
3.2.3.4	Screw and Gear Pumps: Describe typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00161

Topic/sub-topic Number	Particularization or modification of Model Course 7.04	Quantity	Serial number starts at
3.2.3.6	Air Compressors: Describe typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00166
3.2.3.7	Heat Exchangers: Describe typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00171
3.2.3.10	Boiler auxiliary and waste heat recovery: points of inspection and survey and typical faults in fire tube auxiliary boilers	5	AMS1-00176
3.2.3.11	Shafting System: Describe typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00181
3.2.3.12	Refrigeration Maintenance: Describe typical signs of malfunction such as compressor wear, component malfunction, sea water/cooling air temperature, other ambient conditions, blockage, and potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00186
3.2.3.13	Oil Fuels and Lubricating System Maintenance: Describe routine service and maintenance tasks, typical malfunctions and their causes, potential course of action, and when warranted, remedial actions/repairs for the listed components:	5	AMS1-00191
	Total	195	

Table MPS1

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
1.4.1	Basic Construction and Operating Principles of Propulsion Machinery and Systems		
1.4.1.1.3.1.1	Atomization, fuel air mixing and combustion of residual fuel oils,	2	MPS1-00001
1.4.1.1.3.1.2	Atomization, fuel air mixing and combustion ultra-low sulphur fuel oil	2	MPS1-00003
1.4.1.1.3.1.2	Atomization, fuel air mixing and combustion LNG	2	MPS1-00005
1.4.1.1.3.2	Design features, arrangement, and operational principles of the following exhaust gas treatment systems:		
1.4.1.1.3.2.1	SCR	2	MPS1-00007
1.4.1.1.3.2.1	Scrubbers	2	MPS1-00009
1.4.1.1.3.3	Operation of the following exhaust gas treatment systems:		
1.4.1.1.3.3.1	SCR	2	MPS1-00011
1.4.1.1.3.3.2	Scrubbers	2	MPS1-00013

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
1.4.1.1.5	Diagnosis of potential malfunction based on data obtained from typical indicator diagrams for:		
1.4.1.1.5.1	Two stroke engine	5	MPS1-00015
1.4.1.1.5.2	Four stroke engine	5	MPS1-00020
1.4.1.1.5.5	Calculate indicated power given only typical engine data for two stroke and four stroke diesel engines	2	MPS1-00025
1.4.1.1.6a	Large bore 2 stroke propulsion engines		
1.4.1.1.6a.1	Details of construction, arrangement, materials, and design features of the following:		
1.4.1.1.6a.1.16	Piston rings	2	MPS1-00027
1.4.1.1.6a.1.22	an exhaust valve	2	MPS1-00029
1.4.1.1.6a.1.23	an exhaust port	2	MPS1-00031
1.4.1.1.6a.1.24	an air inlet valve	2	MPS1-00033
1.4.1.1.6a.4.7	an air inlet port	2	MPS1-00035
1.4.1.1.6a.4.8	Common rail fuel pump	2	MPS1-00037
1.4.1.1.6a.1.28	Jerk fuel pump	2	MPS1-00039
1.4.1.1.6b	Medium speed and high speed (four-stroke) diesel propulsion engines		
1.4.1.1.6b.2	Details of construction, arrangement, materials, and design features of the following:		
1.4.1.1.6b.2.18	Fuel injector mechanically actuated	2	MPS1-00041
1.4.1.1.6b.2.18	Fuel injector electronically actuated	2	MPS1-00043
1.4.1.1.6b.2.22	Sequence of events and typical values of pressure, temperature, and crank angle degrees for timing diagrams for medium speed and high speed diesel engines, using oil fuels and LNG as fuel	2	MPS1-00045
1.4.1.1.6b.2.25	Lubrication and piston cooling systems for a medium speed diesel engine	2	MPS1-00047
1.4.1.1.6b.2.26	Pneumatic, hydraulic, or electrical engine starting systems for propulsion engines, for auxiliary engines, for emergency generator engines	2	MPS1-00049
1.4.1.1.6b.2.31	Automation systems, sequence of events, Class requirements for emergency generator starting on loss of electrical power	2	MPS1-00051
1.4.1.1.6b.2.32	Purpose, arrangement, function of main diesel engine safety systems and engine slow down/shut down functions	2	MPS1-00053
1.4.1.1.6b.2.33	safe and effective operational recovery responses to the activation of main diesel engine safety systems and engine slow down/shut down functions	2	MPS1-00055

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
1.4.2.3	Power Failure (Blackout) recovery diesel, dual fuel, and hybrid propulsion plants	2	MPS1-00057
1.4.3.1	Main Engine and Associated Auxiliaries dual fuel and hybrid plants		
1.4.3.1.2	Precautions, safety measures, checking procedures and points to be made as preparations before starting up main engine	5	MPS1-00059
1.4.3.1.6	Precautions needed before starting each auxiliary system associated with propulsion machinery such as fuel oil, lubricating oil, combustion air, exhaust gas treatment, cooling, and starting air systems	5	MPS1-00064
1.4.3.1.7	Precautions, safety measures, checking procedures and points to be made as preparations before starting up main engine	2	MPS1-00069
1.4.3.1.13	Torsional vibration, the barred speed range, practices for passing through the barred speed range, and potential damage to engines and shafting system	2	MPS1-00071
3.2.3.8	Typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the following components for slow and medium speed diesel engines		
3.2.3.8.1	– pistons	2	MPS1-00073
3.2.3.8.2	– rings	2	MPS1-00075
3.2.3.8.3	– liners	2	MPS1-00077
3.2.3.8.4	– bearings	2	MPS1-00079
3.2.3.8.5	– inlet valves	2	MPS1-00081
3.2.3.8.	– cylinder block, cylinder liner, cylinder head, turbocharger, and piston cooling passages	2	MPS1-00083
3.2.3.8.10	cylinder lubrication pumps and quills	2	MPS1-00085
3.2.3.8.11	– cylinder heads	2	MPS1-00087
3.2.3.8.12	– exhaust valves	2	MPS1-00089
3.2.3.8.13	– air start valves	2	MPS1-00091
3.2.3.8.14	– fuel injector	2	MPS1-00093
3.2.3.8.15	– fuel injection pump	2	MPS1-00095
3.2.3.9	Turbocharger: Typical wear patterns, wear causes, potential course of action, and when warranted, remedial actions/repairs for the following components:		
3.2.3.9.2	– air casing	2	MPS1-00097
3.2.3.9.4	– impeller	2	MPS1-00099

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
3.2.3.9.8	– nozzle ring	2	MPS1-00101
3.2.3.9.9	– rotor	2	MPS1-00103
3.2.3.9.11	and with particular attention to wear and deterioration as follows:		
3.2.3.9.13	– erosion in the turbine nozzles and in the blades	2	MPS1-0005
3.2.3.9.14	– corrosion of the gas casing	2	MPS1-00107
3.2.3.9.15	– hard deposits	2	MPS1-00109
3.2.3.9.16	– damage to blading	2	MPS1-00111
3.2.3.9.17	– condition of bearings	2	MPS1-00113
3.2.3.9.18	– condition of labyrinths	2	MPS1-00115
3.2.3.9.19	– obstructions in the bleed and sealing passages	2	MPS1-00117
3.2.3.9.20	– lubrication system	2	MPS1-00119
Total		120	

Table SPS1

Topic/sub-topic Number	Modification or Particularization of the Model Course 7.04 topic and sub-topic	Quantity of questions required	Serial # Starts at
1.4.1.2.2	Details of construction, arrangement, materials, and design features of the following:		
1.4.1.2.2.5	High pressure turbine rotor	3	SPS1-0001
1.4.1.2.2.11	Main condenser	3	SPS1-0004
1.4.1.2.3	Operational principles, practices, procedures for the following steam propulsion systems or items:		
1.4.1.2.3.2	Maintaining main condenser vacuum, causes of vacuum loss, actions taken to restore vacuum	3	SPS1-0007
1.4.1.2.3.8	Practices, procedures, precautions, and importance of the following:		
1.4.1.2.3.9	Warming through propulsion turbines, spinning operations, auto-spinning systems	2	SPS1-00010
1.4.1.2.3.10	Maneuvering propulsion turbines and plant in remote control from machinery space control room or from wheelhouse	3	SPS1-00012
1.4.1.2.3.16	Turbine and reduction gear emergency lubrication oil supply arrangements and operation.	2	SPS1-00015

Topic/sub-topic Number	Modification or Particularization of the Model Course 7.04 topic and sub-topic	Quantity of questions required	Serial # Starts at
1.4.1.4.2	Marine boiler fundamentals - propulsion systems		
1.4.1.4.2.1	Arrangement and particular design features of very high-pressure propulsion boilers	3	SPS1-00017
1.4.1.4.2.2	Arrangement of propulsion steam distribution systems	3	SPS1-00020
1.4.1.4.2.3	Arrangement of condensate and feedwater systems	3	SPS1-00023
1.4.1.4.2.4	Particular dangers and risks posed by the use of very high stream pressure systems	3	SPS1-00026
1.4.1.4.2.5	Practices, procedures, precautions for the operation of very high-pressure steam systems, 900PSI and above to ensure personnel safety	3	SPS1-00029
1.4.1.4.3	Materials, construction and arrangement of drums, headers, water tubes, water walls for very high steam pressure propulsion boilers	3	SPS1-00032
1.4.1.4.4	Arrangement, function, and operation of the following boiler fittings and mountings:		
1.4.1.4.4.1	Main steam stop valves	2	SPS1-00035
1.4.1.4.4.2	Safety valves and easing gear	2	SPS1-00037
1.4.1.4.4.3	Local water level gauges	2	SPS1-00039
1.4.1.4.4.4	Remote reading water level gauges	2	SPS1-00041
1.4.1.4.4.5	Feedwater inlet valves	2	SPS1-00043
1.4.2.1	Main Engine steam turbine auto-slow down and shut down	2	SPS1-00045
1.4.2.2	Main Boiler auto-shut down and shut down for propulsion boilers		
1.4.2.2.4	Safe and effective operational recovery responses to the activation of propulsion boiler safety systems	2	SPS1-00047
1.4.2.2.5	The activation and actions of a main boiler auto-shut down system, taking a typical system as an example in terms of the following:		
1.4.2.2.5.1	Impact on the plant under way and in port	2	SPS1-00049
1.4.2.2.5.4	Procedures for recovery (eliminating causes, reigniting burner and etc.)	2	SPS1-00051
1.4.2.2.5.5	Main boiler control system (changeover of control system, position and etc.)	1	SPS1-00053
1.4.2.3	Power Failure (Blackout) recovery steam propulsion plants		
1.4.2.3.1	Power supply, backup power supply and emergency power supply systems	3	SPS1-00054
1.4.2.3	Specific conditions leading to a blackout and procedures for recovery responding to their causes taking a typical system as an example		
1.4.2.3.2	– Equipment/installations to be promptly addressed	2	SPS1-00057
1.4.2.3.3	– Sequential restarting auxiliaries	2	SPS1-00059

Topic/sub-topic Number	Modification or Particularization of the Model Course 7.04 topic and sub-topic	Quantity of questions required	Serial # Starts at
1.4.2.3.4	– Auxiliaries to be manually restarted	2	SPS1-00061
1.4.3.1.1	Precautions needed before starting each auxiliary system associated with propulsion machinery such as fuel oil, lubricating oil, combustion air, condensate, feedwater, and boiler exhaust gas systems	3	SPS1-00063
1.4.3.1.2	Precautions to be taken before barring over propulsion steam turbines	2	SPS1-00066
1.4.3.1.3	Evaluation of the running conditions to determine if the propulsion plant is in good working order in terms of running parameters, engine performance and operating range	2	SPS1-00068
1.4.3.1.4	Determination that running parameters such as temperatures, pressures and levels are in normal range	2	SPS1-00070
1.4.3.2	Propulsion Boiler and Associated Auxiliaries, and Steam Systems		
1.4.3.2.1	Procedures and precautions for lighting burners manually and automatically	2	SPS1-00072
1.4.3.2.2	Procedures and precautions to build up the steam pressure and to put boiler into service	2	SPS1-00074
1.4.3.2.3	Procedures and precautions to be taken when raising steam from a cold boiler	2	SPS1-00076
1.4.3.2.4	Arrangement, function, and adjustment of safety valves to the correct blow off pressure	2	SPS1-00078
1.4.3.2.5	Operation methods of boiler and economizer while under way	1	SPS1-00080
1.4.3.2.6	Precautions for using exhaust gas economizer	2	SPS1-00081
1.4.3.2.7	Practices and procedures used to ensure that all pipes, cocks, valves, and other fittings used for indicating water level are clear and in good working order	2	SPS1-00083
1.4.3.2.8	Precautions for opening high temperature and high-pressure steam valves	2	SPS1-00085
1.4.3.2.9	Procedures for checking the water level in steaming boilers	2	SPS1-00087
1.4.3.2.10	Boiler furnace "blow-back" and practices and procedures to prevent boiler furnace blow back	2	SPS1-00089
	Total	90	

Table AMS1, MPS1, and SPS1

Appendix B: Sample Question format(s)

Sample Question Format*

Level	Operational		
Subject	Auxiliary Machinery and Systems 1	Subject Code	AMS1
Topic/sub-topic Number	1.1.1.6.8	Serial Number in Topic	AMS1-00056

Estimated Level of Difficulty	1, 2 or 3
Estimated time to answer (min)	x

Question Stem:

Option 1	Statement of Option 1		Why is this option wrong
Option 2	Statement of Option 2		Why is this option wrong
Option 3**	Statement of Option 3	√ (correct option)	
Option 4	Statement of Option 4		Why is this option wrong
Option 5	Statement of Option 5		Why is this option wrong

Complete solution (e.g. for problems including numerical calculations):

*Questions will be submitted in digital form in two formats, Word and Excel, the Excel format will be provided at the start of work.

** The position of the correct answer amongst the alternatives shall be randomly selected for each question.

STATEMENT OF WORK – PART 2

Part 2 – Development of Examination Questions and Answers in the subjects Auxiliary Machinery and Systems 2 (AMS2), Motor Propulsion Systems 2 (MPS2), and Steam Propulsion Systems 2 (SPS2)

1.0 Scope

1.1 Title

Development of Examination Questions and Answers in the subjects of **Auxiliary Machinery and Systems 2 (AMS2), Motor Propulsion Systems 2 (MPS2), and Steam Propulsion Systems 2 (SPS2)**.

1.2 Introduction

The *Marine Personnel Regulations* requires the evaluation of an applicant's competency in marine engineering subjects before issuing a certificate of competency.

The Minister of Transport is mandated by the *Canada Shipping Act, 2001* to determine the manner by which the competency of applicants is assessed.

1.3 Objectives of the Work

The objective of this project is to develop, in the English language, a bank of **405** questions in the subjects Auxiliary Machinery and Systems 2 (AMS2), Motor Propulsion Systems 2 (MPS2), and Steam Propulsion Systems 2 (SPS2) to be used in the evaluation of applicants for Chief Engineer Officer and Second Engineer Officer certificates of competency.

2.0 Requirements

2.1 Requirements in Relation to Deliverables

- 2.1.1 The Contractor will prepare, in the English language, a bank of multiple-choice examination questions and their respective answers.
- 2.1.2 The questions must cover the knowledge, understanding, competencies and proficiencies described in the Table A-III/2 of the STCW Code broken down by the topics and sub-topics of the IMO Model Course 7.02 Chief Engineer Officer and Second Engineer Officer, 2014 edition, as modified and identified in the tables AMS2, MPS2 and SPS2. These tables are to be read in conjunction with the IMO Model Course 7.02 Chief Engineer Officer and Second Engineer Officer, 2014 edition. The number of questions required per topic and sub-topic are indicated in each table. The Contractor will assign each question a unique alpha-numeric code in the manner described in each table.
- 2.1.3 Each question will require the candidate to draw upon a detailed knowledge and understanding of the principles, design features, construction and operation of the shipboard machinery, equipment, devices, and systems which are the topic of the question and apply that knowledge and understanding in one or more of the following ways:
 - 1. Analysis of functioning and operating conditions;
 - 2. Recognition, data interpretation and assessment of correct functioning;
 - 3. Recognition of defects, their causes and prevention;

4. Recognition, testing, diagnosis, and fault finding of defects and malfunction;
 5. Remediation of defects and malfunction;
 6. Planning and executing a correct course of action to be taken in the event of machinery, equipment, device, or system failure;
 7. Planning and executing a correct course of action to be taken in the event of an urgent or emergency situation such as fire, flooding, loss of propulsion power, loss of electrical power, loss of control;
 8. Ensuring safe and efficient operation and maintenance;
 9. Applying the principles of effective management to the safe operation and maintenance of the machinery and to the management of people and;
 10. Applying the relevant Canadian Legislation and Regulations governing the marine industry and implementing international conventions
- 2.1.4** The questions shall be multiple choice and shall consist of a stem and alternatives. The alternatives will consist of the correct answer and distractors. The questions shall be written such that a person with a good command of the subject would be able to select the correct answer in 1 to 5 minutes. The Contractor shall provide an estimate of the time required with the answer.
- 2.1.5** The questions shall not be trivial
- 2.1.6** The questions shall not rely on complex calculations for solution.
- 2.1.7** The stem shall be meaningful by itself and shall present a definite problem.
- 2.1.8** The stem shall be clearly and unambiguously worded using commonly understood technical terms when needed.
- 2.1.9** The stem shall not contain irrelevant material.
- 2.1.10** The stem and alternatives shall be free of errors in English usage.
- 2.1.11** The use of negatively worded stems shall be avoided and may be used only if negative wording format is preferable.
- 2.1.12** The stem should usually be a full and complete question. The use of partial sentence stems shall be avoided and may be used only if the partial sentence format is preferable.
- 2.1.13** The stem shall not be written as a “trick” question where the stem tends to lead the candidate to an incorrect answer.
- 2.1.14** The stem shall not be written such that the correct answer may be deduced directly from the stem.
- 2.1.15** In lower order cognitive questions, the stem must require understanding or comprehension of the topic. A stem which requires only the memorization of fact is not acceptable.
- 2.1.16** Each question shall have 3 to 5 distractors.
- 2.1.17** Distractors shall be plausible and mutually exclusive.
- 2.1.18** Alternatives shall be grammatically consistent with the stem.
- 2.1.19** If answer options can be ordered, then they should be ordered.

- 2.1.20** Alternatives shall not use “all of the above”, “none of the above” or combinations of alternatives such as “A and B”.
- 2.1.21** Choice of question command words shall be based on the types of action verbs given in the table to Annex 2 of HTW 5/3/13. A fresh choice of command words shall be made for each topic and subtopic so that the question meets the requirements of paragraph 2.1.3.
- 2.1.22** Each question will be assigned a level of difficulty according to the following criteria:
1. Level 1: Lower order cognitive questions (LO). Questions which test the *remembering and understanding* of concepts and facts.
 2. Level 2: Intermediate order cognitive questions (IO). Questions which test *applying and analyzing* skills.
 3. Level 3: Higher order cognitive questions (HO). Questions which test *evaluating and creating* abilities.
- 2.1.23** Within a given topic the distribution of the level of difficulty in the group of submitted questions on that topic shall be in the ratios given in the table.

Quantity of questions by topic and subtopic required in tables AMS2, MPS2, and SPS2	Ratio LO: IO: HO
1	0:1:0
2	0:1:1
3	1:1:1
5	1:2:2

- 2.1.24** Each question shall include an explanation as to why the correct answer is the best answer and include a relevant reference to a standard textbook or online resource when practicable.
- 2.1.25** Each question will include a technical sketch if one is needed to present the question or to select the correct answer. Sketches shall be either the Contractor’s own work or in the public domain.

Subject	Total Questions per subject
AMS2	195
MPS2	120
SPS2	90
Total number of questions	405

2.2 Acceptance Criteria

All submitted questions will be assessed for acceptance based on the following criteria:

1. The question meets the requirements of paragraphs 2.1.2 and 2.1.3.
2. The question fits within the required question type of paragraph 2.1.4.
3. The question meets the requirements of paragraphs 2.1.5 to 2.1.21.
4. The question difficulty level is assigned in accordance with paragraph 2.1.22.
5. The distribution of questions on a given topic meets the requirements of paragraph 2.1.23.
6. The model answer meets the requirements of paragraph 2.1.24 and 2.1.25.

2.3 Tasks, Activities, Deliverables and Milestones (Work Breakdown Structure)

The questions and answers will be delivered on the dates indicated below.

Each question will be submitted in the format given in Appendix B.

Milestone	Tasks/Activities	Due Date
1	Participate in a teleconference with the Project Authority to discuss coordination.	Within 1 week of contract award
2	The first set of 80 questions and answers are to be submitted to the Project Authority for review.	August 1, 2023
3	The second set of 80 questions and answers are to be submitted to the Project Authority for review.	September 12, 2023
4	The third set of 80 questions and answers are to be submitted to the Project Authority	October 24, 2023
5	The fourth set of 80 questions and answers are to be submitted to the Project Authority	December 5, 2023
6	The last set of 85 questions and answers are to be submitted to the Project Authority	January 16, 2024

2.4 Specifications and Standards

The Contractor will provide the questions and answer options in Microsoft Excel and Microsoft Word, in versions no earlier than 2013. The specific format of the questions and answer options, is given in Appendix B.

2.5 Method and Source of Acceptance

All deliverables and services rendered under any contract are subject to approval by the Project Authority.

2.6 Reporting Requirements

Delivery of the questions and answers will be according to the schedule given in Section 2.3. Feedback, if needed, will be given to the Contractor as per Section 2.3.

3.0 Contractor's Obligations

Contractor's Obligations

1. Questions and answers submitted for evaluation shall be submitted using the Transport Canada secure messaging server or a selected method as instructed by Transport Canada.
2. Transport Canada will issue a Transport Canada laptop to the resource to complete the Work. The Contractor will be required to:
 - a) Complete Security screening
 - b) Not use personal IT device to complete the deliverables.
 - c) Pick up TC laptop
 - d) Take proper care of laptop
 - e) Return laptop at the end of the contract

3. Questions and answers shall be in password protected MS-Word and MS-Excel files. If necessary, all discussions concerning the submitted questions and answers shall be conducted via telephone or teleconference. Questions and answers shall not be submitted via e-mail.
4. No copies of the questions and/or answers will be kept in any form or format on any storage medium after the end of the contract.
5. No hard copies of the questions and answers bank will exist at any time.
6. All documents and proprietary information are confidential, during and after the end of the Contract.
7. All documentation, electronic or otherwise, in the Contractor's possession will be deleted or destroyed after delivery and acceptance by Transport Canada.
8. The Contractor must meet all tasks, deliverables and milestones as identified in Section 2.3.
9. The Contractor must return all material belonging to Transport Canada to the Transport Canada Representative upon completion of the Contract.
10. The Contractor will attend meetings with the Transport Canada Representative on site or by teleconference and provide briefings, if requested.
11. The Contractor will provide updates on the progress every 15 days from the start of the Contract and/or as frequently as needed. Transport Canada aims to have an open dialogue with the Contractor to facilitate the development of the questions and answers.

3.1 Location of Work, Work Site and Delivery Point

The work will be performed at the Contractor's place of work. The Contractor will not have access to any Transport Canada offices or work computers.

3.2 Travel

There is no travel required for this Contract.

Appendices

Appendix A Tables of Topics

Table: AMS2

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.1.5.1	Details of arrangement, operation, maintenance of propeller shafting and associated ancillaries	5	AMS2-00001
1.2.5.1	Refrigeration and Airconditioning systems	5	AMS2-00006
1.2.6.2	Interpretation of fuel test results	3	AMS2-00011
1.2.6.3	Fuel contaminants	3	AMS2-00014
1.2.6.4	Fuels handling and treatment	3	AMS2-00017
1.3.1.3	Auxiliary Prime mover and associated systems	5	AMS2-00020
1.3.1.4	Other auxiliary machinery	5	AMS2-00025
1.3.3.2	Engine components for auxiliary diesel engines to 3 000 kW		
1.3.3.2.2	Evaluate different fabrication methods of diesel engine components, including: welding, forging, utilizing composite materials, plasma-spraying, laser hardening, use of ceramics and other special materials.	5	AMS2-00030
1.3.3.2.4	Explain out of balance gas and inertia forces, couples, and moments, and relate these to flywheels, balance weights, and first/second order balancing, and hull vibration.	2	AMS2-00035
1.3.3.3.1	Identify diesel engine lubricant types, properties, and applications.	3	AMS2-00037
1.3.3.3.2	Outline principles of diesel engine lubrication.	2	AMS2-00040
1.3.3.3.3	In relation to contamination and deterioration of diesel engine lubricants:	2	AMS2-00042
1.3.3.3.3.1	Discuss the sources, types, and effects of contamination	4	AMS2-00044
1.3.3.3.3.2	Discuss the causes, types, and effects of deterioration	3	AMS2-00048
1.3.3.3.3.3	Describe typical testing and treatment methods,	3	AMS2-00051
1.3.3.3.3.4	Interpret typical results of testing, giving appropriate actions which should be undertaken	4	AMS2-00054
1.3.3.4	Auxiliary engines less than 3 000 kW	5	AMS2-00058
1.3.3.6	Auxiliary engines less than 3 000 kW	5	AMS2-00063
1.3.3.7	Auxiliary engines less than 3 000 kW	5	AMS2-00068
1.3.3.8.1	With respect to waste heat units:	5	AMS2-00073

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.3.3.8.3	With respect to starting air lines:	3	AMS2-00078
1.3.3.8.4	With respect to diesel engine crankcases and gearboxes:	5	AMS2-00081
1.3.3.11	functioning and operation of all components including fittings and safety devices of air compressors and compressed air systems	5	AMS2-00086
1.3.3.11	common operational faults of single and multi-stage air compressors, including: leaking valves, leaking piston rings, blocked filters, blocked coolers	4	AMS2-00091
1.3.3.12		5	AMS2-00095
1.3.3.13		5	AMS2-00100
1.3.3.14		5	AMS2-00105
1.3.3.15		2	AMS2-00110
1.3.3.16		3	AMS2-00112
1.3.3.18		3	AMS2-00115
1.3.3.19		3	AMS2-00118
1.3.3.20		3	AMS2-00121
1.3.3.21		3	AMS2-00124
1.3.3.22		5	AMS2-00127
1.3.3.23		2	AMS2-00132
1.3.3.24		5	AMS2-00134
1.3.3.25		5	AMS2-00139
1.4.1.1		5	AMS2-00144
1.4.1.2		5	AMS2-00149
1.4.1.3		4	AMS2-00154
3.1.1.1		2	AMS2-00158
3.3.1.1	Application of risk assessment to realistic maintenance decision making scenarios	5	AMS2-00160
3.3.1.2		4	AMS2-00165
3.3.1.3		2	AMS2-00169

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
3.3.1.4		2	AMS2-00171
3.3.1.6		2	AMS2-00173
3.3.1.9		5	AMS2-00175
3.3.1.10		4	AMS2-00180
3.3.1.11		4	AMS2-00184
3.3.1.14		2	AMS2-00188
3.3.1.15		2	AMS2-00190
3.3.1.16		2	AMS2-00192
3.3.1.18		2	AMS2-00194
	Total	195	

Table MPS2

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.1.1	Propulsion engines 3 000 kW and above and their associated auxiliaries		
1.1.1.1.1	Material selection, and design features of the structure of diesel engine:	2	MPS2-00001
1.1.1.1.1.1	Structure of the bedplate	2	MPS2-00003
1.1.1.1.1.2	Bedplate connection to the tank top	2	MPS2-00005
1.1.1.1.1.3	Arrangement of tie bolts	2	MPS2-00007
1.1.1.1.1.7	Arrangement of main bearing caps	2	MPS2-00009
1.1.1.1.1.8	Arrangement of piston rod gland assembly	2	MPS2-00011
1.1.1.1.2	Material selection, and design features of the running gear of diesel engine:	2	MPS2-00013
1.1.1.1.2.2	Crankshaft	2	MPS2-00015
1.1.1.1.2.2	Main bearing	2	MPS2-00017
1.1.1.1.2.4	Bottom end bearing	2	MPS2-00019
1.1.1.1.2.6	Cross head and bearing	2	MPS2-00021
1.1.1.1.2.7	Guides and guide shoes	2	MPS2-00023

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.1.1.1.3	Material selection, and design features of the fuel injection equipment of diesel engine:	2	MPS2-00025
1.1.1.1.3.1	Fuel injection pumps including fuel pumps for common rail system	2	MPS2-00027
1.1.1.1.3.3	Arrangement of fuel injectors	2	MPS2-00029
1.1.1.1.3.4	Variable injection timing	2	MPS2-00031
1.1.1.1.3.5	LNG dual fuel lean-burn arrangement	2	MPS2-00033
1.1.1.1.4	Describes with the aid of sketches/computer aided drawing, material selection, and design features of the combustion chamber components of diesel engine:	2	MPS2-00035
1.1.1.1.5	Material selection, and design features of piston rings, compatibility to cylinder liner and cylinder lubrication employed in a diesel engine:	2	MPS2-00037
	Selection of cylinder lubrication oil	2	MPS2-00039
1.1.1.1.6	Operative mechanism(s) of diesel engine systems:		
1.1.1.1.6.6	Engine safety system	4	MPS2-00041
1.3.2.1		2	MPS2-00045
1.2.3.3		2	MPS2-00047
1.3.3.1.1.6	Detects faults from sample indicator diagrams	5	MPS2-00049
1.3.3.1.1.6	Discusses engine condition monitoring and evaluation systems with regard to:		
1.3.3.1.1.6.1	Online system with automatic sampling of engine parameters supplemented by cylinder pressure measurement	3	MPS3-00051
1.3.3.1.1.6.2	Engine diagnosis system and computer-controlled surveillance.	2	MPS2-00054
1.3.3.2.5	Explain factors contributing to torsional vibration and identify methods of minimizing or eliminating harmful effects of critical speeds.	2	MPS2-00059
1.3.3.2.6	Evaluate the calibration of:	2	MPS2-00061
1.3.3.2.6.1	Pistons	2	MPS2-00063
1.3.3.2.6.2	Cylinder liners	2	MPS2-00065
1.3.3.2.6.3	Piston rings	3	MPS3-00067

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.3.3.2.6.5	Crankshafts: identify wear patterns, limits, and means of correction.	3	MPS3-00070
1.3.3.2.7	Specify alignment and adjustment criteria of:		
1.3.3.2.7.1	Crankshafts	2	MPS2-00073
1.3.3.2.7.2	Chain drives	2	MPS2-00075
1.3.3.2.7.3	Gear drives	2	MPS2-00077
1.3.3.2.7.4	Integral thrust bearings	3	MPS3-00079
1.3.3.2.7.5	Crossheads.	3	MPS3-00082
1.3.3.2.8	Compile specified working clearances and limits of all bearings, sliding surfaces, and interference fits of a typical diesel engine, using engine builders' manuals.	2	MPS2-00085
1.3.3.3.4	Distribution of lubricating oil to diesel engines, in particular the:		
1.3.3.3.4.1	Guides and crosshead bearings of slow speed diesel engines	3	MPS3-00087
1.3.3.3.4.2	Top end bearings of medium speed engines	3	MPS3-00090
1.3.3.3.4.3	Bottom end bearing	3	MPS3-00093
1.3.3.3.4.4	Main bearings	3	MPS3-00096
1.3.3.3.4.5	Camshaft drives, showing direction of flow, typical clearances, and stating normal operating parameters.	2	MPS2-00099
1.3.3.4.1	Fuel injection of oil fuels in propulsion engines greater than 3 000 kW		
1.3.3.4.1.2	State typical injection pressures and viscosities for different grades of fuel.	3	MPS3-00101
1.3.3.4.1.7	Identify common service faults, symptoms, and causes of combustion problems, specifying appropriate adjustments, including methods of fuel pump timing.	5	MPS5-00104
1.3.3.5.6	Assess lubrication and cooling requirements of turbochargers	3	MPS3-00109
1.3.3.5.7	Analyze typical faults and identify appropriate actions to be undertaken with defective or damaged turbochargers.	3	MPS3-00112
1.3.3.5.8	Identify common faults and identify appropriate actions to be undertaken with typical diesel engine starting and maneuvering systems	1	MPS1-00115
1.3.3.7	Propulsion engines greater than 3 000 kW		

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.3.3.8.2	With respect to scavenge fires:		
1.3.3.8.2.1	Identify routine cleaning and inspection criteria	1	MPS1-00116
1.3.3.8.2.2	Identify symptoms of a fire and response procedures	3	MPS3-00117
1.3.3.8.5	Evaluate the causes and consequences of diesel engine overspeed and give procedures which must be undertaken in the event of such an occurrence.	1	MPS1-00120
	Total	120	

Table SPS2

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
	Propulsion Steam Turbine Plants for large LNG tankers and similar vessels of modern build and design		
1.1.2.1	Details of the design features, materials selection, and operative mechanisms for the listed items		
1.1.2.1	Optimum blade speeds	2	SPS2-00001
1.1.2.1	Turbine glands and gland steam systems	3	SPS2-00003
1.1.4.1.1	Details of the design features, materials selection, and operative mechanisms for the listed items		
1.1.4.1.1	Types of main steam boilers.	3	SPS2-00006
1.1.4.1.1	Methods of construction.	3	SPS2-00009
1.1.4.1.1	Boiler fittings and drum internals.	3	SPS2-00012
1.1.4.1.1	Water circulation.	3	SPS2-00015
1.1.4.1.1	Gas circulation.	3	SPS2-00018
1.1.4.1.1	Operating parameters.	3	SPS2-00021
1.1.4.1.1	Support and expansion.	3	SPS2-00024
1.1.4.1.1	Superheaters and their temperature control.	3	SPS2-00027
1.1.4.1.1	Soot blowers.	3	SPS2-00030
1.1.4.1.1	Economizers.	3	SPS2-00033
1.1.4.1.1	Air heaters.	3	SPS2-00036
1.1.4.1.1	Steam to steam generation.	3	SPS2-00039
1.1.4.1.1	Chemistry of combustion.	3	SPS2-00042
1.1.4.1.1	Burners and burner registers.	3	SPS2-00045
1.1.4.1.1	Local and remote water level indicators.	3	SPS2-00048
1.1.4.1.1	Safety valves.	3	SPS2-00051
1.1.4.1.1	Main feed systems	2	SPS2-00054
1.1.4.1.1	Condenser types, level control, construction, materials, support, expansion, operating parameters, loss of vacuum and leak testing	2	SPS2-00056
1.1.4.1.1	Air ejectors	2	SPS2-00058
1.1.4.1.1	Vacuum pumps	2	SPS2-00060

Topic/sub-topic Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial Number starts at
1.1.4.1.1	Extraction pumps	2	SPS2-00062
1.1.4.1.1	Gland condensers	2	SPS2-00064
1.1.4.1.1	Low pressure heaters	2	SPS2-00066
1.1.4.1.1	Drain coolers	2	SPS2-00068
1.1.4.1.1	High pressure heaters	2	SPS2-00070
1.1.4.1.1	Turbo feed pumps, hydraulic balance	2	SPS2-00072
1.1.4.1.1	De-aerators	2	SPS2-00074
	Practices, procedures, and precautions to be observed when starting up and shutting down propulsion boilers	10	SPS2-00076
1.2.3.2	Parameters concerning operating limits of main steam turbine such as steam inlet pressure and temperature, torque, revolution, vibration, and others	5	SPS2-00086
	Total	90	

Table AMS2, MPS2, and SPS2

Appendix B: Sample Question format(s)

Sample Question Format*

Level	Management / Operational		
Subject	Auxiliary Machinery and Systems 2	Subject Code	AMS2
Topic/sub-topic Number	1.3.3.2.2	Serial Number in Topic	AMS2-00030
Estimated Level of Difficulty	1, 2 or 3		
Estimated time to answer (min)	x		

Question Statement:

Option 1	Statement of Option 1		Why is this option wrong
Option 2	Statement of Option 2		Why is this option wrong
Option 3**	Statement of Option 3	√ (correct option)	
Option 4	Statement of Option 4		Why is this option wrong
Option 5	Statement of Option 5		Why is this option wrong

Complete solution (e.g., for problems including numerical calculations):

*Questions will be submitted in digital form in two formats, Word and Excel, the Excel format will be provided at the start of work.

** The position of the correct answer amongst the alternatives shall be randomly selected for each question.

STATEMENT OF WORK – PART 3

Part 3 – Development of Examination Questions and Answers in the subjects of Electro-technology and Automation 1, (ETA1) and High Voltage Safety – Operational (HVO)

1.0 Scope

1.1 Title

Development of Examination Questions and Answers in the subjects of **Electro-technology and Automation 1, (ETA1) and High Voltage Safety – Operational (HVO)**.

1.2 Introduction

The *Marine Personnel Regulations* requires the evaluation of an applicant's competency in marine engineering subjects before issuing a certificate of competency.

The Minister of Transport is mandated by the Canada Shipping Act, 2001 to determine the manner by which the competency of applicants is assessed.

1.3 Objectives of the Work

The objective of this project is to develop, in the English language, a bank of **195** questions in the subjects of Electro-technology and Automation 1, (ETA1) and High Voltage Safety – Operational (HVO) to be used in the evaluation of applicants for an Engineer in Charge of the Watch certificate of competency.

2.0 Requirements

2.1 Requirements in Relation to Deliverables

- 2.1.1** The Contractor will prepare, in the English language, a bank of multiple-choice examination questions and their respective answers.
- 2.1.2** The questions must cover the knowledge, understanding, competencies and proficiencies described in the Table A-III/1 of the STCW Code broken down by the topics and sub-topics of the IMO Model Course 7.04 *Officer in Charge of an Engineering Watch*, 2014 edition, as modified and identified in the Table ETA1 and HVO. This table is to be read in conjunction with the IMO Model Course 7.04 *Officer in Charge of an Engineering Watch*, 2014 edition. The number of questions required per topic and sub-topic are indicated in each table. The Contractor will assign each question a unique alpha-numeric code in the manner described in each table.
- 2.1.3** Each question will require the candidate to draw upon a broad knowledge and understanding of the applied electrical, electronic, and automation engineering principles, and of the design features, functioning and operation of the electrical and electronic devices and systems which are the topic of the question and to apply that knowledge and understanding to their safe and efficient operation, and maintenance at the operational level in one or more of the following ways:
1. Knowledge and understanding of the applied electrical and electronic engineering principles and the ability to describe or explain the link between these principles and the function, operation, operating characteristics, and maintenance;

2. Knowledge and understanding of the operating characteristics, the observable operating parameters and conditions, and the ability to interpret those observations for the recognition of correct functioning and typical malfunctioning or failure;
 3. Knowledge of the practices, procedures, and precautions to be taken for the safe operation of electrical machinery and devices;
 4. Practices, procedures, and precautions to be followed in operation of electrical, electronic, automation and control systems;
 5. The ability to take appropriate action to remedy or mitigate failure, malfunctioning and in response to emergency situations;
 6. Ability to perform routine fault-finding tasks for devices and systems
 7. Ability to test, replace and adjust temperature, pressure, and level sensing field instrumentation;
 8. Ability to perform routine servicing, repair, replace, and return to service;
 9. Knowledge of occupational health and safety practices and requirements to create and maintain an electrically safe workspace and CSA Z462-18 *Workplace Electrical Safety*.
- 2.1.4** The questions shall be multiple choice and shall consist of a stem and alternatives. The alternatives will consist of the correct answer and distractors. The questions shall be written such that a person with a good command of the subject would be able to select the correct answer in 1 to 5 minutes. The Contractor shall provide an estimate of the time required with the answer.
- 2.1.5** The questions shall not be trivial
- 2.1.6** The questions shall not rely on complex calculations for solution.
- 2.1.7** The stem shall be meaningful by itself and shall present a definite problem.
- 2.1.8** The stem shall be clearly and unambiguously worded using commonly understood technical terms when needed.
- 2.1.9** The stem shall not contain irrelevant material.
- 2.1.10** The stem and alternatives shall be free of errors in English usage.
- 2.1.11** The use of negatively worded stems shall be avoided and may be used only if negative wording format is preferable.
- 2.1.12** The stem should usually be a full and complete question. The use of partial sentence stems shall be avoided and may be used only if the partial sentence format is preferable.
- 2.1.13** The stem shall not be written as a “trick” question where the stem tends to lead the candidate to an incorrect answer.
- 2.1.14** The stem shall not be written such that the correct answer may be deduced directly from the stem.
- 2.1.15** In lower order cognitive questions, the stem must require understanding or comprehension of the topic. A stem which requires only the memorization of fact is not acceptable.
- 2.1.16** Each question shall have 3 to 5 distractors.
- 2.1.17** Distractors shall be plausible and mutually exclusive.
- 2.1.18** Alternatives shall be grammatically consistent with the stem.

- 2.1.19** If answer options can be ordered, then they should be ordered.
- 2.1.20** Alternatives shall not use “all of the above”, “none of the above” or combinations of alternatives such as “A and B”.
- 2.1.21** Choice of question command words shall be based on the types of action verbs given in the table to Annex 2 of HTW 5/3/13. A fresh choice of command words shall be made for each topic and subtopic so that the question meets the requirements of paragraph 2.1.3.
- 2.1.22** Each question will be assigned a level of difficulty according to the following criteria:
1. Level 1: Lower order cognitive questions (LO). Questions which test the *remembering and understanding* of concepts and facts.
 2. Level 2: Intermediate order cognitive questions (IO). Questions which test *applying and analyzing* skills.
 3. Level 3: Higher order cognitive questions (HO). Questions which test *evaluating and creating* abilities.
- 2.1.23** Within a given topic the distribution of the level of difficulty in the group of submitted questions on that topic shall be in the ratios given in the table.

Quantity of questions by topic and subtopic required in Table ETA1 and HVO	Ratio LO: IO: HO
1	0:1:0
2	0:1:1
3	1:1:1
5	1:2:2

- 2.1.24** Each question shall include an explanation as to why the correct answer is the best answer and include a relevant reference to a standard textbook or online resource when practicable.
- 2.1.25** Each question will include a technical sketch if one is needed to present the question or to select the correct answer. Sketches shall be either the Contractor’s own work or in the public domain.

Subject	Total Questions
ETA1 and HVO	195
Total number of questions	195

2.2 Acceptance Criteria

All submitted questions will be assessed for acceptance based on the following criteria:

1. The question meets the requirements of paragraphs 2.1.2 and 2.1.3.
2. The question fits within the required question type of paragraph 2.1.4.
3. The question meets the requirements of paragraphs 2.1.5 to 2.1.21.
4. The question difficulty level is assigned in accordance with paragraph 2.1.22.
5. The distribution of questions on a given topic meets the requirements of paragraph 2.1.23.
6. The model answer meets the requirements of paragraph 2.1.24 and 2.1.25.

2.3 Tasks, Activities, Deliverables and Milestones (Work Breakdown Structure)

The questions and answers will be delivered on the dates indicated below.

Each question will be submitted in the format given in Appendix B.

Milestone	Tasks/Activities	Due Date
1	Participate in a teleconference with the Project Authority to discuss coordination.	Within 1 week of contract award
2	The first set of 65 questions and answers are to be submitted to the Project Authority for review.	February 17, 2023
3	The second set of 65 questions and answers are to be submitted to the Project Authority for review.	March 3, 2023
4	The last set of 65 questions and answers are to be submitted to the Project Authority	March 24, 2023

2.4 Specifications and Standards

The Contractor will provide the questions and answer options in Microsoft Excel and Microsoft Word, in versions no earlier than 2013. The specific format of the questions and answer options, is given in Appendix B.

2.5 Method and Source of Acceptance

All deliverables and services rendered under any contract are subject to approval by the Project Authority.

2.6 Reporting Requirements

Delivery of the questions and answers will be according to the schedule given in Section 2.3. Feedback, if needed, will be given to the Contractor as per Section 2.3.

3.0 Contractor's Obligations

1. Questions and answers submitted for evaluation shall be submitted using the Transport Canada secure messaging server or a selected method as instructed by Transport Canada.
2. Transport Canada will issue a Transport Canada laptop to the resource to complete the Work. The Contractor will be required to:
 - f) Complete Security screening
 - g) Not use personal IT device to complete the deliverables.
 - h) Pick up TC laptop
 - i) Take proper care of laptop
 - j) Return laptop at the end of the contract
3. Questions and answers shall be in password protected MS-Word and MS-Excel files. If necessary, all discussions concerning the submitted questions and answers shall be conducted via telephone or teleconference. Questions and answers shall not be submitted via e-mail.

4. No copies of the questions and/or answers will be kept in any form or format on any storage medium after the end of the contract.
5. No hard copies of the questions and answers bank will exist at any time.
6. All documents and proprietary information are confidential, during and after the end of the Contract.
7. All documentation, electronic or otherwise, in the Contractor's possession will be deleted or destroyed after delivery and acceptance by Transport Canada.
8. The Contractor must meet all tasks, deliverables and milestones as identified in Section 2.3.
9. The Contractor must return all material belonging to Transport Canada to the Transport Canada Representative upon completion of the Contract.
10. The Contractor will attend meetings with the Transport Canada Representative on site or by teleconference and provide briefings, if requested.
11. The Contractor will provide updates on the progress every 15 days from the start of the Contract and/or as frequently as needed. Transport Canada aims to have an open dialogue with the Contractor to facilitate the development of the questions and answers.

3.1 Location of Work, Work Site and Delivery Point

The work will be performed at the Contractor's place of work. The Contractor will not have access to any Transport Canada offices or work computers.

3.2 Travel

There is no travel required for this Contract.

Appendices

Appendix A: Tables of Topics

Table: ETA1 and HVM

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
1.4.1.8	The application of various control methodologies taking examples such as automatic motor start/stop for ON-OFF control, automatic generator start/stop for sequential control, level/temperature/pressure control for PID control and main engine speed multiplication/reducing program for program control	5	ETA1-00001
2.1.1.4.1	Purposes and applications of switches, circuit breakers and fuses in terms of current interrupting capacity	2	ETA1-00003
2.1.1.4.1	Working principles various types of closing mechanism of circuit breakers	2	ETA1-00005
2.1.1.4.1	Essential services which are supplied by electrical power	2	ETA1-00007
2.1.1.4.1	Arrangement, functioning, and applications of emergency power supply devices and systems, batteries, UPS, generator	2	ETA1-00009
2.1.1.4.1	Automatic and manual operation of emergency power supply devices and systems, batteries, UPS, generator	2	ETA1-00011
2.1.1.4.1	Working principles, arrangement, advantages and disadvantages of insulated-neutral and earthed-neutral systems	5	ETA1-00013
2.1.1.4.2	Insulation resistance and causes of deterioration and remedies	2	ETA1-00015
2.1.1.6	direct online starting	4	ETA1-00017
2.1.1.6	star-delta starting	4	ETA1-00019
2.1.1.6.10	Single phasing of a polyphase motor, its effect on a motor, and observable indications:		
2.1.1.6.10.1	when running	2	ETA1-00021
2.1.1.6.10.2	when starting	2	ETA1-00023
2.1.1.6.11	Working principles of the protection against running with a phase open circuited	2	ETA1-00025
2.1.3.6.1.	Temperature - Electrical	2	ETA1-00027
2.1.3.6.3.	Level - Inferential Methods	2	ETA1-00029
2.1.3.6.4.7	Working principles and design features of:		
2.1.3.6.4.7.1	a rotor meter	2	ETA1-00031
2.1.3.6.4.7.2	an electrical flowmeter	2	ETA1-00033
2.1.3.6.4.7.3	a venturi flowmeter	2	ETA1-00035
2.1.3.6.5	working principles of a viscometer	2	ETA1-00037
2.1.3.6.6	Working principles and application of a photoelectric cell to:		
2.1.3.6.6.1	– an oil-in-water detector	2	ETA1-00039

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
2.1.3.6.6.2	– an oil-mist detector	2	ETA1-00041
2.1.3.6.8	Design features and use of the listed items:		
2.1.3.6.8.1	an explosive-gas detector	2	ETA1-00043
2.1.3.6.9	Practices and procedures for the setting up, testing and maintenance of the measuring devices listed		
2.1.3.6.9.1	torque metre based on the effect of stress in a magnetic field	2	ETA1-00045
2.1.3.6.9.2	viscometer	2	ETA1-00047
2.1.3.7.1	Operating principals and application of signal transmitters/transducers	2	ETA1-00059
2.2.1	SAFETY REQUIREMENTS FOR WORKING ON ELECTRICAL SYSTEMS including safety requirements for working on high voltage equipment		
	Causes and effect of electric shock, fatal levels of current	2	ETA1-00061
	Levels of risk of shock from voltage levels considered safe to lethal	2	ETA1-00063
	Practices and procedures for workplace electrical safety, CSA Z462-18	4	ETA1-00065
	Practices and procedures to ensure the safe disconnection, isolation, and proving an electrically safe working condition	4	ETA1-00069
	Purpose and practices in the use of interlocking devices fitted on circuit breakers	2	ETA1-00073
	Dangers posed by busbars and other exposed conductors; voltage creep, clearance distances at various voltages	3	ETA1-00075
	Hazards posed by instrument voltage/current transformer circuits and the safe procedures for working on such circuits	2	ETA1-00078
	Safety/protection design features for switchboards, for example, such as door locks/interlocks, dead front panel, blast relief panels	2	ETA1-00080
2.2.2.2	Generator		
	Safety and isolation precautions necessary before commencing work	2	ETA1-00082
	Inspection points, common faults, and the necessary remedial action	2	ETA1-00084
	Generator insulation resistance testing, performance, records, interpretation of values	2	ETA1-00086
2.2.2.3	Switchboard		
	Routine maintenance tasks for circuit breakers	2	ETA1-00088
2.2.2.4	Electrical Motors		
	Practices for the performance of maintenance tasks for cage electric motors, paying particular attention to:		
	routine tasks and their frequency of maintenance	2	ETA1-00090
	common causes of failure of insulation and remedial actions	2	ETA1-00092

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
	Practices and procedures for insulation resistance testing for three-phase induction motors	2	ETA1-00094
2.2.2.5	Points of observation and testing to determine functional status, correct functioning and common malfunctions in motor starters and controllers, and protective devices	2	ETA1-096
2.2.2.6.2	Distribution		
	Definition of the following faults: open circuit, earth fault, short-circuit	2	ETA1-098
	Causes and dangers of earth faults	2	ETA1-0100
	Effects of earth faults in an insulated neutral distribution system	2	ETA1-0102
	Detection of earth faults using earth-fault lamps	2	ETA1-0104
	Practices and procedure for locating earth-faults using earth-fault lamps and an insulation-testing instrument	2	ETA1-0106
	Detection and locating earth faults using earth-fault monitor	2	ETA1-0108
	Practices and procedure for locating earth-faults using earth-fault detection devices	2	ETA1-0110
	Practices and procedures for the installation and maintenance of watertight cable fittings	2	ETA1-0112
2.2.2.7	D.C Electrical Systems and Equipment		
2.2.2.7.1	Battery systems		
	emergency lights and backup power supply lines for the ship's propulsion machinery must be tested at frequent intervals	2	ETA1-0114
	– Demonstrates or describes the maintenance of batteries, taking all necessary precautions	2	ETA1-0116
	Off-gassing hazards when recharging a lead-acid battery, and the effect on the electrolyte and remedial action	2	ETA1-0118
	Testing and importance of the specific gravity of the electrolyte of a lead-acid battery and of an alkaline battery	2	ETA1-0120
	Working principles and application of various battery charging systems	2	ETA1-0122
	Functioning and operation of various battery charging systems	2	ETA1-0124
	Routine maintenance and testing of batteries and battery banks	2	ETA1-0126
	Hazards posed by the use of batteries and battery charging systems and safety practices and procedures	2	ETA1-0128
	Specific fire hazards and response to fire involving Li-Ion batteries and battery banks	2	ETA1-0130
2.2.2.7.2	Remote/Automatic Control Equipment		

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
	Practices and procedures for verification that backup power supplies for remote/automatic control equipment is functioning correctly and common malfunctions	2	ETA1-0132
	Practices and procedures for verification that backup power supplies for monitoring systems is functioning correctly and common malfunctions	2	ETA1-0134
2.2.3.1	Fault Protection		
	Fault protection arrangements for steering gear motors and steering controls, including single phasing, overload, overcurrent, ground fault	2	ETA1-0136
	Earthing practices for switchboard instrumentation	2	ETA1-0138
	Dangers posed by instrument voltage/current transformer circuits and the safe procedure for working on such circuits	2	ETA1-0140
	Fault location in simple control systems	2	ETA1-0142
	– On locating fault takes actions to best prevent damage	2	ETA1-0144
2.2.4	CONSTRUCTION AND OPERATION OF ELECTRICAL TESTING AND MEASURING EQUIPMENT		
	Working principles of an insulation tester	2	ETA1-0146
	Use of an insulation tester:		
	– to check the zero reading	2	ETA1-0148
	– to check that the equipment is dead	2	ETA1-0150
	– to measure values of phase-to-phase insulation	2	ETA1-0152
	– to measure values of phase-to-earth insulation	2	ETA1-0154
	Use of digital and analogue multimeters, taking the necessary precautions, to:		
	– measure resistance	2	ETA1-0156
	– measure voltage	2	ETA1-0158
	– test diodes	2	ETA1-0160
2.2.5.2	Automatic Control Devices		
2.2.5.2.1	(Process control)		
	Arrangement/system configurations of typical marine automatic control systems and components such as, for example, field sensors, signal conditioners, converters, amplifiers, I/O modules,	3	ETA1-0162
	Arrangement/configuration of field instrumentation circuits	3	ETA1-0165
	Fault finding process for wiring faults in field instrumentation circuits from I/O module to sensor	2	ETA1-0168
	Working principles and arrangement of the following process monitoring elements:	2	ETA1-0170
	Pt 100 RTD, temperature compensation, use and installation in 2, 3, and 4-wire circuits	2	ETA1-0172
	Resistance to Current Converters in Pt 100 RTD circuits	2	ETA1-0174

Topic/sub-topic Number	Modification or Particularization of the Model Course topic and sub-topic	Quantity	Serial number starts at
	Fault finding in Pt 100 RTD circuits and replacement of faulty Pt100 RTD	2	ETA1-0176
	Type-J and Type-K thermocouples	2	ETA1-0178
	Electromagnetic speed sensors (MPU)	2	ETA1-0180
	Fault finding, testing of electromagnetic speed sensors and sensor replacement	2	ETA1-0182
	Construction and arrangement of field wiring to prevent electromagnetic interference	2	ETA1-0184
	Arrangement and functioning of automatic control systems in the following operating control systems:		
	– main engine	2	ETA1-0186
	– boiler burner control	2	ETA1-0188
	Practices and procedures testing for correct functioning and for malfunction in the following automatic control systems in the following operating control systems:		
	– power generation and distribution	2	ETA1-0192
	– boiler water level control	2	ETA1-0194
	TOTAL	195	

Table ETA1 and HVM

Appendix B: Sample Question format(s)

Sample Question Format*

Level	Operational		
Subject	ETA1 and HVO	Subject Code	ETA1
Topic/sub-topic Number	2.2.4	Serial Number in Topic	ETA1-00146
Estimated Level of Difficulty	1, 2 or 3		
Estimated time to answer (min)	x		

Question Statement:

Option 1	Statement of Option 1		Why is this option wrong
Option 2	Statement of Option 2		Why is this option wrong
Option 3**	Statement of Option 3	√ (correct option)	
Option 4	Statement of Option 4		Why is this option wrong
Option 5	Statement of Option 5		Why is this option wrong

Complete solution (e.g., for problems including numerical calculations):

*Questions will be submitted in digital form in two formats, Word and Excel, the Excel format will be provided at the start of work.

** The position of the correct answer amongst the alternatives shall be randomly selected for each question.

STATEMENT OF WORK – PART 4

Part 4 – Development of Examination Questions and Answers in the subjects of Electro-technology and Automation 2, (ETA2) and High Voltage Safety – Management (HVM).

1.0 Scope

1.1 Title

Development of Examination Questions and Answers in the subjects of **Electro-technology and Automation 2, (ETA2) and High Voltage Safety – Management (HVM)**

1.2 Introduction

The *Marine Personnel Regulations* requires the evaluation of an applicant's competency in marine engineering subjects before issuing a certificate of competency.

The Minister of Transport is mandated by the Canada Shipping Act, 2001 to determine the manner by which the competency of applicants is assessed.

1.3 Objectives of the Work

The objective of this project is to develop, in the English language, a bank of **195** questions in the subjects of Electro-technology and Automation 2, (ETA2) and High Voltage Safety – Management (HVM) to be used in the evaluation of applicants for Chief Engineer Officer and Second Engineer Officer certificates of competency.

2.0 Requirements

2.1 Requirements in Relation to Deliverables

- 2.1.1 The Contractor will prepare, in the English language, a bank of multiple-choice examination questions and their respective answers.
- 2.1.2 The questions must cover the knowledge, understanding, competencies and proficiencies described in the Table A-III/2 of the STCW Code broken down by the topics and sub-topics of the IMO Model Course 7.02 Chief Engineer Officer and Second Engineer Officer, 2014 edition, as modified and identified in table ETA2 and HVM. This table is to be read in conjunction with the IMO Model Course 7.02 Chief Engineer Officer and Second Engineer Officer, 2014 edition. The number of questions required per topic and sub-topic are indicated in each table. The Contractor will assign each question a unique alpha-numeric code in the manner described in each table.
- 2.1.3 Each question will require the applicant to draw upon a detailed knowledge and understanding of the applied electrical, electronic, and automation engineering principles, design features, arrangement and operation of the electrical, electronic and automation systems, machinery, equipment, and devices which are the topic of the question and to apply that knowledge and understanding to their safe and efficient operation and maintenance at the management level in one or more of the following ways:

1. Analysis of functioning and operating conditions;

2. Recognition, data interpretation and assessment of correct functioning and typical malfunctioning or failure.
 3. Recognition of defects, their causes and prevention;
 4. Recognition, testing, diagnosis, and fault finding of defects and malfunction;
 5. Remediation of defects and malfunction;
 6. Planning and executing a correct course of action to be taken in the event of machinery, equipment, device, or system failure;
 7. Planning and executing a correct course of action to be taken in the event of an urgent or emergency situation such as loss of electrical power, loss of propulsion automatic control, loss of steering control, fire in electrical machinery and distribution systems, flooding;
 8. Applying occupational health and safety regulations, CSA standards Z462-18 and Z460-13 to the safe and efficient identification of risks and hazards in the operation and maintenance of electrical/electronic/automation systems and the control of work on electrical/electronic/automation systems;
 9. Knowledge of the practices and requirements for software version control and records keeping for software and setting changes for automation devices and systems.
- 2.1.4** The questions shall be multiple choice and shall consist of a stem and alternatives. The alternatives will consist of the correct answer and distractors. The questions shall be written such that a person with a good command of the subject would be able to select the correct answer in 1 to 5 minutes. The Contractor shall provide an estimate of the time required with the answer.
- 2.1.5** The questions shall not be trivial
- 2.1.6** The questions shall not rely on complex calculations for solution.
- 2.1.7** The stem shall be meaningful by itself and shall present a definite problem.
- 2.1.8** The stem shall be clearly and unambiguously worded using commonly understood technical terms when needed.
- 2.1.9** The stem shall not contain irrelevant material.
- 2.1.10** The stem and alternatives shall be free of errors in English usage.
- 2.1.11** The use of negatively worded stems shall be avoided and may be used only if negative wording format is preferable.
- 2.1.12** The stem should usually be a full and complete question. The use of partial sentence stems shall be avoided and may be used only if the partial sentence format is preferable.
- 2.1.13** The stem shall not be written as a “trick” question where the stem tends to lead the candidate to an incorrect answer.
- 2.1.14** The stem shall not be written such that the correct answer may be deduced directly from the stem.
- 2.1.15** In lower order cognitive questions, the stem must require understanding or comprehension of the topic. A stem which requires only the memorization of fact is not acceptable.
- 2.1.16** Each question shall have 3 to 5 distractors.
- 2.1.17** Distractors shall be plausible and mutually exclusive.

- 2.1.18** Alternatives shall be grammatically consistent with the stem.
- 2.1.19** If answer options can be ordered, then they should be ordered.
- 2.1.20** Alternatives shall not use “all of the above”, “none of the above” or combinations of alternatives such as “A and B”.
- 2.1.21** Choice of question command words shall be based on the types of action verbs given in the table to Annex 2 of HTW 5/3/13. A fresh choice of command words shall be made for each topic and subtopic so that the question meets the requirements of paragraph 2.1.3.
- 2.1.22** Each question will be assigned a level of difficulty according to the following criteria:
1. Level 1: Lower order cognitive questions (LO). Questions which test *remembering and understanding* of concepts and facts.
 2. Level 2: Intermediate order cognitive questions (IO). Questions which test *applying and analyzing* skills.
 3. Level 3: Higher order cognitive questions (HO). Questions which test *evaluating and creating* abilities.
- 2.1.23** Within a given topic the distribution of the level of difficulty in the group of submitted questions on that topic shall be in the ratios given in the table.

Quantity of questions by topic and subtopic required in the table ETZ2 and HVM	Ratio LO: IO: HO
1	0:1:0
2	0:1:1
3	1:1:1
5	1:2:2

- 2.1.24** Each question shall include an explanation as to why the correct answer is the best answer and include a relevant reference to a standard textbook or online resource when practicable.
- 2.1.25** Each question will include a technical sketch if one is needed to present the question or to select the correct answer. Sketches shall be either the Contractor’s own work or in the public domain.

Subject	Total Questions per subject
ETA2 and HVM	195
Total number of questions	195

2.2 Acceptance Criteria

All submitted questions will be assessed for acceptance based on the following criteria:

1. The question meets the requirements of paragraphs 2.1.2 and 2.1.3.
2. The question fits within the required question type of paragraph 2.1.4.
3. The question meets the requirements of paragraphs 2.1.5 to 2.1.21.
4. The question difficulty level is assigned in accordance with paragraph 2.1.22.
5. The distribution of questions on a given topic meets the requirements of paragraph 2.1.23.
6. The model answer meets the requirements of paragraph 2.1.24 and 2.1.25.

2.3 Tasks, Activities, Deliverables and Milestones (Work Breakdown Structure)

The questions and answers will be delivered on the dates indicated below.

Each question will be submitted in the format given in Appendix B.

Milestone	Tasks/Activities	Due Date
1	Participate in a teleconference with the Project Authority to discuss coordination.	Within 1 week of contract award
2	The first set of 65 questions and answers are to be submitted to the Project Authority for review.	April 7, 2023
3	The second set of 65 questions and answers are to be submitted to the Project Authority for review.	May 5, 2023
4	The last set of 65 questions and answers are to be submitted to the Project Authority	June 16, 2023

2.4 Specifications and Standards

The Contractor will provide the questions and answer options in Microsoft Excel and Microsoft Word, in versions no earlier than 2013. The specific format of the questions and answer options, is given in Appendix B.

2.5 Method and Source of Acceptance

All deliverables and services rendered under any contract are subject to approval by the Project Authority.

2.6 Reporting Requirements

Delivery of the questions and answers will be according to the schedule given in Section 2.3. Feedback, if needed, will be given to the Contractor as per Section 2.3.

3.0 Contractor's Obligations

1. Questions and answers submitted for evaluation shall be submitted using the Transport Canada secure messaging server or a selected method as instructed by Transport Canada.
2. Transport Canada will issue a Transport Canada laptop to the resource to complete the Work. The Contractor will be required to:
 - k) Complete Security screening
 - l) Not use personal IT device to complete the deliverables.
 - m) Pick up TC laptop
 - n) Take proper care of laptop
 - o) Return laptop at the end of the contract
3. Questions and answers shall be in password protected MS-Word and MS-Excel files. If necessary, all discussions concerning the submitted questions and answers shall be conducted via telephone or teleconference. Questions and answers shall not be submitted via e-mail.

4. No copies of the questions and/or answers will be kept in any form or format on any storage medium after the end of the contract.
5. No hard copies of the questions and answers bank will exist at any time.
6. All documents and proprietary information are confidential, during and after the end of the Contract.
7. All documentation, electronic or otherwise, in the Contractor's possession will be deleted or destroyed after delivery and acceptance by Transport Canada.
8. The Contractor must meet all tasks, deliverables and milestones as identified in Section 2.3.
9. The Contractor must return all material belonging to Transport Canada to the Transport Canada Representative upon completion of the Contract.
10. The Contractor will attend meetings with the Transport Canada Representative on site or by teleconference and provide briefings, if requested.
11. The Contractor will provide updates on the progress every 15 days from the start of the Contract and/or as frequently as needed. Transport Canada aims to have an open dialogue with the Contractor to facilitate the development of the questions and answers.

3.1 Location of Work, Work Site and Delivery Point

The work will be performed at the Contractor's place of work. The Contractor will not have access to any Transport Canada offices or work computers.

3.2 Travel

There is no travel required for this Contract.

Appendices

Appendix A: Tables of Topics

Table: ETA2 and HVM

Item Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial number starts at:
1.3.4	FUNCTIONS AND MECHANISM OF AUTOMATIC CONTROL FOR MAIN ENGINE		
1.3.4.1	Diesel Engines		
1.3.4.1.2	Purpose and operating mechanisms of the devices and systems performing the following functions used for main engine automatic control including:		
1.3.4.1.2.5	Speed run-up program by revolution, load and/or combination control, including bypass program for critical speed	2	ETA2-00001
1.3.4.1.2.6	Crash/Emergency astern program	2	ETA2-00003
1.3.4.1.2.10	Safety (automatic shutdown, automatic slowdown) system	2	ETA2-00005
1.3.4.1.3	The function and operating mechanisms of the electro-governing system for revolution control	2	ETA2-00007
1.3.5.1.2	Purpose and operating mechanisms of the devices and systems performing the following functions used for generator and distribution automatic control including:		
1.3.5.1.2.1	Full automatic control for generator distribution system, including automatic starting and stopping prime mover	2	ETA2-00009
1.3.5.1.2.3	Automatic load sharing	2	ETA2-00011
1.3.5.1.2.7	Protective/Safety functions built in Automatic/Main Circuit Breaker (ACB and VCB)	2	ETA2-00013
1.3.5.1.2.8	Automatic voltage (AVR) and frequency control	2	ETA2-00015
1.3.5.2	Steam boiler		
1.3.5.2.1	Automatic Combustion Control (ACC), including steam pressure control, fuel oil flow control and air flow control	2	ETA2-00017
1.3.5.2.2	Automatic feed water control	2	ETA2-00019

Item Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial number starts at:
1.3.5.2.4	Protective/Safety functions for steam boiler	2	ETA2-00021
1.3.5.5	Pumping and piping system	2	ETA2-00023
1.3.5.6	Steering gear system	2	ETA2-00025
2.1.1.1	Use and meaning of the following in terms in electrical practice in ships		
	Effect of temperature, oxidation, fire, oil, seawater, acids, and solvents on insulation materials	2	ETA2-00027
	Sheathing of electric cables	2	ETA2-00029
2.1.1.2	Use and meaning of the following in terms in electronic fault diagnosis on board ships	2	ETA2-00031
	Interpretation and use of electronic systems and subsystem circuit diagrams, operation, and maintenance manuals.	2	ETA2-00033
	Electronic test equipment, method of DMM display.	2	ETA2-00035
	Use of CRO as a testing and display instrument.	2	ETA2-00037
	Analysis of measurement and test result on components and circuits.	2	ETA2-00039
	Methods of fault detection.	2	ETA2-00041
2.1.1.3	Control air supply.	2	ETA2-00043
2.1.1.3	Controllers and Basic Control Theory	2	ETA2-00045
2.1.2.2	Ziegler-Nichols, Cohen-Coon tuning methods	2	ETA2-00047
2.1.2.2	Digital communication bus and fibre optic signal transmission systems		
2.1.2.2	Electronic PID Controllers		
2.1.2.2	Boiler water level control.	3	ETA2-00049
2.1.2.2	Main engine control for FP and CP propellers.	2	ETA2-00052
2.1.2.2	General requirements of automatic control equipment and safety devices:		
2.1.2.2	Safety system	2	ETA2-00054

Item Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial number starts at:
2.1.2.2	System independence	2	ETA2-00056
2.1.2.2	Local control	2	ETA2-00058
2.1.2.2	Power supply	2	ETA2-00060
2.1.2.2	Remote control – Diesel propulsion		
2.1.2.2	Control electronic, electro-pneumatic, electro-hydraulic or pneumatic	2	ETA2-00062
2.1.2.2	Malfunctions – alarm, engine slow down, engine stop	2	ETA2-00064
2.1.2.2	UMS Systems	2	ETA2-00066
2.1.2.3	Generator and distribution system		
	Instrumentation and Safety in Generator and Distribution system	2	ETA2-00068
	Auxiliary Diesel Generator Alarm and Shut Down	2	ETA2-00070
	Automatic Starting of Propulsion Auxiliaries	2	ETA2-00072
2.1.2.4	Steam boiler	2	ETA2-00074
2.1.3.1	Three Phase A.C. Motors	2	ETA2-00076
2.1.3.2	Three Phase Synchronous Motors	2	ETA2-00078
2.1.3.3	Effect of varying frequency and voltage of A.C. Motors	2	ETA2-00080
2.1.3.4	Motor control and protection	2	ETA2-00082
2.1.3.5	Insulated Gate Bipolar Transistor (IGBT) motor speed control	2	ETA2-00084
2.1.3.6	Motor speed control by Thyristors	2	ETA2-00086
2.1.3.7	Three Phase Generators	2	ETA2-00088
2.1.3.8	Three Phase Transformers	2	ETA2-00090
2.1.3.9	Distribution	2	ETA2-00092

Item Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial number starts at:
2.1.3.10	Emergency Power	2	ETA2-00094
2.1.4.1	Design features of high-voltage installations	2	ETA2-00096
	Generation and distribution of high voltage on ships	2	ETA2-00098
	Electric propulsion system	2	ETA2-00100
	Synchro-convertors and cyclo-convertors	2	ETA2-00102
	Functional, operational and safety requirements for a marine high-voltage system	2	ETA2-00104
	Assigning qualified personnel to carry out maintenance and repair of high-voltage switchgear of various types	2	ETA2-00106
	High-voltage system advantages	2	ETA2-00108
	Advantages of an insulated system	2	ETA2-00110
	High-voltage circuit breakers	2	ETA2-00112
	High-voltage cable	2	ETA2-00114
	High-voltage fuses	2	ETA2-00116
	Remedial action necessary during faults in a high-voltage system	2	ETA2-00118
	Switching strategy for isolating components of a high-voltage system	2	ETA2-00120
	Selection of suitable apparatus for isolation and testing of high-voltage equipment	2	ETA2-00122
	Switching and isolation procedure on a marine high-voltage system, complete with safety documentation	2	ETA2-00124
Performance of insulation resistance and polarization index on high-voltage equipment	2	ETA2-00126	
2.1.4.2	Safe Operation and Maintenance of High-Voltage Systems		
	Knows how to use HV personal protection equipment (PPE): insulated gloves, goggles, insulating bars, insulating footwear, mates, earthing cables, HV testers	2	ETA2-00128

Item Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial number starts at:
	Knows terms of certification of personal protection equipment	2	ETA2-00130
	Explains HV safety procedures:	2	ETA2-00132
	Permission and co-ordination of HV works	2	ETA2-00134
	Information, warnings, and protection against unauthorized influence on safety	2	ETA2-00136
	Assistance during HV work	2	ETA2-00138
	Checking for voltage presence before any work starts	2	ETA2-00140
2.1.5.1		2	ETA2-00142
2.1.5.2		2	ETA2-00144
2.2.1.1	Safety procedures to be adopted when working on electrical installations.	2	ETA2-00146
2.2.1.4	Logical six step troubleshooting procedure		
	Listing of probable faulty function	2	ETA2-00148
2.2.1.5	Generation	2	ETA2-00150
2.2.2.1	Function test Over Current Relay (OCR)	2	ETA2-00152
	Function test Relays and magnetic contactors	2	ETA2-00154
	Function test Timers	2	ETA2-00156
	Function test Fuses	2	ETA2-00158
	Function test MCCB	2	ETA2-00160
	Function test ACB	2	ETA2-00162
	Function test Diodes	2	ETA2-00164
	Function test Silicon Controlled Rectifier (SCR)	2	ETA2-00166
	Function test Temperature, Pressure and Level transmitters:	2	ETA2-00168
	Function test Overspeed Protection Devices	2	ETA2-00170
2.2.4.1	Inputs and output modules and configuration of PLCs	2	ETA2-00172
2.2.4.1	Understanding of ladder logic and PLCs programming	2	ETA2-00174

Item Number	Modification or Particularization of the topic and sub-topic	Number of Questions	Serial number starts at:
2.2.4.2	Microcontrollers		
2.2.4.2	Analog to digital convertor	2	ETA2-00176
2.2.4.2	Digital interfaces	2	ETA2-00178
2.2.4.2	Serial peripheral interface	2	ETA2-00180
2.2.4.2	Communication with PC	2	ETA2-00182
2.2.4.3	Digital Techniques		
2.2.4.3	Microprocessors, principles of operation, input/output functions, application in marine control systems, programs, alteration of values	2	ETA2-00184
2.2.4.3	Microcontrollers designed for embedded applications and real time response to events	2	ETA2-00186
2.2.4.3	Typical input and output devices switches, relays, solenoids, LEDs, radio frequency devices, and sensors for data such as temperature, humidity, light level etc.	2	ETA2-00188
2.2.4.3	Description and use of General Purpose Input / Output pins (GPIO).	2	ETA2-00190
2.2.4.3	Analog-to-digital converter (ADC)	2	ETA2-00192
2.2.4.3	Digital-to-analog converter (DAC)	2	ETA2-00194
Total Questions		195	

Table ETA2 and HVM

Appendix B: Sample Question Format(s)

Sample Question Format*

Level	Management		
Subject	Electrotechnology and Automation 2	Subject Code	ETA2-
Topic/sub-topic Number	2.2.2.1	Serial Number in Topic	ETA2-00052
Estimated Level of Difficulty	1, 2 or 3		
Estimated time to answer (min)	x		
Question Statement:			
Option 1	Statement of Option 1		Why is this option wrong
Option 2	Statement of Option 2		Why is this option wrong
Option 3**	Statement of Option 3	√ (correct option)	
Option 4	Statement of Option 4		Why is this option wrong
Option 5	Statement of Option 5		Why is this option wrong

Complete solution (e.g. for problems including numerical calculations):

*Questions will be submitted in digital form in two formats, Word and Excel, the Excel format will be provided at the start of work.

** The position of the correct answer amongst the alternatives shall be randomly selected for each question.

ANNEX "B"

BASIS OF PAYMENT

In consideration of the Contractor satisfactorily completing all of its obligations under the terms and conditions of this Contract, the Contractor will be paid an all-inclusive firm price.

All prices and costs must be submitted in Canadian dollars. Applicable taxes excluded.


Bidders must insert zero (\$0.0) for the cost per question for the table below and if they do not wish to bid

Statement of Work	Title	Cost Per Question (A)	Number of Questions (B)	Total estimated Cost (A+B)
Part 1	Development of Examination Questions and Answers in the subjects of Auxiliary Machinery and Systems 1 (AMS1), Motor Propulsion Systems 1 (MPS1), and Steam Propulsion Systems 1 (SPS1)	\$TBD to be completed by Bidder	405	\$TBD
Part 2	Development of Examination Questions and Answers in the subjects Auxiliary Machinery and Systems 2 (AMS2), Motor Propulsion Systems 2 (MPS2), and Steam Propulsion Systems 2 (SPS2)	\$TBD to be completed by Bidder	405	\$TBD
Part 3	Development of Examination Questions and Answers in the subjects of Electro-technology and Automation 1, (ETA1) and High Voltage Safety – Operational (HVO)	\$TBD to be completed by Bidder	195	\$TBD
Part 4	Development of Examination Questions and Answers in the subjects of Electro-technology and Automation 2, (ETA2) and High Voltage Safety – Management (HVM)	\$TBD to be completed by Bidder	195	\$TBD
TOTAL ESTIMATED CONTRACT COST				\$TBD

ANNEX "C"

SECURITY REQUIREMENTS CHECK LIST

Clear Data - Effacer les données

 Government of Canada / Gouvernement du Canada	Contract Number / Numéro du contrat T8080-210523
	Security Classification / Classification de sécurité Unclassified

English Instructions

Instructions français

SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE		
1. Originating Government Department or Organization Ministère ou organisme gouvernemental d'origine Transport Canada	2. Branch or Directorate / Direction générale ou Direction Marine Safety and Security	
3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant	
4. Brief Description of Work - Brève description du travail Development of 1200 questions and answers for multiple marine engineering examinations.		
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
6. Indicate the type of access required - Indiquer le type d'accès requis		
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)	<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui	
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p.ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciales sans entreposage de nuit?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès		
Canada <input checked="" type="checkbox"/>	NATO / OTAN <input type="checkbox"/>	
7. b) Release restrictions / Restrictions relatives à la diffusion		
No release restrictions / Aucune restriction relative à la diffusion <input checked="" type="checkbox"/>	All NATO countries / Tous les pays de l'OTAN <input type="checkbox"/>	
Not releasable / À ne pas diffuser <input type="checkbox"/>		
Restricted to: / Limité à: <input type="checkbox"/>	Restricted to: / Limité à: <input type="checkbox"/>	
Specify country(ies): / Préciser le(s) pays:	Specify country(ies): / Préciser le(s) pays:	
7. c) Level of information / Niveau d'information		
PROTECTED A / PROTÉGÉ A <input checked="" type="checkbox"/>	NATO UNCLASSIFIED / NATO NON CLASSIFIÉ <input type="checkbox"/>	PROTECTED A / PROTÉGÉ A <input type="checkbox"/>
PROTECTED B / PROTÉGÉ B <input type="checkbox"/>	NATO RESTRICTED / NATO DIFFUSION RESTREINTE <input type="checkbox"/>	PROTECTED B / PROTÉGÉ B <input type="checkbox"/>
PROTECTED C / PROTÉGÉ C <input type="checkbox"/>	NATO CONFIDENTIAL / NATO CONFIDENTIEL <input type="checkbox"/>	PROTECTED C / PROTÉGÉ C <input type="checkbox"/>
CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/>	NATO SECRET / NATO SECRET <input type="checkbox"/>	CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/>
SECRET / SECRET <input type="checkbox"/>	COSMIC TOP SECRET / COSMIC TRÈS SECRET <input type="checkbox"/>	SECRET / SECRET <input type="checkbox"/>
TOP SECRET / TRÈS SECRET <input type="checkbox"/>		TOP SECRET / TRÈS SECRET <input type="checkbox"/>
TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>		TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>

Security Classification / Classification de sécurité
Unclassified

TBS/SCT 350-103 (2004/12)

Canada



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PART A (continued) / PARTIE A (suite)	
8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets? Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS? If Yes, indicate the level of sensitivity: Dans l'affirmative, indiquer le niveau de sensibilité :	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui
9. Will the supplier require access to extremely sensitive INFOSEC information or assets? Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate? Short Title(s) of material / Titre(s) abrégé(s) du matériel : Document Number / Numéro du document :	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui
PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)	
10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis	
<input checked="" type="checkbox"/> RELIABILITY STATUS / COTE DE FIABILITÉ <input type="checkbox"/> TOP SECRET - SIGINT / TRÈS SECRET - SIGINT <input type="checkbox"/> SITE ACCESS / ACCÈS AUX EMPLACEMENTS	<input type="checkbox"/> CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/> NATO CONFIDENTIAL / NATO CONFIDENTIEL
<input type="checkbox"/> SECRET / SECRET <input type="checkbox"/> NATO SECRET / NATO SECRET	<input type="checkbox"/> TOP SECRET / TRÈS SECRET <input type="checkbox"/> COSMIC TOP SECRET / COSMIC TRÈS SECRET
Special comments: Commentaires spéciaux : _____	
NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided. REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.	
10. b) May unscreened personnel be used for portions of the work? Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail? If Yes, will unscreened personnel be escorted? Dans l'affirmative, le personnel en question sera-t-il escorté?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui
PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)	
INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS	
11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises? Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?	<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui
11. b) Will the supplier be required to safeguard COMSEC information or assets? Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui
PRODUCTION	
11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises? Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui
INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)	
11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data? Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?	<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui
11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency? Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?	<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui

Security Classification / Classification de sécurité Unclassified
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PART C (continued) / PARTIE C (suite)

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire en ligne (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category Catégorie	PROTECTED PROTÉGÉ			CLASSIFIED CLASSIFIÉ			NATO				COMSEC					
	A	B	C	Confidential Confidentiel	Secret	Top Secret Très Secret	NATO Restricted NATO Diffusion Restreinte	NATO Confidential NATO Confidentiel	NATO Secret	COSMIC Top Secret COSMIC Très Secret	Protected Protégé			Confidential Confidentiel	Secret	Top Secret Très Secret
											A	B	C			
Information / Assets Renseignements / Biens	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT Media Support TI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT Link Lien électronique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui
- If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée.
12. b) Will the document attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui
- If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).

Security Classification / Classification de sécurité Unclassified
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ANNEX “D”

MANDATORY AND POINT RATED CRITERIA

BASIS OF SELECTION – PART 1

Part 1 – Development of Examination Questions and Answers in the subjects of Auxiliary Machinery and Systems 1 (AMS1), Motor Propulsion Systems 1 (MPS1), and Steam Propulsion Systems 1 (SPS1)

MANDATORY TECHNICAL CRITERIA

Criterion	Mandatory Criteria	Met / Not Met	Cross Reference to Proposal/Resume
M1	<p>The Bidder must submit a *detailed résumé for each of the proposed resource(s), demonstrating that they possess the mandatory requirements (educational, professional designations and work experience) as described in the Statement of Work.</p> <p>*Detailed resume defined as:</p> <ul style="list-style-type: none"> a. Name of the resource; b. Chronological work experience relevant to the provision of services described within the Statement of Work (indicated in years and months); c. Experience working as a Chief or Second Engineer on vessels of at least 3 000 kW propulsion power; d. Experience teaching marine engineering subjects relevant to the competencies of Tables A-III/1 and A-III/2 of the STCW Code at an institution approved by the relevant Maritime Administration to deliver STCW compliant training; e. Education and professional attainment in relation to marine engineering. All formal training listed in chronological order by course/program title and the duration (Days/months/years) with start and end dates; and <ul style="list-style-type: none"> • Where, when and how the experience was obtained. 		
M2	<p>The Bidder must demonstrate the proposed resource(s) have experience teaching marine engineering at the post-secondary level of at least 5 years in the last 10 years.</p>		

POINT RATED CRITERIA

	Point Rated Technical Criteria	Maximum Points Available	Cross reference to proposal
R1	<p>The Bidder's proposed resource(s) have sailed in the positions of Chief Engineer Officer or Second Engineer Officer on vessels of at least 3 000 kW propulsive power while holding STCW Reg. III/2 First or Second-Class Engineer Certificates of Competency.</p> <p>Point Allocation: 0 Points = 0 years to ≤ 3 years 5 Points = 3 years to ≤ 5 years 7 Points = 5 years to ≤ 10 years 10 Points = ≥ 10 years</p>	/10	
R2	<p>The Bidder must demonstrate that the proposed resource(s) has recent experience, or has completed training in the design, application, and evaluation of objective (multiple-choice) examinations.</p> <p>Point Allocation: 5 Points – Completion of training in the development of objective (multiple-choice) exams 1 Point – 1 year of experience in exam development 2 Points – 2 years of experience in exam development 3 Points – 3 years of experience in exam development 4 Points – 4 years of experience in exam development 5 Points – 5 years of experience in exam development</p>	/10	
R3	<p>The Bidder's proposed resource(s) must demonstrate, using project summaries, that they have experience in the development of curricula, programs, and/or examinations related to engineer officers' education, in compliance with the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Convention and the IMO Model Courses for engineer officers.</p> <p>A maximum of two (2) Project Summaries will be evaluated on projects within the last fifteen years.</p>	/10	

	<p>Additional Project Summaries will not be reviewed.</p> <p>Point Allocation: Five (5) points for each project summary up to a maximum total of 10 points.</p>		
R4	<p>The Bidder's proposed resource (s) must submit a total of 20 sample questions demonstrating understanding of the Statement of Work in the following subjects:</p> <p>Auxiliary Machinery and Systems 1 (10 questions)</p> <p>Motor Propulsion Systems 1 (5 questions)</p> <p>Steam Propulsion Systems 1 (5 questions)</p> <p>3 points per questions</p>	/60	
R5	<p>The Bidder's proposal demonstrates an understanding of the following aspects:</p> <ol style="list-style-type: none"> 1. a thorough understanding of the requirement and; 2. a plan of action to meet the requirements and a reasonable timeline in which to meet the requirements. <p>This criterion is worth up to 5 point based on the rating scale below:</p> <p>Point Allocation: 1 Point = Inaccurate understanding demonstrated, displaying misinterpretation of key facts, concepts, and dynamics. 2 Points = Poor understanding demonstrated, displaying an inconsistent grasp of key facts, concepts, and dynamics, and lacking precision. 3 Points = Superficial understanding demonstrated, displaying a basic, general, consistent grasp of key facts, concepts, and dynamics. 4 Points = Good understanding demonstrated, displaying an agile and precise grasp of key facts, concepts, and dynamics.</p>	/5	

	5 Points = Excellent understanding demonstrated, displaying an agile, precise, and nuanced grasp of key facts, concepts, and dynamics, as well as value-added insight.		
	Minimum required score of all of the point-rated technical criteria is 60% or 57 points	/95	

BASIS OF SELECTION – PART 2

Part 2 – Development of Examination Questions and Answers in the subjects Auxiliary Machinery and Systems 2 (AMS2), Motor Propulsion Systems 2 (MPS2), and Steam Propulsion Systems 2 (SPS2)

MANDATORY TECHNICAL CRITERIA

Criterion	Mandatory Criteria	Met / Not Met	Cross Reference to Proposal/Resume
M1	<p>The Bidder must submit a *detailed résumé for each of the proposed resource(s), demonstrating that they possess the mandatory requirements (educational, professional designations and work experience) as described in the Statement of Work.</p> <p>*Detailed resume defined as:</p> <ul style="list-style-type: none"> a. Name of the resource; b. Chronological work experience relevant to the provision of services described within the Statement of Work (indicated in years and months); c. Experience working as a Chief or Second Engineer on vessels of at least 3 000 kW propulsion power; d. Experience teaching marine engineering subjects relevant to the competencies of Tables A-III/1 and A-III/2 of the STCW Code at an institution approved by the relevant Maritime Administration to deliver STCW compliant training; e. Education and professional attainment in relation to marine engineering. All formal training listed in chronological order by course/program title and the duration (Days/months/years) with start and end dates; and <ul style="list-style-type: none"> • Where, when and how the experience was obtained. 		
M2	<p>The Bidder must demonstrate the proposed resource(s) have experience teaching marine engineering at the post-secondary level of at least 5 years in the last 10 years.</p>		

POINT RATED CRITERIA

Point Rated Technical Criteria	Maximum Points Available	Cross reference to proposal
<p>R1 The Bidder's proposed resource(s) have sailed in the positions of Chief Engineer Officer or Second Engineer Officer on vessels of at least 3 000 kW propulsive power while holding STCW Reg. III/2 First or Second-Class Engineer Certificates of Competency.</p> <p>Point Allocation: 0 Points = 0 years to ≤ 3 years 5 Points = 3 years to ≤ 5 years 7 Points = 5 years to ≤ 10 years 10 Points = ≥ 10 years</p>	/10	
<p>R2 The Bidder must demonstrate that the proposed resource(s) has recent experience, or has completed training in the design, application, and evaluation of objective (multiple-choice) examinations.</p> <p>Point Allocation: 5 Points – Completion of training in the development of objective (multiple-choice) exams 1 Point – 1 year of experience in exam development 2 Points – 2 years of experience in exam development 3 Points – 3 years of experience in exam development 4 Points – 4 years of experience in exam development 5 Points – 5 years of experience in exam development</p>	/10	
<p>R3 The Bidder's proposed resource(s) must demonstrate, using project summaries, that they have experience in the development of curricula, programs, and/or examinations related to engineer officers' education, in compliance with the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Convention and the IMO Model Courses for engineer officers. A maximum of two (2) Project Summaries will be evaluated on projects within the last fifteen years.</p>	/10	

	<p>Additional Project Summaries will not be reviewed.</p> <p>Point Allocation: Five (5) points for each project summary up to a maximum total of 10 points.</p>		
R4	<p>The Bidder's proposed resource (s) must submit a total of 20 sample questions demonstrating understanding of the Statement of Work in the following subjects:</p> <p>Auxiliary Machinery and Systems 1 (10 questions)</p> <p>Motor Propulsion Systems 1 (5 questions)</p> <p>Steam Propulsion Systems 1 (5 questions)</p> <p>3 points per question</p>	/60	
R5	<p>The Bidder's proposal demonstrates an understanding of the following aspects:</p> <ol style="list-style-type: none"> 1. a thorough understanding of the requirement and; 2. a plan of action to meet the requirements and a reasonable timeline in which to meet the requirements. <p>This criterion is worth up to 5 point based on the rating scale below:</p> <p>Point Allocation: 1 Point = Inaccurate understanding demonstrated, displaying misinterpretation of key facts, concepts, and dynamics. 2 Points = Poor understanding demonstrated, displaying an inconsistent grasp of key facts, concepts, and dynamics, and lacking precision. 3 Points = Superficial understanding demonstrated, displaying a basic, general, consistent grasp of key facts, concepts, and dynamics. 4 Points = Good understanding demonstrated, displaying an agile and precise grasp of key facts, concepts, and dynamics. 5 Points = Excellent understanding demonstrated, displaying an agile, precise, and nuanced grasp of key facts, concepts,</p>	/5	

	and dynamics, as well as value-added insight.		
	Minimum required score of all of the point-rated technical criteria is 60% or 57 points	/95	

BASIS OF SELECTION – PART 3

Part 3 – Development of Examination Questions and Answers in the subjects of Electro-technology and Automation 1, (ETA1) and High Voltage Safety – Operational (HVO)

MANDATORY TECHNICAL CRITERIA

Criterion	Mandatory Criteria	Met / Not Met	Cross Reference to Proposal/Resume
M1	<p>The Bidder must submit a *detailed résumé of the proposed resource (s), demonstrating that they possess the following mandatory requirements:</p> <p>1. A Bachelor’s Degree recognized in Canada in Electrical Engineering, Automation and Controls, Mechatronics, or equivalent.</p> <p>*Detailed resume defined as: a. Name of the resource; b. Chronological work experience relevant to the provision of services described within the Statement of Work (indicated in years and months); c. Experience teaching in electrical engineering or automation and control, or mechatronics related subjects d. Education and professional attainment in relation to electrical engineering, automation and control or mechatronics. All formal training listed in chronological order by course/program title and the duration (Days/months/years) with start and end dates; and Where, when and how the experience was obtained.</p>		
M2	<p>The Bidder must demonstrate the proposed resource(s) has teaching experience relevant to the provision of services described within the Statement of Work at the post-secondary level of at least 5 years in the last 10 years.</p>		

POINT RATED CRITERIA

Criterion	Technical Rated Criteria	Max Points	Cross reference to proposal
R1	<p>The Bidder's proposed resource(s) possesses a postgraduate degree recognized in Canada in Electrical engineering, mechatronics, or equivalent</p> <p>5 points for a master's degree</p> <p>10 points for a doctorate</p>	/10	
R2	<p>The Bidder's proposed resource(s) must have experience teaching electrical or electronic engineering subjects at a Transport Canada Recognized Institution listed in TP 10655</p> <p>Point Allocation: 0 to less than 3 years = 0 points 3 to less than 5 years = 5 points 5 to less than 10 years = 7 points 10 or more years = 10 points</p>	/10	
R3	<p>The Bidder must demonstrate that the proposed resource(s) has recent experience, or has completed training in the design, application, and evaluation of objective (multiple-choice) examinations.</p> <p>Point Allocation:</p> <p>5 Points – Completion of training in the development of objective (multiple-choice) examinations</p> <p>1 Point – 1 year of experience developing exams 2 Points – 2 years of experience developing exams 3 Points – 3 years of experience developing exams 4 Points – 4 years of experience developing exams 5 Points – 5 years of experience developing exams</p>	/10	
R4	<p>The Bidder's proposed resource(s) must demonstrate, using project summaries, that they have experience in the development of curricula, programs, and/or examinations related to engineer officers' education, in compliance with the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Convention and the IMO Model Courses for engineer officers.</p>	/10	

	<p>A maximum of two (2) Project Summaries will be evaluated on projects within the last fifteen years. Additional Project Summaries will not be reviewed.</p> <p>Point Allocation: Five (5) points for each project summary up to a maximum total of 10 points.</p>		
R5	<p>The Bidder's proposed resource (s) must submit a total of 20 sample questions divided equally between the subjects:</p> <p>Electro-technology and Automation 1 (10)</p> <p>High Voltage Safety - Operational (10)</p> <p>Three (3) points per question</p>	/60	
R6	<p>The Bidder's proposal demonstrates an understanding of the following aspects:</p> <ol style="list-style-type: none"> 1. a thorough understanding of the requirement and; 2. a plan of action to meet the requirements and a reasonable timeline in which to meet the requirements. <p>Point Allocation:</p> <p>1 Point = Inaccurate understanding demonstrated, displaying misinterpretation of key facts, concepts, and dynamics.</p> <p>2 Points = Poor understanding demonstrated, displaying an inconsistent grasp of key facts, concepts, and dynamics, and lacking precision.</p> <p>3 Points = Superficial understanding demonstrated, displaying a basic, general, consistent grasp of key facts, concepts, and dynamics.</p> <p>4 Points = Good understanding demonstrated, displaying an agile and precise grasp of key facts, concepts, and dynamics.</p> <p>5 Points = Excellent understanding demonstrated, displaying an agile, precise, and nuanced grasp of key facts, concepts, and dynamics, as well as value-added insight.</p>	/5	
	Minimum required score of all of the point-rated technical criteria is 60% or 63 points	/105	

BASIS OF SELECTION – PART 4

Part 4 – Development of Examination Questions and Answers in the subjects of Electro-technology and Automation 2, (ETA2) and High Voltage Safety – Management (HVM)

MANDATORY TECHNICAL CRITERIA

Criterion	Mandatory Criteria	Met / Not Met	Cross Reference to Proposal/Resume
M1	<p>The Bidder must submit a *detailed résumé of the proposed resource (s), demonstrating that they possess the following mandatory requirements:</p> <p>1. A Bachelor’s Degree recognized in Canada in Electrical Engineering, Automation and Controls, Mechatronics, or equivalent.</p> <p>*Detailed resume defined as: a. Name of the resource; b. Chronological work experience relevant to the provision of services described within the Statement of Work (indicated in years and months); c. Experience teaching in electrical engineering or automation and control, or mechatronics related subjects d. Education and professional attainment in relation to electrical engineering, automation and control or mechatronics. All formal training listed in chronological order by course/program title and the duration (Days/months/years) with start and end dates; and Where, when and how the experience was obtained.</p>		
M2	<p>The Bidder must demonstrate the proposed resource(s) has teaching experience relevant to the provision of services described within the Statement of Work at the post-secondary level of at least 5 years in the last 10 years.</p>		

POINT RATED CRITERIA

Criterion	Technical Rated Criteria	Max Points	Cross reference to proposal
R1	<p>The Bidder's proposed resource(s) possesses a postgraduate degree recognized in Canada in Electrical engineering, mechatronics, or equivalent</p> <p>5 points for a master's degree</p> <p>10 points for a doctorate</p>	/10	
R2	<p>The Bidder's proposed resource(s) must have experience teaching electrical or electronic engineering subjects at a Transport Canada Recognized Institution listed in TP 10655</p> <p>Point Allocation: 0 to less than 3 years = 0 points 3 to less than 5 years = 5 points 5 to less than 10 years = 7 points 10 or more years = 10 points</p>	/10	
R3	<p>The Bidder must demonstrate that the proposed resource(s) has recent experience, or has completed training in the design, application, and evaluation of objective (multiple-choice) examinations.</p> <p>Point Allocation:</p> <p>5 Points – Completion of training in the development of objective (multiple-choice) examinations</p> <p>1 Point – 1 year of experience developing exams 2 Points – 2 years of experience developing exams 3 Points – 3 years of experience developing exams 4 Points – 4 years of experience developing exams 5 Points – 5 years of experience developing exams</p>	/10	
R4	<p>The Bidder's proposed resource(s) must demonstrate, using project summaries, that they have experience in the development of curricula, programs, and/or examinations related to engineer officers' education, in compliance with the Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Convention and the IMO Model Courses for engineer officers.</p>	/10	

	<p>A maximum of two (2) Project Summaries will be evaluated on projects within the last fifteen years. Additional Project Summaries will not be reviewed.</p> <p>Point Allocation:</p> <p>Five (5) points for each project summary up to a maximum total of 10 points.</p>		
R5	<p>The Bidder's proposed resource (s) must submit a total of 20 sample questions divided equally between the subjects:</p> <p>Electro-technology and Automation 1 (10)</p> <p>High Voltage Safety - Operational (10)</p> <p>Three (3) points per question</p>	/60	
R6	<p>The Bidder's proposal demonstrates an understanding of the following aspects:</p> <ol style="list-style-type: none"> 2. a thorough understanding of the requirement and; 2. a plan of action to meet the requirements and a reasonable timeline in which to meet the requirements. <p>Point Allocation:</p> <p>1 Point = Inaccurate understanding demonstrated, displaying misinterpretation of key facts, concepts, and dynamics.</p> <p>2 Points = Poor understanding demonstrated, displaying an inconsistent grasp of key facts, concepts, and dynamics, and lacking precision.</p> <p>3 Points = Superficial understanding demonstrated, displaying a basic, general, consistent grasp of key facts, concepts, and dynamics.</p> <p>4 Points = Good understanding demonstrated, displaying an agile and precise grasp of key facts, concepts, and dynamics.</p> <p>5 Points = Excellent understanding demonstrated, displaying an agile, precise, and nuanced grasp of key facts, concepts, and dynamics, as well as value-added insight.</p>	/5	
	<p>Minimum required score of all of the point-rated technical criteria is 60% or 63 points</p>	/105	

Appendix "E"

TP10655E - Recognized Institutions and Approved Training Courses



Transport
Canada

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Canada



TP 10655E
(04/2022)

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

SECOND EDITION

APRIL 2022



<p>Responsible Authority</p> <p>The Director, Seafarer Certification, Marine Safety and Security, is responsible for this document, including any change, correction, or update.</p>	<p>Approved By:</p> <hr/> <p>“Original signed by Julia Murphy”</p> <p>Julia Murphy</p> <p>Director, Seafarer Certification Marine Safety and Security</p> <p>Date signed: April 1st 2022</p>
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Original Date Issued: May 2018

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TP 10655E
(04/22)

TC # 1006563

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

DOCUMENT INFORMATION			
Title	RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES		
TP No.	10655E	Edition	2 RDIMS # 13664365 v.23
Catalogue No.	T29-116/2021E	ISBN	978-0-660-39043-7
Originator	Seafarer Certification Marine Safety and Security 330 Sparks St., 8 th floor Tower C, Place de Ville Ottawa, Ontario K1A 0N8	Telephone	(613) 991-3120
		Fax	(613) 990-1538
		E-mail	marinesafety-securitemaritime@tc.gc.ca
		URL	https://tc.canada.ca/en/marine-transportation

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

TP 10655E

REVISIONS				
Last Review				
Next Review				
Revision No.	Date of Issue	Affected Pages	Author(s)	Brief Description of Change
1	November 1 st , 2021	p.1-55	Vanessa Chenier	<ol style="list-style-type: none"> 1. Addresses 2. Courses approved online 3. New institution
2	February 1 st , 2022	p.1-55	Vanessa Chenier	<ol style="list-style-type: none"> 1. Courses approved 2. New signing authorities
3	April 1, 2022	p.1-55	Vanessa Chenier	<ol style="list-style-type: none"> 1. Courses Approved 2. New signing authorities

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE MARINE PERSONNEL REGULATIONS (MPR)	
CODES	TRAINING COURSES
1MLT<18m	Chief Mate Limited, General Ship Knowledge (Vessels less than 18m)
1MLT≥18m	Chief Mate Limited, General Ship Knowledge (Vessels 18m or more)
ACV1E	Air Cushion Vehicle Engineer Class I – General Knowledge and Maintenance of Air Cushion Vessels
ACV2E	Air Cushion Vehicle Engineer Class II – General Knowledge and Maintenance of Air Cushion Vessels
AS	Able Seafarer
AFF	Advanced Fire Fighting
ASTRO 1	Celestial Navigation, level 1
ASTRO 2	Celestial Navigation, level 2
BRM	Bridge Resource Management
BWR	Bridge Watch Rating Training Program
C&NS	Chartwork And Navigation Safety
C&P 1	Chartwork and Pilotage, level 1
C&P 2	Chartwork and pilotage, level 2
CG 1	Cargo, level 1
CG 2	Cargo, level 2
CG 3	Cargo, level 3
CLW<18m	Master Limited, General Ship Knowledge (Vessels less than 18m)
CLW≥18m	Master Limited, General Ship Knowledge (Vessels 18m or more)
Code O	General Seamanship (All Certificate of Competency)
COM	Communications
COOK	Ship's Cook
CT2	Specialized Chemical Tanker Safety Training
DPVS	Domestic Passenger Vessel Safety
DVS	Domestic Vessel Safety
ECDIS	Electronic Chart Display & Information System
EK 1	Engineering Knowledge, level 1

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE <i>MARINE PERSONNEL REGULATIONS</i> (MPR)	
CODES	TRAINING COURSES
EK 2	Engineering Knowledge, level 2
EPS	Electronic positioning Systems
FFB	Proficiency in Free-Fall Lifeboats
FRB	Proficiency in Fast Rescue Boats
GSK 1	General Ship Knowledge, level 1
GSK 2	General Ship Knowledge, level 2
GSK 3	General Ship Knowledge, level 3
GSK 3D	General Ship Knowledge (Domestic Vessels)
IGCOW	Insert Gas System And Crude Oil Washing Systems
IGFA	Advanced Training for service on vessels subject to the IGF code
IGFB	Basic Training for service on vessels subject to the IGF code
LAMS	Leadership and Managerial skill
LGT2	Specialized Liquefield Gas Tanker Safety Training
LGTF	Liquefield Gas Tanker Familiarization Training
MAFA	Marine Advanced First Aid
MBFA	Marine Basic First Aid
MET 1	Basic Meteorology
MET 2	Advanced Meteorology
MMC	Marine Medical Care
MOU-BOS	Basic Offshore Survival
MOU-CCMME	Command and Control and Management of Major Emergencies Training Course
MOU-H2S	Hydrogen Sulphide Training
MOU-SBC	Stability And Ballast Control (MOU surface)
MOU-SOWC	Supervisor, Offshore Well Control
MOU-SSE	Stability (MOU/Self Elevating)
NCTP	Nautical Cadet Training Program

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE MARINE PERSONNEL REGULATIONS (MPR)	
CODES	TRAINING COURSES
NS 1	Basic Navigation Safety
NS 2	Advanced Navigation Safety
NS&I	Navigation Systems and Instruments
OCTF	Oil And Chemical Tanker Familiarization
OT2	Specialized Oil Tanker Training
PPSSIM 1	Ship Watchkeeping Practices
PPSSIM 2	Ship Management Practices
PRR	Ro-ro Passenger Ship Training
PSC	Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats
PSCM	Passenger Ship Crowd Management Training
PSCMHB	Passenger Ship Crisis Management and Human Behavior Training
PSM	Passenger Safety Management
REF-AFF	Refresher Training Course in Advanced Fire Fighting
REF-FFB	Refresher Training Course in Proficiency in Free-Fall Lifeboats
REF-FRB	Refresher Training Course in Proficiency in Fast Rescue Boats
REF-MBFA	Refresher Training Course in Marine Basic First Aid
REF-PSC	Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats
REF-STCW BS	Refresher Training Course in STCW Basic Safety
REF-STCWBS + PSC	Refresher Training Course in STCW Basic Safety and to Proficiency in Survival Craft and Rescue Boats Other than Fast Rescue Boats
REF-STCWBS + PSC+AFF	Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats and in Advanced Fire Fighting
SCS 1	Ship Construction and Stability, level 1
SCS 2	Ship Construction and Stability, level 2
SCS 3	Ship Construction and Stability, level 3
SCS 4	Ship Construction and Stability, level 4
SCS 5	Ship Construction and Stability, level 5
SCTO	Supervision Of A Chemical Transfer Operation
SDV-BS	Small Non-Pleasure Domestic Vessel Basic Safety

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE <i>MARINE PERSONNEL REGULATIONS</i> (MPR)	
CODES	TRAINING COURSES
SEN-D	Simulated Electronic Navigation, Domestic
SEN-F	Simulated Electronic Navigation, Fishing
SEN-L	Simulated Electronic Navigation, Limited
SEN-M	Simulated Electronic Navigation, Management Level
SEN-O	Simulated Electronic Navigation, Operational Level
SEXTANT	Knowledge And Use Of A Marine Sextant
SM 1	Ship Management, Level 1
SM 2	Ship Management, Level 2
SM 3	Ship Management, Level 3
SM 4	Ship Management, Level 4
SPSM	Specialized Passenger Safety Management (Ro-Ro vessels)
SSO	Ship Security Officer
SSPV-CP	Small Seasonal Passenger Vessel Safety (Certified Personnel)
SPV – NCP	Small Seasonal Passenger Vessel Safety (Non-Certificated Personnel)
STCW A-VI/1-1	Proficiency in Personal Survival Techniques
STCW – A-VI/1/2	Fire Prevention and Fire
STCW-A-VI-1-4	Personal Safety and Social Responsibilities
STCW BS	STCW Basic Safety
STEERING	Steering
SVOP	Small Vessel Operator Proficiency
VOPB	Basic Training For Personnel On Ships Operating In Polar
VOPA	Advanced Training For Personnel On Ships Operating In Polar
VPWOSR	Vessel personnel without security responsibilities
VPWSR	Vessel personnel with security responsibilities
1AMP	Applied Mechanics
2AMP	

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE <i>MARINE PERSONNEL REGULATIONS</i> (MPR)	
CODES	TRAINING COURSES
3AMP	
1EKG 2EKG 3EKG 4EKG WKEMDFVG	General Engineering Knowledge
1EKM 2EKM 3EKM 4EKM WKEMDFVM	Engineering Knowledge of Motor Vessels
1EKS 2EKS 3EKS 4EKS	Engineering Knowledge of Steamships
1ELC 2ELC 3ELC	Electrotechnology
1H-H 2H-H 3H-H	Thermodynamics
1NAR 2NAR	Naval Architecture
2D	Technical Drawing
3MA	Applied Mathematics
ACV1	Air Cushion Vehicle Engineer Class 1 – General knowledge and maintenance of air cushion vessels

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE <i>MARINE PERSONNEL REGULATIONS</i> (MPR)	
CODES	TRAINING COURSES
ACV2	Air Cushion Vehicle Engineer Class II – General knowledge and maintenance of air cushion vessels
APSME	Alternative Path for Practical Skills
ARPA	Automatic Radar Plotting Aids
CCMME	Command and Control And Management of Major Emergencies
CD	Compass Adjuster
CLW < 60T	General Ship Knowledge, less than 60 gross tonnage
CLW ≥ 60T	General Ship Knowledge, 60 Gross Tonnage Or More
COM 1	Communication, level 1
COM 2	Communication, level 2
COTE	Marine Engineer Cadet Training Program
EOET	Engineering Officer Education and Training
ERR	Engine Room Rating Training Program
HELM-M	HELM – Managerial Level
HELM-O	HELM – Operational Level
LMS	Leadership and Managerial Skills
LTW	Leadership and Teamwork
MDM	Marine Diesel Mechanic – 9 Months
MED AFF	MED in Advanced Fire Fighting
MED PSC	MED with Respect to Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats
MED RSPV	MED with Respect to Restricted Small Passenger Vessel Safety
MEDA1	Med with Respect to Basic Safety
MEDA2	MED with Respect to Small Passenger Vessel Safety
MEDA2L	MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Certified Personnel)
MEDA2LL	MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Non-Certified Personnel)
MEDA3	MED with respect to Small Non-Pleasure Vessel Basic Safety
PPSMGT	Propulsion Plant Simulator Level II – Ship Management Practices Taught Using A Propulsive Plant Simulator

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES UNDER THE <i>MARINE PERSONNEL REGULATIONS</i> (MPR)	
CODES	TRAINING COURSES
PPSOPR	Propulsion Plant Simulator Level I – Ship Watchkeeping Practices Taught Using A Propulsive Plant Simulator
PSME	Practical Skills Training for Marine Engineer program
SEN 1	Simulated Electronic Navigation, Level 1 – Radar Navigation – Operational Level, Includes Radar Navigation, Radar Plotting And Use Of ARPA
SEN 2	Simulated Electronic Navigation, Level 2 – Radar Navigation – Management Level, Includes Radar Navigation, ARPA, Bridge Teamwork And Search & Rescue
SOTO-C	Supervision Of An Oil Transfer Operation – Pact C – Advanced
SVMO-T	Small Vessel Machinery Operator

RECOGNIZED ESTABLISHMENTS AND APPROVED TRAINING COURSES

RECOGNIZED INSTITUTIONS APPROVED TO DELIVER APPROVED TRAINING COURSES NATION WIDE

RECOGNIZED INSTITUTIONS / ASSOCIATIONS	
-	Canadian Coast Guard – HQ Ottawa
-	St. John Ambulance
-	Canadian Red Cross
-	Royal Canadian Mounted Police
-	PCVA Passenger & Commercial Vessel Association
-	CAMTI – Canadian Association of Marine Training Institutes

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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

APPROVED TRAINING COURSES

NEWFOUNDLAND AND LABRADOR		
Recognized Establishments	Contact Person	Approved Courses
Canadian Corps of Commissionaires Newfoundland and Labrador Division 45 Pippy Place St. John's, NL A1B3X2	Peter Morey Instructor Cell: 709-743-7268 Tel: 709-754-2112 Fax: 709-754-0116 E-Mail: pmorey@commissionaires.nl.ca Nathan McLachlan Instructor Cell: 709-725-7654 Tel: 709-754-2080 Fax: 709-754-0116 E-Mail: nmclachlan@commissionaires.nl.ca	Vessel personnel with security responsibilities – VPWSR Marine Facilities Security Officer's Course – MFSO
College of the North Atlantic P.O. Box 1693 1, Prince Philip Drive St. John's NL A1C 5P7 www.cna.nl.ca	Paul Forward Tel: (709) 758-7418 Fax: (704) 758-7302 E-mail: paul.forward@cna.nl.ca	Ship's Cook – COOK Ship's Cook Practical Test – COOK - P
RelyOn Nutec 35 Beclin Road Suite 101 Mount Pearl, NL A1N 5G4 https://relyonnutec.com/en_ca	Sterling Barnes Instructor Tel: (902) 466-7878 E-mail: shsb@ca.relyonnutec.ca Alternates: Sean Fitzpatrick Operations Manager Tel : (709) 579-7878 E-mail: sf@ca.relyonnutec.com John Hapgood Offshore Sea Survival Instructor Tel: (709) 579-7878	STCW Basic Safety – STCW BS Proficiency in Personal Survival Techniques – STCW A-VI/1-1 Fire Prevention and Fire Fighting – STCW – A-VI/1/2 Personal Safety and Social Responsibilities – STCW-A-VI-1-4 Refresher Training Course in STCW Basic Safety – REF – STCW BS Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF – STCW – BS + PSC

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

	<p>Email: JH@ca.relyonnutec.com</p> <p>To register for training please contact : (NL) Training Coordinator Telephone #: +1 (709) 351 1782</p> <p>Toll Free North America: +1 (877) 355 7878</p> <p>Email Michelle: MP@ca.relyonnutec.com</p> <p>Approved Representative (training certificates)</p> <ul style="list-style-type: none"> - Pamela Wiseman E-mail: pw.ca.relyonnutec.com Courtney Bown E-mail: cb@ca.relyonnutec.com 	<p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats in Advanced Fire Fighting – REF – STCW BS+PSC+AFF</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF – PSC</p> <p>Proficiency in Fast Rescue Crafts – FRC</p> <p>Refresher Training Course in Proficiency in Fast Rescue Crafts – REF-FRC</p> <p>Advanced Fire Fighting – AFF</p> <p>Refresher Training Course in Advanced Fire Fighting – REF – AFF</p> <p>Vessel personnel without security responsibilities – VPWOSR</p> <p>Vessel personnel with security responsibilities - VPWSR</p> <p>Small Vessel Operator proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
<p>Fisheries and Marine Institute of Memorial University P.O. Box 4920 155 Ridge Road ST. John's NL A1C 5R3 www.mi.mun.ca</p>	<p>Fred Anstey Tel: (709) 778-0361 Fax: (709) 778-0659 E-mail: Fred.Anstey@mi.mun.ca</p> <p>Fabian Lambert Tel : (708) 778-0564 Email : Fabian.lambert@mi.mun.ca</p> <p>Cody Garlie Tel: (709) 778-0564 Email: Cody.garlie@mi.mun.ca</p> <p>Approved Representative (training certificates)</p> <ul style="list-style-type: none"> - Sheena Allen 	<p>Nautical Cadet Training Program – NCTP (Blended/E-learning during COVID-19)</p> <p>Marine Engineer Cadet Training Program – EOET</p> <p>Engine Room Rating Training Program – ERR</p> <p>STCW Basic Safety – STCW BS (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1 (CAMTI)</p> <p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2 (CAMTI)</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4 (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI)</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI)</p> <p>Refresher training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats and in Advanced Fire Fighting – REF-STCW BS+PSC+AFF (CAMTI)</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC (CAMTI)</p> <p>Proficiency in Fast Rescue Crafts – FRC (CAMTI)</p> <p>Refresher Training Course in Proficiency in Fast Rescue Crafts – REF-FRC (CAMTI)</p> <p>Advanced Fire Fighting – AFF (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in Advanced Fire Fighting – REF – AFF</p> <p>Simulated Electronic Navigation, Level 1 – SEN-1</p> <p>Simulated Electronic Navigation, Level 2 – SEN-2</p> <p>Electronic Positioning System – EPS</p> <p>Automatic Radar Plotting Aids – ARPA</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Simulated Electronic Navigation, Operational – SEN-O</p> <p>Simulated Electronic Navigation, Management – SEN-M</p> <p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Oil and Chemical Tanker Familiarization – OCTF</p> <p>Specialized Oil Tanker Training – OT2</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Stability and Ballast Control (MOU Surface) – MOU-SBC</p> <p>Passenger Safety Management – PSM</p> <p>Specialized Passenger Safety Management (Ro-Ro Vessels) – SPSM</p> <p>Marine Advanced First Aid – MAFA</p> <p>Bridge Watch Rating training Program – BWR</p> <p>Basic Training for Personnel on Ships Operating In Polar Waters – VOPB (Blended/E-learning during COVID-19)</p> <p>Advanced Training for Personnel on Ships Operating In Polar - VOPA</p> <p>Vessel personnel without security responsibilities – VPWOSR</p> <p>Vessel personnel with security responsibilities - VPWSR (Blended/E-learning during COVID-19)</p> <p>Ship Security Officer – SSO</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Domestic Passenger Vessel Safety – DPVS (CAMTI)</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (CAMTI)</p> <p>Advanced celestial navigation – ASTRO 2</p> <p>Basic Meteorology – MET 1</p> <p>Advanced Meteorology – MET 2</p> <p>Ship Construction and Stability Operational Level – SCS 4</p> <p>Bridge Resource Management – BRM</p> <p>Marine Basic First Aid – MBFA</p> <p>Propulsion Plant Simulator Level II – Ship Management Practices Taught Using a Propulsive Plant Simulator – PPSMGT</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Propulsion Plant Simulator Level I – Ship Watchkeeping Practices Using a Propulsive Plant Simulator – PPSOPR</p> <p>Marine Diesel Mechanic – 9 Months (Approved for PSME)</p> <p>HELM-Managerial Level – HELM-M (Taught by an approved MCA course provider)</p> <p>HELM-Operational Level – HELM-O (Taught by an approved MCA course provider)</p> <p>Knowledge and Use of Marine Sextant – SEXTANT</p>
<p>Professional Fish Harvesters Certification Board of Newfoundland and Labrador 368 Hamilton Avenue P.O. Box 8541 St. John's, NL A1B 3P2 www.pfhcb.com</p>	<p>Mark Dolomount Tel: (709) 722-8170 Fax: (709) 722-8201 E-mail: mdolomount@pfhcb.com</p>	<p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>

NOVA SCOTIA

Approved Establishments	Contact Person	Approved training courses
<p>Canadian Coast Guard College 1190 Westmount Road P.O. Box 4500 Sydney, NS B1R 2J6 www.ccg-gcc.gc.ca/College</p> <p>Note: Cadet Programs and Courses are offered in English and French.</p>	<p>David Gerbasi Tel: 902-564-3660 Ext .1328 Email: David.Gerbasi@dfo-mpo.gc.ca</p> <p>Katlyn Cann Tel: 902-564-3660 Ext. 1347 Email : Katlyn.Cann@dfo-mpo.gc.ca</p>	<p>Nautical Cadet Training Program – NCTP</p> <p>Marine Engineer Cadet training Program – EOET</p> <p>Proficiency in Fast Rescue Crafts – FRC</p> <p>Simulated Electronic Navigation, Level 1 – SEN-1</p> <p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Basic Training for Personnel on Ships Operating In Polar Waters – VOPB</p> <p>Knowledge and Use of Marine Sextant – SEXTANT</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Propulsion Plant Simulator Level II – Ship Management Practices Taught Using A Propulsive Plant Simulator – PPSMGT</p> <p>Propulsion Plant Simulator Level 1 – Ship Watchkeeping Practices Taught Using a Propulsive Plant Simulator – PPSOPR</p>
<p>Enger Safety Services Inc. Suite 101 802 Prince Street Truro Nova Scotia, Canada B2N1H1</p>	<p>Kody Messenger Tel: (902) 559-9603 E-mail: kody@enger.works</p>	<p>Marine Basic First Aid - MBFA</p>
<p>RelyOn Nutec 20 Orion Court Dartmouth, NS B2Y 4W6 https://relyonnutec.com/en_ca</p>	<p>Sterling Barnes Instructor Tel: (902) 466-7878 E-mail: shsb@ca.relyonnutec.ca</p> <p>Alternates: Brian Sampson Tel: (902) 466-7878 E-mail: brs@ca.relyonnutec.com</p> <p>Greg Onions Tel: (902) 466-7878 E-mail: go@ca.relyonnutec.com</p> <p>To register for training please contact:</p> <p>(NS) Training Coordinator Telephone #: +1 (902) 466 7878</p> <p>Toll Free North America: +1 (877) 355 7878</p> <p>Email Crystal: CC@ca.relyonnutec.com</p> <p>Approved Representative (training certificates)</p> <ul style="list-style-type: none"> - Andrea Kidson E-mail: ak.ca.relyonnutec.com - Hillary Carroll E-mail: hc@relyonnutec.com 	<p>STCW Basic Safety – STCW BS</p> <p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1</p> <p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4</p> <p>Refresher Training Course in STCW Basic Safety – REF – STCW BS</p> <p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF – STCW – BS + PSC</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats in Advanced Fire Fighting – REF – STCW BS+PSC+AFF</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF – PSC</p> <p>Proficiency in Fast Rescue Crafts – FRC</p> <p>Refresher Training Course in Proficiency in Fast Rescue Crafts – REF-FRC</p> <p>Advanced Fire Fighting – AFF</p> <p>Refresher Training Course in Advanced Fire Fighting – REF – AFF</p> <p>Vessel personnel without security responsibilities – VPWOSR</p> <p>Vessel personnel with security responsibilities – VPWSR</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

	<ul style="list-style-type: none"> - Margie MacPhail E-mail: mm@ca.relyonnutec.com - Shana Handspiker E-mail : SH@ca.relyonnutec.com 	<p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
<p>Marine Atlantic Inc. 65 Memorial Drive North Sydney, NS B2A 0B9</p>	<p>Brian Clancy Tel: (902) 794-5300 E-mail: bclancy@marine-atlantic.ca</p>	<p>Passenger Safety Management – PSM</p> <p>Specialized Passenger Safety Management (Ro-Ro vessels) – SPSM</p>
<p>Medavie HealthED 154-50 Eileen Stubbs Avenue Dartmouth, NS B3B 0M7</p>	<p>Brad Reid Tel: (902) 463-0462 Toll-Free/Tel: 1-888-798-3888 Fax: (902) 434-2242 E-mail: brad.reid@medaviehealthed.com</p> <p>Melissa Budd Tel : 902-407-3276 E-mail : Melissa.budd@medaviehealthed.com</p>	<p>Marine Medical Care – MMC</p>
<p>Nova Scotia Community College – Port Hawkesbury Straight Area Campus Nautical Institute 226 Reeves Street P.O. Box 1225 Port Hawkesbury, NS B9A 2A2 www.nsc.ca</p> <p>Note: Nova Scotia College also represents Nova Scotia School of Fisheries (NSSF) from Pictou, NS.</p>	<p>John-Suresh Selvaraj Tel: (902) 631-5717 E-mail: John-Suresh.Selvaraj@nsc.ca</p> <p>Approved Representative (training certificates)</p> <ul style="list-style-type: none"> - Wilma Greencom - Emily Hartley - Martha Holmes 	<p>Nautical Cadet Training Program – NCTP</p> <p>Engineering Officer Education and Training – EOET</p> <p>Engine Room Rating Training Program – ERR</p> <p>Practical Skills Training For Marine Engineer Program (Electrical) – PSME-E</p> <p>Practical Skills Training For Marine Engineer Program (Machining) – PSME-M</p> <p>Practical Skills Training for Marine Engineer Program (Welding) – PSME-W</p> <p>Alternative Path for Practical Skills – APSME</p> <p>STCW Basic Safety – STCW BS (CAMTI)</p> <p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1 (CAMTI)</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2 (CAMTI)</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4 (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats and in Advanced Fire Fighting – REF-STCW BS+PSC+AFF (CAMTI)</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI)</p> <p>Refresher training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC (CAMTI)</p> <p>Proficiency in Fast Rescue Crafts – FRC (CAMTI)</p> <p>Refresher Training Course in Proficiency an Fast Rescue Crafts – REF-FRC (CAMTI)</p> <p>Advanced Fire Fighting – AFF (CAMTI)</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF (CAMTI)</p> <p>Simulated Electronic Navigation, Level 1 – SEN-1</p> <p>Simulated Electronic Navigation, Level 2 – SEN-2</p> <p>Simulated Electronic Navigation, Operational Level – SEN-O</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI)</p> <p>Leadership and Teamwork –LTW (CAMTI)</p> <p>Passenger Safety Management – PSM</p> <p>Bridge Watch Rating Training Program – BWR (Blended/E-learning during COVID-19)</p> <p>Basic Training for Personnel on Ships Operating In Polar Waters – VOPB</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Vessel personnel without security responsibilities – VPWOSR</p> <p>Vessel personnel with security responsibilities – VPWSR</p> <p>Ship Security Officer – SSO</p> <p>Small vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS (CAMTI)</p> <p>Domestic Passenger Vessel Safety – DPVS (CAMTI)</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (CAMTI)</p> <p>Advanced celestial navigation – ASTRO 2</p> <p>Electronic Positioning System – EPS</p> <p>Bridge Resource Management – BRM</p> <p>Propulsion Plant Simulator Level II – Ship Management Practices Taught Using a Propulsive Plant Simulator – PPSMGT</p> <p>Propulsion Plant Simulator Level 1 – Ship Watchkeeping Practices Taught Using a Propulsive Plant Simulator – PPSOPR</p> <p>Technical Drawing – 2D</p> <p>Ship’s Cook – COOK</p> <p>Knowledge and Use of Marine Sextant – SEXTANT</p>
<p>Nova Scotia Community College – Shelburne P.O. Box 760, 1575 Lake Road Shelburne, afeScotia B0T 1W0 http://www.nsc.ca/explorensc/campuses/Shelburne</p>	<p>Duane Dakin Tel: (902) 875-5426 Fax: (902) 875-3797 E-mail: Duane.Dakin@nsc.ca</p> <p>Approved Representative (training certificates) Darlene Giles Tel : (902) 749-2419 Fax : (902) 742-0519 E-mail : darlene.giles@nsc.ca</p>	<p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS</p> <p>Small Non-Pleasure Domestic Basic Safety – SDV-BS</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

<p>PortBeacon Training Services Inc. P.O. Box 51027 Halifax, NS, B3M 4R8</p>	<p>Jana Warren Tel: (902) 830-5592 E-mail: jana@portbeacon.ca</p> <p>Robert Salisbury E-mail: bob@portbeacon.ca</p>	<p>Leadership and Managerial Skills – LMS (Blended/E-learning during COVID-19)</p> <p>Vessel personnel without security responsibilities – VPWOSR (Blended/E-learning during COVID-19)</p> <p>Vessel personnel with security responsibilities – VPWSR (Blended/E-learning during COVID-19)</p> <p>Ship Security Officer – SSO (Blended/E-learning during COVID-19)</p>
<p>Survival Systems Training Ltd. 40 Mount Hope Avenue Dartmouth, NS B2Y 4K9 www.sstl.com</p>	<p>Dan Latremouille Training and Operations Manager Tel: (902) 465-3888 Ext. 138 Fax: (902) 466-2929 E-mail: dan@sstl.com</p> <p>Administration Ext. 103 E-mail: sst@sstl.com or heatherc@sstl.com</p> <p>Approved Representative (training certificates) Robert Baxter Ext. 132 E-mail: bobb@sstl.com</p>	<p>STCW Basic Safety – STCW BS</p> <p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1</p> <p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4</p> <p>Refresher Training Course in STCW Basic Safety – REF-STCW BS</p> <p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats and in Advance Fire Fighting – REF-STCW BS+PSC+AFF</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC</p> <p>Refresher Training course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC</p> <p>Proficiency in Fast Rescue Crafts – FRC</p> <p>Refresher Training Course in Proficiency in Fast Rescue Crafts – REF-FRC</p> <p>Advanced Fire Fighting – AFF</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF</p> <p>Passenger Safety Management – PSM</p> <p>Vessel personnel without security responsibilities - VPWOSR</p> <p>Vessel personnel with security responsibilities – VPWSR</p> <p>Small Vessel Operator Proficiency – SVOP (Blended/E-learning during COVID-19)</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		Domestic Vessel Safety – DVS Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (Blended/E-learning during COVID-19)
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NEW BRUNSWICK

Approved Establishments	Contact Person	Approved Training Courses
CCNB, Campus de la Peninsule acadienne 9, Boul. St-Pierre Est Caraquet, NB E1W 1B6 www.ccnb.ca	Johanne Doucet Tel: (506) 726-2455 Cell: (506) 726-7041 E-mail: johanne.doucet@ccnb.ca Approved Representatives (training certificates) Alain Boisvert Tel : (506) 336-3369 (506) 726-2094 E-mail: alain.boisvert@CCNB.ca	Simulated Electronic Navigation, Limited – SEN-L Small Vessel Operator proficiency – SVOP Domestic Vessel Safety – DVS (CAMTI) Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (CAMTI)
Life Start Training Inc. 93 Loch Lomond Rd. Saint John, NB E2J 1X6	Khryspn Jensen Tel: (506) 654-2410 Email: kjensen@lifestarttraining.com	Marine Basic First Aid – MBFA

PRINCE EDWARD ISLAND

Approved Establishment	Contact Person	Approved training courses
Holland College Marine Centre 100 Water Street Summerside, PEI CIN 1A9 www.hollandcollege.com	Ozan Dermen Tel: (902) 888-6485 E-mail: odermen@hollandcollege.com Approved Representatives (training certificates) - Barry MacDonald - Laura Cormier - Marian Punch	Nautical Cadet Training Program – NCTP Engine Room Rating Training Program – ERR Practical Skills Training For Marine Engineer Program (Electrical) – PSME-E Practical Skills Training For Marine Engineer Program (Machining) – PSME-M Practical Skills Training for Marine Engineer Program (Welding) – PSME-W STCW Basic Safety – STCW BS (CAMTI)

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1 (CAMTI)</p> <p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2 (CAMTI)</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4 (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats in Advanced Fire Fighting – REF-STCW BS+PSC+AFF (CAMTI)</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI)</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other than Fast Rescue Boats – REF-PSC (CAMTI)</p> <p>Advanced Fire Fighting – AFF (CAMTI)</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF (CAMTI)</p> <p>Simulated Electronic Navigation, Level 1 – SEN-1</p> <p>Simulated Electronic Navigation, Level 2 – SEN-2</p> <p>Automatic Radar Plotting Aids – ARPA</p> <p>Simulated Electronic Navigation, Operational Level – SEN-O</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Electronic chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and teamwork – LTW (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI)</p> <p>Oil And Chemical tanker Familiarization – OCTF</p> <p>Specialized Oil Tanker Training – OT2</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Specialized Chemical Tanker Safety Training – CT2</p> <p>Advanced Chemical Tanker Cargo Training</p> <p>Passenger Safety Management – PSM</p> <p>Specialized Passenger Safety Management (Ro-Ro vessels) – SPSM</p> <p>Bridge Watch Rating Training Program – BWR</p> <p>Vessel personnel without security responsibilities - VPWOSR</p> <p>Vessel personnel with security responsibilities – VPWSR</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS (CAMTI)</p> <p>Domestic Passenger Vessel Safety – DPVS (CAMTI)</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (CAMTI)</p> <p>Electronic Positioning System – EPS</p> <p>Bridge Resource management – BRM</p> <p>Propulsion Plant Simulator Level II – Ship Management Practices Taught Using a Propulsive Plant Simulator – PPSMGT</p> <p>Propulsion Plant Simulator Level I – Ship Watchkeeping Practices Taught Using a Propulsive Plant Simulator – PPSOPR</p> <p>Knowledge and Use of Marine Sextant – SEXTANT</p>
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QUEBEC

Approved Establishment	Contact Person	Approved training courses
<p>Maritime Simulation and Resource Centre 271, rue de L'Estuaire Bureau 201 Québec (QC) G1K 8S8 www.sim-pilot.com</p>	<p>Paul Racicot Tel: (418) 692-0183 Fax: (418) 692-4262 E-mail: info@sim-pilot.com</p>	<p>Electronic Chart Display & Information System – ECDIS</p> <p>Bridge Resource Management – BRM</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

<p>Commission des normes, de l'équité, de la santé et de la sécurité du travail 1600 ave. D'Estimauville Quebec (QC) G1J 0H7 http://www.cnesst.gouv.qc.ca secouristeautravail@cnesst.gouv.qc.ca</p> <p>Tel : (418) 266-4699</p>	<p>Martine Ruest Tel : (418)266-4699 ext. 5710 E-mail : martine.ruest@cnesst.gouv.qc.ca</p> <p>Catherine Ferland E-mail : catherine.ferland@cnesst.gouv.qc.ca</p>	<p>Marine Basic First Aid - MBFA</p>
<p>Centre de services scolaire des îles Centre de formation professionnelle 50, Chemin de la Martinique L'Etang-du-Nord (QC) G4T 3R7</p>	<p>Donald Chiasson Tel : (418) 986-5511 Ext. 2102 Fax : (418) 986-3552 E-mail: dchiasson@csdesiles.qc.ca</p> <p>Approved Representatives (training certificates)</p> <ul style="list-style-type: none"> - Celine Turbide celineturbide@csdesiles.qc.ca - Ani Vigneau sec010@csdesiles.qc.ca 	<p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Small Vessel Operator Proficiency – SVOP, English Version</p> <p>Domestic Vessel Safety – DVS</p> <p>MED with Respect to Small Passenger Vessel Safety – MED A2</p>
<p>Eastern Shores School Board 40 Mountsorrel New Carlisle, QC G0C 1Z0</p>	<p>Zachary Cyr Tel: (418) 752-2247 Ext. 230 E-mail : zachary.cyr@essb.qc.ca</p> <p>Approved Representatives (training certificates)</p> <p>Jane Bradbury</p> <p>Ann Guilbeault</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
<p>École des Pêches et de l'Aquaculture du Québec 167, La Grande-Allée Est Grande-Rivière (QC) G0C 1V0 www.epaq.qc.ca</p>	<p>François Castilloux E-mail : FCastilloux@cegepgim.ca</p> <p>Marylène Nicolas E-mail: MNicolas@cegepgim.ca</p> <p>Approved Representatives (training certificates)</p> <p>Chloé Boudreau</p>	<p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p> <p>Basic Chartwork and Pilotage – C&P 1</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		Basic Ship Construction and Stability (Fishing Vessels) – SCS 1
Escapades Memphremagog 2400, rue Principale Ouest Magog (QC) J1X 0J1 www.escapadesmemphremagog.com	Charles Lavigne Tel : (819) 820-4419 Fax : (819) 843-9096 E-mail : capitaine@escapadesmemphremagog.com	MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Non-Certified Personnel) – MED A2LL
CTMA 435, Chemin Avila-Arseneau Cap-aux-Meules (QC) G4T 1J3	Marc-André Molaison Tel : (418) 986-6600 Fax : (418) 986-3273 E-mail : ma.molaison@ctma.ca Mario Landry E-mail : mario.landry@ctma.ca Tel : (418) 986-6600 Dominik ARSENEAU E-mail : dominik.arseneau@ctma.ca Thierry MAGNAN E-mail : thierry.magnan@ctma.ca	Passenger Safety Management – PSM Specialized Passenger Safety Management (Ro-Ro Vessels) – SPSM
Institut maritime du Québec Centre de Lévis MED Centre 2965, rue de l'Etchemin Lévis (QC) G6W 7X5 www.imq.qc.ca Note: All courses are offered in French and English.	Genevieve Vezina MED Centre: (418) 835-1621 Ext. 233 Fax: (418) 835-0192 E-mail: gvezina@imq.qc.ca Approved Representative (training certificates) - Julie Gasse	STCW Basic Safety – STCW BS (CAMTI) Proficiency in Personal Survival Techniques – STCW A-VI/1-1 (CAMTI) Fire Prevention and Fire Fighting – STCW – A-VI/1/2 (CAMTI) Personal Safety and Social Responsibilities – STCW-A-VI-1-4 (CAMTI) Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI) Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI) Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats and in Advanced Fire Fighting – REF-STCW BS+PSC+AFF (CAMTI) Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI) Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC (CAMTI)

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Proficiency in Fast Rescue Crafts – FRC (CAMTI)</p> <p>Refresher Training Course in Proficiency in Fast Rescue Crafts – REF-FRC (CAMTI)</p> <p>Advanced Fire Fighting – AFF (CAMTI)</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF (CAMTI)</p> <p>Simulated Electronic Navigation, Level 1A – SEN-1A</p> <p>Simulated Electronic Navigation, Level 1B – SEN-1B</p> <p>Simulated Electronic Navigation, Level 2 – SEN-2</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Simulated Electronic Navigation, Management Level – SEN-M</p> <p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI)</p> <p>Oil And Chemical Tanker Familiarization – OCTF</p> <p>Passenger Safety Management – PSM</p> <p>Marine Advanced First Aid – MAFA</p> <p>Bridge Watch Rating Training Program – BWR (Blended/E-learning during COVID-19)</p> <p>Advanced Training for Personnel on Ships Operating In Polar - VOPA</p> <p>Basic Training for Personnel on Ships Operating In Polar Waters – VOPB</p> <p>Vessel personnel with security responsibilities – VPWSR (Blended/E-learning during COVID-19)</p> <p>Ship Security Officer – SSO</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS (CAMTI)</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Domestic Passenger Vessel Safety – DPVS (CAMTI)</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (CAMTI)</p> <p>Small Seasonal Passenger Vessel Safety (certified Personnel) - SSPV-CP</p> <p>Seasonal Passenger Vessel Safety (Non-Certificated Personnel) - SPV-NCP</p> <p>Bridge Resource Management – BRM</p> <p>Marine Basic First Aid – MBFA</p> <p>Marine Medical Care – MMC</p> <p>Ship’s Cook – COOK</p>
<p>Institut maritime du Québec de Rimouski 53 rue St. Germain Ouest Rimouski (QC) G5L 4B4 www.imq.qc.ca</p> <p>Note: Cadet programs and courses offered in French only with exception of Propulsion Plant Simulator, level 1 and II.</p>	<p>Mélanie Leblanc Tel: (418) 724-2822 Ext. 4401 E-mail: melanie.leblanc@imq.qc.ca</p> <p>Approved Representatives (Training Certificates) - Marie-Stephanie St-Laurent Stage.training@imq.qc.ca</p>	<p>Nautical Cadet Training Program – NCTP (Blended/E-learning during COVID-19)</p> <p>Marine Engineer Cadet Training Program – COTE</p> <p>Marine Engineer Cadet Training Program – EOET</p> <p>Practical Skill Training for Marine Engineer Program (Electrical) – PSME-E</p> <p>Simulated Electronic Navigation, Operational Level – SEN-O</p> <p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Oil and Chemical Tanker Familiarization – OCTF</p> <p>Bridge Watch Rating Training Program – BWR</p> <p>Vessel personnel with security responsibilities – VPWSR</p> <p>Meteorology, Level 2 – MET 2</p> <p>Basic Engineering Knowledge – EK 1</p> <p>Electronic Positioning System – EPS</p> <p>Propulsion Plant Simulator Level II – Ship Management Practices Taught Using A Propulsive Plant Simulator – PPSMGT</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		Propulsion Plant Simulator Level I – Ship Management Practices Taught Using a Propulsive Plant Simulator - PPSOPR
Ottawa Boat Cruise 895, rue Jacques Cartier Gatineau (QC) J8T 2W3	Robert Taillefer Tel : (819) 246-3855 Fax : (819) 246-0101 E-mail : bob@ottawaboatcruise.com	MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Certified Personnel) – MED A2L MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Non-Certified Personnel) – MED A2LL
Société des traversiers du Québec 250, rue Saint-Paul Québec (QC) G1K 9K9 www.traversiers.gouv.qc.ca	Sarah Cliche Tel: (418) 646-0359 Fax: (418) 643-7308 E-mail: Sarah.Cliche@traversiers.gouv.qc.ca	Passenger Safety Management – PSM Specialized Passenger Safety Management (Ro-Ro Vessels) - SPSM
Traverse Rivière-du-Loup Saint Siméon 199, rue Hayward, C.P. 172 Rivière-du-Loup (QC) G5R 3Y8 www.traverserdl.com	Serge-Martin Denis Directeur-Général Marc Harvey Tel : (418) 862-9545 (418) 862-8143 Fax : (418) 862-5382 E-mail : ass.directionpdt@traverserdl.com	Passenger Safety Management - PSM
Garde côtière auxiliaire canadienne (Québec) inc. / Canadian Coast Guard Auxiliary (Québec) Inc. 17, rue du Prince Sorel-Tracy (Québec) J3P 4J4 Hubertd6651@yahoo.fr	Hubert Desgagnés Tel : (418) 746-4385 E-mail : hubertd6651@yahoo.fr Approved Representative (Training Certificates) - Serges Jacques - Dorothée Lemieux	Small Vessel Operator Proficiency – SVOP Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

Virtual Maritime Academy 11075 boul henry bourassa CP 65054, Québec QC, G1G 3X0	Emanuel Huard Tel : (418) 456-1667 E-mail : emanuel@virtual-maritime-academy.com	Ship Security officer – SSO Vessel personnel with security responsibilities – VPWSR Vessel personnel without security responsibilities – VPWOSR
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ONTARIO

Approved Establishment	Contact Person	Approved Training Courses
Action First Aid 92 Commerce Park Unit #5, Barrie Ontario L4N 8W8 actionfirstaid.ca info@actionfirstaid.ca	Deb Hennig Tel: 1-(866) 347-7824 Ext. 222 E-mail: deb@actionfirstaid.ca	Marine Basic First Aid - MBFA
Canadian Maritime Group Suite 81112 89 Queens Quay West Toronto, ON M5J 2V3	Doug Prothero Tel: (416) 302-2018 E-mail: doug@canmargroup.com	Currently not offering any approved courses.
Canadian Coast Guard – HQ Ottawa – CG Ottawa 200 Kent St. PD Certification branch Operational personnel Station 5S019 Ottawa, ON K1A 0E6 This institution is authorized to deliver courses across Canada.	Laurent Desmarais Tel: (613) 293-7964 E-mail: laurent.desmarais@dfo-mpo.gc.ca	Small Vessel Operator Proficiency – SVOP MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3
Canadian International Bureau of Shipping Ltd. 5330 Canotek Road, Unit #2 Ottawa, Ontario K1J 9C1	Said Nassif Managing Director Tel: (613) 695-2427 24 hr. line: (613) 790-7260 E-mail: snassif@cibsmarine.org	Leadership And Teamwork – LTW Leadership and Managerial Skills – LMS Ship Security officer – SSO Vessel personnel with security responsibilities – VPWSR

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		Vessel personnel without security responsibilities – VPWOSR Small Vessel Operator Proficiency – SVOP
CPVA Canadian Passenger Vessel Association P.O. Box 23001, Station Mall Sault Ste. Marie, ON P6A 6W6	Capt. John Chomniak Executive Director E-Mail: cpva@cruiseacanada.ca Tel : (705) 946-5745	Domestic Passenger Vessel Safety – DPVS Small Seasonal Passenger Vessel Safety (certified Personnel) - SSPV-CP Seasonal Passenger Vessel Safety (Non-Certificated Personnel) - SPV-NCP
PCVA Passenger & Commercial Vessel Association P.O. Box 663 Ottawa, ON K1P 5P7	Kurt Huck Tel: (613) 241-8811 E-mail: kurthuck@capitalcruises.ca Jill Hicks President Tel : (416) 868-0000 E-mail : jill.hicks@pcva.ca	Domestic Passenger Vessel Safety – DPVS Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS Small Seasonal Passenger Vessel Safety (certified Personnel) - SSPV-CP Seasonal Passenger Vessel Safety (Non-Certificated Personnel) - SPV-NCP Small Vessel Operator Proficiency – SVOP (Blended/E-learning during COVID-19)
Canadian Red Cross 170 Metcalfe Ave. Ottawa, ON K2P 2P2 www.redcross.ca This institution is authorized to deliver courses across Canada.	Don Marentette / Ian Fitzpatrick Tel: (613) 740-1894 Fax: (613) 740 1911 E-mail: don.marentette@redcross.ca Ian.fitzpatrick@redcross.ca	Marine Advanced First Aid – MAFA Marine Basic First Aid - MBFA
Captain Paul Papps Nautical Training 3130 Babcock Road, Elginburg, ON K0H 1M0 www.nauticaltraining.ca	Captain Paul Papps Tel: (613) 376-6188 Email: nauticaltraining@xplornet.com	Simulated Electronic Navigation, Limited – SEN-L
The Casualty Care First Aid Company 128 High Hill Rd. RR 1 Allenford, ON N0H 1A0 www.casualtycare.com	Terry Arnold Tel: 1-(800) 465-7045 (226) 668-3434 E-mail: terryarnold@casualtycare.com	Currently not offering any approved courses.
Georgian College	Thomas Aulinger	

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

<p>1450 8th St. East P.O. Box 700 Owen Sound, ON N4K 5R4 www.georgiancollege.on.ca www.marinetraining.ca</p>	<p>Tel: (519) 376-0840 ext. 2020 Email: thomas.aulinger@georgiancollege.ca</p> <p>Cadet Training Programs Colin MacNeil Tel: (519) 376-0840 Ext. 2071 E-mail: Colin.Macneil@georgiancollege.ca</p> <p>Approved Representative (Training Certificates) Carol Record Tel: (519) 376-0840 Ext. 2079 E-mail: Carol.Record@georgiancollege.ca</p> <p>Janis Stewart Tel : (519) 376-0840 Ext. 2021 E-mail: Janis.Stewart@georgiancollege.ca</p> <p>Danielle Stewart Tel : (519) 376-0840 Ext. 2079 E-mail: danielle.stewart@georgiancollege.ca</p> <p>Nathalie Stiévenart Tel: (519) 376-0840 ext. 2337 E-mail: Nathalie.Stievenart@GeorgianCollege.ca</p> <p>Tara Morton</p> <p>Ryan Kittel</p> <p>Kent Simpson</p> <p>Rebecca Sanderson</p> <p>Claudia Carleton</p> <p>Lisa Lavigne</p>	<p>Nautical Cadet Training Program – NCTP</p> <p>Engineering Officer Education and Training – EOET</p> <p>Practical Skills Training For Marine Engineer Program – PSME</p> <p>STCW Basic Safety – STCW BS (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1 (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2 (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4 (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats and in Advanced Fire Fighting – REF-STCW BS+PSC+AFF (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Advanced Fire Fighting – AFF (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Simulated Electronic Navigation, Level 1 – SEN-1</p> <p>Simulated Electronic Navigation, Level II – SEN-2</p> <p>Automatic Radar Plotting Aids – ARPA</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI) (Blended/E-learning during COVID-19)</p> <p>Oil and Chemical Tanker Familiarization – OCTF</p> <p>Passenger Safety Management – PSM</p> <p>Specialized Passenger Safety Management (Ro-Ro Vessels) – SPSM (Blended/E-learning during COVID-19)</p> <p>Marine Advanced First Aid – MAFA</p> <p>Bridge Watch Rating Training Program – BWR</p> <p>Vessel personnel with security responsibilities – VPWSR (Blended/E-learning during COVID-19)</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS (CAMTI)</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (CAMTI)</p> <p>Electronic positioning Systems – EPS</p> <p>Bridge Resource Management – BRM</p> <p>Marine Basic First Aid – MBFA</p> <p>Ship’s Cook – COOK</p> <p>Supervision of an Oil Transfer Operation – Part C – Advanced – SOTO-C</p> <p>Propulsion Plant Simulator, Level II – Ship Management Practices Taught Using A Propulsive Plant Simulator – PPSMGT</p> <p>Propulsion Plant Simulator, Level I – Ship Management Practices Taught Using a Propulsive Plant Simulator – PPSOPR</p> <p>Knowledge and Use of Marine Sextant – SEXTANT</p>
NAV-TEX Ltd.	Ray Throop	

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

10 Apple Blossom Drive Brockville, ON K6V 5T1	Tel: (613) 246-0963 E-mail: raythroop300@msn.com	Small Vessel Operator Proficiency – SVOP MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3
Ramara Fire & Emergency Services PO Box 130 Breachin, ON L0K 1B0	Jim Watson: E-mail: watson@orilliapronet.com Madison Dunn E-mail: skarabin@ramara.ca	Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS
Rescue 7 Inc. 550 Alden Rd. Unit 107 Markham, ON L3R 6A8	John Collie Tel: (905) 474-0770 Fax: (905) 474-2724 E-mail: johncollie@rescue7.net Michele McCabe	Marine Advanced First Aid – MAFA Marine Basic First Aid - MBFA
St. John Ambulance National Headquarters 400-1900 City Park Dr. Ottawa, ON K1J 1A3 www.sja.ca/Pages/default.aspx This institution is authorized to deliver courses across Canada.	Iyad Mansour Tel: (902) 377-2403 E-mail : iyad.mansour@sja.ca Approved Representative (training certificates) Annette Pion E-mail: Annette.Pion@nhq.sja.ca	Marine Advanced First Aid – MAFA Marine Basic First Aid - MBFA
St. Lawrence College 100 Portsmouth Ave. Kingston, ON K7L 5A6 www.stlawrencecollege.ca	Debbie Kiely Tel: (613) 544-5400 Ext. 1195 Fax: (613) 545-3923 E-mail: dkiely@sl.on.ca Debbie Baker Administrative Support Tel : 613-544-5400 ext. 1670 E-mail: dbaker@sl.on.ca	MED with Respect to Small Passenger Vessel Safety – MED A2
Underwater Forensic Services 224 Glendale Avenue St. Catharines, ON L2T 4C4	Bill Wiley Tel: (905) 931-3986 E-mail: ufs@cogeco.ca Crew.maritime@hotmail.com	Small Vessel Operator Proficiency – SVOP MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3
Workplace Medical Corp. First Aid Training 130 Wilson Street Hamilton, Ontario L8R 1E2	Dean Pezzin Tel : 1- (800) 205-3278 x1323 E-mail : Dean.pezzin@workplacemedical.com	Marine Basic First Aid – MBFA

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

http://www.workplacemedical.com	Mike Bardgett E-mail : Mike.bardgett@workplacemedical.com	

ALBERTA

Approved Establishment	Contact Person	Approved Training Courses
Canadian College of Emergency Medical Services 4712, 91 st Avenue Edmonton, AB T6B 2L1 www.ccofems.org	John Clarkes Tel: (780) 451-4437 1-(800) 797-4437 Fax: (780) 457-1720 E-mail: greg@ccofems.org Peter Anderst, RN, BN Canadian College Of EMS Tel: (204) 230-7178 E-mail: anderst@shaw.ca	Marine Advanced First Aid – MAFA Marine Basic First Aid – MBFA
ITE Training and Consulting Inc. 5222, 18 th Avenue Edson, AB T7E 1G9 www.itetc.ca	Lee Tarr Tel: (780) 517-8225 E-mail: ite@telus.net	Small Vessel Operator Proficiency – SVOP Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS

BRITISH COLUMBIA

Approved Establishment	Contact Person	Approved Training Courses
Academy of Emergency Training #14 - 1225 East Keith Road North Vancouver, BC V7J-1J3	Declan Lawlor Tel: (604) 922-2249 E-mail: info@firstaid.ca	Marine Advanced First Aid – MAFA (Blended/E-learning during COVID-19) Marine Basic First Aid – MBFA (Blended/E-learning during COVID-19) Marine Medical Care – MMC (Blended/E-learning during COVID-19)
British Columbia Ferry Services Inc. 1 Ferry Causeway Delta, BC V4M 4G6	Jayne Sutton Tel: (250) 716-7117 Email: Jayne.sutton@bcferries.com	Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats - PSC Passenger Safety Management – PSM

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

	Approved Representative (training certificates) - Natasha Nand - Naomi Thomas	
BCIT – Marine Campus 265 West Esplanade North Vancouver, BC V7M 1A5 www.bcit.ca/transportation/marine	Andrew Liebmann Associate Dean Tel: (604) 453-4122 E-mail: aliebmann@bcit.ca	Nautical Cadet Training Program – NCTP Engineering Officer Education and Training – EOET Practical Skills Training For Marine Engineer Program (Electrical) – PSME-E Practical Skills Training For Marine Engineer Program (Machining) – PSME-M Practical Skills Training for Marine Engineer Program (Welding) – PSME-W Alternative Path for Practical Skills – APSME STCW Basic Safety – STCW BS (CAMTI) Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI) Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI) Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats in Advanced Fire Fighting – REF – STCW BS+PSC+AFF (CAMTI) Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI) Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC (CAMTI) Simulated Electronic Navigation, Level 1A – SEN-1A Simulated Electronic Navigation, Level 1B – SEN-1B Simulated Electronic Navigation, Level 2 – SEN-2 Simulated Electronic Navigation, Limited – SEN-L Simulated Electronic Navigation, Management Level – SEN-M Simulated Electronic Navigation, Operational Level – SEN-O

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI)</p> <p>Oil and Chemical Tanker Familiarization – OCTF</p> <p>Specialized Oil Tanker Training – OT2</p> <p>Bridge Watch Rating Training Program – BWR</p> <p>Vessel Personnel without security responsibilities – VPWOSR</p> <p>Vessel Personnel with security responsibilities – VPWSR</p> <p>Ship Security officer – SSO</p> <p>Domestic Vessel Safety – DVS (CAMTI)</p> <p>Communications Level 1 – COM 1</p> <p>Communications Level 2 – COM 2</p> <p>Basic Meteorology – MET 1</p> <p>Advanced Meteorology – MET 2</p> <p>Ship Construction and Stability (Small Vessels) – SCS 3</p> <p>Ship Construction and Stability Operational Level – SCS 4</p> <p>Basic Cargo – CG 1</p> <p>Cargo Operational Level – CG 2</p> <p>Cargo Management Level – CG 3</p> <p>Basic Engineering Knowledge – EK 1</p> <p>Advanced Engineering Knowledge – EK 2</p> <p>Ship Management, vessels less than 500 tons – SM 2</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Basic Ship Management – SM 3</p> <p>Ship Management, Level 4 – SM 4</p> <p>Navigation Systems and Instruments – NS&I</p> <p>Electronic positioning Systems – EPS</p> <p>Bridge Resource Management – BRM</p> <p>Propulsion Plant Simulator Level I – Ship Watchkeeping Practices Taught Using a Propulsive Plant Simulator – PPSOPR</p> <p>Propulsion Plant Simulator Level II – Ship Management Practices Taught Using A Propulsive Plant Simulator - PPSMGT</p>
<p>Camosun College Interurban Campus 4461 Interurban Road Victoria, BC V9E 2C1 www.camosun.bc.ca</p>	<p>Morteza Peivast Tel: (250) 370-4016 E-mail: peivastm@camosun.bc.ca</p>	<p>STCW Basic Safety – STCW BS (CAMTI)</p> <p>Proficiency in Personal Survival Techniques – STCW A-VI/1-1 (CAMTI)</p> <p>Fire Prevention and Fire Fighting – STCW – A-VI/1/2 (CAMTI)</p> <p>Personal Safety and Social Responsibilities – STCW-A-VI-1-4 (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety – REF-STCW BS (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC (CAMTI)</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and rescue Boats and in Advanced fire Fighting – REF-STCW BS+PSC+AFF (CAMTI)</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC (CAMTI)</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC (CAMTI)</p> <p>Proficiency in Fast Rescue Crafts – FRC (CAMTI)</p> <p>Refresher Training Course in Proficiency in Fast Rescue Crafts – REF-FRC (CAMTI)</p> <p>Advanced Fire Fighting – AFF (CAMTI)</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF (CAMTI)</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Simulated Electronic Navigation, Level 1A – SEN-1A</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Electronic Chart Display & Information System – ECDIS (CAMTI)</p> <p>Leadership and Teamwork – LTW (CAMTI)</p> <p>Leadership and Managerial Skills – LMS (CAMTI)</p> <p>Vessels Operating in Polar Waters, Basic - VOPB</p> <p>Passenger Safety Management – PSM</p> <p>Specialized Passenger Safety Management (Ro-Ro Vessels) – SPSM</p> <p>Small Vessel Operator Proficiency – SVOP (Blended/E-learning during COVID-19)</p> <p>Domestic Vessel Safety – DVS (CAMTI)</p> <p>Domestic Passenger Vessel Safety – DPVS (CAMTI)</p> <p>Small Non-Pleasure Domestic Basic Safety – SDV-BS</p> <p>Basic Chartwork and Pilotage – C&P 1</p> <p>Advanced Chartwork and Pilotage – C&P 2</p> <p>Basic Meteorology – MET 1</p> <p>Advanced Meteorology – MET 2</p> <p>Ship Construction and Stability (Small Vessels) – SCS 3</p> <p>Ship Construction and Stability Operational Level – SCS 4 (Blended/E-learning during COVID-19)</p> <p>Ship Construction and Stability Management Level – SCS 5</p> <p>Cargo Operational Level – CG2</p> <p>Basic Ship Management – SM 3</p> <p>Electronic positioning Systems – EPS</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Bridge Resource Management – BRM</p> <p>Bridge Watch Rating training Program – BWR</p>
<p>Capp's Northern Training 410-309 2nd Avenue West Prince Rupert, BC V8J 3T1 604-828-4262</p>	<p>David Milligan Tel : (250) 627-1265 Email: cappsnortherntraining@gmail.com</p>	<p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Med with Respect to Basic Safety – MED A1</p> <p>MED with Respect to Small Passenger Vessel Safety – MED A2</p> <p>MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Certified Personnel) – MED A2L</p> <p>MED with respect to Small Seasonal Passenger – Carrying Vessel Safety (Non-Certified Personnel) – MED A2LL</p> <p>Small Non-Pleasure Domestic Basic Safety – SDV-BS</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Chartwork and Pilotage, level 1 – C&P 1</p>
<p>Datum Marine Services Ltd. 601 Gibson St Box 1115 Tofino BC V0R 2Z0 www.marinettrainingbc.com</p>	<p>Thomas Van Wyck Queenie Prentice Tel: (250) 726-6058 / (250) 726-5466 E-mail: admin@marinettrainingbc.com</p> <p>Approved Representative (training certificates) - Patrice Dufour</p>	<p>Small Non-Pleasure Domestic Basic Safety – SDV-BS</p> <p>Small Vessel Operator Proficiency - SVOP</p>
<p>ECDIS on Site Systems Inc. 14756 McDonald Ave. White rock, BC V4B 2C8</p>	<p>David Milligan Tel: (604) 828-4262 E-mail: millli@shaw.ca davidmilligan07@gmail.com</p>	<p>Electronic Chart Display & Information System – ECDIS</p>
<p>Emergency First Response Corporation 107-1680 Broadway Street Port Coquitlam, BC V3C 2M8</p>	<p>Randy Giles Tel: (604) 221-7231 Fax: (604) 552-5921 E-mail: Randy.giles@padi.com</p>	<p>Marine Basic First Aid - MBFA</p>
<p>Excel Career College 201-841, Cliffe Ave. Courtenay, BC V9N 2J8 www.excelcareercollege.com</p>	<p>Pauline Stevenson Tel: (250) 334-2452 Fax: (250) 334-1014 E-mail: paulines@excelcareercollege.com</p>	<p>Small Non-Pleasure Domestic Basic Safety – SDV-BS</p> <p>Small Vessel operator Proficiency – SVOP</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

	Approved Representative Michelle Konkle Valerie Sinnett Chris Rasmussen Heather Noel	
FMI Marine Inc. 10875 Inwood Rd. North Saanich, BC V8I 5H9 fathommarineinstitute.ca	Pat Fogarty Tel: (250) 634-3303 Email: info@fmimarine.ca	Small Non-Pleasure Domestic Basic Safety – SDV-BS Small Vessel operator Proficiency – SVOP
Fish SAFE 100-12051 Horseshoe Way Richmond, BC V7A 4V4 www.fishsafebc.com	Stephanie Nguyen Tel: (604) 261-9700 Fax: (604) 275-7140 E-mail: admin@fishsafebc.com :	MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3 Small Vessel Operator Proficiency – SVOP
Heads Up Navigation P.O. Box 602 Saanichton, BC V8M 2C5 www.headsupnav.com	Cpt. Lesley Head Tel: (250) 704-0325 / 1-877-655-4656 E-mail: captain@headsupnav.com	Small Non-Pleasure Domestic Basic Safety – SDV-BS Small Vessel operator Proficiency – SVOP
International Navigation School 3794, Meredith Drive Royston, BC V0R 2V0 www.learnonavigate.com	Barrie Hudson Tel: (250) 702-3014 E-mail: jbhudson@shaw.ca	Knowledge And Use Of Marine Sextant – SEXTANT
Justice Institute of BC Fire and Safety Training Centre 13500, 256 Street Maple Ridge, BC V4R 1C9 www.jibc.bc.ca/fire	Darren Charlton Tel: (604) 528-5908 E-mail: dcharlton@jibc.ca	STCW Basic Safety – STCW BS Refresher Training Course in STCW Basic Safety – REF-STCWBS Refresher Training Course in STCW Basic Safety and Proficiency in Survival Craft and Rescue Boats Other than Fast Rescue Boats and to Advance Fire Fighting - REF-STCWBS + PSC + AFF Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC Advanced Fire Fighting – AFF Domestic Vessel Safety – DVS

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		(The firefighting portion of every MED course listed above is delivered by the JIBC – the rest is delivered by BCIT)
Landsend Marine Training P.O. Box 1949 Gibson, BC V0N 1V0	Greig Williams Tel: (604) 886-3573 / (604) 989-2771 Fax: n/a E-mail: skipper@landsendbc.ca	Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS Small Vessel Operator Proficiency – SVOP
North Island College 1685 South Dogwood Street Campbell River, BC V9W 8C1 www.nic.bc.ca	Lynn Weaver E-mail :lynn.weaver@nic.bc.ca Approved Representative (training certificates) Bob Haugen Tel: 250-923-9792 Email: bob.haugen@nic.bc.ca	Simulated Electronic Navigation, Limited – SEN-L Domestic Vessel Safety – DVS Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS Small Vessel Operator Proficiency – SVOP Basic Chartwork and Pilotage – C&P 1 Advanced Chartwork and Pilotage – C&P 2 Ship Construction and Stability (Small Vessels) – SCS 3
Coast Mountain College 353 5 th Street Prince Rupert, BC V8J 3L6 www.nwcc.bc.ca	Kelly Jean Tel: (250) 635-6511 Ext. 5473 E-mail: kjean@coastmountaincollege.ca	Med with Respect to Basic Safety – MED A1 MED with Respect to Small Passenger Vessel Safety – MED A2 MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3 Small Vessel Operator Proficiency – SVOP
Howard Marine Services 901 W. 3 rd Street Griffin Centre North Vancouver, BC V7P 3P9 www.quicknav.com	Ron Howard Tel: (604) 685-5936 E-mail: howardmarineservices@gmail.com	Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS Small Vessel Operator Proficiency – SVOP
Royale Canadian Marine Search and Rescue 6040 East Sooke Road Sooke, BC V9Z 0Z7 www.rcmsar.com	Ralph Mohrmann Tel: (778) 352-1780 ext. 113 cell: (778) 352-8976 E-mail: ralph.mohrmann@rcmsar.com Approved Representative (training certificates)	Simulated Electronic Navigation, Limited – SEN-L MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3 Small Vessel Operator Proficiency – SVOP

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

	- Francois Michaud	
Safer Ocean Systems 212 Prideaux Street Nanaimo, BC V9R 2N1 www.saferoceans.com	Ryan Masson E-mail: ryan@saferoceans.com	Simulated Electronic Navigation, Limited – SEN-L Domestic Vessel Safety – DVS Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS (Blended/E-learning during COVID-19) Small Vessel Operator Proficiency – SVOP (Blended/E-learning during COVID-19) Basic Chartwork and Pilotage – C&P 1 Advanced Chartwork and Pilotage – C&P 2 Basic Ship Construction and Stability (Fishing Vessels) – SCS 1
Westcoast Adventure College 2526 Eastdowne Rd., Victoria, BC V8R 5P9	Phil Foster Tel: (250) 818-1212 Fax: (250) 592-2452 E-mail: info@westcoastadventurecollege.com Approved Representative (training certificates) -Brad Mason Tel: (250) 858-5369 E-mail: bmason17@hotmail.com -Krista Gooderham Tel : (250) 216 -7565 E-mail : klgooderh@gmail.com	Small Vessel Operator Proficiency – SVOP
West Coast Powerboat Handling 10191 Third St Sidney, BC V8L 3B7 www.westcoastpowerboathandling.com	Bruce Stott Tel: (250) 656-2628 E-mail: wcp@cruising.bc.ca	MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3 Small Vessel Operator Proficiency – SVOP
Western Maritime Institute 3519 Hallberg Road Ladysmith, BC V9G 1K1 www.maritimeed.com	Captain David Badior Tel: (250) 245-4455 Fax: (250) 245-8881 E-mail: David.Badior@maritimeed.com Approved Representative	Engine Room Rating Training Program – ERR STCW Basic Safety – STCW BS Refresher Training Course in STCW Basic Safety – REF-STCW BS

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

	<p>(training certificates) -Ellen Hank E-mail : Ellen.hank@maritimeed.com</p>	<p>Refresher Training Course in STCW Basic Safety and in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-STCW BS+PSC</p> <p>Refresher Training Course in STCW Basic Safety, in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats in Advanced Fire Fighting – REF-STCW BS+PSC+AFF</p> <p>Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – PSC</p> <p>Refresher Training Course in Proficiency in Survival Craft and Rescue Boats Other Than Fast Rescue Boats – REF-PSC</p> <p>Advanced Fire Fighting – AFF</p> <p>Refresher Training Course in Advanced Fire Fighting – REF-AFF</p> <p>Simulated Electronic Navigation, Operational Level – SEN-O</p> <p>Simulated Electronic Navigation, Limited – SEN-L</p> <p>Simulated Electronic Navigation, Management Level – SEN-M</p> <p>Electronic Chart Display & Information System – ECDIS</p> <p>Leadership and Teamwork – LTW</p> <p>Leadership and Managerial Skills – LMS</p> <p>Passenger Safety Management – PSM</p> <p>Specialized Passenger Safety Management (Ro-Ro Vessels) – SPSM</p> <p>Bridge Watch Rating Training Program – BWR</p> <p>Vessel personnel without security responsibilities – VPWOSR</p> <p>Vessel personnel with security responsibilities – VPWSR</p> <p>Ship Security Officer – SSO</p> <p>Small Vessel Operator Proficiency – SVOP</p> <p>Domestic Vessel Safety – DVS</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

		<p>Domestic Passenger Vessel Safety – DPVS</p> <p>Communication, level 1 – COM 1</p> <p>Basic Chartwork and Pilotage – C&P 1</p> <p>Advanced Chartwork and Pilotage – C&P 2</p> <p>Basic Meteorology – MET 1 (Blended/E-learning during COVID-19)</p> <p>Basic Ship Construction and Stability (Fishing Vessels) – SCS 1</p> <p>Advanced Ship Construction and Stability (Fishing Vessels) – SCS 2</p> <p>Ship Construction and Stability (Small Vessels) – SCS 3</p> <p>Ship Construction and Stability Operational Level – SCS 4</p> <p>Cargo Operation Level – CG 2</p> <p>Basic Engineering Knowledge – EK 1</p> <p>Basic General Ship Knowledge (Fishing Vessels) GSK 1</p> <p>General Ship Knowledge – GSK 3</p> <p>Ship Management, vessels less than 500 tons – SM 2 (Blended/E-learning during COVID-19)</p> <p>Navigation Systems and Instruments – NS&I</p> <p>Small Vessel Machinery Operator – SVMO-T</p> <p>Electronic positioning Systems – EPS (Blended/E-learning during COVID-19)</p> <p>Knowledge and Use of Marine Sextant – SEXTANT</p>
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NUNAVUT		
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Approved Establishment	Contact Person	Approved Training Courses
Nunavut Arctic College Box 600	Markoosie Qaunirq Tel: (867) 979-7231	No courses currently offered.

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

Iqaluit, NU X0A 0H0 http://www.mi.mun.ca/	Fax: (867) 979-7101 E-mail: markoosie.qaunirq@arcticcollege.ca	
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NORTHWEST TERRITORIES

Approved Establishment	Contact Person	Approved Training Courses
Aurora College Box 600 Fort Smith, NT X0E 0P0 www.auroracollege.nt.ca/campuses/thebacha.aspx	Linh Nguyen Tel: (867) 872-7577 E-mail: LNguyen@auroracollege.nt.ca	Small Vessel Operator Proficiency – SVOP Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS

PART II

RECOGNIZED INSTITUTIONS APPROVED TO DELIVER IN-HOUSE TRAINING COURSES ONLY

NOVA SCOTIA

Approved Establishment	Contact Person	Approved Training Courses
Point Tupper Marine Services 4090 Port Malcolm Road Point Tupper, NS B9A 1Z5 Note: In-House Training	Shannon MacDonald Tel: (902) 631-4960 E-mail: Shannon.macdonald@nustarenergy.com Shannon.macdonald@triox.ca	Small Vessel Operator Proficiency – SVOP MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3

ONTARIO

Approved Establishment	Contact Person	Approved Training Courses
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RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

<p>City of Barrie: Barrie Fire and Emergencies Service 155, Dunlop Street W. P.O. Box 400 Barrie, ON L4M 4T5 www.barrie.ca</p> <p>Note: In-House Training</p>	<p>Dave Hendricks Tel: (705) 739-3199 Ext. 3243 Fax: (705) 728-1277 E-mail: dave.hendricks@barrie.ca</p>	<p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
<p>Canadian Coast Guard Auxiliary – Central & Arctic 305 Milner Avenue Suite 208, Toronto, ON M1B 3V4</p> <p>Note : In-House Training</p>	<p>Paul Hebbel Tel : (416) 463-7283 Fax : (416) 463-7285 E-mail : centraltrainingmanager@ccga-ca.com</p> <p>Juanita Armstrong juanita@ccga-ca.com</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>
<p>Eastern Canada Response Corp. Ltd. 275 Slater St. Suite 1201 Ottawa, ON K1P 5H9 www.ecrc.ca</p> <p>Note: In-House Training</p>	<p>Darin Connors Tel: (902) 461-9170 ext. 264 Fax: (902) 461-9590 Cell: (902) 499-6553 E-mail: dconnors@ecrc.ca</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>
<p>Niagara Regional Police Service 5700 Valley Way Niagara Falls, Ontario, Canada L2E 1X8 Canada Telephone (905) 688-4111 Web: http://www.niagarapolice.ca</p> <p>Note: In-House Training</p>	<p>Sergeant Jon Pilkington E-mail : jon.pilkington@niagarapolice.ca</p> <p>Tim Eaton : E-mail : tim.eaton@niagarapolice.ca</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
<p>Ontario Provincial Police (OPP) 777 Memorial Avenue Orillia, ON L3V 7V3 www.opp.ca</p> <p>Note: In-House Training</p>	<p>Dave Moffatt Tel : (705) 644-1097 (cell) (705) 329-6125) E-mail : David.Moffatt@opp.ca</p> <p>Approved Representative</p> <p>Chelsea Strik Email : chelsea.strik@opp.ca</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>
<p>Ottawa Police Service Marine Dive and Trail Unit</p>	<p>Marc-Andre Sheehy Tel: (613) 236-1222 Ext. 2304</p>	<p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

<p>P.O. Box 9634 Station T Ottawa, ON K1G 6H5 www.ottawapolice.ca</p> <p>Note: In-House Training</p>	<p>E-mail: mdt@ottawapolice.ca</p>	
<p>Royal Canadian Mounted Police (RCMP) 73 Leikin Drive Building M3, 3rd Floor Mail Stop #8 Ottawa, ON K1H 0R2 www.rcmp-grc.gc.ca</p> <p>Note: In-House Training</p>	<p>James (Jim) Huberts Tel: (613) 843-5098 Cell: (613) 617-5825 E-mail: James.huberts@rcmp-grc.gc.ca</p>	<p>Small Vessel Operator proficiency – SVOP</p> <p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>
<p>Toronto Police Service Marine Unit 259 Queen's Quay West Toronto, ON M5W 1A2 www.torontopolice.on.ca</p> <p>Note: In-House Training</p>	<p>Sean Griffiths Tel: (416) 808-5842 Fax: (416) 808-5802 E-mail: sean.griffiths@torontopolice.on.ca</p> <p>Edward Pangos E-mail : edward.pangos@torontopolice.on.ca</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>Small Non-Pleasure Domestic Vessel Basic Safety – SDV-BS</p>
<p>Underwater Forensic Services 224 Glendale Avenue St. Catherine's, ON L2T 4C4</p> <p>Note: In-House Training</p>	<p>Bill Wiley Tel: (905) 931-3986 E-mail: ufs@cogeco.ca Crew.maritime@hotmail.com</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>
<p>York Regional Police Marine Unit 57 Lorne Street Georgina, ON L0E 1L0 http://www.yrp.ca/</p> <p>Note: In-House Training</p>	<p>Aaron Busby Tel: 905-830-0303 Ext.7322 Fax: 905-722-8020 E-mail: 1336@yrc.ca</p>	<p>Small Vessel Operator Proficiency – SVOP</p> <p>MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3</p>

RECOGNIZED INSTITUTIONS AND APPROVED TRAINING COURSES

SASKATCHEWAN		
Approved Establishment	Contact Person	Approved Training Courses
Western Conservation Law Enforcement Academy (WCLEA) Box 3003 800 Central Ave, 6 th Floor, MacIntosh Mall Prince Albert, Canada S6V 6G1 Tel: (306) 953-3499 Note: In-House Training	Donald Pechawis Cell: (306) 961-8419 Fax: (306) 953-2502 E-mail: Donald.pechawis@gov.sk.ca	Small Vessel Operator Proficiency – SVOP MED with respect to Small Non-Pleasure Vessel Basic Safety – MED A3
BRITISH COLUMBIA		
Approved Establishment	Contact Person	Approved Training Courses
Naval Personnel Training Group Headquarters (CFB Esquimalt) P.O. Box 17000 Stn Forces Victoria, BC V9A 7N2 Note: In-House Training	Mr. Seb Auger Phone: (205) 363-7322 Email: Sebastien.Auger@forces.gc.ca Authorized Representative: Mr. Barry Sayeau Phone: (205) 580-3342 Email: Barry.Sayeau@forces.gc.ca	STCW Basic Safety – STCW BS Refresher Training Course in STCW Basic Safety – REF-STCW BS Advanced Fire Fighting – AFF Refresher Training Course in Advanced Fire Fighting – REF-AFF