



### Purpose:

The e-learning modules library is designed for theoretical training of navigators in accordance with Chapter II of the STCW Convention in the part concerning shiphandling.

### What is an e-learning library?

The e-learning library consists of several e-learning modules. E-learning module is the electronic textbook on one or more sections. Theoretical materials can be accompanied by drawings, diagrams, photos, animations and videos. There is a test for assessment of knowledge gained at the end of each section.

### Consist of E-learning library «Shiphandling basics»:

- Ship maneuverability
- Shiphandling in heavy weather
- Shiphandling at anchoring operations
- Shiphandling at mooring operations
- Shiphandling in shallow and narrow water
- Shiphandling in ice
- Shiphandling when getting off the ground
- Shiphandling in tug operations
- Loading operations
- Features of tanker's operations
- Maritime signaling and communication
- Shiphandling in emergency situations
- Shiphandling in rescue operations
- Stability of the ship

### Target groups

Deck - Management  
Deck - Operational

### Ship types

Generic



## Regulations

Tables A-II/1, A-II/2, A-II/3 STCW Code



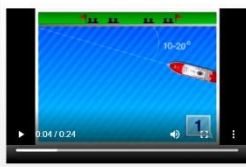
**SHIPHANDLING AT MOORING OPERATIONS**  
Version: 05/2022

Section 5: Self-mooring the vessel

**APPROACH TO THE BERTH BY STARBOARD SIDE WITHOUT DROPPING ANCHOR IN CALM WEATHER.**

When performing this maneuver, one should remember that, when running the engine astern, the stern will go away from the berth, and the bow towards the berth. Therefore, it is necessary to approach the berth at a sharper angle ( $10 - 20^\circ$ ), after giving the head mooring lines; the rudder should be put hard to port and the engine must go ahead for a short period so that the stern comes closer to the berth.

As soon as the aft lines are given, the engine must run astern to stop the headway, then the ship will stop parallel to the berth line, after which she is pulled up and fixed.



Approach to the berth by starboard side without dropping anchor in calm weather.  
(1)

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**SHIPHANDLING AT ANCHORING OPERATIONS**  
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Section 10: Watchkeeping at anchor

**Yawing reduction**

If the ship lying at one anchor is caught by an unexpected storm wind, then as a result of increased pitching and yawing, the dynamic loads on the anchor and anchor chain will increase. At significant yawing, an additionally lowered anchor chain may not be enough, and the second anchor should be dropped to prevent drift. There are two ways to reduce yawing. One of them is that in the middle stage of the yaw, the second anchor is dropped and kept on a short cable.

The resistance of the anchor as it drags along the ground reduces the deviation of the ship from its center position. In another method, the second anchor is given when the bow of the vessel reaches its greatest deflection, then both cables are lowered and the ship lies at two anchors. Sometimes it is more advantageous to drop the anchor with the ropes spread at an angle of  $20 - 30^\circ$  as described below.



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**SHIPHANDLING IN HEAVY WEATHER**  
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Section 4: Rule of tropical cyclone avoidance

Let's consider the rules of passing the tropical cyclone in the Northern Hemisphere, in the Southern Hemisphere the picture has a mirror image.

Case 2. If the ship is in the most dangerous (right front) quarter of a tropical cyclone and cannot cross the path of the cyclone in advance, then it is necessary to move away from the center of the cyclone, if possible, bringing the wind to the forward course angles of the starboard side (option 'a'), if it is not possible to move away from the center of a tropical cyclone for a considerable distance, then the ship must keep its bow against the wave, with engine in operation (option 'b').

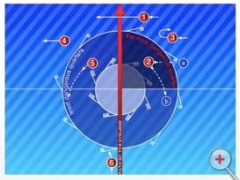


Diagram of ship's maneuvering in the zone of a tropical cyclone in the Northern Hemisphere

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**SHIPHANDLING IN ICE**  
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Section 7: Icebreaker Operation when Escorting Ships in Ice

**Icebreaker Speed, Breaking Ice.**

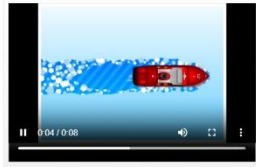
A place in the convoy is assigned with regard to the ship dimensions, strength of her hull, engine output, manoeuvring capabilities, state of loading technical condition and specific ice situation.

Large vessels whose beam is only slightly smaller than that of the icebreaker are as a rule set first after the icebreaker.

Placed at the end are ships which have powerful engines and are commanded by experienced captains, since they have to proceed in the most adverse conditions.

In the heavy ice, a ship with a weak hull is preceded by a ship with a strong hull and powerful propulsion plant, which smoothes out the channel behind the icebreaker and clears it of the remaining large ice floes.

An ordinary convoy consists of one icebreaker and ships which follow it. The number of ships depends on the length of the clear-of-ice channel formed behind the icebreaker.



Scheme of the channel behind the icebreaker in consolidated ice.

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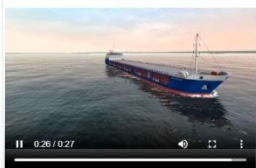
**SHIP MANEUVERABILITY**  
Version: 05/2022

Section 3: Ships maneuvering characteristics

**Inertia characteristics of the vessel**

In various situations it becomes necessary to change the speed of the vessel (anchoring, passing by, etc.). It is caused by a change in the operating conditions of the main engine or propellers, after which the ship begins to make uneven motion.

Ship's deceleration performance is the required path and time to perform a maneuver associated with uneven motion.




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**SHIPHANDLING AT ANCHORING OPERATIONS**  
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Test tasks



COMMENT

Test of question:  
After what period shall anchor chains be submitted for inspection by the classification society?

Choose the correct answer:

- In five years.
- In four years.
- In three years.
- In two years.

Attempts: 1

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