

## Pre CLII-B Evaluation

### Course training sessions for Stations – Optimizing use of Electronic tools in gaining situational awareness for Navigation in all conditions of visibility

#### Introduction:

The CLII-B program taught at the training center has a limited timeline and aggressive Schedule. This requires adequate and thorough preparation of its participants to assure that the outcomes are met adequately. The objectives of the CLII-B course could take years of application and practice for someone to attain so adequate preparation and sufficient exposure is key.

#### Purpose:

The pre-CLII-B training should facilitate the participant's learning curve during the course at HQTC and allow RCMSAR members to build upon a skill set already acquired at their station. This proposed training should help in making sure that all course attendees are at a similar level of competency by the time they attend the course and alleviate "hold backs". The CLII-B course will serve to validate the training received at station level and provide a means to hone and build efficiency and competency of those skills, under the tutorial and support of experts in the subject matter.

Outcomes: Quality control and consistency of training, standardization of process

#### Course objectives:

- These training sessions are designed to be a **precursor** to CLII-B and be delivered at station level.
- It will provide enough exposure to the skills and concepts addressed by the CLII-B course's technical objectives, to allow the participant to demonstrate the application of those skills, with a reasonable amount of competency and understanding before attending the CLII-B course.
- Increase comfort levels and familiarity with the extensive subject matter, that the course covers.
- It assumes each participant has completed the new crew curriculum and advanced Crew Sign offs.
- It will be given in-house, at each individual station, by the designated training officer/Coxswain.
- The designated training officer/Coxswain will be responsible to make sure that each participant has met the objectives of the program and that the sign offs are entered in the SMS.
- The program consists of an introduction to electronic navigation techniques and concepts to maintaining situational awareness by using all available means.
- The final objectives of each topics covered should be evaluated and successfully demonstrated by the participant, prior to attending a CLII-B course.

## **Session #1: Multi-function display buttonology:**

**3 hrs.**

### **Objectives:**

Basic familiarization to the electronic tools, how to navigate thru the different functionalities and their purpose. The understanding of a Vector Electronic Chart and it's advantages over a Raster-scan Chart.

**References in Crew manual: Chapter 7 section 7.6**

### **Chart plotter display:**

- On/Off button, Brilliance, home page, activation of the touch vs non touch screen option
- Location of buttons and dials/ their functionalities
- Menus and sub-menus/ Cartography settings and the meaning of each parameters
- Units/settings
- Split screen function and page settings
- Vessel icon's vector line (3-6 or 9-minute projection Vector) and Heading marker line on/off
- Compass course and heading information
- Data box location and data contained
- Cursor range& bearing information-how is it used
- Find Boat function/find Cursor (range-in at Cursor position)
- Heads up/North up modes
- Chart offsets (1/3 or 2/3 offset)
- AIS information on/off
- The advantage of doing a quick system check in the same order every time
- Range in and out function and amount of details obtained on vector Charts when ranging in

### **Radar display:**

- Heads-up mode and why (No Heading input from Gyro)
- EBL and VRM menus
- Data box
- Understanding what a VRM and EBL is and their various purposes

- Moving the VRM and the EBL in non-touch screen mode
- AIS information on/off
- Offsets (1/3 or 2/3)
- Range rings on or off
- Interference rejection function
- Bearing alignment error correction function
- Dual range function (Model-dependent)
- Short pulse vs Long pulse
- Gain, tune and Filters (Just show where they are located at this stage you should operate in Auto mode)

**Cross-referencing introduction and basics:**

- Matching the range and Bearing of a prominent object from the Chart plotter's Cursor to the Radar' EBL and VRM for positive identification of features on displays in a static mode (Vessel not making headway)
- Slowly introduce vessel movement and operational environment by getting the member to practice those skills during a slow run

**Delivery format:**

- On the station's vessel, demonstrate and go over the functionalities and buttonology of the MFD's and demonstrate a system's check at the dock, prior to departure
- Make sure the member feels comfortable and has a chance to try before leaving the dock.
- Active lookouts and an experienced Helmsman to maintain safety should help in maintaining situational awareness and stop the vessel if necessary
- Get the participant to sit at the Nav position on the vessel and take the vessel out to a calm area where prominent features are available to cross-reference
- Monitor and coach as necessary
- Increase difficulty by getting the member to attempt cross-referencing with the vessel picking up headway.
- Focus on targets and features between "10 and 2" O' clock relative. (Makes the math easier and is relevant to where the vessel is heading)

### **Outcomes to be met:**

By the end of the session, the member being trained should be able to demonstrate increased competence and comfort levels, at operating the basic functions of the multi-function displays and electronic tools to navigation. A sound understanding of the chart settings and systems checks parameters as well as interpreting the cursor data information and how to transpose a Compass bearing to a relative bearing when Cross-referencing between the E-Chart display and the Radar picture.

### **Session #2: The use of the E-Nav tools to ascertain positive control of the vessel's position:**

3 Hrs.

#### **Objectives:**

Review the previous session's objectives and confirm the vessel's position whilst underway, using proper ranging and E-Nav tools.

- Perform a radar-assisted turn using Radar VRM and EBL.
- Looking ahead of current position using ranging and cursor tool on E-Chart and acquiring awareness of navigational hazards before hand
- Ranging in at vessel's location when in proximity to shore and reefs; The more you range -in, the greater the details and accuracy of features
- Using a VRM as a safety clearance zone and pre-determined safety distance, from hazards and shoreline
- Use of EBL to predict and anticipate the exact amount of degrees relative to ship's heading needed from the Helm, to stay at the pre-determined distance from a hazard or shoreline in the application of a Radar assisted turn
- Understanding the VRM as a measuring tool

#### **Delivery format:**

- Classroom style presentations and drawings on a white board
- Interactive exercise involving a chart and getting the participant to measure clearances to maintain, in a route which will be ascertained with the VRM once on the vessel using the VRM/EBL
- Proceed on a boat run where the instructor will demonstrate the concept of a R.A.T then have the participant practice and demonstrate it

- The participant will be encouraged to “look up” and avoid “tunnel vision” in operating the Electronic tools.

**Outcomes to be met:**

- The members will demonstrate more confidence and efficiency at the concepts and skills practiced the previous session
- The members will be able to demonstrate the ability to execute a radar-assisted turn using a VRM and EBL effectively

**Session #3: E-nav tools and Collision avoidance:**

**3 Hrs.**

**Objectives:**

- Avoiding close quarter situations as per Coll regs Rule 5-7-8
- The 1 nm zone of awareness and all Radar target within that zone being accounted for, once cross-referenced to the Chart plotter
- Understanding relative motion vs True motion assessment of a Radar target
- Understanding what CPA is:
- Closest point of approach: The shortest linear distance from the vessel to the radar target, which would be an imaginary line drawn from the vessel to where it would cross the trajectory of the target at right angle (90 deg.). The CPA can be predicted using the VRM by observing the target’s motion across the Radar display and evaluating the Gap spacing that will result if nothing changes when the target will be at the CPA.
- Using the VRM and EBL to maintain a safe CPA and monitor for close-quarters situations as per Col regs.

**Delivery format:**

- Classroom presentation/discussion/drawing on a board
- Training session onboard the station’s vessel involving avoiding real vessel targets using tools rather than just go by visual assessments.

**Outcomes to be met:**

- Effective cross-referencing to positively identify vessel targets vs stationary objects within a nautical mile radius
- Application of rule 7 by assessing if a close quarter is developing with targets using the VRM and EBL on the RADAR
- Application of rule 8 by choosing an acceptable CPA and using the VRM and EBL to maintain the chosen CPA

**Session # 4: electronic tools and Restricted visibility:**

**3Hrs.**

**Objectives:**

- Maintaining Situational awareness and positive control in restricted visibility
- Appropriate ranging and target assessments
- The explanation of proper range scales during target assessments and X-referencing (IE: targets in outer-third of display
- The importance of sharing situational awareness with the rest of the Crew when no one can see-Communications!
- A basic understanding of radar limitations such as radar shadows and realistic detection range based on scanner height
- Rule 19, safe speed and sound signals

**Delivery format:**

- Classroom style presentation about Rule 19 and Radar limitations
- A practical exercise onboard and during on the water training, where a means such as curtains if equipped or available can provide a means of mimicking restricted visibility
- All concepts learnt during previous sessions are practiced and demonstrated with reasonable effectiveness.

**Outcomes to be met:**

- Positive control will be maintained and full situational awareness of the vessel's position will be maintained from using the electronic tools to their full advantage
- If targets vessels are present, they will be assessed for close-quarters, within a nautical mile distance from the vessel and an acceptable CPA will be established and maintained using all available means.

**Reference material:**

- CCGA Crew manual
- The radar book by Kevin Monahan
- The CCG RHIOT manual
- Old Sarnav-1&2 manual if available
- Coxswain Leadership Course reference material package from the course participant package with exercises from previous Sarnav/CLII-B course attendees at the station
- The Collision regulations document or books

**Pre CLII-B On-the-Water Evaluation Details**

Session # 1

Instructor's Name \_\_\_\_\_

Date and Time of Evaluation: \_\_\_\_\_

Candidate Name \_\_\_\_\_

Location: \_\_\_\_\_

**Comments:**

Instructor Signature \_\_\_\_\_

Candidate Signature \_\_\_\_\_

**Pre CLII-B On-the-Water Evaluation Details**

Session # 2

Instructor's Name \_\_\_\_\_

Date and Time of Evaluation: \_\_\_\_\_

Candidate Name \_\_\_\_\_

Location: \_\_\_\_\_

**Comments:**

Instructor Signature \_\_\_\_\_

Candidate Signature \_\_\_\_\_

**Pre CLII-B On-the-Water Evaluation Details**

Session # 3

Instructor's Name \_\_\_\_\_

Date and Time of Evaluation: \_\_\_\_\_

Candidate Name \_\_\_\_\_

Location: \_\_\_\_\_

**Comments:**

Instructor Signature \_\_\_\_\_

Candidate Signature \_\_\_\_\_

**Pre CLII-B On-the-Water Evaluation Details**

Session # 4

Instructor's Name \_\_\_\_\_

Date and Time of Evaluation: \_\_\_\_\_

Candidate Name \_\_\_\_\_

Location: \_\_\_\_\_

**Comments:**

Instructor Signature \_\_\_\_\_

Candidate Signature \_\_\_\_\_

**\*\*A copy of this Evaluation in its entirety must be returned to the office in order to fulfill the Pre CLII-B On-the-Water Evaluation component.\*\***