

## Familiarization Exercise



## Train the Trainer Inland Navigation Simulator

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## Familiarization

Successful in familiarizing trainees with the simulator is reliant on the instructor and simulator operator working in close communication with each other. During a course's planning phase, they must jointly discuss the entry requirements of course participants before deciding on the nature and extent of the exercises needed to familiarize them with the simulator.

The following aspects in particular should be observed:

- 1 Trainees' entry requirements such as:
  - > The possession of a sailing licence or other proof of a similar qualification
  - > •Experience of sailing a vessel in real-life or in a simulator
  - > Experience in dealing with wheelhouse equipment
  - > •Experience with individual types of vessels (push boat, tankers, boats with one or two engines, different types of propulsion system ...)
  - > Experience with other types of simulators

The entry requirements can be checked via a detailed questionnaire, enabling an individual qualification and experience profile to be created for each trainee.

- 2 Information about the features and capabilities of the simulator used, such as
  - > Type of simulator
  - > Wheelhouse equipment and its function or operation
  - > Information important to navigation
  - > The capability to simulate specific effects (rain, snow, currents, shallow water, etc.) via simulation algorithms

Before the course starts, the trainees can familiarize themselves with the wheelhouse equipment. A brief description of the various devices and their arrangement in the wheelhouse (with appropriate pictures) should therefore be handed out.

- 3 Detailed information (clearly worded and defined) about the sailing exercise, helping the participants to feel at home in the simulator. These include:
  - > Type of vessel
  - > Vessel properties (length, width, number of engines, propulsion system, etc.)
  - > Weather conditions (rain, snow, fog, sun, wind speed and wind direction, etc.)
  - > Water conditions (current direction and speed, water level, wave height, etc.)
  - > Geographical area the exercise takes place in, including any special circumstances
  - > Season, day and time

Information on the vessel's key data can also easily be provided in writing in the form of a "Vessels details card". Figure 1 shows such a card on which all the essential information of the vessel (length, width, type of thruster, number of engines, type of propulsion system, radar antenna position, etc.) are clearly detailed.



Type of vessel:	Tanker	Propulsion system:	Conventional shafting
Load:	unloaded	No of engines/rudders:	2/2
Length:	110 m	Thruster(s):	Bow thruster
Width:	11,40 m	Type of thruster:	crosswise
Max. draught:	1,00 m	Max. speed:	24 km/h

Figure 1. Example of a “set card” with all relevant information about a tanker

Dealing with a vessel in the simulator can be significantly easier when trainees are given clearly defined tasks in which they can gradually get to know and evaluate the simulated vessel’s behaviour. The level of difficulty of these tasks must match trainees’ knowledge and experience. It should be remembered that the intention of the Familiarization Exercise is to give trainees a good and safe feeling for the simulated vessel’s behaviour.

The following list gives an overview of possible tasks. Their difficulty varies dependent on environmental conditions. This will be discussed later:

- > Steering the vessel straight (Down/up the river)
- > Turning the vessel, downstream or upstream
- > Steering at different speeds, stopping the vessel
- > Steering with different types of control modes
- > Entering/leaving a port
- > Turning to / moving off
- > Crossing, meeting and overtaking vessels with the help of VHF communication

It is a good idea for the trainer to give his commands for a specific manoeuvre via VHF communication. The trainer will get an impression of the execution of the manoeuvre at the instructor/operator workstation. If any problems are encountered, the trainer (and/or the operator) should be able to help, explaining any differences between the trainee’s expectations and the actual behaviour of the simulated ship as a result of trainee action. At this stage of familiarization it is very important to convey to trainees a positive feeling with regard to simulator use and to successfully counteract any internal resistance that simulator training is not the same as operating a vessel in real life.

As regards the environment, simple, normal conditions should typically be chosen during familiarization (good visibility, good weather, little or no boat traffic, normal water level, low current speed, etc.). However, at the end of the familiarization period it makes sense to briefly show trainees the impact of other (adverse) environmental conditions (e.g. rain, snow) to avoid incorrect responses to surprise effects. Adverse environmental conditions should only be selected here when trainees' entry requirements permit such and / or when the planned training tasks might require such.

To gain clarity on familiarization requirements and contents, the instructor should plan the individual tasks for the trainees in advance, specifying their details in a written worksheet in close cooperation with the operator. An example of such terms of reference is shown in Table 1. For the trainees, a familiarization checklist can be prepared. This will list the individual tasks (e.g. manual steering control, time control, path control, pilot steering) and trainees can tick them off after successful execution.

Table 1. Instructor worksheet for a familiarization exercise:

Instructor worksheet (familiarization exercise No. 1)				
<b>Objective:</b>	Familiarization with simulator and main wheelhouse equipment			
<b>Exercise Area:</b>	For example: River Rhine, km 775-785			
<b>Exercise No. 1</b>	<b>Revision No.</b> 2015-1	<b>Duration:</b> 1 Hour	<b>Issued by:</b> Instructor (name)	<b>Issue Date:</b> 30/07/2015
Start Information			Own Ship	
Date:	10.08.2015	Type of vessel:	tanker	
		Set card No:	110 m tanker, loaded	
		Start Position:	778 km	
Time:	11 am	Heading:	down the river	
Visibility:	good (> 3000 m)	Speed:	1 km/h	
Precipitation:	none	Working channels:	15 internal & 10 external	
Area:	Duisburg Ruhrort	Communication:	VHF	
Tidal condition:	none	Charts & passage plan:	ECDIS	
Special condition:	none	Checklist:	none	
Special information:	none	Publications:	none	
Special instructions:	none	Engine status:	working	
Wind		Current		Sea State
Direction: SW		Direction: follows the river	Direction: none	
Speed: 5 km/h		Speed: 6,5 km/h	Speed: none	
<b>The task</b>				
<ul style="list-style-type: none"> <li>- Familiarize yourself with the vessel's characteristics.</li> <li>- Proceed with the given heading.</li> <li>- Take the vessel straight down the river.</li> <li>- Try out hand steering and familiarize yourself with different steering modes.</li> <li>- Try out the main engine and thrusters.</li> <li>- Familiarize yourself with all wheelhouse equipment.</li> <li>- Familiarize yourself with the virtual world.</li> <li>- Tick off the familiarization checklist.</li> <li>- Any doubts should be dealt with in an open-minded manner.</li> </ul>				
<b>Checks</b>				
<ul style="list-style-type: none"> <li>- familiarization with all wheelhouse equipment</li> <li>- familiarization with the simulator and the various buttons</li> <li>- familiarization with the virtual world – the trainee should have experienced elements in the virtual world and thus enjoyed 'tele-presence'.</li> <li>- Instructor should be able to start, stop &amp; pause the scenario.</li> </ul>				

Finally, nautical and especially educational experience is necessary when informing trainees about the essential aspects of handling a vessel in the simulator without overtaxing them.

Last but not least, it is important to give trainees the opportunity to ask any questions arising from the familiarization, and to allow enough time to answer them. Likewise, trainees should be given the opportunity to express an opinion on the familiarization phase and to share their feelings. This helps them to familiarize themselves with the simulator, while at the same time allowing the instructor to learn more about how the trainees perceive the exercise. Critical remarks about the simulator application can be countered at an early stage and, if necessary, the familiarization period can be extended. A good feeling for simulator handling and use is very important to achieve a high level of acceptance for the upcoming training tasks. A suitably long period must therefore be allowed for the familiarization phase.

In summary, the familiarization phase should be carried out in three steps:

- > 1. The instructor / operator explains the main aspects of the simulator used (construction, image generation, radar data processing ...) and discusses the possibilities to intervene in the simulated situation as an operator.
- > 2. The instructor / operator explains the essential (relevant for the training task) equipment in the simulator's wheelhouse.
- > 3. The instructor / operator explains the set familiarization task by means of a "Set card" for the vessel and a familiarization worksheet created jointly by the instructor and the operator.
- > Observance of and compliance with the recommendations and instructions discussed above increases participants' simulator usage acceptance. Successful familiarization is always a good basis for successful training, as it greatly supports and facilitates the subsequent training tasks.