

## Purpose:

The e-learning module is designed for theoretical training of ratings as able seafarer deck in accordance with Chapter II of the STCW Convention in the part concerning of towing operation.

The ELM is included in the "*Able seaman*" library.

## What is an e-learning module?

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.

## Contents:

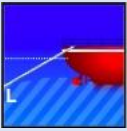
- Towing methods. Towing to the wake. Lagged towing. Push towing
- Preparation of the crew and non self-propelled objects for towing
- Methods for feeding and fastening the towing cable
- Features of ship handling during towing
- Elements of the towing line
- Ice towing
- Use of ship's devices when towing. Safety engineering

## Target groups

Deck - Support

## Ship types

Generic



## Regulations

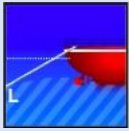
### Table A-II/5 STCW Code

Competence:

Contribute to berthing, anchoring and other mooring operations

Knowledge, understanding  
and proficiency:

Working knowledge of the mooring system and related procedures...



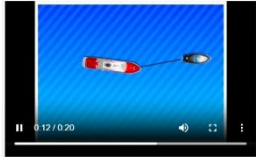
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Section 8. Elements of the towing line

The controllability of the towed object must be satisfactory, and its yaw must be kept to a minimum.

Full-scale test and towing experience show that if the length of the towing line is equal to three lengths of the towing ship, then the longitudinal component in the wake has such a small effect that it can be neglected.

At the length of the towing line less than  $2L$ , the impact of the wake becomes quite noticeable.



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Section 2. Preparation of the crew and non self-propelled objects for towing

**Actions of the crew in an emergency situation.**

If the towing convoy poses an immediate danger to navigation, offshore structures or the coast at breaking the towline, or for any other reason, the master of the towing vessel is obliged, in accordance with SOLAS Regulation V/2, to transmit information about this by all means at his disposal to the nearest ships, as well as to the competent authorities at the first point on the coast with which he can communicate. In all cases, measures to resume towing the towing convoy if it has broken away should be carried out in accordance with good maritime practice, taking into account seasonal weather conditions and the area of operation.

To reduce the risk of pollution, the amount of oil products on the towed object should be limited by the safety requirements of the towed object and/or the towing ship and their normal operation, provided that the removal of oil products from the towed object does not create a risk to the environment.



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Section 3. Methods for feeding and fastening the towing cable


**Methods of towline securing.**

On merchant ships, the choice of the method of securing towlines is determined depending on the size and characteristics of the ship's construction, the availability of equipment for securing towlines, and in case of forced towing, also on weather conditions. In all cases, reliable securing of the rope must be ensured and the possibility of changing the length of the towing line and its immediate release must be provided.

Securing of the towline on the towed ship.

We will assume that towing is carried out bow first, as it happens in most cases. The yaw of the towed ship is more influenced by the point of securing of the towing line. The most favorable place for its securing is the stem.

The easiest way is to secure the towing line directly to the bit.



Securing of the towline to the bit:

- 1 – anchor shackle;
- 2 – towline;
- 3 – one and half fake;
- 4 – final securing.

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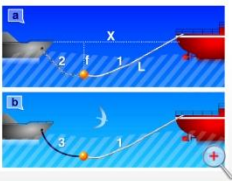
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Section 5. Elements of the towing line

**Types of towing lines.**

Towing of one ship by another is performed using a towing line. The towing line can be homogeneous (towing cable) and combined (synthetic cable + anchor chain, wire rope + anchor chain, synthetic rope + wire rope; rope + anchor + anchor chain). In addition, a non-homogeneous line can be symmetrical or asymmetrical.

The towing line is characterized by the length  $L$ , the sag  $f$  and the distance between ships  $x$ . The length and the sag determine the ability of the towing line to increase the distance between ships due to its elastic elongation and shape change.



**Towing lines types:**

- 1 – wire rope; 2 – anchor chain; 3 – synthetic rope.

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Section 7. Use of ship's devices when towing. Safety engineering

Before each towing, all parts of the towing equipment (hooks, rails, arches, fairleads, ropes, towing winches, etc.) must be carefully examined.

It is forbidden to tow if there are defects in the towing rope specified in the Technical Rules of Operation of the mooring arrangement.




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Test tasks



**Test of questions**

How far can a guide line can be given using a line throwing apparatus in calm weather?

Choose the correct answer:

- At least 50 meters.
- At least 300 meters.
- At least 230 meters.
- At least 150 meters.

Attempts: 1

COMMENT

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