ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE

SECTION 1

EO M321.01 – DESCRIBE SAFETY PROCEDURES FOR OPERATING LIFTING DEVICES

Total Time: 30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to introduce safety procedures for operating lifting devices.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have described safety procedures for operating lifting devices.

IMPORTANCE

It is important for cadets to be familiar with personal safety equipment, safe practices and danger zones while working with lifting devices as there is the potential for injury if safety procedures are not followed.

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Teaching point 1 **Discuss Safety Procedures and Equipment for Operating Lifting Devices**

Time: 15 min Method: Interactive Lecture

SAFE PRACTICES



It is essential that the following safe practices be applied at all times to avoid injury while working with lifting devices.

Personal Conduct

- Do not run or participate in horseplay.
- Do not stand in danger zones.
- Do not straddle or wrap lines around any part of the body.
- Do not stand in bights or coils of lines.
- Do not walk on spars.
- Do not throw equipment.

Clothing

- Avoid loose clothing while working with tackles.
- Avoid clothing with draw-strings or hanging zippers.

Use of Rigging Equipment

- Do not step over a tackle while it is under tension.
- Do not put hands through a tackle when choking a block.
- Do not put hands/fingers on a block under tension.
- Do not walk with an open knife.
- Do not cut towards the body.

PERSONAL SAFETY EQUIPMENT

The following personal safety equipment must be worn at all times while working with lifting devices:

- Hard hat,
- Issued cadet boots or safety boots, and
- Knife lanyard (if knife is used).

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. When shall safe practices be applied?

Q2. What types of clothing should be avoided when operating lifting devices?

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Q3. What personal safety equipment must be worn at all times while working with lifting devices?

ANTICIPATED ANSWERS

A1. At all times.

A2. Loose clothing and clothing with draw-strings or hanging zippers.

A3. Personal safety equipment includes:

- Hard hat,
- Issued cadet boots or safety boots, and
- Knife lanyard (if knife is used).

Teaching point 2 **Describe Danger Zones**

Time: 10 min Method: Interactive Lecture

DANGER ZONES

While operating lifting devices, there is the risk of injury due to a failure in the rigging equipment. To minimize this risk, danger zones have been determined that come into effect at specific times during the rigging.

Sheers

There are two main danger zones when rigging sheers that must be observed:

1. **Forward Danger Zone.** When the topping lift is heaved in, an area within an arc approximately 1 and 1/2 spar lengths in front of the sheers and extending out from the heels becomes a danger zone (as illustrated in Figure 1). If the heel tackles or topping lift fails, the sheers may fall forward within this area.

2. **Aft Danger Zone.** When the topping lift is heaved in, the area approximately 1 and 1/2 spar lengths directly behind the sheers and extending out from the after heel anchors becomes a danger zone (as illustrated in Figure 1). If the sheers are raised too high or the load becomes unhooked, the sheers may snap back and fall backward into this area. This risk can be minimized by fitting a martingale to the sheers.



When the splay tackles and heel tackles have been tensioned and choked, the area inside the spars becomes unsafe. If the tackles were to release accidentally, the spars may snap back quickly along the ground.

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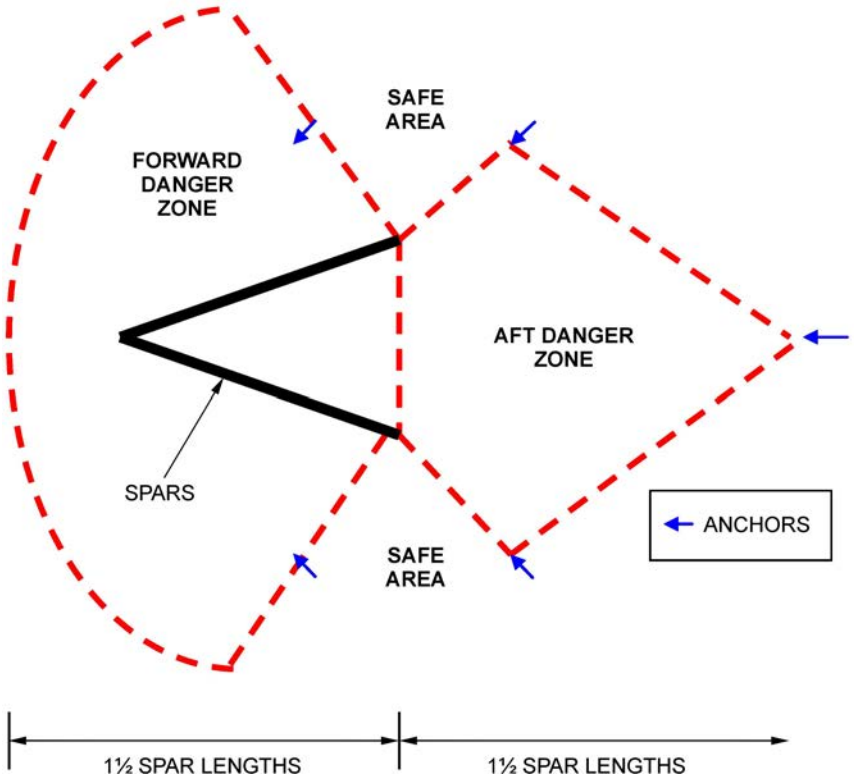

Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 4)

Figure 1 Sheers Danger Zones

Gyn

When the splay tackles are heaved in to raise the gyn, the area between the heels becomes a danger zone. Care should be taken when working with the splay tackles and the main purchase.

Heave in the splay tackles in small increments when the gyn nears its full height as it can be heaved off balance easily and fall to the side. Cadets who are working with the splay tackles should stand close to the heels until the gyn reaches full height (as illustrated in Figure 2).

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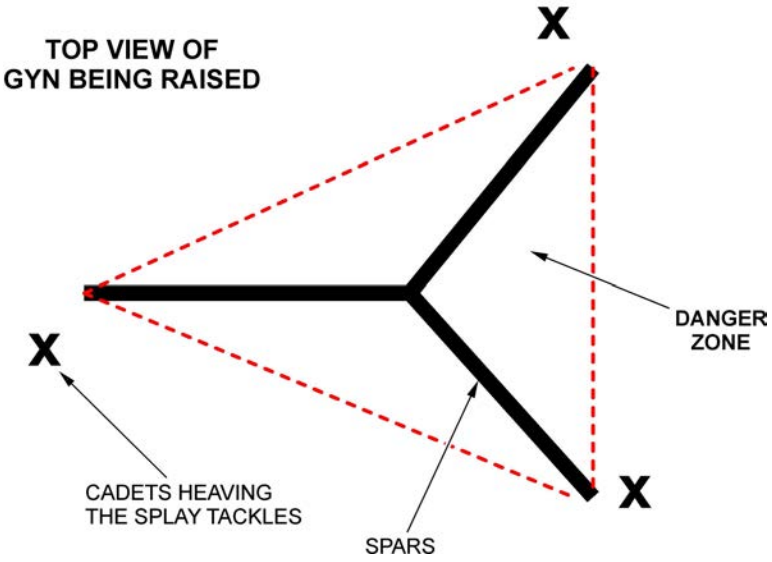
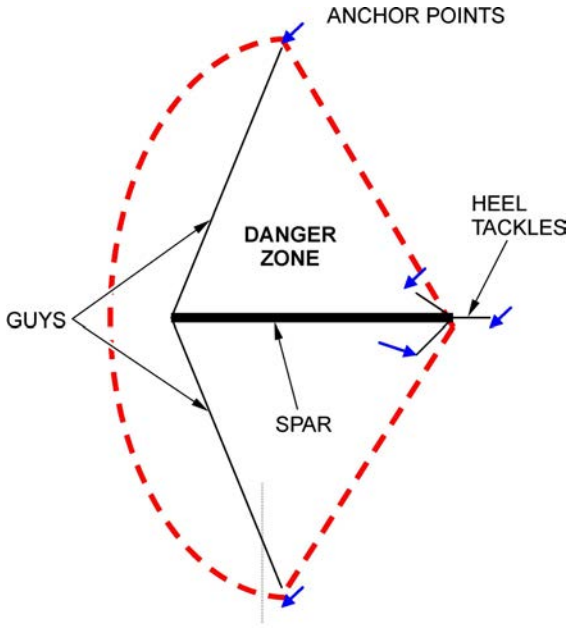


Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 2 Gyn Danger Zone

Standing Derrick

When the topping lift is heaved in to raise the standing derrick, the area within an arc approximately 1 and 1/2 spar lengths directly in front of the spar between the guy anchors becomes a danger zone. If the topping lift or one of the guys fails, the spar will fall within this area (as illustrated in Figure 3). The topping lift should be checked away before the load is hooked on or unhooked.



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 3 Standing Derrick Danger Zone

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CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. When do the forward and aft danger zones of the sheers become active?

Q2. Why should care be taken when heaving in the splay tackles on the gyn?

Q3. What should be done before hooking on or unhooking the load on the standing derrick?

ANTICIPATED ANSWERS

A1. When the topping lift is heaved in.

A2. The gyn may become unstable when it nears full height.

A3. The topping lift should be checked away.

END OF LESSON CONFIRMATION

QUESTIONS

Q1. When should personal safety equipment be worn?

Q2. Why is the inside of the sheers a danger zone when the heel tackles are under tension?

Q3. What are danger zones?

ANTICIPATED ANSWERS

A1. At all times.

A2. The spars may snap back along the ground if the splay or heel tackles fail.

A3. Areas where there is a risk of injury due to a failure in the rigging equipment.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 4 (321 PC).

CLOSING STATEMENT

It is important to be familiar with the personal safety equipment, safe practices and danger zones while working with lifting devices as there is the potential for injury if safety procedures are not followed.

INSTRUCTOR NOTES/REMARKS

This EO shall be conducted prior to EO M321.02 (Rig Sheers, Section 2).

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REFERENCES

A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Fleet Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.

C1-131 Navy League of Canada. (2008). *NLP 101 Flotilla and Provincial Seamanship Competition Manual*. Toronto, ON: Navy League of Canada.

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