Guidelines for the Construction, Inspection, Certification, and Operation of Tugs < 24 Metres in Length

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The Director, Design, Equipment and Boating Safety is responsible for this document, including any change, correction, or update.

Approval

“Original signed by Julie Gascon”

Julie Gascon
Director, Design, Equipment and Boating Safety
Marine Safety

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| Telephone | 1-855-859-3123                                                                                     |
| Fax | 613-990-1879                                                                                       |
| E-mail | marinesafety-securitymaritime@tc.gc.ca                                                          |
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1 GENERAL

1.1 FOREWORD

1.1.1 The purpose of this document is to provide a convenient, cohesive reference document to the various legislative and regulatory requirements and standards in Canada that apply to tugs of less than 24 metres in length. These Guidelines have been developed not only to facilitate and simplify the tasks of the designers, builders, owners, operators, and inspectors of tugs, but ultimately to support the safety and protection of persons working aboard Canadian tugs and to protect the environment.

1.1.2 It must be noted that by virtue of the less than 24 metres in length limitation, these Guidelines specifically do not relate to any tug which is:

- Greater than 500 gross tonnage (GT) and undertaking international voyages and hence subject to the Safety of Life at Sea (SOLAS) Convention, except when operating solely on the Great Lakes of North America and the River St Lawrence.
- Of 24 metres in length and above and hence subject to the requirements of either the Canadian or International Load Line regulations.

1.1.3 The operators of tugs need to pay special attention to the intended operations and operating areas (including environmental factors and voyage considerations) when selecting the design most appropriate to the application, and designers and builders must specify and select materials and equipment for construction which are most appropriate to the intended service of the vessel. Not all of these matters can be covered by regulation or by published standards, and therefore the counsel of persons well-qualified and experienced in tug design, construction and operations should be sought for each new vessel application.

1.1.4 The designer, builder, owner and operator must always refer to the most recent version of the Canada Shipping Act, 2001 (CSA 2001) and regulations made thereunder, as these Guidelines do not replace the legal requirements and may not capture recent changes made to the various regulations and/or standards. Canadian statutes and regulations prevail in the case of conflict with these Guidelines.

1.1.5 The final authority for any section of these Guidelines is the latest relevant regulation, which must be consulted prior to any undertaking. A list of regulations and standards referred to in these Guidelines is provided in Section 1.3. This list, although comprehensive, may not capture every
Guidelines for the Construction, Inspection, Certification, and Operation of Tugs < 24 Metres in Length

These Guidelines also direct the reader to the following relevant statutes:

- **Canada Labour Code (CLC):**
- **Maritime Occupation Health and Safety Regulations** pursuant to the CLC:

1.1.6 Many sections of these Guidelines also contain a heading “Additional Guidance”. The application of the information under this heading is not mandatory but is provided as it is considered to address some additional safety concerns and also represent industry best practices.

1.1.7 APPLICATION

1.2.1 These Guidelines address only new tugs of less than 24 metres in length, and existing tugs of less than 150 gross tonnage, unless otherwise specified. However for clarity in understanding the various regulatory boundaries there are references included herein to some specific regulations which also apply to tugs of 24 metres in length and above.

1.2.2 When applying the Regulations and Standards to existing tugs, the date of application should be verified in every Regulation. Some provisions may be applicable retroactively to all vessels, while others may only be applicable to vessels constructed after a certain date as defined in the Regulation or standard under consideration.

1.2.3 When applying the Regulations and Standards referred in these guidelines, the local Transport Canada Centre may be contacted for clarification on application or interpretation.

1.2.4 If technical advice is required owners and operators should contact a marine consultant with expertise regarding tugs and the Canadian regulatory regime.
1.3 REGULATIONS REFERENCED

1.3.1 Principal Regulations and Standards

1.3.1.1 The following regulations and standards should be consulted for their direct applicability to tugs. The requirements of these documents are applicable in large part to tugs, with the application usually determined by the gross tonnage of the tug:

- Canada Shipping Act, 2001
- Collision Regulations
- Fire and Boat Drills Regulations
- Fire Detection and Extinguishing Equipment Regulations
- Hull Construction Regulations:
  - Part VII for all tugs, except as indicated by Section 79
  - Part VIII for all tugs > 5 GT
- Hull Inspection Regulations
- Life Saving Equipment Regulations
- Marine Machinery Regulations
- Marine Personnel Regulations
- Navigation Safety Regulations
- Safe Working Practices Regulations
- Ship Station (Radio) Regulations
- Small Vessel Regulations
- Towboat Crew Accommodation Regulations
- Vessel Certificates Regulations
- Vessel Pollution and Dangerous Chemicals Regulations
- Vessel Registration and Tonnage Regulations
- Transport Canada Marine Safety – Technical Publications (TP):
  - TP127 Ships Electrical Standards
  - TP3685 Standards Respecting Noise Control and Hearing Protection in Canadian Towboats Over 15 Tons, Gross Tonnage
  - TP7301 Stability, Subdivision, and Load Line Standards (STAB 3)
  - TP13430 Standard for the Tonnage Measurement of Vessels
1.3.2 Additional Regulations, Standards and Guidelines

1.3.2.1 In addition to the principal regulations and standards listed in Section 1.3.1, the following regulations and standards are referred to in these Guidelines for their applicability to tugs. These documents contain provisions that may be applicable to certain tugs, with the application being determined by the features of the tug or its operation. Some of these documents also contain requirements related to the equipment used on tugs. These requirements are often addressed to the equipment manufacturer; however some are also addressed to the owner and operators. Other documents provide guidance to the owner and operators:

- Anchorage Regulations
- Ballast Water Control and Management Regulations
- Charts and Nautical Publications Regulations
- Ship Station (Radio) Technical Regulations
- VHF Radiotelephone Practices and Procedures Regulations
- Transport Canada Technical Publications:
  - TP1861 Standards for Navigation Lights, Shapes, Sound Signal Appliances and Radar Reflectors
  - TP3231 Ship Safety Bulletins, towing and tug specific:
    - 06/1980 Interpretation of Rule 3(g)(vi) of the Collision Regulations
    - 06/1981 Recommendations to be applied to every tug which is employed in towing vessels on a long line astern
    - 06/1983 Tugs engaged in towing vessels on a long line astern
    - 18/1988 West Coast Winders - Operational Safety
    - 01/1994 EPIRBs and EPIBs on Tugs
    - 13/1994 Towboats - Dangers Associated with Girding
    - Other Ship Safety Bulletins may contain general safety information (e.g. stability, watertight integrity, lifesaving, crewing, etc.) that could also be applicable to tugs.
  - TP3668 Standards for Navigating Appliances and Equipment
  - TP9878 Safety and Distress Radiotelephone Procedures
  - TP11960 Standards and Guidelines for the Construction, Inspection and Operation of Barges that Carry Oil in Bulk (identifies types of tugs and required performance of tugs to be deemed suitable for oil barge towing service)
  - TP13617 A Guide to Canada's Ballast Water Control and Management Regulations
  - TP14070 Small Commercial Vessel Safety Guide
  - TP14475 Canadian Life Saving Appliance Standard
1.3.3 These regulations, standards and guidelines are available in their entirety online from:

- [http://www.tc.gc.ca/eng/marinesafety/bulletins-menu.htm](http://www.tc.gc.ca/eng/marinesafety/bulletins-menu.htm)

1.3.4 Other Relevant Documents

1.3.4.1 Other relevant local, national and international documents listed below could also be consulted although not all of these apply to vessels of less than 24 metres in length which are the subject of these Guidelines.

1.3.4.2 International Maritime Organization (IMO):

- IMO Guidelines for Safe Ocean Towing MSC/Circ. 884
- IMO Resolution MSC.346(91) Application of SOLAS Regulation III/17-1 to ships to which SOLAS Chapter III does not apply
- IMO MSC.1/Circ.1447 Guidelines for the development of plans and procedures for recovery of persons from the water

1.3.4.3 Other National Administration:


1.3.4.4 Standards Development Organizations

- ISO 7547:2002 – Air conditioning and ventilation of accommodations spaces – Design conditions and basis of calculations
- ISO 8862:1987 – Air conditioning and ventilation of machinery control-rooms – Design conditions and basis of calculations
- ISO 8864:1987 – Air conditioning and ventilation of wheelhouse on board ships – Design conditions and basis of calculations
- ANSI/ASHRAE Standard 26-2010 - Mechanical Refrigeration and Air Conditioning Installations Aboard Ship
- ISO 12215-5:2008 - Design pressures for monohulls, design stresses, scantlings determination (for vessels on sheltered water voyages)
1.3.4.5 Industry documents

- GL-Noble Denton: - *Guidelines for the Approval of Towing Vessels 0021/ND*
- GL Noble Denton: - *Guidelines for Marine Transportation, 0030/ND*

1.3.4.6 Finally, consultation with the Rules of a Classification Society is strongly advisable for the design and construction of tugs, as these rules are thorough and comprehensive and reflect generally the best modern practices. Information on the International Association of Classification Societies (IACS) and its member companies can be found at: [http://www.iacs.org.uk/](http://www.iacs.org.uk/)

1.4 INTERPRETATION

1.4.1 Definitions from the Act and regulations:

- "Act" means the *Canada Shipping Act, 2001.*
- "Authorized Representative" is defined in section 14 of the Act. To summarize, it is the person who is responsible under the *Canada Shipping Act, 2001* for acting with respect to all matters relating to the vessel that are not otherwise assigned by this Act to any other person. The authorized representative of a Canadian vessel is generally the owner of the vessel. Where a foreign vessel is brought into Canadian registry under a bare-boat charter, the authorized representative is the bare-boat charterer. If more than one person owns a vessel, the owners must appoint one of themselves as the authorized representative. If the owner is a corporation, the authorized representative is the corporation. In these guidelines, “owner” means “authorized representative”.
- "Length" means for the applicability of this standard the length as defined in section 6 of the *Vessel Registration and Tonnage Regulations*. This length, commonly called the “Registered Length”, is shown on the Certificate of Registry. When applying various regulations, the length as defined in the regulations under consideration is applicable.
- "MTRB" means the Marine Technical Review Board, established by section 26 of the Act.

Note that regulations made before the coming into force of the *Canada Shipping Act 2001*, define the Board as the Board of Steamship Inspection, which is the previous name for the Marine Technical Review Board (MTRB). Where a regulation refers to the Board of Steamship Inspection for *exemption or equivalency*, it should be interpreted to mean the MTRB. When a regulation refers to
the Board for inspection or approval it should be interpreted as meaning the Minister of Transport.

- "Tow" or “Towing” means:
  - In the context of the Small Vessel Regulations: “except for the purposes of Part 10, means the action of pulling a vessel or an object astern or alongside, or pushing a vessel or an object ahead, but does not include pulling or pushing, in the course of the vessel’s normal operations, a floating object or vessel that has a significantly smaller displacement than the vessel’s displacement”.
  - In the context of the Towboat Crew Accommodations Regulations: “to pull or push any floating object”.

- "Tug" or "Towboat" means:
  - In the context of the Life Saving Equipment Regulations, Marine Personnel Regulations, Navigation Safety Regulations, Ship Station (Radio) Regulations, 1999, and Ship Station (Radio) Technical Regulations, 1999: “a vessel used exclusively in operations associated with towing another vessel or a floating object astern or alongside or in pushing another vessel or a floating object ahead”.
  - In the context of the Small Vessel Regulations: “a vessel that is constructed or converted primarily for the purpose of towing, but does not include a vessel that is constructed or converted for the purpose of
    (a) salvaging logs; or
    (b) managing oil pollution booms and associated equipment”.
  - In these guidelines, “tug” means “tug” or “towboat”.

- "Watertight", in relation to a structure, means the structure is capable of preventing the passage of water through it in any direction, under a head of water up to the vessel’s margin line.

1.4.2 Additional definitions used for these Guidelines:

- "Attended Vessel" means the barge or ship to which a tug is providing towing or assistance operations.
- "Azimuthing Propulsion" means a device capable of directing thrust through 360° for the propulsion and steering of a vessel.
- "Escort" or "Escorting" means the use of tugs, readily available, to apply emergency steering or braking forces to an attended vessel at speeds in excess of 6 knots in confined channels or similar restricted spaces (a function distinct and separate from "Ship-Assist").
- "Classification Society" (also sometimes referred to as "Class") means a ship Classification Society that publishes its own classification
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Rules (including technical requirements) in relation to the design, construction and survey of ships, and has the capacity to apply, maintain and update those Rules. For more information on major Classification Societies refer to [http://www.iacs.org/](http://www.iacs.org/).

- "Local Transport Canada Centre" means the Local Transport Canada Centre in the region in which the tug will operate. For contact details refer to the following website: [http://www.tc.gc.ca/eng/regions.htm](http://www.tc.gc.ca/eng/regions.htm).

- "Rules" means rules, codes and guides issued by a Classification Society and related to the construction, installation, and inspection of marine hulls and machinery.

- "Ship-Assist" refers specifically to the role of tugs in the act of berthing or unberthing large vessels in port, whether directly connected to the attended vessel by a towline or not.

### 1.5 ADDITIONAL GUIDANCE

1.5.1 Although the existing regulations and standards apply to all tugs regardless of their size, power or voyage, the fact is that the term "tug" describes a very wide array of diverse craft which are often engaged in vastly different duties, each of which carries its own attendant degree of risk. The guidelines have attempted to identify where specific regulatory requirements are most important to any one of these particular tug services (e.g. ship-assist as opposed to towing a vessel or a floating object).

1.5.2 The current Canadian regulations applicable to tugs have often been overtaken by the technologies in the towing industry which have evolved since the early-mid 1970s, and in particular by the dominance of azimuthing propulsion as the preferred propulsion system in tugs. The reader is therefore strongly encouraged to look at sources such as Classification Society Rules in order to ensure that any new Canadian vessel reflects the lessons learned internationally regarding the safe construction and operation of such vessels.

1.5.3 There are no internationally recognized guidelines governing the relationships between the size and power of a tug and the size or type of its tow. Various documents are worthy of review however, if only to verify at least on an empirical basis that the tug-tow relationship is reasonable and appropriate. Although some of these documents relate to much larger vessels and longer (ocean) tows, they provide useful background nonetheless. References are to the latest version of these documents:

- **TP 11960 – Standards and Guidelines for the Construction, Inspection and Operation of Barges that Carry Oil in Bulk (1995), Appendix A**
• International Maritime Organization, *Guidelines for Safe Ocean Towing MSC/Circ. 884*

• GL-Noble Denton: *Guidelines for the Approval of Towing Vessels 0021/ND*

• GL Noble Denton: *Guidelines for Marine Transportations, 0030/ND*

1.5.4 The above guidelines from international sources are available from:

• International Maritime Organization - MSC Circulars:
  ○ [http://www.imo.org/OurWork/Circulars/Pages/IMODOCS.aspx](http://www.imo.org/OurWork/Circulars/Pages/IMODOCS.aspx)

• GL Noble Denton guidelines:
2 INSPECTION, CERTIFICATION AND APPROVAL

2.1 SUBMISSION FOR APPROVAL OF PLANS AND DATA

2.1.1 Tugs ≤ 15 GT

2.1.1.1 Although some regulations require plan approval for certain provisions without stating any lower size limits, there is no mandatory Transport Canada plan approval for tugs of not more than 15 gross tonnage that are not required to be certificated as per the *Vessel Certificate Regulations*. The owner is, however, responsible to prepare all the documentation required by the regulations and to make this documentation available on request to any person or organization authorized under the Act to carry out inspections.

2.1.2 Tugs > 15 GT

2.1.2.1 The owner of a tug of more than 15 gross tonnage must submit for approval vessel plans and data as set out in the regulations listed below. For vessels delegated under the Delegated Statutory Inspection Program (DSIP see 2.6), the plans must be submitted to the Recognized Organization (RO). For vessels that are not delegated, the submission may be made either to Transport Canada or to a Recognized Organization.

- *Hull Inspection Regulations* – Schedule VI, Part 3(c)
- *Fire Detection and Extinguishing Regulations* – Section 7
- *Life Saving Equipment Regulations* – Section 110
- *TP 7301 Stability, Subdivision, and Load Line Standards* – Stab 1, 2, and 3
- *Marine Machinery Regulations* – Section 6
- *TP 127 Ships Electrical Standards* – Part I, Section 36

2.1.2.2 The local Transport Canada Marine Safety office should be contacted to get details on the regional plan submission process. Contact information is available on the following web site: [http://www.tc.gc.ca/eng/regions.htm](http://www.tc.gc.ca/eng/regions.htm)
2.2 VESSEL REGISTRATION

2.2.1 General

2.2.1.1 All non-pleasure vessels must be registered as per section 46 of part 2 of the Canada Shipping Act, 2001.

2.2.1.2 The following Regulations and Standards apply to registration and tonnage measurement:

- Vessel Registration and Tonnage Regulations

2.2.1.3 More information on registration and tonnage is available on the following website: http://www.tc.gc.ca/vessel-registry.

2.2.2 Tugs ≤ 15 GT

2.2.2.1 Tugs of not more than 15 gross tonnage may be registered either in the Small Vessel Register or in the Canadian Register of Vessels.

2.2.3 Tugs > 15 GT

2.2.3.1 Tugs of more than 15 gross tonnage must be registered in the Canadian Register of Vessels.

2.3 VESSEL CERTIFICATION

2.3.1 Tugs ≤ 15 GT

2.3.1.1 Tugs of not more than 15 gross tonnage are not issued an inspection certificate.

2.3.2 Tugs > 15 GT

2.3.2.1 All tugs of more than 15 gross tonnage must hold an inspection certificate issued by Transport Canada or one of its Recognized Organizations (see 2.6).

2.3.2.2 The following regulations apply to the certification of tugs of more than 15 gross tonnage:

- Vessel Certificates Regulations, Sections 9 to 11
2.4 PRODUCT APPROVAL

2.4.1 All vessels, including vessels not required to hold an inspection certificate, are required to have on board equipment and systems that are approved by Transport Canada. Examples of approved products and systems are:

- Life saving equipment
- Fire safety equipment and systems
- Navigation lights and shapes
- Navigational aids
- Sound signal appliances
- Sewage treatment plants
- Engine and incinerator emissions systems

2.4.2 When a product, equipment or system requires approval, this is specifically stated in the regulations using the words “approve”, “approved” or “approval”.

2.4.3 Some products, equipment or systems may also be approved by a Classification Society, one of the Recognized Organizations (see 2.6) or by a Product Certification Body. When approval by one of these organizations is permitted, it will either be stated directly in the regulations or it will be stated in an agreement between the organization and the Minister made under section 10 of the Act.

2.4.4 The approval process for life-saving appliances and fire safety systems, equipment and products is explained in the following document:

- TP 14612, Procedures for Approval of Life-Saving Appliances and Fire Safety Systems, Equipment and Products

2.4.5 The list of products, equipment and systems approved by Transport Canada is available in the Approved Products Catalogue Index (APCI) available on the following website:


2.4.6 The list of products, equipment and systems approved by one of the Recognized Organizations is available on their respective website (see section 2.5 of TP 14612). Note that only life-saving appliances and fire safety systems, equipment and products that are listed and that meet the specific conditions stated in the TP14612 may be used on Canadian vessels.
2.5 INSPECTION

2.5.1 Tugs ≤ 15 GT

2.5.1.1 Although some regulations require inspections for certain provisions without stating any lower size limits, there are no mandatory Transport Canada inspections required for tugs of not more than 15 gross tonnage which are not required to be certified as per the Vessel Certificates Regulations. The owner is however responsible to carry out any inspection required by the regulations to ensure compliance and to keep appropriate records. These records must be made available on request to any person or organization authorized under the Act to carry out inspections.

2.5.1.2 Transport Canada Marine Safety inspectors may conduct random monitoring inspections to verify compliance with the requirements of relevant regulations applicable to tugs of not more than 15 gross tonnage. Non-compliance with the requirements may result in enforcement action by Transport Canada Marine Safety.

2.5.2 Tugs > 15 GT

2.5.2.1 The following regulations and standards apply to the inspection of tugs of more than 15 gross tonnage for the purpose of issuing a certificate, and in some cases also state inspection provisions that are the responsibility of the owner, master, crew or a third party:

- *Vessel Certificates Regulations*, Section 10
- *Hull Inspection Regulations*
- *Life Saving Equipment Regulations*, Part III, Section 113
- *Fire Detection and Extinguishing Equipment Regulations*, Sections 9 to 11
- *Marine Machinery Regulations*, Part IV of each Schedule for all vessels
- *Navigation Safety Regulations*, Section 17
- *Ship Station (Radio) Technical Regulations*, Sections 27, 41, 49 to 51
- *Ship Station (Radio) Regulations*, Section 17
- *Towboat Crew Accommodation Regulations*, Section 46 to 49
- *Vessel Pollution and Dangerous Chemicals Regulations* Sections 24(3), 55(6), 92, and 121(3)
- *Fire and Boat Drills Regulations*, Section 24, 25, 33, 37
- *Ships Electrical Standards – TP 127*, Part 1, 33 & 34
2.5.2.2 The following regulations may also have inspection provisions specific to some operations:

- Cargo, Fumigation and Tackle Regulations, Section 116, 162
- Classed Ships Inspection Regulations
- Safe Working Practices Regulations, Section 6, 30, 42, 84
- Ships’ Elevator Regulations, Section 4

2.5.2.3 All tugs of more than 15 gross tonnage are subject to a first (initial) inspection before the vessel is put into service and to periodical inspections thereafter. Tugs not over 150 gross tonnage are subject to a periodical inspection every four years. Tugs over 150 gross tonnage are subject to a periodical inspection every year. Refer to section 18 of the Hull Inspection Regulations for the interval between periodic inspections.

2.5.2.4 Tugs of not more than 150 gross tonnage are subject to an underwater inspection at every periodical inspection (four years). Tugs of more than 150 gross tonnage are subject to an underwater inspection at every two, four or five years depending on the area of operation and the age of the vessel. Refer to Schedule I of the Hull Inspection Regulations for the interval between underwater inspections.

2.5.2.5 The fees applicable for these inspections are stated in the specific regulations with the inspection provision or are stated in the following regulations:

- Board of Steamship Inspection Scale of Fees
- Ship Radio Inspection Fees Regulations

2.5.2.6 The Marine Safety service standards for inspections are available on the following web page: [http://www.tc.gc.ca/eng/marinesafety/service-standards-menu.htm](http://www.tc.gc.ca/eng/marinesafety/service-standards-menu.htm)

2.5.2.7 In addition to the inspection required to be performed by a Marine Safety Inspector or the Classification Society Surveyor in the case of a delegated vessel (see 2.6), some of the regulations listed above require that the owner, the Master or the crew perform certain inspections and keep appropriate records of these inspections. Additionally certain systems and equipment for which there is no prescribed inspection by regulation must also be periodically verified by the owner to ensure they continue to meet the regulatory requirements.

2.5.2.8 Some regulations include provisions for certain inspections to be made by third parties. Examples are the servicing of liferafts, inspection of portable fire extinguishers and radio installations. Refer to the appropriate inspection provisions of the regulations for more information.
2.5.3 Persons authorized to carry out inspections

2.5.3.1 Transport Canada Marine Safety Inspectors are appointed under section 11 of the *Canada Shipping Act 2001*. The authority to carry out inspections is established by sections 11, 210 and 211 of the Act.

2.5.3.2 Under section 12 of the Act the Minister may also authorize other persons to carry out inspections. Surveyors of Recognized Organizations (see 2.6) are authorized under this section of the Act. Certain enforcement officers, such as members of the RCMP, Ontario Provincial Police (OPP) and Sureté du Québec (SQ) are also authorized under section 12 to conduct inspections, other than for construction, on vessels of less than 150 gross tonnage.

2.6 DELEGATED STATUTORY INSPECTION PROGRAM (DSIP)

2.6.1 In order to promote an efficient marine transportation system and encourage the harmonization of marine practices, Transport Canada has entered into formal agreements with certain Classification Societies, under the authority of the Act. These agreements cover the delegation of statutory inspection and certification functions and product approvals.

2.6.2 When a Classification Society enters into this type of agreement with Transport Canada, they are known as a Recognized Organization (RO). There are currently five Recognized Organizations in Canada:

- American Bureau of Shipping (ABS) [http://www.eagle.org/](http://www.eagle.org/)
- Bureau Veritas (BV) [http://www.bureauveritas.com/](http://www.bureauveritas.com/)
- Det Norske Veritas (DNV) [http://www.dnv.com/](http://www.dnv.com/)
- Germanischer Lloyd (GL) [http://www.gl-group.com/](http://www.gl-group.com/)
- Lloyd’s Register (LR) [http://www.lr.org/](http://www.lr.org/)

2.6.3 For more information on the Delegated Statutory Inspection Program, refer to:


2.7 MARINE TECHNICAL REVIEW BOARD (MTRB)

2.7.1 The Marine Technical Review Board (MTRB) is established under section 26 of the Act to review applications for equivalencies or exemptions to requirements set out in regulations made under the Act. These applications concern individual Canadian vessels or the issuance of Canadian maritime documents to persons. The MTRB cannot make a decision that affects multiple vessels or classes of vessels.
2.7.2 To apply for an exemption or equivalency through the MTRB, the applicant should first contact the nearest Transport Canada Centre (TCC). A written application should then be submitted, and should contain the proposed alternative explaining its equivalency. A Marine Safety Inspector may contact the applicant to discuss the proposed exemption or equivalency, prior to processing the application.

2.7.3 For more information on the MTRB and its processes, refer to:


2.7.4 To contact the nearest TCC, refer to:

- [http://www.tc.gc.ca/eng/regions.htm](http://www.tc.gc.ca/eng/regions.htm)
3 CONSTRUCTION REQUIREMENTS

3.1 HULL CONSTRUCTION

3.1.1 Regulatory Requirements

3.1.1.1 The following regulations and standards apply to the hull design and construction of tugs:

- Tugs ≤ 5 GT:
  - Small Vessel Regulations, Part 5 Section 521, Part 6 Sections 601 and 602
- Tugs > 5 GT:
  - Hull Construction Regulations, Part VIII (specific to tugs)
- Tugs of all sizes:
  - Hull Construction Regulations, Section 7 for Structural Strength
  - Hull Construction Regulations, Part VII Section 86 for Bulwarks and Freeing Ports
  - Marine Machinery Regulations, Schedule IX
  - Marine Personnel Regulations, Part 3, Division 3, Section 329

3.1.2 Additional Guidance

3.1.2.1 There is no TC regulation that defines in a quantifiable manner the scantlings required for a tug. The requirements of a Classification Society are recommended as general direction in this regard. For vessels undertaking Sheltered Water voyages or Near Coastal Voyages, Class 2, Limited, the ISO 12215 Small Craft – Hull Construction and Scantlings standards series may be used but the appropriate wave height design category must be considered. The side framing should be additionally strengthened as a minimum by the percentages stated in Classification Society Rules.

3.1.2.2 In general, tug owners find that the rugged service of tugs demands that the side strength of tugs should be considerably in excess of Classification Society Rules.

3.1.2.3 Note that on vessels of less than 24 metres in length, watertight doors could be of hinged or sliding type. Some owners may choose to install sliding watertight doors to allow the doors to be remotely operable from above the main deck similar to what is required in the Hull Construction Regulations section 111 for vessels of more than 24.1 metres in length.
3.2 INTACT STABILITY

3.2.1 Regulatory Requirements

3.2.1.1 The following regulations and standards apply to the Intact Stability requirements of Canadian tugs:

- Tugs \( \leq 5 \) GT
  - Small Vessel Regulations, Part 6, Section 601
- Tugs > 5 GT:
  - Hull Construction Regulations: Part VIII Sections 105 to 107 for inclining experiment and stability book requirements
  - Stability, Subdivision and Load Line Standards – TP 7301, STAB 1 for inclining experiment requirements, STAB 2 for stability book requirements and STAB 3 for intact stability criteria

3.2.1.2 Particular attention should be paid to the Hull Construction Regulations, Part VIII, 105-107 and the Stability, Subdivision and Load Line Standards – TP 7301, STAB1-3, pertaining to the requirements for the minimum intact stability criteria for tugs, and to the requirements for the data, methodology used and conditions to be included within the stability documentation.

3.2.2 Additional Guidance

3.2.2.1 It must be noted that by virtue of their very operation, tugs are subject to large external forces from the towline connections to their tows. The impact of these external forces is not presently considered in the referenced TC regulations. Owners are therefore strongly advised to apply the requirements for towline stability as defined by Classification Societies or other regulatory agencies such as the Australian Transport Council and its National Standard for Commercial Vessels - Part C Design And Construction - Section 6 Stability - Subsection 6A Intact Stability Requirements – Annex F (http://www.nmsc.gov.au/) to verify that a new design is safe for the intended towing task.

3.2.2.2 If a tug is to be engaged in any escorting duties, its intact stability should be thoroughly assessed for compliance with the Escort Towing Stability requirements of a major Classification Society. At present the criterion has been published by DNV, GL, and BV.

3.2.2.3 If a tug is engaged in other operations such as carrying deck cargo or lifting, the stability shall also be assessed accordingly. Appropriate operating conditions, limitations or notes to the master should be added to the stability booklet. For lifting operations refer to the Australian Transport Council National Standard for Commercial Vessels - Part C Design and Construction - Section 6 Stability - Subsection 6A Intact
Guidelines for the Construction, Inspection, Certification, and Operation of Tugs < 24 Metres in Length


3.3 DAMAGED STABILITY AND SUBDIVISION

3.3.1 Regulatory Requirements

3.3.1.1 The following regulations and standards govern the requirements for the subdivision of tugs and the consequent damaged stability characteristics (applicable to tugs > 5 GT):

- *Hull Construction Regulations*, Part VIII Sections 104 & 107 for compartment down-flooding

3.3.1.2 Particular attention should also be paid to the *Hull Construction Regulations*, Part VIII, pertaining to the requirement for positive freeboard and stability to remain after filling (down-flooding) any compartment aft of the machinery space which is accessible from the main deck. Note specifically that this is not a damaged stability equilibrium flooding condition, but one that assumes the complete flooding of a space below deck from above. Compliance with this requirement must be demonstrated by calculation at the design stage and incorporating the results of the inclining experiment after completion. Refer to the *Stability, Subdivision and Load Line Standards – TP 7301*, STAB 3, for the requirements for the data, methodology used and conditions to be included within the stability documentation.

3.4 GENERAL OUTFITTING

3.4.1 Regulatory Requirements

3.4.1.1 The following regulations and standards apply to the design and construction of tugs with respect to the configuration and layout of all crew accommodation, common and storage areas, and the means of safe access and egress thereto in particular:

- Tugs > 5 GT:
  - *Hull Construction Regulations*, Part VIII:
    - Section 110 to 128 for Openings requirements,
    - Section 140 for Non-Skid Surfaces and
    - Section 141 for Exterior Storm Rails.
  - *Towboat Crew Accommodation Regulations*
    - Sections 6 – 10 for Layout of Accommodation Spaces
    - Sections 11 – 14 for Construction of Accommodation Spaces
    - Sections 15 – 18 for Sleeping Rooms
– Sections 19 – 21, 33-34 for Dining, Recreation and Galley Spaces
– Sections 22 – 32 for Sanitation Requirements
– Sections 35 – 36 for Storage Requirements
– Schedule I for General Safety
– Schedule III for Deck Coverings

• Tugs of all sizes:
  o Hull Construction Regulations, Part VII;
    – Section 84 for Means of Escape,
    – Section 86 for Railings and Stanchions, and
    – Sections 94 to 96 for Notices and Markings
  o Maritime Occupational Health and Safety Regulations
    (see 3.4.1.4)
    – Part 2 for Access arrangements and General Safety
    – Part 3 for Crew Accommodation
    – Part 4 for Sanitation
    – Part 6 for Medical Care
    – Part 7, 9 & 10 for General Personnel Safety

3.4.1.2 Particular attention should be paid to the Hull Construction Regulations, Part VIII, and the Towboat Crew Accommodation Regulations pertaining to the requirements for the location, size and outfitting of accommodation spaces.

3.4.1.3 Particular attention should also be paid to the Towboat Crew Accommodation Regulations pertaining to the requirements for domestic systems, including, but not limited to, potable water, scuppers and drains.

3.4.1.4 Vessels with employees that are covered by federal health and safety legislation will fall under Part 2 of the Canada Labour Code (Section 123) and the Marine Occupational Health and Safety Regulations. Most vessels that operate only within the limits of a province will have employees that are covered by that province’s health and safety legislation.

3.4.1.5 For the services to be provided to living spaces on tugs (greater than 5 GT), refer to the following:

• Ventilation:
  o Hull Construction Regulations, Section 126,
  o Towboat Crew Accommodation Regulations, Section 42
• Lighting:
  o Towboat Crew Accommodation Regulations:
    ▪ Section 41 for emergency lighting
    ▪ Schedule IV for lighting levels
• Access and Egress:
  o Hull Construction Regulations – Part VIII
• Wash places:
  o Towboat Crew Accommodation Regulations; Section 22
  o Maritime Occupational Health and Safety Regulations (MOHS)
    Section 46 (see 3.4.1.4)
    Note that the MOHS regulations apply to tugs of all sizes.

3.4.2 Additional Guidance

3.4.2.1 Note that in addition to the regulations some vessels may be subject to union agreements with respect to the crew accommodation requirements, and in particular:
  • the location of sleeping rooms relative to the main deck
  • the size of spaces and amenities allocated per crew member

3.4.2.2 Although section 127 of the Hull Construction Regulations states the minimum strength requirements for windows in tugs, Classification Society Rules should also be consulted for more detailed requirements. Further, if the windows are in close proximity to winches or other towing devices, then suitable mechanical protection in the form of heavy duty screens or similar equipment should be provided.

3.4.2.3 When air-conditioning services are to be provided to living spaces on tugs, refer to the following:
  • ISO 7547:2002 – Air conditioning and ventilation of accommodations spaces – Design conditions and basis of calculations
  • ISO 8862:1987 – Air conditioning and ventilation of machinery control-rooms – Design conditions and basis of calculations
  • ISO 8864:1987 – Air conditioning and ventilation of wheelhouse on board ships – Design conditions and basis of calculations
  • ANSI/ASHRAE Standard 26-2010 - Mechanical Refrigeration and Air Conditioning Installations Aboard Ship
3.5 DECK MACHINERY

3.5.1 Regulatory Requirements

3.5.1.1 Regulations and standards that contain references to the design, installation and operation of deck machinery on tugs are the following:

- Tugs ≤ 15 GT:
  - *Small Vessel Regulations* – Part 5 – section 510 for basic tackle requirements and section 521 (tug specific) for means of emergency release of towline

- Tugs > 5 GT:
  - *Hull Construction Regulations* – Part VIII (tug specific) Sections 131 to 138 for basic equipment functionality and safety features & sections 142-143 for chain lockers
  - *Towboat Crew Accommodation Regulations* (tug specific) – Schedule 1 with regard to routing hawse pipes through accommodation spaces

- For all sizes of tugs:
  - *Marine Machinery Regulations* – Schedule VII, Part II, Div. 3 for windlass

3.5.2 Additional Guidance

3.5.2.1 In addition, it is recommended that the design and construction of the deck machinery be in accordance with the rules of a Classification Society to provide design guidance, establish design loads, and define allowable stresses for critical components.

3.5.2.2 Ground tackle (anchors, anchor chain, windlasses, etc.) for tugs should be selected according to the vessel size, its duty and service area. In the absence of any quantified TC requirements, refer to the Rules of a Classification Society. However, the nature of the tug duty may not warrant such equipment, or fitting it may actually constitute a hazard to safe operations on the working deck. For example, tugs performing only ship-assist operations within the confines of a port could, in certain cases, do without any anchors at all, or perhaps a smaller "throw-over" anchor in case of emergency. In this instance, further consultation with the Classification Society being used may be necessary.

3.5.2.3 It is strongly recommended that the design and construction of the towing machinery and related towing fittings such as towing bitts, towhooks, etc. be developed with reference to the requirements of a Classification Society to provide general design guidance and establish the most
appropriate design loads, towline orientations and allowable stresses in each component.

3.5.2.4 The maximum allowable design load for any fitting to be used for towing should be clearly marked directly on that fitting.

3.5.2.5 If a tug is to be engaged in any escorting duties, its towing gear should be assessed for compliance with the Escort Towing requirements of a Classification Society.

3.6 MACHINERY AND SYSTEMS

3.6.1 Regulatory Requirements

3.6.1.1 The following regulations and standards apply to the design and construction of the propulsion machinery and related shipboard systems on tugs (applicable to all sizes of tugs):

- Marine Machinery Regulations:
  - Schedule I to III for boiler systems
  - Schedule IV and V for engines
  - Schedule VI for gearing, shafting and propellers
  - Schedule VII for steering systems, shipside components, and windlasses
  - Schedule VIII for remote control and monitoring systems (see Section 3.8 of these Guidelines)
  - Schedule IX for non-structural tanks, and plastic piping
  - Schedule X for steam, boiler, and cooling water systems
  - Schedule XI for compressed air and refrigerating gas systems
  - Schedule XII for fuel oil systems
  - Schedule XIII for liquid petroleum gas fuel systems
  - Schedule XIV for lubricating oil and hydraulic power oil systems
  - Schedule XV for bilge and ballast systems
  - Schedule XVI for general design specifications

3.6.2 Additional Guidance

3.6.2.1 In addition, it is recommended that vessels adhere to the published Rules of a Classification Society for the machinery requirements appropriate to the vessel's size, area of operation, and intended service.
3.7 ELECTRICAL

3.7.1 Regulatory Requirements

3.7.1.1 The following regulations and standards apply to the design and installation of electrical systems on tugs:

- For tugs ≤ 15 GT:
  - Small Vessel Regulations – Part 6, section 608
- For all sizes of tugs:
  - Ships Electrical Standards – TP 127 for most requirements
  - Collision Regulations – (tug specific) Part C and Annex 1 for towing lights
  - Marine Machinery Regulations - Schedule VIII, Part I for generator set requirements
  - Navigation Safety Regulations – Part 4 regarding searchlights
  - Ship Station (Radio) Regulations – Sections 21 & 22 regarding radio station power sources
  - Ship Station (Radio) Technical Regulations – Sections 13 & 14 regarding radio station power sources
  - Towboat Crew Accommodation Regulations (tug specific)
    - Sections 39 to 41 regarding lighting
    - Schedule I, Section 7 regarding battery location
    - Schedule IV regarding light levels

3.7.1.2 The following regulations and standards apply to the operation and maintenance of electrical systems (for all sizes of tugs):

- Safe Working Practices Regulations – Sections 61 to 68
- Maritime Occupational Health and Safety Regulations - Part 15 (subject to applicability of Canada Labour Code, Section 123)

3.7.2 Additional Guidance

3.7.2.1 In addition, it is recommended to adhere to the published Rules of a Classification Society.

3.8 CONTROLS, ALARMS AND MONITORING SYSTEMS

3.8.1 Regulatory Requirements

3.8.1.1 The following regulations and standards apply to the design, construction and inspection of the control, alarm and monitoring systems aboard tugs:
• For tugs > 5 GT:
  o *Hull Construction Regulations* – (tug specific) Part VIII, Section 130 in regards to steering
• For all sizes of tugs:
  o *Marine Machinery Regulations* – Schedule VII, Part I, Division I & III in regards to steering
  o *Ships Electrical Standards, TP 127* – Part I, Sections 21-22 in regards to alarms and control circuits

3.8.1.2 The vast majority of tugs operate with "Periodically Unmanned Machinery Spaces", and the requirements for this designation are clearly defined in the following (applicable to all sizes of tugs):
  • *Marine Machinery Regulations*, Schedule VIII, Part I Division I

3.8.2 Additional Guidance

3.8.2.1 In addition, it is recommended to adhere to the published Rules of a Classification Society.

3.9 POLLUTION PREVENTION

3.9.1 Regulatory Requirements

3.9.1.1 The following regulations and standards apply to the design and construction of tugs with regards to pollution prevention:
  • *Vessel Pollution and Dangerous Chemicals Regulations*
    o Part 2:
      ▪ Division 1 - Oil
        o Section 14 - Containers or enclosed deck areas for bunkering operations
        o Subdivision 4 - Discharges of Oil and Oily Mixtures
      ▪ Division 4 - Sewage
        o Subdivision 2 - Equipment
      ▪ Division 6 - Air pollution
        o Section 110 - Nitrogen Oxides (NOx) — Diesel Engines
        o Section 111 - Sulphur Oxides (SOx)
      ▪ Division 8 - Anti-fouling systems

3.9.1.2 Note that the mandatory installation of oil filtering equipment, alarm arrangements and automatic stopping arrangements prescribed by section 12 of the *Vessel Pollution and Dangerous Chemicals Regulations* only applies to vessels of more than 400 gross tonnage. However for any vessel, the authorized discharge under Subdivision 4 can only be made if
the discharge is processed through oil filtering equipment that meets the requirements of the regulations.

3.10 COMPOSITE UNITS

3.10.1 Regulatory Requirements

3.10.1.1 If a tug is fitted or refitted with the equipment to mate with a barge in an articulated-tug-barge (ATB) or integrated-tug-barge (ITB) configuration, the equipment must be appropriate for the service under the Marine Machinery Regulations (i.e. hydraulics) and TP127 (electrical components).

3.10.2 Additional Guidance

3.10.2.1 The hull should be built, or strengthened, for the usage of ATB/ITB equipment, and any additional equipment should be appropriate for the service. The applicable requirements of a Classification Society should be followed.

3.10.2.2 Transport Canada is currently reviewing the requirements applicable to composite units and will release additional guidance at a later date.
4 SAFETY EQUIPMENT

4.1 FIRE DETECTION AND PROTECTION EQUIPMENT

4.1.1 Regulatory Requirements

4.1.1.1 The following regulations and standards apply to the design and construction of both fixed and portable Fire Detection and Protection Equipment aboard tugs:

- For tugs ≤ 15 GT
  - Small Vessel Regulations, Part 5
- For tugs > 15 GT:
  - Fire Detection and Extinguishing Equipment Regulations – Class H ships
- For all sizes of tugs:
  - Ships Electrical Standards, TP 127 – Part I, Section 21 in regards to fire alarms for all tugs

4.1.2 Additional Guidance

4.1.2.1 In addition, it is recommended to adhere to the published Rules of a Classification Society appropriate to the vessel's size, area of operation, and intended service.

4.2 LIFE SAVING EQUIPMENT

4.2.1 Regulatory Requirements

4.2.1.1 The following regulations and standards apply to the provision of appropriate lifesaving equipment aboard tugs:

- Tugs ≤ 15 GT:
  - Small Vessel Regulations, Part 5
- Tugs > 15 GT:
  - Life Saving Equipment Regulations, Class IX or Class X ships

4.2.1.2 In addition to the general requirements of the Regulations indicated in 4.2.1.1, particular attention should be paid to the various sub-clauses within the regulations, which dictate specific requirements for life saving equipment to be carried on board tugs:

- Life Saving Equipment Regulations, Sections 20(1)(b)(iii), 20(1)(e)(ii), 22(1)(e), 22(1)(h)(ii), 23(e), 24(d), 25(e), 26(e), 27(c), 27.2(2) and/or 27.2(3)(a)(ii)
- Small Vessel Regulations, Sections 509 and 521
4.2.2 Additional Guidance

4.2.2.1 Although not mandated in the regulations, man-overboard recovery systems should be considered. Reference can be made to:

- IMO Resolution MSC.346(91) Application of SOLAS Regulation III/17-1 to ships to which SOLAS Chapter III does not apply
- IMO MSC.1/Circ.1447 Guidelines for the development of plans and procedures for recovery of persons from the water.

4.3 NAVIGATION AND COMMUNICATIONS

4.3.1 Regulatory Requirements

4.3.1.1 The following regulations and standards apply to the design and construction of navigation and communication equipment aboard tugs:

- Tugs > 15 GT:
  - *Life Saving Equipment Regulations* – Class IX or X
- Tugs of all sizes:
  - *Charts and Nautical Publications Regulations* – In general
  - *Collision Regulations* – Part D, Part F Rule 46, Annex I & Annex III for sound and light signals
  - *Marine Machinery Regulations* – Schedule XVI, Section 4 for internal communications
  - *Navigation Safety Regulations* – In general & Part 4, Sections 69 to 72 specifically for tugs in regards to gyro-compass, radar and echo-sounder requirements
  - *Ship Station (Radio) Regulations* – In general
  - *Ship Station (Radio) Technical Regulations* – In general
  - *Ships Electrical Standards – TP 127* – Part I, Section 21 in regards to internal communication

4.3.1.2 The following regulations and standards apply to the operation and maintenance of navigation and communication equipment aboard tugs (applicable to tugs of all sizes):

- *Charts and Nautical Publications Regulations* – In general
- *Collision Regulations* – In general
- *Marine Personnel Regulations* – Part 2 in regards to communication personnel
- *Vessel Traffic Services Zones Regulations* – In general
- *Safety and Distress Radiotelephone Procedures, TP 9878* – In general
5 OPERATION

5.1 TOWING SAFETY

5.1.1 Regulatory Reference

5.1.1.1 The following regulations contain requirements that are applicable to some of the risks associated with tugs and tows:

- *Safe Working Practices Regulations*
- *Maritime Occupational Health and Safety Regulations* (see 5.1.1.2)

5.1.1.2 Vessels with employees that are covered by federal health and safety legislation will fall under Part 2 of the *Canada Labour Code* (Section 123) and the *Maritime Occupational Health and Safety Regulations*. Most vessels that operate only within the limits of a province will have employees that are covered by that province’s health and safety legislation.

5.1.2 Additional Guidance

5.1.2.1 A review of the recent safety record of the towing industry indicates that the greatest risks to tug personnel are associated with movements between tug and tow, e.g. between tug and barge or between tug and log boom, and the most serious accidents occur when crew fall directly from the tow. Such occurrences are impossible to prevent by regulation, and require a safety culture aboard the tug, with an emphasis on crew awareness of the risks associated with moving onto the tow from the relative safety of the tug itself.

5.1.2.2 However there are risks inherent with every aspect of towing or ship-assist. Owners must be familiar with these risks and promote safety through good design, sound construction, careful maintenance, and the implementation and enforcement of safe working practices, including in particular:

- Operations around rotating and reciprocating machinery
- Operations with electrical equipment
- Operations handling fuel and oils
- Use of major deck equipment, towlines and mooring lines
- The appropriate matching of the tug itself to the tow and the conditions and locale in which the tow will take place
5.2 POLLUTION PREVENTION

5.2.1 Regulatory Requirements

5.2.1.1 The following regulations and standards apply to the pollution prevention aboard all tugs:

- *Vessel Pollution and Dangerous Chemicals Regulations*
  - Part 1 for general requirements
  - Part 2 for specific requirements:
    - Division 1 for oil
    - Division 2 for noxious liquid substances and dangerous chemicals
    - Division 3 for marine pollutants
    - Division 4 for sewage
    - Division 5 for garbage
    - Division 6 for air pollution
    - Division 7 for pollutant substances
    - Division 8 for anti-fouling systems
  - Part 3 for pollutant discharge reporting

- *Ballast Water Control and Management Regulations*, for all vessels that are designed or constructed to carry ballast water:
  - Sections 4 and 5 for ballast water management
  - Sections 6 and 7 for ballast water exchange
  - Sections 8 and 9 for ballast water treatment and exchange standards
  - Section 10 for sediment disposal
  - Sections 11 and 12 for ballast water management plan

5.2.1.2 The following regulations and standards apply specifically to the operation and maintenance of pollution prevention equipment:

- *Vessel Pollution and Dangerous Chemicals Regulations*, Part 2
- *Ballast Water Control and Management Regulations*

5.2.1.3 Particular attention should be paid to sewage discharges in designated sewage areas, as listed in Schedule 2 of the *Vessel Pollution and Dangerous Chemical Regulations*. For requirements, refer to section 96 of the *Vessel Pollution and Dangerous Chemical Regulations*. 
5.3 CREWING

5.3.1 Regulatory Requirements

5.3.1.1 The crewing requirements for all Canadian vessels are provided in the following sections of the Marine Personnel Regulations Part 2:

- Training and Familiarization – Section 205 and 206
- Minimum Complement – Sections 207 to 210
- Safe Manning Requirements – Section 211
- Masters and Deck Officers – Section 212
- Deck Watch – Sections 213 to 216
- Engineers – Section 217 to 222
- Engineering Watch – Sections 223 to 225
- Dual Capacity – Section 226
- Cooks – Section 227
- Radio Watch – Section 264 to 267 (where a ship station is required by the Ship Station (Radio) Regulations, 1999)
- Medical Examination of Seafarers – Division 8

5.3.1.2 The maritime labour standards for Canadian vessels are provided in the Part 3 of the Marine Personnel Regulations.

5.3.2 Additional Guidance

5.3.2.1 It should be noted that there may be some union agreements across Canada which may require crew complement to exceed those of the regulations.

5.4 SAFE OPERATING PROCEDURES

5.4.1 The Canada Shipping Act 2001, section 106, requires the authorized representative of a tug to develop procedures for the safe operation of the vessel and for dealing with emergencies, and to ensure that the crew receives safety training. The authorized representative is also required under the Marine Personnel Regulations, section 206, to provide the vessel master with written instructions to ensure that each member of the vessel complement is familiar with the shipboard equipment operational instructions specific to the vessel and can effectively perform their duties related to safety and pollution prevention.
## 6.1 APPLICABILITY TABLES

### Table A – *Canada Shipping Act 2001* - Regulations Applicability Table

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Notes

1. For application to existing vessels, the definition of new and existing vessels must be verified in the regulations under consideration.

2. If a tug of not more than 15 gross tonnage is carrying passengers, part 4 of the Small Vessel Regulations is applicable and the vessel shall not be engaged in towing operations while passengers are on board (Section 404(3)). Note that other regulations may impose additional requirements when passengers are carried.
<table>
<thead>
<tr>
<th>Abbreviation</th>
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<td>X</td>
<td>Regulation or part of regulation that is applicable to all vessels, including tugs.</td>
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<td>S</td>
<td>Regulation or part of regulation specifically applicable to tugs. Note that some requirements that are applicable to tugs or towing operations under very specific or limited conditions have not been included in the list.</td>
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