



MARITIME SIMULATION AND RESOURCE CENTRE

Corporation of Lower St. Lawrence Pilots

<http://www.sim-pilot.com/en>

AZIMUTHING PROPULSION SYSTEMS FOR PILOTS

(AZ-010-014-ENG)

Objectives:	Enable navigators to become acquainted with these modes of propulsion and acquire a good grasp of both the limitations and the advantages of all these technologies.
Duration:	14 hours (2 days)
Schedule:	Begins at 8:30 <i>This schedule may be altered depending on the group and/or certain constraints.</i>
Teaching strategies used:	Basically a hands-on approach. Brief theoretical explanations and exercises on the Navigation Simulator.
Training activities:	Theory followed by simulation exercises. Ships used: see list at the end of the syllabus.
Notes about the exercises:	Crash stops, steering effects of pods, undocking without external factors, undocking with current, undocking with current and wind, docking without external factors, docking with current, docking with current and wind, undocking and docking with limited manoeuvring space. The exercises become increasingly difficult and are followed by a short self-evaluation period (with assistance from the trainer, as needed).

AZIMUTHING PROPULSION SYSTEMS FOR PILOTS (APS)

(AZ-010-014-ENG)

Proposed schedule and brief description of training activities

Day one 8:30 to 11:30 a.m.
Welcome/Registration
Tour of the facilities and the bridge(s) that will be used by the participants. If the main full mission bridge is used, participants will take turns at the various controls to make the most of their training time, but under normal circumstances, three bridges, fully independent from each others, are offered for individual training. The number of exercises is tripled in such a manner.
Introduction and setting the schedule
Delivery of teaching material, presentation of course plan
Familiarization with the bridge(s) and navigation instruments
PowerPoint presentation: <ul style="list-style-type: none">• General comments on various APS (Azimuthing Propulsion Systems)• Principles/Concept/Limitations/Advantages of APS
Discussion on «Conning »... Practice with Z-Drive tugs in Halifax harbour. The purpose is to get acquainted with this type of propulsion system and to get familiar with the console and navigation equipment available for all exercises. Consequences of mistakes when the pods are not used appropriately
Undocking and docking with a coastal tanker fitted with APP.
Analysis and input

Day one

12:30 to 3:30 p.m.

Exercises:

The Centre has at its disposal an impressive number of exercises designed to cover the various navigation conditions encountered on the Saint-Lawrence River.

Other geographical locations normally visited by liners are immediately available, including:

The Port of Montreal

The Saguenay Fjord

The Port of Vancouver

The Gulf Islands (West Coast)

The Port of Halifax

New York City

The Port of St. John's, Newfoundland

And more

The trainer will choose from the exercises according to the groups and each individual's specific needs.

The trainer proposes exercises but the participants are free (and encouraged) to request special conditions for their exercises.

Analysis and input

Day two

8:30 to 11:30 a.m.

Power Point presentation on ship consoles

Crash stop:

- “APS” way
- Indirect way (two ways)
- Full ahead to full astern

Most efficient way to stop the ship when lateral room is available

Comparison between these methods

Full astern Steering effect of pods followed by a demonstration.

Exercises: as proposed by the trainer or according to the particular requests of participants

Exercise (**optional**) with pods set at 25° to 45° depending on meteorological conditions.
E.g.: port, red 35° and starboard, green 35°

Some of our exercises are accurate reproductions of manoeuvres performed by certain liners in the Port of Quebec. Participants will have the opportunity to execute these manoeuvres.

Analysis and input

12:30 to 3:30 p.m.

Exercises proposed by the trainer or requested by participants

Some of our exercises are accurate reproductions of manoeuvres performed by certain liners in the Port of Quebec. Participants will have the opportunity to execute these manoeuvres.

Analysis and course evaluation

NB : The course schedule outlines the main topics covered, but the order of execution can vary to suit the needs of each participant so that full advantage is taken of the simulations.

SHIPS USED DURING SIMULATION EXERCICES

Note. Some were developed at the MRSC for specific purposes.

- Z-Drive tugs (No reverse).
- Coastal tanker equipped with two pods. Pods orientation unlimited, ahead and astern power available, two bow thrusters available.
- Ferryboat equipped with two pods, only ahead power available, two bow thrusters are available.
- Ferryboat equipped with one pod at each end, no reverse and no thrusters.
- Large cruise ship(s) equipped with two pods, pod's orientation unlimited, ahead and astern power available, up to three bow thrusters can be used.

NB: Ship's characteristics are available on the tablet situated in each bridge.