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Learning Engagement Tool
Ropes & Wires

Participants	Signature

GUIDELINE

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A Learning Engagement Tool has been developed to discuss important issues related to a theme and to prevent similar incidents. In this case, how to prevent a rope from breaking, to prevent injury. Discuss the theme and think as a team about the answers and what you can learn.

The theme is split up in 2 categories::

- CHARACTERISTICS
- MAINTENANCE & CHECKS

After every category, some tips and examples are mentioned to help guide the conversation.

Good luck!

Ropes - CHARACTERISTICS

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A certificate of all ropes and wires must be present on board. Ropes and wires roughly consist of 2 different types of materials. In the table below these, with associated characteristics, are described.

Material	Elasticity	MBS	Weight
Steel	Low	High	Heavier than synthetic materials
Synthetic	Medium/high	Lower than steel wire, depending on type of synthetic material	Lighter to use than steel wires

Explanation:
Elasticity: The higher the elasticity, the more force is built up in the entire outstanding wire. When the wire breaks or comes loose, a medium/ high elasticity will involve the wire jumping away like an elastic band.
A steel wire is not or low elastic and will 'fall down' earlier when breaking and therefore pose less danger.
Steel wires that shoot loose are just like synthetic wires: life-threatening!
A steel wire does not give a 'warning' (sound) before breaking and is more difficult to bring to tension.
MBS – Minimum Breaking Strength: A value given by the supplier (in kilonewtons) for new dry mooring wires. The value is determined based on tests with a selection of the same wires. The lowest tension at which the wire is broken is the minimum breaking strength.

1. Which ropes/wires are on board?

2. When do you use which material?

GUIDELINE - Characteristics

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1. Which ropes/wires are on board?

Name which wires there are. How can you recognize these, what are the characteristics, etc.

There are also various ropes and wires on the market, which consist of a combination of the materials mentioned. There are also ropes that are lightweight (such as synthetic ropes), however, have a smaller snap-back zone (such as steel wires).

It is important to thoroughly delve into the characteristics of the material, its suitability for your type of work and the requirements mentioned in the certificate of examination.

For legislation, see, among other things, the ROSR (art. 10.02.2) and ADN.

2. When do you use which material?

When do you use a steel wire and when do you use a synthetic wire? How do you distinguish the situations?

Ropes – MAINTENANCE & CHECKS

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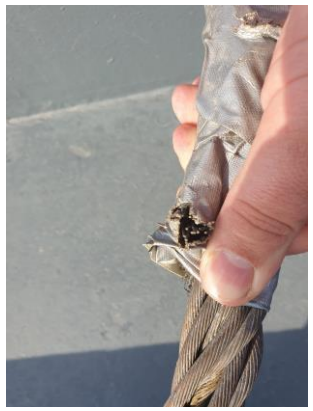
Doing proper maintenance and carrying out regular checks extends the life of the materials and reduces the risk of accidents. Some points of attention:

1. When determining the maintenance and replacement frequency, always consult the supplier regulations.

2. Regularly perform visual checks on the condition of the ropes and wires. Wear and tear, and damage (kinks, and meat hooks) of the ropes and wires have a negative impact on the breaking strength. Replace it if necessary.

1. How to keep track of when the ropes/wires need to be replaced?

2. What is the best way to check the ropes/wires? When is it better not to use a rope/wire anymore?



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1. How to keep track of when the ropes/wires need to be replaced?

Show the crew how this is tracked and when they need to be replaced according to supplier instructions. This way everyone is involved.

2. What is the best way to check the ropes/wires? When is it better not to use a rope/wire anymore?

Discuss examples and tips on how best to check a rope. How can you tell when a rope needs to be replaced?

If possible, check out some ropes/wires on deck and explain how to check them.

entdrilltes Drahtseil (Aufdoldung)
Niet gedraaide staaldraad
Untwisted wire rope

Schlinge im Drahtseil
Strop in de staalkabel
Loop in the wire

Riss einer Litze (Litzenbruch)
Gebroken streng
Broken strand

Knickstelle (Kink) im Drahtseil
Kink in de kabel
Kink in the wire

gebrochene Litzendrähte (Fleischhaken)
Gebroken draden (vleeshaak)
Broken wire (meat hook)

Stauchung (Quetschung)
Compressie
Compression