

# Toronto Brigantine Inc. Grade Standards

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## Notes on the Grade Standards

Toronto Brigantine Inc (TBI) has a long history of sail training. The organization began operating in 1964, and since then an estimated 10,000 crew members have benefited from their experience with our program. It is important to note that not only does TBI teach participants how to sail, but also encourages the development of leadership, discipline, and self-assurance. Although not all participants continue with careers in the marine industry, the skills they learn at TBI continue to serve them well wherever life leads.

The grade standards are modified from time-to-time in order to best meet the current social climate and regulatory requirements. Over the past 45 years the TBI grade standards have been influenced by other organizations (such as the Canadian Navy and the Canadian Yachting Association), as well as influencing the development of other organizations (such as the Canadian Sail Training Association).

The most recent revisions to the grade standards are designed to respond to the changes in TBIs regulatory environment, especially with regard to safe manning, while also increasing their relevance to the operational practice of our training regime.

The grade standards identify minimum requirements at each level of training. They should not be interpreted as restricting the breadth or depth of training.

The grade standards should:

1. Provide a framework for TBIs training curriculum.
2. Help participants track and set goals for their training.
3. Train participants to meet the STV crewing requirements as set out by TCMS;
4. Provide the majority of the training required to obtain an introductory deck license;
5. Be realistically obtainable for the participants who are attending high school;
6. Offer the participants something tangible they can take away, such as TCMS certification;
7. Demonstrate TBIs continued commitment to 1st class training.

# Toronto Brigantine Inc Grade Standards Overview

## Grade 1 (Lead Hand):

1. Targeted at Trainees sailing their first course.
2. They should be able to complete Grade 1 by the end of their first course.

## Grade 2 (Petty Officer):

1. Targeted at 1st year Winter Program participants.
2. They should be able to complete Grade 2 during the Winter Program and following spring.
3. Provides an introduction to seamanship and a working knowledge of sail handling and ship's routine.

## Grade 3 (Junior Officer):

1. Targeted at 2nd year Winter Program participants.
2. They should be able to complete Grade 3 during the Winter Program and following spring.
3. Meets TCMS requirements for non-certificated crew rating..
4. Provides an introduction to the skills required to lead a navigational watch.

## Grade 4 (Senior Officer):

1. Targeted at 3rd year Winter Program participants.
2. They should be able to complete Grade 4 during the Winter Program and following spring.
3. Has demonstrated the ability to lead a navigational watch.
4. Meets the TCMS requirements for a *Chief Mate, Ltd < 60 GT* license (limited by age).

## Grade 5 (Executive Officer):

1. Targeted at 4th year WP participants.
2. Ideally they should be able to complete Grade 4 during the Winter Program and following spring.
3. Meets the TCMS requirements for a *Chief Mate, Ltd > 60 GT* license (limited by age).

## Grade I - Lead Hand

1. Complete at least one full course aboard a Sail Training Vessel; roughly equivalent to a course with TBI.
2. Be able to identify and describe the terms listed in appendix I-A;
3. Be able to identify and describe the parts of a vessel and her sails, rigging, and spars as listed in appendix I-B;
4. Be able to explain the theory of maneuvering under sail, including the terms listed in appendix I-C;
5. Be able to steer by compass, wind, landmark, and direct order, plus demonstrate thorough knowledge and practical response to the terms listed in appendix I-D;
6. Be able to tie the knots listed in appendix I-E within a 30sec time limit and describe how and when they are used;
7. Be able to describe and demonstrate proficiency in the use of the Safety equipment listed in appendix I-F;
8. For the vessel on which you are sailing, demonstrate a knowledge of the vessel's details listed in appendix I-G;
9. Demonstrate thorough knowledge and practical response to the commands listed in appendix I-H;
10. Be able to describe their action to be taken in the event of a man overboard situation;
11. Be able to describe their action to be taken in the event of a fire on board;
12. Be able to describe their action to be taken in the event of an abandon ship situation;
13. Be able to describe and demonstrate proficiency in coiling and belaying lines;
14. Be able to work and communicate with other members of a watch and perform duties under supervision.

**I-A Simple Sea Terms**

Aft  
 Port  
 Starboard  
 Forward  
 Ahead  
 Aft  
 Astern  
 Abeam  
 Amidships  
 Belay  
 Leeward  
 Windward  
 Make fast  
 Underway  
 Reef  
 Set  
 Douse

**I-B Parts of the Ship**

After-peak  
 Fore-peak  
 Bow  
 Stern  
 Fairlead  
 Scupper  
 Freeing port  
 Hull  
 Deck  
 Bulkhead  
 Deckhead  
 Keel  
 Rudder  
 Lifeline  
 Hatch  
 Skylight  
 Cleat  
 Pin-rail  
 Fife-rail  
 Spider-band  
 Block  
 Stays  
 Shrouds  
 Bowsprit  
 Boom  
 Mast  
 Yard  
 Gaff  
 Top  
 Jib  
 Mains'l  
 Stays'l  
 Tops'l  
 Course  
 Reef points

**I-C Points of Sailing & Maneuvers**

Luff  
 Tack  
 Gybe  
 Wear

**I-D Steering**

Steer xxx°  
 Compass heading  
 Lubber's line  
 Hard a' Port (or Starboard)  
 Head up  
 Bear off  
 Full n' By  
 Importance of repeating orders

**I-E Knots**

Clove-hitch  
 Figure of Eight  
 Reef

**I-F Safety Equipment**

Boat Hook  
 Jacob's ladder  
 Buddy System  
 EPIRB  
 Fire extinguisher  
 Fire hose  
 Harnesses  
 Night Harness  
 Heaving line  
 Life jackets  
 Life rafts  
 Kisby Ring  
 MOB pole

**I-G Vessel Details**

Length Overall (LOA)  
 Sparred Length  
 Beam  
 (Water) Draft  
 Air Draft  
 Type of Rig  
 Complement  
 Engine Type  
 Year Built

**I-H Commands**

"Stand-by"  
 "Snub"  
 "Make fast"  
 "Cast-off"  
 "Ease"  
 "Haul"  
 "Let Fly"  
 "Ready about"  
 "About ship helm's a'lee"  
 "Tack (eg.) the jib"  
 "Aft on your sheets"  
 "Ease your sheets"  
 "Stand by to jibe"  
 "helm's a'weather"  
 "Jibe ho"  
 "Jibe the (eg.) jib"  
 "Stand by sheets and braces"  
 "Brace to (eg.) Port"

## Grade II - Petty Officer

1. Complete all Grade I requirements;
2. Be able to teach all pertinent Grade I requirements;
3. Successfully complete a basic First Aid course;
4. Successfully complete the Food Handler Certification Course;
5. In addition to the Grade 1 seetime requirements, at least 3 days aboard a TBI vessel.
6. Complete at least 180 hours (total) of winter program training and/or maintenance;
7. Be able to locate and stow gear aboard ship;
8. Be able to describe the actions needed to complete the tasks in Appendix II-A
9. Be able to describe the ship's radio terms as listed in appendix II-B;
10. Be able to tie the knots listed in appendix II-C and describe how and when they are used;
11. Be able to demonstrate the practical ability to row the dories;
12. Be able to describe the principals of anchoring and the duties of anchor watch as listed in appendix II-D;
13. Be able to identify and describe the parts of a vessel and her sails and rigging as listed in appendix II-E;
14. Be able to identify and describe the rigs listed in appendix II-F;
15. Demonstrate a knowledge of safety subjects including the areas listed in appendix II-G;
16. Be able to locate all belaying positions for running rigging.
17. Demonstrate leadership, maturity and commitment appropriate to the rank.

### Courses:

1. First Aid
2. Food Handler Certification

**II-A Watch Handling**

Bending on Head sails  
 Setting Standard Press  
 Handling Standard Press  
 Reefing Standard Press  
 Dousing Standard Press  
 Stations for arriving  
 Stations for departing  
 Stations for maneuvering  
 Following ship's routine  
 Clean up duties  
 Launch and recover dories

**II-B Radio Terms**

Channel 16  
 All stations  
 Mayday  
 Pan-pan  
 Sécurité  
 Vessel Name

**II-C Knots**

Anchor (fisherman's) bend  
 Eye splice  
 Whipping  
 Mousing  
 Seizing  
 Bowline  
 Rolling-hitch  
 Round turn & two half-hitches  
 Sheet bend

**II-D Anchoring**

Danforth and AP/Fisherman anchors  
 Principle of anchoring  
 Effects of wind and current  
 Precautions to prevent dragging

**II-E Terms and Parts of the Ship****Parts**

Turnbuckle  
 Bottlescrew  
 Spreader  
 Deck beam  
 Break  
 Cap-rail  
 Chain-plates  
 Coamings  
 Crosstrees  
 Trestle trees  
 Frame  
 Halse-pipe  
 Hounds  
 Knee  
 Mast chocks

Mast Heel  
 Mast Truck  
 Mast step  
 Partners  
 Pintel & Gudgeon  
 Sampson post  
 Sea-cock  
 Stanchion  
 Stem  
 Transom  
 Washboard  
 Bosun's chair  
 Bolt rope  
 Cringle  
 Grommet  
 Hank  
 Roach  
 Tumbler  
 Lacing  
 Mitre  
 Parrel-bead  
 Sail cloth  
 Sail panel  
 Sail tabling  
 Seam (of a sail)  
 Head (of a sail)  
 Clew (of a sail)  
 Foot (of a sail)  
 Bunt (of a sail)  
 Leech (of a sail)  
 Luff (of a sail)  
 Peak (of a sail)  
 Tack (of a sail)  
 Throat (of a sail)

**Terms**

Bend on  
 Bight (of a line)  
 Broach  
 Leeway  
 headway  
 Sternway  
 Aground  
 Fore and Aft  
 Cardinal points  
 Helm a' lee  
 Helm a' weather  
 Pinch  
 sailing by the lee  
 Close hauled  
 Close reach  
 Beam Reach  
 Broad reach  
 Run  
 In irons  
 In stays

**II-F Rigs**

Barque (Bark)  
 Barquentine (barkentine)  
 Brig  
 Brigantine  
 Cutter  
 Full rigged ship  
 Ketch  
 Yawl  
 Marconi (Bermuda) rig  
 Gaff rig  
 Schooner  
 Sloop  
 Cat  
 Junk  
 Lateen

**II-G Safety**

Shop safety  
 Ship safety  
 Tool safety  
 WHIMS  
 MSDS  
 Muster list

**II-H Ship Details**

Freeboard  
 Length Waterline (LWL)  
 Gross Tonnage

## Grade III - Junior Officer

1. Complete all Grade II requirements;
2. Be able to teach all pertinent Grade II requirements;
3. Successfully complete the Marine Emergency Duties (MED) A1 & A2 courses;
4. Successfully complete the Restricted Operator Certificate – Maritime (ROC-M) radio course;
5. Be able to take a MAFOR
6. Complete at least 20 days sailing (total, including 8 nights at sea) aboard a Sail Training Vessel after obtaining Grade II.
7. Complete at least 200 hours during the last winter program.
8. Be able to describe the actions of all personnel on board to be taken in the event of a man overboard;
9. Be able to describe the actions of all personnel on board to be taken in the event of a fire on board;
10. Be able to describe the actions of all personnel on board to be taken in the event of an abandon ship situation;
11. Be able to name, rig, and describe the purchases and terms listed in appendix III-A;
12. Be able to name and describe the sail cloth and cordage listed in appendix III-B;
13. Demonstrate a proficiency in marlinspike seamanship including the areas listed in appendix III-C;
14. Be able to demonstrate a knowledge of the rules of the road as listed in appendix III-D;
15. Demonstrate a proficiency in chart-work including the areas listed in appendix III-E;
16. Be able to describe and demonstrate precautions and actions to be taken in the event of heavy weather, including the terms listed in appendix III-F;
17. Be able to describe how a sail develops power, and interpret all terms and effects from items listed in appendix III-G;
18. Be able to describe and correctly interpret the significance of the anchoring, mooring, and docking terms listed in appendix III-H;
19. Be able to take and report soundings with a lead-line;
20. Have lead a group in the tasks listed in appendix III-I
21. Describe the operations listed in appendix III-J
22. Be able to describe and demonstrate the main aspects of rigging, engine, plumbing, and electrical equipment, including common problems, safety, and maintenance as listed in appendix III-K.
23. Have a knowledge of the navigational terms in appendix III-L
24. Demonstrate leadership, maturity and commitment appropriate to the rank.

### Courses:

1. Marine Emergency Duties A1 & A2
2. Restricted (Radio) Operator Certificate – Maritime (ROC-M)
3. Marine Basic First Aid

**III-A Blocks & Tackle**

Single block  
 Double block  
 Triple block  
 Fiddle block  
 Snatch block  
 Becket  
 Cheek  
 Eye  
 Sheave  
 Strop  
 Swallow  
 Single whip  
 Double whip  
 Luff purchase  
 Double purchase  
 Runner and tackle

**III-B Sail Cloth & Cordage**

Natural fiber cordage  
 Synthetic cordage  
 Hawser laid cordage  
 Braided cordage  
 Cable-laid cordage  
 Wire-rope  
 Natural fiber sail cloth  
 Synthetic sail cloth

**III-C Marlinspike Seamanship**

Herringbone stitch  
 Long splice  
 Round stitch  
 Worming  
 Parceling  
 Serving  
 Bowline on a bight  
 Back splice  
 Short splice  
 butterfly knot  
 Tugboat hitch

**III-D Rules of the Road**

Canadian buoyage system  
 How to determine risk of collision  
 How to identify stand on and give way vessels  
 Responsibilities of stand on and give way vessels  
 Be able to identify vessels by lights and sound signals

**III-E Chart-work**

Understanding of charts  
 Basic compass knowledge  
 TVMDC  
 Measuring distance  
 Time/speed/distance calculations  
 Taking and potting fixes  
 Plotting safe courses  
 Maintaining a log  
 Knowledge of Publications

**III-F Heavy Weather**

Broaching  
 Lying a'hull  
 Pooping  
 Heaving-to  
 Reefing  
 Trailing warps  
 Crew exhaustion  
 Preparation of crew  
 Lifelines  
 Preventers  
 Safety Harnesses  
 Storm sails  
 Weather forecasts

**III-G Sail Power & Terms**

Centre of effort  
 Centre of lateral resistance  
 Sail balance  
 Sail trim  
 How sails work

**III-H Anchoring, Mooring & Docking**

Anchoring under power  
 Anchoring under sail  
 Lines  
 Bollards  
 Fendering  
 Chafe  
 Bottom type  
 Dragging anchor  
 Length of dock  
 Propeller walk  
 Current  
 Depth  
 Shelter  
 "Springing"  
 Steerage way  
 Swinging room  
 Wind  
 Catting and stowing anchor

**III-I**

Bending on a sail  
 Setting all sails  
 Handling all sails  
 Reefing a sail  
 Dousing all sails  
 Setting stations for arriving  
 Setting stations for departing  
 Setting stations for maneuvering  
 Following ship's routine  
 Clean up duties

**III-J**

Tack  
 Gybe  
 Wear ship  
 Heave-to

**III-K Ship's Systems**

Electrical: voltage  
 Electrical: current  
 Electrical: frequency  
 Electrical: batteries  
 Electrical: battery charging  
 Electrical: distribution system  
 Electrical: generator  
 Electrical: shore power  
 Engine: air  
 Engine: cooling  
 Engine: exhaust  
 Engine: fuel  
 Engine: lubrication  
 Engine: starting  
 Engine: stopping  
 Engine: ventilation  
 Engine: winterizing  
 Engine: Horsepower  
 Plumbing: pumps  
 Plumbing: through-hulls  
 Plumbing: valves  
 Plumbing: vents  
 Plumbing: winterizing  
 Steering gear

**III-L**

Latitude  
 Longitude  
 Variation  
 Deviation  
 True north  
 Magnetic north  
 Pelorus  
 Sextant  
 Parallel rulers  
 Dividers  
 GPS  
 Chart 1

## **Grade IV - Senior Officer (Watch Officer)**

1. Complete all Grade III requirements;
2. Be able to teach all pertinent Grade III requirements;
3. Complete at least 30 days sailing (total, including 10 nights at sea) aboard a Sail Training Vessel since obtaining grade III;
4. Complete at least 200 hours of winter program training and/or maintenance in the preceding winter;
5. Be able to lead a watch aboard ship in the tasks listed in appendix IV-A;
6. Successfully complete the TCMS Simulated Electronic Navigation Limited (SEN1L) course;
7. Be able to, under power, complete the maneuvers listed in appendix IV-B;
8. Be able to, under sail, complete the maneuvers listed in appendix IV-B;
9. Demonstrate the ability to communicate effectively with subordinate and superior officers, and correctly uphold their responsibilities in the chain of command;
10. Demonstrate the ability to take charge of a deck watch at sea, during both day & night, in all weather, and act in a safe and seaman-like manner in this capacity.

### **Courses:**

1. Simulated Electronic Navigation (SEN1L)

**IV-A Watch Handling**

- Bending on sail
- Setting all sail
- Handling all sail
- Reefing all sail
- Dousing all sail
- Stations for arriving
- Stations for departing
- Stations for maneuvering
- Following ship's routine
- Clean up duties

**IV-B Maneuvers**

- Approach a dock
- Approach an anchorage
- Secure alongside a dock
- Anchor
- Leave a dock
- Weigh anchor

## **Grade V - Executive Officer**

1. Complete all Grade IV requirements;
2. Be able to teach all pertinent Grade IV requirements;
3. Complete at least 200 hours (total) of winter program training and/or maintenance in the preceding winter;
4. Demonstrate a knowledge of section A-VIII of the STCW Code;
5. Demonstrate a knowledge of the emergency plan terms and expressions listed in appendix V-A;
6. Be able to describe the meteorological terms and expressions listed in appendix V-B, and correctly interpret their effects for the Great Lakes area;
7. Demonstrate an understanding of the fundamentals of watertight integrity including the terms and expressions listed in appendix V-C;
8. Demonstrate a working knowledge of stability and damaged stability data supplied to small vessels integrity including the terms and expressions listed in appendix V-D;
9. Demonstrate a knowledge of the pollution prevention requirements including the terms and expressions listed in appendix V-E;
10. Demonstrate a knowledge of the responsibilities and duties of a chief mate when joining a vessel;
11. Demonstrate a knowledge of parts 2 and 3 of the Marine Personnel Regulations;
12. Demonstrate a knowledge of the regulations concerning life-saving and fire-fighting appliances;
13. Obtain the applicable Transport Canada mates certificate.
14. Demonstrate leadership, maturity and commitment appropriate to the rank.

### **V-A Evacuation Plans**

- Muster list and emergency instructions
- The concept of dividing the crew into teams
- Knowledge of the composition of emergency teams
- Communication links between emergency teams
- The importance of drills and training
- Knowledge of specific duties to assign to crew members
- Pre-departure safety orientation
- The need to communicate effectively
- Personnel management during an emergency
- Procedures for vessel's evacuation
- Rescuing persons and assisting vessels in distress

### **V-B Meteorology**

- Cloud formations & patterns
- Barometric pressure
- Precipitation
- Temperature
- Thunderstorms
- Visibility
- Weather forecasts
- Weather systems
- Wind direction
- Wind strength
- Beaufort scale

### **V-C Watertight Integrity & Heavy Weather**

- Securing watertight hatches, doors and scuttles
- Lowering and securing weights onboard
- Ensuring that freeing arrangements are functional
- Monitoring water detection in compartments
- Actions to be taken in case of water ingress
- Actions to be taken in case of vessel becoming disabled
- Heavy weather boat handling
- How to prevent ice accretion
- Actions to be taken if ice starts to accumulate

### **V-D Stability**

- Effect of trainees gathering on one side of the vessel
- Understanding of ship's plans and specifications
- Stiff and tender ships
- Effects of reduction in freeboard on stability
- Effects of reduction in freeboard on seaworthiness

### **V-E Pollution**

- Precautions to be taken during fueling
- Statutory requirements to report pollution incidents
- Precautions to be taken to prevent pollution
- Action to be taken in response to pollution incidents
- Types of pollution