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Supt. Troy Lightfoot \_\_\_\_\_ Date  
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**APPROVED (TRAINING):**

\_\_\_\_\_  
C/Supt. Louis-Philippe Plourde \_\_\_\_\_ Date  
Director General, Learning and Development

**COURSE TRAINING STANDARD**

**WATER TRANSPORT ELECTRONIC NAVIGATION COURSE**

**CTS PROTECTED A  
COURSE PROTECTED A**



Nota: La version française est disponible sur demande

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## HISTORY OF CTS REVISIONS

Summary of Modification	Date Change Approved	Section	Reference



# Water Transport Electronic Navigation Course

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## **PART I: COURSE DESIGN**

### **1.1 PURPOSE OF COURSE**

This course is designed to build on knowledge and skills gained through completion of the Basic Water Transport Course (SVOP/MED A3) with a focus on electronic navigational systems. Upon completion of the course, successful candidates will be able to:

- Demonstrate the skills and knowledge gained from the Basic Water Transport Course (SVOP/MED A3).
- Apply pertinent policy to RCMP vessel operations.
- Demonstrate ability to navigate with the use of GPS and plotter on board appropriate to the prevailing circumstances and conditions.
- Demonstrate ability to navigate with the assisted use of radar on board appropriate to the prevailing circumstances and conditions.
- Apply electronic navigation skills to police related scenarios successfully.

### **1.2 COURSE DESCRIPTION**

- The course is four days or 32 instructional hours
- This is a national course, divisionally delivered
- Minimum 2 and maximum 8 candidates
- Ratio of candidates to approved instructors 2:1

The following modules are covered:

- Orientation
- Module 1 – Review SVOP/MED A3
- Module 2 – GPS Plotter
- Module 3 – Radar
- Module 4 – Practical Activities and Policing Scenarios

This is a four-day, national course which will require the following pre-course work:

- Review SVOP/MED A3 workbook
- RCMP Policy
- Small Commercial Safety Guide



## **1.3 CANDIDATE SELECTION CRITERIA AND PREREQUISITES**

Before candidates can take the Water Transport Electronic Navigation Course they must:

- Have completed the SVOP/MED A3.
- Be certified persons permitted to operate RCMP Vessels as part of their job.

## **1.4 COMPETENCIES**

The following principal organizational competencies are covered:

- Decisiveness – Level 3
- Problem Solving Level 4

The following principal functional competencies are covered:

- Knowledge of Marine Safety, Operations, Procedures and Equipment – Level 4
- Concern for Safety – Level 3

## **1.5 INSTRUCTIONAL STRATEGIES**

The instructional strategies used in this course are as follows:

- Lecture
- Demonstration
- Practice
- Practical exercises
- Q&A
- Coaching
- Simulations
- Storytelling
- Video

This course utilizes less than 10% lecture. The majority of the learning is done through demonstration, practice and practical exercises and simulations. The learners spend the majority of the four days on the water using the GPS, GPS Overlay and RADAR.





## 1.6 LEARNER ASSESSMENT STRATEGIES

The candidates are assessed as follows:

- Candidates are assessed continuously throughout the course using a rubric which measures their performance against the objectives.
- By the end of the course, all candidates need to achieve the "Working Level" for each behavioural indicator. If the *Working Level* is not achieved, the instructor will provide remediation. If the candidate does not achieve the *Working Level* after remediation and is left with a score under "Needs Supervision", the candidate will need to practice that skill at their home unit and then be re-tested by a qualified instructor in order to receive HRMIS credit for the course.

## 1.7 COURSE EVALUATION

### Formal Feedback:

Each time a course is delivered, and based on L&D standards, the unit responsible for delivery is also responsible for the formal collection of evaluation data on:

- a) Evaluating Reaction (i.e. the level of satisfaction of candidates with the course as delivered). Data is collected through the completion of Form 2116e, the Level 1 Evaluation Questionnaire for an in-class course or a Level 1 Evaluation Questionnaire in Agora.

## 1.8 CHALLENGE FOR CREDIT

There is no challenge for credit for this course.

## 1.9 CONTENT APPROVAL, VETTING AND MAINTENANCE

The policy centre is responsible for approving the course content. If the course is to be shared with an external audience, the policy centre is responsible for vetting the content as necessary. On an annual basis, the policy centre is required to confirm that the content of the course remains valid as well as provide any necessary updates.



## PART II: COURSE DELIVERY

### 2.1 COURSE DELIVERY INSTRUCTIONS

The following delivery instructions apply to this course:

- Select course candidates and send joining instructions with pre-course requirement to each candidate.
- Send joining instructions 28 days or more prior to the course.
- Joining instructions should include that candidates are required to:
  - Be prepared for cold and inclement weather
  - Dress according to divisional policy
  - Bring personal protective equipment such as:
    - RCMP approved PFD (if not supplied)
    - Sunscreen, sunglasses, hat
    - Flashlight
    - Rope (three feet required to practice knot tying)
  - Bring the proper gear candidates will need on the course
  - Bring SVOP and MED A3 Certificates
  - Bring their SVOP and MED A3 manuals
- Arrange for and provide all necessary equipment and supplies for the outside workspace for demonstrations, practice and assessments.
- Ensure the boat is operational and in good working order.
- Plot the route and ensure you know where you will get your fuel, repairs etc.
- Fully exploit all types of conditions in the area.

#### **Prepare the Participant Material:**

- **Binder:** Additional course information and reference material should be collated in a binder with the binder contents 5 tabs which contains:
  1. Syllabus
  2. Rubric
  3. Commercial Vessel Guide latest version (TP 14070 – Available on the Transport Canada Marine Safety Web Site found at <http://www.tc.gc.ca/eng/marinesafety/tp-tp14070-menu-1648.htm>).
  4. PowerPoint Presentation with notes (if applicable)
  5. Reference material (if applicable)



**Prepare Instructor Materials:**

- **Binder:** Additional course information and reference material should be collated in a binder with the binder contents with 7 tabs which contains:
  1. Syllabus
  2. Rubric
  3. Commercial Vessel Guide latest version
  4. PowerPoint Presentation with notes.
  5. Boat Maintenance Manuals
  6. Manufacturers manuals for electronic equipment
  7. SVOP and MED A3 Manuals
  8. Lesson Plans





## 2.2 COURSE SYLLABUS

The following syllabus is included as a reference. Depending on the availability of facilitators and facilities and in order to meet other delivery objectives, the syllabus can be adapted by the course coordinator, as long as the duration of each session is respected.

Week 1	Day 1	Day 2	Day 3	Day 4
0800-1000	Introduction Module 1 – Review SVOP/MED A3	Module 2 GPS Plotter (cont'd)		Module 4 Practical Exercises and Scenarios (cont'd)
1000-1015	Break	Break		Break
1015-1200	Module 1 – Review SVOP/MED A3 Assessment (cont'd)	Module 2 GPS Plotter (cont'd) Assessment		Module 4 Practical Exercises and Scenarios (cont'd)
1200-1230	Lunch hour	Lunch hour		Lunch hour
1230-1415	Module 2 GPS Plotter (cont'd)	Module 3 - Radar	Module 4 Practical Exercises & Scenarios (cont'd)	Module 4 Practical Exercises and Scenarios (cont'd if required)
1415-1430	Break	Break	Break	Break
1430- 1600	Module 2 GPS Plotter (cont'd)	Module 3 Radar (cont'd) Assessment	Module 4 Practical Exercises and Scenarios	Assessment Course Evaluation
1600-1800			Module 4 Practical Exercises and Scenarios (cont'd)	
1800-1830			Dinner	
1830-1030			Module 4 Practical Exercises and Scenarios (night) (cont'd)	



## 2.3 MODULE OUTLINES

Introduction		
Lesson	Notes	Duration
<b>Course Overview</b>	<ol style="list-style-type: none"> <li>1. Begin the course by introducing yourself, and describing your expertise.</li> <li>2. Introduce the training team if applicable.</li> <li>3. Cover housekeeping and emergency procedures.</li> <li>4. Ask candidates to introduce themselves, describe their experience and any relevant experience they have.</li> <li>5. Refer to the Syllabus and outline the course.</li> <li>6. Cover the course objectives.</li> <li>7. Explain the purpose of the course.</li> <li>8. Cover the assessments.</li> <li>9. Walk through the contents of their binders.</li> <li>10. Encourage candidates to take notes, participate actively and to ask a lot of questions.</li> <li>11. Caution candidates by explaining that:                         <ul style="list-style-type: none"> <li>• PFDs are mandatory as per policy.</li> <li>• We are compliant with all aspects of the Canada Shipping Act-2001.</li> <li>• Boat operator/the instructor is in charge.</li> <li>• You are accountable for all your actions.</li> <li>• Be aware of your environment. You are in the public eye.</li> </ul> </li> </ol>	30 minutes



## MODULE 1 - Review SVOP/MED A3

<b>Course Title</b>	<b>Water Transport Electronic Navigation Course</b>
<b>Brief Description</b>	This module serves to provide candidates with a review of the SVOP/MED A3. Demonstrate the skills and knowledge gained from the Basic Water Transport Course (SVOP/MED A3).
<b>Objectives</b>	At the end of the module, candidates will be able to: <ol style="list-style-type: none"> <li>1. Determine if there is a risk of collision.</li> <li>2. Articulate the appropriate action to avoid a collision.</li> <li>3. Demonstrate a working knowledge of the Lateral and Cardinal Buoyage system.</li> <li>4. Articulate man-overboard procedures.</li> <li>5. Identify distress signals used in a marine environment.</li> <li>6. Explain cold water shock and survival techniques.</li> <li>7. Demonstrate their ability to tie knots and secure a vessel.</li> </ol>
<b>Instructional Strategies</b>	<ul style="list-style-type: none"> <li>• Lecture and presentation</li> <li>• Q&amp;A</li> <li>• Demonstration</li> <li>• Practice</li> </ul>
<b>List of Lessons</b>	The lessons are as follows: SVOP/MED A3 material: <ul style="list-style-type: none"> <li>• Collision Regulations</li> <li>• Lateral and Cardinal Buoyage systems</li> <li>• Man-overboard</li> <li>• Distress Signals</li> <li>• Cold Water Survival</li> <li>• Knots and lines</li> </ul>
<b>Estimated Duration</b>	The duration of the module is 195 minutes (3.25 hrs.) excluding a 15 minute break).
<b>Instructional Material</b>	<ul style="list-style-type: none"> <li>• Instructor Guide:                             <ul style="list-style-type: none"> <li>• Module 1</li> <li>• PowerPoint presentation and notes (optional)</li> </ul> </li> <li>• Video reviewing SVOP/MED A3 (if available)</li> </ul>





<b>MODULE 1 - Review SVOP/MED A3 (cont'd)</b>			
<b>Special Instructions / Note to Instructor</b>	<p>Review the SVOP/MED A3 subject areas noted. Use a PowerPoint presentation and/or video. Ask candidates questions from each topic to determine what they remember / know. Coach the candidates and answer questions to ensure they have the required knowledge by the end of the module.</p> <p>In preparation for the commencement of the course, the vessel must be sitting on the appropriate trailer attached to the vehicle ready for launching on Day 1 of the course.</p> <p>Every time you take candidates on the boat, ensure that candidates:</p> <ul style="list-style-type: none"> <li>• Complete the pre-trip inspection.</li> <li>• Conduct safety, weather and a tide briefing as appropriate.</li> <li>• Ensure that the RCMP Log Book is completed by the boat operators.</li> </ul>		
Lesson	Notes	Location	Duration
<b>Collision Regulations</b>	<ul style="list-style-type: none"> <li>• Review rules 5, 6, 7, 8, 19</li> </ul>	Classroom	45 min.
<b>Lateral and Cardinal Buoyage systems</b>	<ul style="list-style-type: none"> <li>• Up and downstream navigation principles by day and by night. <i>If a review of trailering is not required, spend 45 minutes on this topic.)</i></li> </ul>	Classroom or dock	20 min
<b>Man-overboard</b>	<ul style="list-style-type: none"> <li>• Review of man-overboard procedures</li> <li>• Apply the electronics needed</li> </ul>	Classroom or dock	20 min.
<b>Distress Signals</b>	<ul style="list-style-type: none"> <li>• Using Transport Canada materials, <a href="http://www.tc.gc.ca/eng/marinesafety/tp-tp14070-3583.htm#4">http://www.tc.gc.ca/eng/marinesafety/tp-tp14070-3583.htm#4</a> review Distress Alerting Equipment, Visual Signals, Signalling, Pyrotechnic Distress Signals (Flares), Safety Measures and Use, and Types of Flares.</li> <li>• Alternatively, review DVD on Distress Signals or Inert Type A,B,C,D Distress signals.</li> </ul>	Classroom or dock	20 min.
<b>Cold Water Survival</b> Reference - <i>Cold Shock</i> : <a href="http://www.tc.gc.ca/eng/marinesafety/tp-tp14070-">http://www.tc.gc.ca/eng/marinesaf</a>	<ul style="list-style-type: none"> <li>• Decision-making</li> <li>• How to recognize hyperthermia</li> <li>• Survival tactics</li> <li>• Help position</li> <li>• Re-boarding</li> </ul>	Classroom or dock	20 min.





<b>MODULE 1 - Review SVOP/MED A3 (cont'd)</b>			
<a href="#">3584.htm#3</a>			
<b>Trailing of Water Transport</b>	Review and demonstrate the following aspects of trailering and ask candidates to participate: <ul style="list-style-type: none"> <li>• Inspection</li> <li>• Maintenance</li> <li>• Braking Systems</li> <li>• <i>(If topic is not applicable, spend 45 min. on Lateral and Cardinal Buoyage Systems.)</i></li> </ul>	Dock	25 min.
<b>Knots and lines</b>	<ul style="list-style-type: none"> <li>• Securing the vessel</li> <li>• Clove hitch</li> <li>• Sheet bend</li> <li>• Bowline</li> <li>• Square knot/Reef knot</li> </ul>	Classroom or dock	25 min.
<b>Module Assessment</b>	<ul style="list-style-type: none"> <li>• Using the Rubric ensure each candidate meets the <i>Working Level</i> for the first objective: <i>Demonstrate the skills and knowledge gained from the Basic Water Transport Course (SVOP/MED A3).</i></li> </ul>	Classroom or dock	20 min.



## MODULE 2 - Basic Theory of Operation: GPS Plotter

<b>Course Title</b>	<b>Water Transport Electronic Navigation Course</b>
<b>Brief Description</b>	This module serves to provide candidates with a tour of the different menus of the display.
<b>Objectives</b>	<p>At the end of the module, candidates will be able to:</p> <ul style="list-style-type: none"> <li>• Explain the basic theory of GPS and navigation by GPS, including Way points, Tracks and Routes.</li> <li>• Demonstrate and explain the Menu functions and Displays of the GPS Plotter and continuously monitor vessel location and heading.</li> <li>• Demonstrate and explain the Menu functions and Set up of the Plotter.</li> <li>• Review Routes stored in the Route List of the GPS Plotter and explain Route functions.</li> <li>• Demonstrate the steps to create, save, name and amend Routes and Tracks.</li> <li>• Recognize which orientation the instrument is set to (Heads Up, North Up and Course Up).</li> </ul>
<b>Instructional Strategies</b>	<ul style="list-style-type: none"> <li>• Demonstration</li> <li>• Q&amp;A</li> <li>• Coaching</li> <li>• Practice exercise</li> <li>• Storytelling</li> <li>• Simulator (if available)</li> </ul>
<b>List of Lessons</b>	<p>The lessons are as follows:</p> <ul style="list-style-type: none"> <li>• Menu functions</li> <li>• Displays</li> <li>• Menu settings &amp; Setup</li> <li>• Navigation by GPS using Plotter</li> </ul>
<b>Estimated Duration</b>	The duration of the module is 390 minutes (6.5 hours which excludes a 15-minute break and lunch).
<b>Instructional Material</b>	<ul style="list-style-type: none"> <li>• Checklist</li> <li>• Participant Reference Binder and Instructor Guide for Module 2</li> </ul>



<b>MODULE 2 – Basic Theory of Operation: GPS Plotter (cont'd)</b>		
<b>Special Instructions</b>	Menu functions, displays and navigation can be taught in the classroom, dockside, on a simulator. The lesson, <i>Navigation by GPS using Plotter</i> should be done on the water.	
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
<b>Menu functions</b>	<ul style="list-style-type: none"> <li>• Provide an overview of each menu.</li> <li>• Cover the topics consistent with the unit you are using. Refer to the manufacturer's manual.</li> </ul>	60 min.
<b>Displays</b>	<ul style="list-style-type: none"> <li>• Ensure the following are covered under multifunction display:                             <ul style="list-style-type: none"> <li>• Set Up. Cover true, magnetic, or compass</li> <li>• Way points</li> <li>• Routes, Tracks</li> <li>• Course</li> </ul> </li> </ul>	60 min.
<b>Navigation system</b>	<ul style="list-style-type: none"> <li>• Demonstrate how to set a Way Point.</li> <li>• Demonstrate how to lay down a track and convert track into route.</li> <li>• Explain each of the course lines and the hazards.</li> <li>• Demonstrate the steps to create, save, name and amend safe routes</li> <li>• Demonstrate the Chart Plotter orientation for North, Course and Heads Up.</li> </ul>	100 min.
<b>Navigation by GPS using Plotter</b>	<ul style="list-style-type: none"> <li>• Provide different course lines to candidates and ask them to set way points.</li> <li>• For safe routes, ask candidates to: Create/amend/name/save/show/clear route.</li> <li>• Run the Route and coach the candidates in amending while navigating.</li> <li>• Navigate using North, Course and Heads Up.</li> </ul>	130 min.
<b>Module Assessment</b>	<ul style="list-style-type: none"> <li>• Using the Rubric, assess each candidate to ensure they can use:                             <ul style="list-style-type: none"> <li>• Set Up</li> <li>• Way Points</li> <li>• Routes</li> <li>• Navigation by day and night (if applicable)</li> <li>• Radar overlay screen</li> </ul> </li> <li>• Correct and coach as necessary.</li> </ul>	40 min.





## MODULE 3 - Radar

<b>Course Title</b>	<b>Water Transport Electronic Navigation Course</b>
<b>Brief Description</b>	This module will cover the operational use of marine radar.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Explain the basic theory of Radar, collision avoidance and navigation.</li> <li>• Demonstrate and explain the Menu functions (including course line), Set up and Displays of Radar including sea and rain clutter functions.</li> <li>• Apply Collision Regulations Rules pertaining to the operation in or near an area of restricted visibility.</li> <li>• Explain the Radar overlay mode and the button functions/controls in overlay.</li> <li>• Recognize which orientation the instrument is set to (Heads Up, North Up and Course Up) and apply the same orientation as the GPS Plotter.</li> <li>• Determine the risk of collision by interpreting targets and take the appropriate corrective action by:                         <ul style="list-style-type: none"> <li>• Ensuring the range scale is set appropriate to the situation.</li> <li>• Using the electronic bearing line onto the targets.</li> <li>• Adjusting the variable range marker onto the targets.</li> </ul> </li> </ul>
<b>Instructional Strategies</b>	<ul style="list-style-type: none"> <li>• Demonstration</li> <li>• Q&amp;A</li> <li>• Storytelling</li> <li>• Coaching</li> <li>• Practice exercise</li> <li>• Simulator (if available)</li> </ul>
<b>List of Lessons</b>	<p>The lessons are as follows:</p> <ul style="list-style-type: none"> <li>• Review basic theory of radar operation</li> <li>• Menu settings, Setup and adjusting the Display</li> <li>• Interpreting the Radar Display</li> <li>• Collision avoidance</li> </ul>





<b>MODULE 3 - Radar (cont'd)</b>		
<b>List of Lessons (cont'd)</b>	<ul style="list-style-type: none"> <li>• Use of Radar Overlay</li> <li>• Navigation by Radar</li> </ul>	
<b>Estimated Duration</b>	The duration of the module is 3.25 hours which excludes a 15-minute break).	
<b>Instructional Material</b>	<ul style="list-style-type: none"> <li>• Participant Reference Binder and Instructor Guide: Module 3</li> </ul>	
<b>Notes to instructor</b>	<ul style="list-style-type: none"> <li>• This module can be delivered in part in the classroom and/or in part by simulator but optimally on the water.</li> </ul>	
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
<b>Review basic theory of radar operation</b>	<ul style="list-style-type: none"> <li>• Demonstrate and explain the Menu functions (including course line), Set up and Displays of Radar including sea and rain clutter functions.</li> <li>• Provide an overview of each menu.</li> <li>• Cover the topics consistent with the unit you are using. Refer to the manufacturer's manual.</li> <li>• Radar controls</li> <li>• Tuning/weather adjustments</li> <li>• Radar Overlay demonstration</li> <li>• Explain the need for stand-by mode.</li> </ul>	15 min.
<b>Menu settings, Setup and adjusting the Display</b>	<ul style="list-style-type: none"> <li>• Explain heading and the hazards.</li> <li>• Demonstrate the radar orientation heads, north and course up.</li> <li>• Tuning (if applicable)</li> <li>• Gain</li> <li>• Weather and sea clutter adjustments</li> </ul>	15 min.
<b>Interpreting the Radar Display</b>	<ul style="list-style-type: none"> <li>• Compare visual targets such as:                             <ul style="list-style-type: none"> <li>• Other boats</li> <li>• Buoys</li> <li>• Coastal structures</li> <li>• Weather and sea</li> </ul> </li> </ul>	15 min.



<b>MODULE 3 - Radar (cont'd)</b>		
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
<b>Interpreting the Radar Display (cont'd)</b>	<ul style="list-style-type: none"> <li>• Range scale</li> <li>• Adjustment to gain</li> <li>• RACON</li> </ul>	
<b>Collision avoidance</b>	<ul style="list-style-type: none"> <li>• Simulate restricted visibility and ask candidates to apply Collision Regulations Rules pertaining to the operation in or near an area of restricted visibility.</li> <li>• Cover collision avoidance as it pertains to radar which includes:                             <ul style="list-style-type: none"> <li>• The different Collision Regulation rules related the conduct of vessels in any condition of visibility</li> <li>• Different collision situations</li> <li>• Collision proximity alarms</li> </ul> </li> <li>• Provide a scenario and ask candidates to: determine the risk of collision by interpreting targets and take the appropriate corrective action by:                             <ul style="list-style-type: none"> <li>• Ensuring the range scale is set appropriate to the situation.</li> <li>• Using the electronic bearing line onto the targets.</li> <li>• Adjusting the variable range marker onto the targets.</li> </ul> </li> </ul>	25 min.
<b>Use of Radar Overlay (if applicable)</b>	<ul style="list-style-type: none"> <li>• Explain the importance of aligning the GPS Plotter to Radar Overlay (Heads, Course, and North up).</li> </ul>	20 min.
<b>Navigation by Radar</b>	<ul style="list-style-type: none"> <li>• Take a short run using Radar alone and explain the Radar picture.</li> <li>• Demonstrate operational use of radar while underway.</li> <li>• Discuss identifying and interdicting targets.</li> <li>• Set the orientation of the instrument to (Heads Up, North Up and Course Up) and ask candidate to apply the same orientation as the</li> </ul>	75 min.



<b>MODULE 3 - Radar (cont'd)</b>		
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
	<p>GPS Plotter</p> <ul style="list-style-type: none"> <li>• For various situations such as (1) for a head-on or crossing situation, (2) leaving the harbour transiting past lateral buoys, (3) steering around obstructions, ask candidates to:                             <ul style="list-style-type: none"> <li>• Determine if risk of collision exists</li> <li>• Verify target</li> <li>• Determine the action to avoid a collision</li> <li>• Follow-through</li> </ul> </li> </ul> <p>Navigate using North, Course and Heads Up.</p>	
<b>Method of Assessment</b>	<p>Using the rubric:</p> <ol style="list-style-type: none"> <li>1. Assess each candidate to ensure they can:                             <ul style="list-style-type: none"> <li>• Use Set Up</li> <li>• Use Navigation by day and night (if applicable)</li> <li>• Use Radar overlay screen and interpret the radar screen.</li> </ul> </li> <li>2. Ask candidates to explain the basic theory of Radar, collision avoidance and navigation.</li> <li>3. Ask candidates to explain the Radar overlay mode and the button functions/controls in overlay.</li> <li>4. Ask candidates to demonstrate their ability to use radar functions for different types of weather and sea conditions and to react appropriately.</li> <li>5. Ask candidates to successfully complete a short run using radar alone.</li> </ol>	30 min.





## MODULE 4 - Practical Activities and Policing Scenarios

<b>Course Title</b>	<b>Water Transport Electronic Navigation Course</b>
<b>Brief Description</b>	This module will provide candidates with an opportunity to apply all that they have learned about electronic navigation systems to police operations.
<b>Objectives</b>	At the end of the module, candidates will be able to: <ul style="list-style-type: none"> <li>• Apply electronic navigation skills to police related scenarios successfully.</li> </ul>
<b>Instructional Strategies</b>	<ul style="list-style-type: none"> <li>• Demonstration</li> <li>• Coaching</li> <li>• Storytelling</li> <li>• Scenario</li> <li>• Simulator (if available)</li> </ul>
<b>List of Lessons</b>	The lessons are as follows: <ul style="list-style-type: none"> <li>• Scenario 1: Man overboard</li> <li>• Scenario 2: Mayday</li> <li>• Scenario 3: Pilotage/Navigation</li> <li>• Scenario 4: Pilotage/Navigation</li> </ul>
<b>Estimated Duration</b>	The duration of the module is 9.75 hours which includes breaks and a meal.
<b>Instructional Material</b>	Rubric
<b>Special Instructions / Note to Instructor</b>	The purpose of the scenarios is for candidates to practice and demonstrate all the skills taught in this course and to apply those skills to policing. Set up the scenarios using the notes below. Scenarios can be modified to better suit the environment and type of enforcement typically conducted in your region. If possible, conduct some of the scenarios at night.





<b>MODULE 4 – Practical Activities and Policing Scenarios (cont'd)</b>		
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
<b>Set up the scenarios</b>	<ol style="list-style-type: none"> <li>1. Tell candidates that they need to go and take a statement from a witness. They will be gone for 8 hours.</li> <li>2. Ensure that the candidates do the following:</li> <li>3. Prepare a passage plan (i.e. development of the route, set up equipment)                             <ul style="list-style-type: none"> <li>• Weather</li> <li>• Distance</li> <li>• Chart/Tide book</li> <li>• Sailing directions</li> <li>• Appropriate fuel and food stops &amp; locations</li> <li>• Day/night capabilities (if applicable)</li> </ul> </li> <li>4. Follow route and apply                             <ul style="list-style-type: none"> <li>• collision regulations</li> <li>• Safe speed</li> <li>• Safe waters</li> <li>• Monitor radios, routes</li> </ul> </li> </ol>	
<i>Scenario 1</i>	<ol style="list-style-type: none"> <li>5. Part way through the scenario, create a man over-board scenario, observe their response and provide feedback.</li> <li>6. Following the man-over-board procedure, return man-over-board to a dock.</li> <li>7. Follow previous plan, observe candidate, coach and provide feedback.</li> </ol>	
<i>Scenario 2</i>	<ol style="list-style-type: none"> <li>8. Simulate a call on radio and a need to respond to a mayday.</li> <li>9. Assess candidate's ability to re-plot and respond to the call which includes the skills described in #3 above.</li> <li>10. Replot and return to the original plan</li> <li>11. Observing candidate, coach and provide feedback.</li> </ol>	
<i>Scenario 3</i>	<p><b>Option A</b></p> <ul style="list-style-type: none"> <li>• Take the statement from a witness.</li> </ul>	



<b>MODULE 4 – Practical Activities and Policing Scenarios (cont'd)</b>		
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
	<ul style="list-style-type: none"> <li>• Follow your plan home.                             <ul style="list-style-type: none"> <li>• Identify buoys and markers at night</li> <li>• Alter course for other opposing vessels as required in sufficient time to prevent a collision.</li> <li>• Use radar plotting techniques to calculate closest point of approach and the appropriate action to avoid in accordance with the Collision Regulations.</li> </ul> </li> </ul> <p><b>Option B</b></p> <ul style="list-style-type: none"> <li>• Conduct a transit of a river where Buoys/ Ranges are in place that requires Chartplotter and Radar to determine their locations and confirm safe passage. The entire course should be charted and have navigational aids requiring all electronics plus paper charts to conduct a safe passage.</li> </ul>	
<b>Scenario 4</b>	<ul style="list-style-type: none"> <li>• While enroute home, receive call of suspicious males at the local marina where reported thefts from and of vessels have been high.</li> <li>• Adjust course lines and transit to marina.</li> <li>• Enter marina and manoeuvre between the docks and jetties practicing confined space movements.</li> <li>• Collision avoidance practice as required within the marina using identified targets on radar.</li> <li>• Dock and secure the vessel. Conduct short foot patrol and then return back to the boat.</li> <li>• Re plot course lines towards home then depart marina back home.</li> </ul>	



<b>MODULE 4 – Practical Activities and Policing Scenarios (cont'd)</b>		
<b>Lesson</b>	<b>Notes</b>	<b>Duration</b>
<b>Method of Assessment</b>	Using the rubric, assess each candidate to ensure they can: <ol style="list-style-type: none"> <li>1. Demonstrate ability to navigate with the assisted use of GPS and plotter on board appropriate to the prevailing circumstances and conditions.</li> <li>2. Apply electronic navigation skills to police related scenarios successfully.</li> <li>3. Demonstrate ability to navigate with the assisted use of GPS and plotter on board appropriate to the prevailing circumstances and conditions.</li> <li>4. Articulate limitations of radar and GPS plotter within confines of marinas and jetties.</li> </ol>	

## 2.4 FACILITATOR SELECTION CRITERIA

Facilitators for this course must:

- Hold MEDA3 & SVOP qualifications (or higher) and have extensive experience using Radar and GPS (including Chart Plotters).
- Hold a training document showing proof of training in radar and GPS systems.
- Have training in instructional techniques or experience as an instructor.

The lead instructor must have the Limited Master Ticket. Other facilitators must be listed on the approved list from Transport Canada.

## 2.5 TRAINING MATERIALS

The following training materials are required for this course:

- SVOP Manual and video.
- MED A3 Manual.
- Small Commercial Vessel Safety Guide (TP 14070 latest version).
- PowerPoint Presentation with notes.
- Boat Maintenance Manuals.
- Manufacturer manuals for electronic equipment.





## 2.6 ASSESSMENT TOOL

RUBRIC – NAME \_\_\_\_\_

Objective	Unsatisfactory	Needs Supervision	Meets the Working Level
<i>Behavioural objectives expected to be demonstrated by the candidates</i>	<i>Tasks done inconsistently, incompletely.</i>	<i>Tasks done inconsistently, without confidence</i>	<i>Tasks done correctly</i>
1. Demonstrate the skills and knowledge gained from the Basic Water Transport Course (SVOP/MED A3).	<ul style="list-style-type: none"> <li><input type="checkbox"/> Not able to determine if there is a risk of collision.</li> <li><input type="checkbox"/> Cannot articulate the appropriate action to avoid a collision.</li> <li><input type="checkbox"/> Little knowledge of the Lateral and Cardinal Buoyage system</li> <li><input type="checkbox"/> N/A</li> <li><input type="checkbox"/> Unable to identify distress signals used in a marine environment.</li> <li><input type="checkbox"/> Cannot explain cold water shock and survival techniques.</li> <li><input type="checkbox"/> Little ability to tie knots and secure a vessel.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Sometimes able to determine if there is a risk of collision.</li> <li><input type="checkbox"/> Sometimes able to articulate the appropriate action to avoid a collision.</li> <li><input type="checkbox"/> Limited knowledge of the Lateral and Cardinal Buoyage system</li> <li><input type="checkbox"/> Cannot articulate man-overboard procedures.</li> <li><input type="checkbox"/> Able to identify some distress signals used in a marine environment.</li> <li><input type="checkbox"/> Limited ability to explain cold water shock and survival techniques.</li> <li><input type="checkbox"/> Limited ability to tie knots and secure a vessel.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Consistently able to determine if there is a risk of collision.</li> <li><input type="checkbox"/> Consistently able to articulate the appropriate action to avoid a collision.</li> <li><input type="checkbox"/> Working knowledge of the Lateral and Cardinal Buoyage system</li> <li><input type="checkbox"/> Can articulate man-overboard procedures.</li> <li><input type="checkbox"/> Able to identify any distress signals used in a marine environment.</li> <li><input type="checkbox"/> Can explain cold water shock and survival techniques.</li> <li><input type="checkbox"/> Able to tie knots and secure a vessel.</li> </ul>





<b>Objective</b>	<b>Unsatisfactory</b>	<b>Needs Supervision</b>	<b>Meets the Working Level</b>
<i>Behavioural objectives expected to be demonstrated by the candidates</i>	<i>Tasks done inconsistently, incompletely.</i>	<i>Tasks done inconsistently, without confidence</i>	<i>Tasks done correctly</i>
<p>2. Demonstrate ability to navigate with the use of GPS and plotter on board appropriate to the prevailing circumstances and conditions.</p> <p>3. Apply electronic navigation skills to police related scenarios successfully.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Rarely monitors vessel location and heading.</li> <li><input type="checkbox"/> Cannot demonstrate how to operate the Menu functions of the GPS Plotter</li> <li><input type="checkbox"/> Cannot Set up Plotter.</li> <li><input type="checkbox"/> Cannot review Route functions.</li> <li><input type="checkbox"/> Cannot create, save, name and amend Routes.</li> <li><input type="checkbox"/> Cannot recognize which orientation the instrument is set to (Heads Up, North Up and Course Up).</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Sporadically monitors vessel location and heading.</li> <li><input type="checkbox"/> Sporadically demonstrates how to operate the Menu functions of the GPS Plotter</li> <li><input type="checkbox"/> Partially able to set up the Plotter.</li> <li><input type="checkbox"/> Inconsistently can review Route functions.</li> <li><input type="checkbox"/> Partially can demonstrate the steps to create, save, name and amend Routes</li> <li><input type="checkbox"/> Intermittently recognizes which orientation the instrument is set to (Heads Up, North Up and Course Up).</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Continuously monitors vessel location and heading.</li> <li><input type="checkbox"/> Consistently demonstrates how to operate the Menu functions of the GPS Plotter</li> <li><input type="checkbox"/> Demonstrate and explain the Set up of the Plotter.</li> <li><input type="checkbox"/> Can review Route functions.</li> <li><input type="checkbox"/> Demonstrates the steps to create, save, name and amend Routes.</li> <li><input type="checkbox"/> Recognize which orientation the instrument is set to (Heads Up, North Up and Course Up).</li> </ul>



<b>Objective</b>	<b>Unsatisfactory</b>	<b>Needs Supervision</b>	<b>Meets the Working Level</b>
<i>Behavioural objectives expected to be demonstrated by the candidates</i>	<i>Tasks done inconsistently, incompletely.</i>	<i>Tasks done inconsistently, without confidence</i>	<i>Tasks done correctly</i>
<p>4. Demonstrate ability to navigate with the assisted use of radar on board appropriate to the prevailing circumstances and conditions.</p> <p>5. Apply electronic navigation skills to police related scenarios successfully.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Unable to demonstrate the Menu functions (including course line), Set up and Displays of Radar including sea and rain clutter functions.</li> <li><input type="checkbox"/> Inability to apply Collision Regulations Rules pertaining to the operation in or near an area of restricted visibility.</li> <li><input type="checkbox"/> Cannot recognize which orientation the instrument is set to (Heads Up, North Up and Course Up) and apply the same orientation as the GPS Plotter</li> <li><input type="checkbox"/> Did not determine the risk of collision through the interpretation and targets</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Randomly demonstrates the Menu functions (including course line), Set up and Displays of Radar including sea and rain clutter functions.</li> <li><input type="checkbox"/> Inconsistently applies Collision Regulations Rules pertaining to the operation in or near an area of restricted visibility.</li> <li><input type="checkbox"/> Intermittently recognizes which orientation the instrument is set to (Heads Up, North Up and Course Up) and apply the same orientation as the GPS Plotter</li> <li><input type="checkbox"/> Determined the risk of collision through the interpretation and targets but did not take the appropriate corrective action</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Demonstrate the Menu functions (including course line), Set up and Displays of Radar including sea and rain clutter functions.</li> <li><input type="checkbox"/> Applies Collision Regulations Rules pertaining to the operation in or near an area of restricted visibility.</li> <li><input type="checkbox"/> Recognizes which orientation the instrument is set to (Heads Up, North Up and Course Up) and apply the same orientation as the GPS Plotter</li> <li><input type="checkbox"/> Determines the risk of collision by interpreting targets and takes the appropriate corrective action.</li> </ul>