

Laser Safety Program- LSO/RSO Responsibilities



U.S. ARMY

Introduction

Enabling Learning Objective

1

Action: Identify the fundamentals of the Laser Safety Officer duties.

2

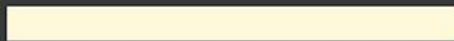
Condition: Given general information, regulations and procedures, hazard assessment information, and information on laser protection.

3

Standard: Identify the fundamentals of the Laser Safety Officer duties and pass the assessment.



Page



CC



Instructions to Developer:

Have avatar say the audio for this slide.

Show Action, Condition, and Standard while avatar is speaking in sync with audio markers.

Need Army avatar.

Number: LSO_02_01

Audio:

(1) On completion of this lesson you will be able to identify the fundamentals of the Laser Safety Officer duties.

Instructions to User:

Select NEXT to continue.

Graphic: CF03_06_09b_butt on_png – need Army Avatar

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

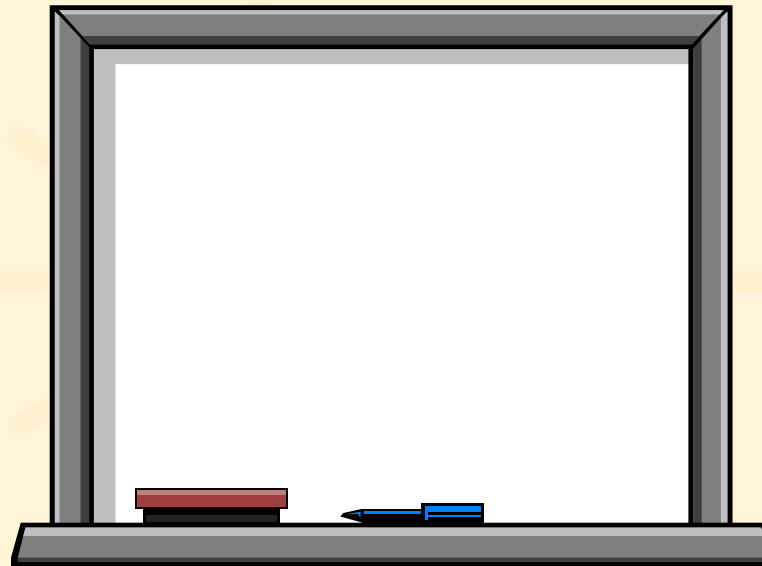
Laser Safety Program- LSO/RSO Responsibilities



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General Knowledge

- Lasers are classified by industry standards
- Lasers are controlled by administrative and engineering controls
- Processes for LSO program and personnel
- Mandated Laser Safety Program



Page



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Instructions to Developer:

- Sync left text bullets and audio markers to audio text.
- Have whiteboard already on screen and bring graphics onto the white board. Bring graphics in one at a time, disappear each one as you bring the new one in. Leave #4 on the white board so it isn't blank and learner selects NEXT to continue
- Use these graphics, just size so they fit well and proportionally on the whiteboard one at a time.

Number: LM01_01_02

Audio:

- (1) Are there specific lasers that must be controlled or are lasers used by the military exempt from any regulations?
- (2) Lasers are classified by set industry standards and certain types must be located and controlled by military personnel on an installation or military site.
- (3) There are processes for both training the Laser Safety Officer and for implementing a Laser Safety Program.
- (4) A tiered set of rules from multiple agencies mandate actions for a Laser Safety Program, training, and the use of lasers by military personnel.

Instructions to User:

Select NEXT to continue.

Graphic: Safe laser.jpg

Ansi.jpg

Ref: Inspect.jpg

Chppm logo.com

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



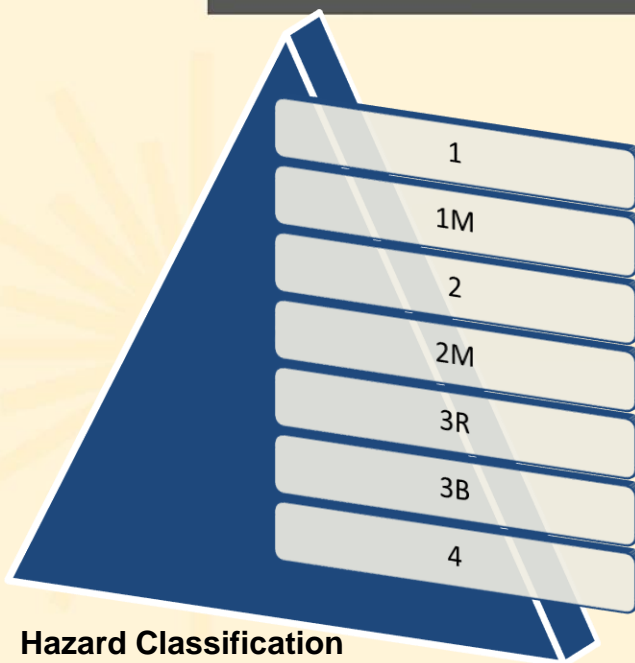
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Laser Classifications

- 1
 - 1M
 - 2
 - 2M
 - 3R
 - 3B
 - 4
- Characteristics
- Energy/Power
 - Pulse
 - Wavelength (Color)
- Determines control Measures



Hazard Classification
PDF



Page



CC



2

3

Number: LSO_01_03a

Audio:

There are multiple laser classifications to include: (1)

- One
- One M
- Two
- Two M
- Three R
- Three B
- And Class four

(2) Classification is based on laser characteristics such as Energy/Power, Pulse Characteristics and Wavelength (Color).

(3) Classification in turn determines control measures.

Instructions to User:

Instructions to Developer:

- Sync narration with left text. (1) synch to narration
- Make each class tab a rollover and match each classification pop-up.
- Auto to b slide.

Graphic: Miles.jpg
Class 4 sign.jpg

Ref:

by the aversion response
(0.25 sec) for unaided viewing
Potentially hazardous if viewed with
optical instruments
(7 x 50 binoculars)
Max exposure duration □ 0.25 s
Cannot exceed the Class 3B AEL

rogram

ty Program – LSO Responsibilities

ctive: Identify the Fundamentals

Number: LSO_01_04

Audio:

For further information on each
classification select each icon.

Laser Safety Program- LSO/RSO Responsibilities



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Individual Classifications



1



1M



2



4



3B



3R

Page



CC



Instructions to Developer:

Allow user to roll over any icon for more information. Space icons proportionally on slide. Arrange in a logical, numeral order. Close each icon when mouse moves to another icon or return to this screen.

Instructions to User:

Select the icons to learn more
about each class or, select
NEXT to continue.

Graphic: Class 1 .jpg
Class 2M.jpg
Class 3B.jpg
Ref: Class 1M.jpg

Laser pointer.jpg
Class 4 example.jpg
Class 3B sign.jpg

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Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Laser Classifications

1

- FLPPS/FDA regulates lasers
- Military specific lasers are exempt

2

2

- System is owned and used exclusively by DOD
- Is designed for actual combat or combat training, or is classified in the interest of national security
- System is unable to comply with the FLPPS due to mission requirements
- While a laser can be exempt from explicit federal requirements, the laser should meet as many federal safety requirements as possible without hindering the mission.



USAPHC Laser Military Exemption

Page



CC



Instructions to Developer:

[PDF : USAPHC Laser Military Exemption](#)

_Ensure that nametap is blurred to ensure no one can read it.

Have picture up on screen to start then bring in text box with cue. Make opaque so

USAPHC icon and text can be seen by learner.

Number: LSO_01_06

Audio:

Laser systems entering commerce in the United States must comply with the (1) Federal Laser Product Performance Standard or F-L-P-P-S. The Food and Drug Administration or F-D-A, which regulates lasers in the US and (2) grants an exemption to these requirements for military specific laser systems when the system is exclusive to DOD, designed for actual combat, and is classified, or if a design requirement could compromise mission performance.

Instructions to User:

Select NEXT to continue.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

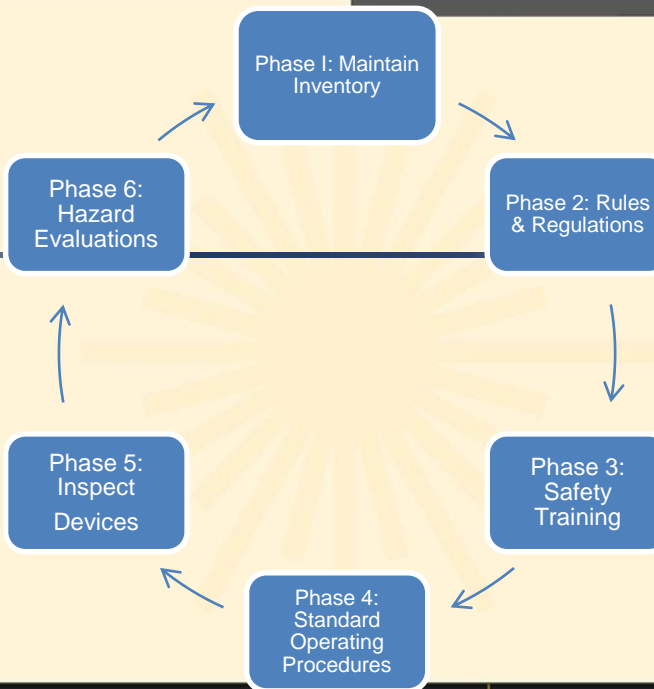
Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



Number: LSO_01_07a

Audio:

This process illustrates the components of a successful laser safety program. It is an overview of the duties and responsibilities of a laser safety officer.

It is important to report all overexposure through command channels and include the command Radiation Staff Safety Officer or R-S-S-O.

Select each phase to learn more.

Instructions to User:

Select each Phase to learn more, then select NEXT to continue.

Graphic: Smart Art

Ref:

Instructions to Developer:

- Each phase needs to be selectable and linked to its (letter slide). Not an autoadvance but each phase links to the notepad slide with each separate phase to read. X to close each phase and return to this screen.
- Use all blue shades or green for text boxes, whichever looks better.
- Grey out as user selects each term, enable NEXT icon after all sections have been viewed. Per SME request.

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

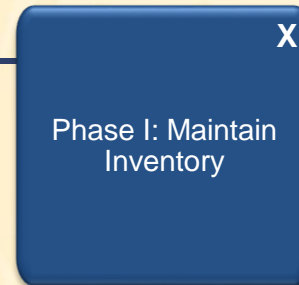
Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



Instructions to Developer:

- Phase 1 selection pop-up
- Gray out other selections and bring in pop up box for Phase 1 text.
- Have an X to close Phase 1 text.

- Return to LSO_01_08a

Number: LSO_01_07b

Audio:

[There is no audio text.]

Instructions to User:

Select X to close.

Graphic: © will need to change notepad but keep as close to possible gray or light green top instead blue

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

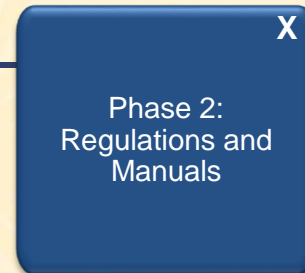
Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



CC



Instructions to Developer:

- Phase 2 selection
- Gray out other selections and bring in pop up box for Phase 2 text.
- Have an X to close Phase 2 text pop-up. .

- Return to LSO_01_08a

Number: LSO_01_07c

Audio:

[There is no audio text.]

Instructions to User:

Select X to close.

Graphic:

Ref:

LASER | Laser Safety Program

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Enabling Learning Objective: Identify the Fundamentals

Number: LSO_01_07d

Audio:

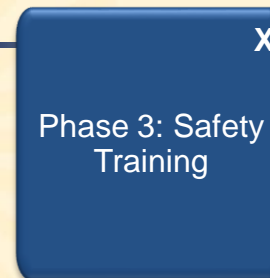
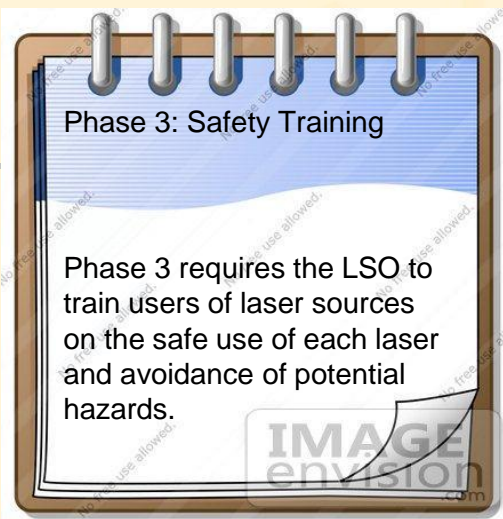
[There is no audio text.]

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



CC



Instructions to Developer:

- Phase 3 selection
- Gray out other selections and bring in pop up box for Phase 3 text.
- Have an X to close Phase 3 text pop-up.

- Return to LSO_01_08a

Instructions to User:

Select X to close.

Graphic:

Ref:

Audio:

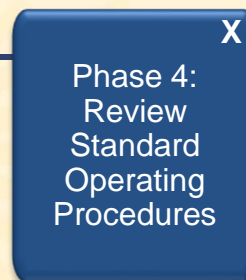
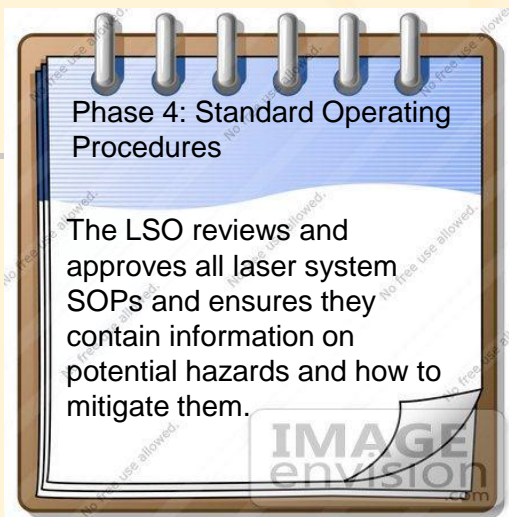
[There is no audio text.]

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



CC



Instructions to Developer:

- Phase 4 selection
- Gray out other selections and bring in pop up box for Phase 4 text.
- Have an X to close Phase 4 text pop-up.

- Return to LSO_01_08a

Instructions to User:

Select X to close.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Number: LSO_01_07f

Audio:

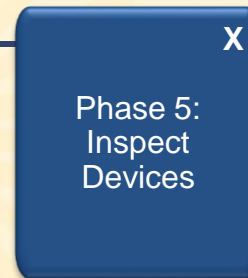
[There is no audio text.]

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



CC



Instructions to Developer:

- Phase 5 selection
- Gray out other selections and bring in pop up box for Phase 5 text.
- Have an X to close Phase 5 text pop-up.

- Return to LSO_01_08a

Instructions to User:

Select X to close.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

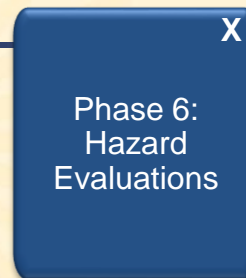
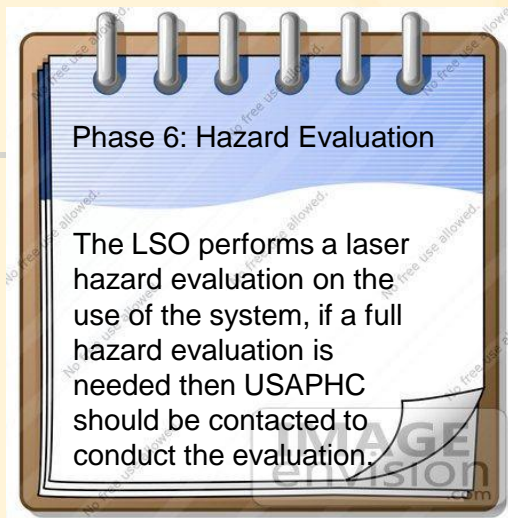
Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Program Processes



Page



CC



Instructions to Developer:

- Phase 6 selection
- Gray out other selections and bring in pop up box for Phase 6 text.
- Have an X to close Phase 6 text pop-up.

- Return to LSO_01_08a

Number: LSO_01_07g

Audio:

[There is no audio text.]

Instructions to User:

Select X to close.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Number: LSO_01_08a

Audio:

- (1) An assessment is completed by Public Health Command. You must have an LSO Safety Program in place for all laser systems.
- (2) A new installation includes setup of a relocated laser, regardless of laser age.
- (3) A new hazard assessment should also be performed when a significant change is made to the original laser setup. (3a) Examples include moving a laser to a new location in a lab, from a helicopter mount to a tank mount, or other changes which may require a change in engineering controls or operating procedures.

Laser Safety Program- LSO/RSO Responsibilities

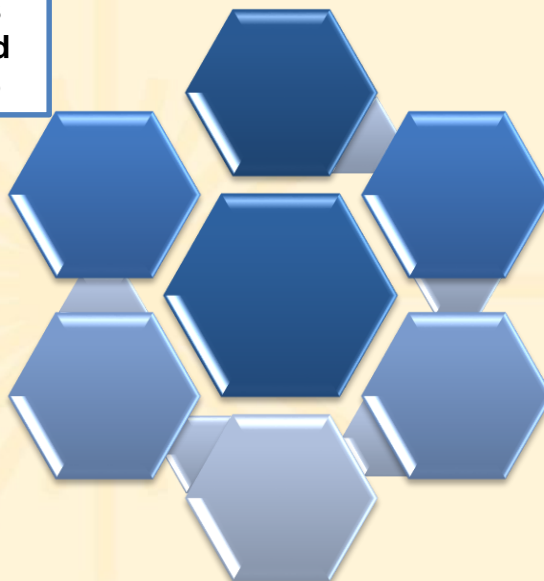


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Need for Safety Program

- 1 New Program
- 2 Revisit Program

3a stays until end of audio



Page



Instructions to Developer:

Circle graphic is smart art, will need to recreate. Have circle graphic already on screen. Text then graphic will go on the circle. Circles should be varying shades of blue as my example. for circle center – should just say Assessment Processes have that already in art when screen comes up. Text goes in at #3 audio marker, and graphics go on top of smart art at audio marker #3a.

Checklist and boxes are clip art, recreate. Other graphics are jpg however clean up goggles and laser sign to clear out white and yellow backgrounds. Make graphics fit and

Instructions to User:

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Need for Safety Program

4

Program includes:

- Properties of lasers
- Engineering controls
- Environment
- Administrative controls
- Authorized Users
- Existing Emergency controls
- Work practices
- Potential for exposure

3a stays until end of audio

Page



CC



Instructions to Developer:

Have circle graphic already on screen with graphics during the audio.

Number: LSO_01_08b

Audio:

(4) A program will include consideration of the properties of the laser, engineering controls, the environment in which it is located, administrative controls, who are authorized users, existing emergency controls, work practices and procedures, and the potential for exposure.

Instructions to User:

Select NEXT to continue.

Graphic: Laser lab.jpg
Laser sign 2.jpg

Ref: Goggles2.jpg
Signing1.jpg

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective:

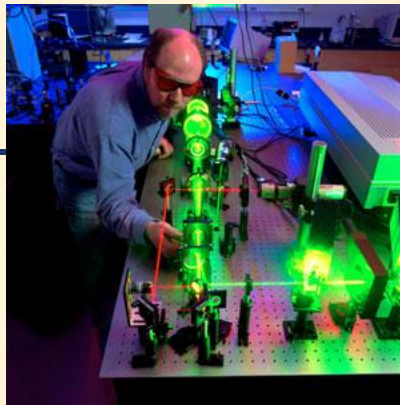
Laser Safety Program- LSO/RSO Responsibilities



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Steps

1



Steps For Laser Movement or New Laser Installation

Page



CC



Instructions to Developer:

Sync graphics and audio.

Enable info button to pop-up steps with an X to close. Info button is clip art, recreate but keep similar.

Make pop-up printable with print icon per SME request.

Number: LSO_01_09

Audio:

(1) When moving a laser or before a new installation there are steps that need to be followed to ensure an appropriate installation at its location.

(2) An L-S-O will have multiple tasks during this process.

Select the information icon to view a list of the steps for the process.

Instructions to User:

Select the information icon, or select NEXT to continue.

Graphic: Danger.jpg
lab laser.jpg

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Functions of the Laser Safety Program

Laser Safety Program- LSO/RSO Responsibilities

Implementation of Protection

- 1 Minimize risk of laser accidents
- 2 Training and control measures
- 3 Maintain inventory
- 3a Ensure proper response

Number: LSO_01_10a

Audio:

(1) Laser safety is safe design, use, and implementation of lasers to minimize the risk of laser accidents.

As the LSO you must:

(2) Provide appropriate training and control measures. (3) Maintain an accurate inventory of class three b, class four, and military exempt laser systems, document annual inventories of class three b and four lasers and laser locations, and (3a) ensure the proper response to accidents and incidents involving laser systems.

Instructions to User:

Instructions to Developer:

Bring in left text with matching audio cues.
Bring in 1-3a graphics in sync with audio cues for this slide.

Graphic: Training 2.jpg
Inspect.jpg
Ref: Eye exam.jpg

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Functions of the Laser Safety Program

Laser Safety Program- LSO/RSO Responsibilities

Implementation of Protection

4

- Types of controls
 - Administrative
 - Procedural
 - Engineering
- Tasks/Standards
- SOPs
 - Follow
 - Revise
 - Create

5

5



2



3



4



4

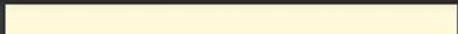


3a



Marine Unit Laser Range Safety Tasks

Page



Instructions to Developer:

Bring in left text with matching audio cues.

Bring in graphics 4 and 5 graphics in sync with audio cues for this slide.

Icon needs to be selectable with Unit laser Tasks PDF to open for the learner.

Number: LSO_01_10b

Audio:

- (4) There may be requirements to implement administrative, procedural, or engineering controls over laser systems.
- (5) It is crucial to maintain standard operating procedures or S-O-Ps which contain standards to follow, revise and possibly create as well as other controls to protect laser users.

Select the icon to view Marine Unit Laser Range Safety tasks.

Instructions to User:

Select unit tasks or, select NEXT to continue.

Graphic: Signing 2.jpg

Goggles.jpg

Ref: AR 25-400-2.jpg

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Rules and Regulations

DOD 6055.05-M Occupational Medical Examinations and Surveillance Manual

DA PAM 385-24 Army Radiation Safety Program

DODI 6055.15 DOD Laser Safety Program

AR 385-10

TB MED 524

Military Standard 1425



Page



CC



Instructions to Developer:

Make icons selectable with PDF files for download by the learner.

Have book graphic and icons already on screen.

SME wants text hyperlinked to current versions. May need to get web addresses from them.

Number: LSO_01_11

Audio:

There are many rules, regulations, and checklists for Laser Safety Programs. It is critical you maintain a library of these materials in order to train others, conduct inspections, and report incidents.

Select the icons to view regulations.

Instructions to User:

Select icons for further information or select NEXT to continue.

Graphic: Books from SP db

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities

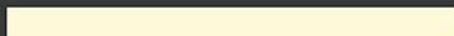


Scenario

You are informed a laser in the hospital must be moved. As LSO what must you do?



Page



CC



Instructions to Developer:

Have avatar move to question being spoken. Will need to develop an Army male avatar.
Advance to 13b

Number: LSO_01_12a

Audio:

You are informed a laser in the hospital must be moved. As LSO what must you do?

Answer the following questions.

Instructions to User:

Graphic: Med laser use.jpg

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective:

Laser Safety Program- LSO/RSO Responsibilities



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Scenario

Determine your answers, select and drag to the box. Then select SUBMIT to check your answers.

Look for nonbeam hazards

Determine the need for engineering controls

Wait until laser installation to inspect

Ensure update of SOP

Replace all PPE

Determine for any new uses

_____	_____
_____	_____

SUBMIT

Page



CC



Instructions to Developer:

Allow user to click and drag answer selections to the box – make lines for the answers to go.

Correct answers are:

Look for nonbeam hazards

Determine the need for engineering controls

Ensure update of SOP

Determine for any new uses

Number: LSO_01_12b

Audio:

[There is no audio.]

Instructions to User:

Select your answers, then select SUBMIT to check. Select NEXT to continue.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective:

Number: LSO_01_12c

Audio:

[There is no audio.]

Laser Safety Program- LSO/RSO Responsibilities



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Scenario

What must you look for in a new location? Determine your answers, select and drag to the box. Then select SUBMIT to check your answers.

Signage
PPE
Engineering controls

Adequate staff
Nonbeam hazards
Pathogens

_____	_____
_____	_____
_____	_____

SUBMIT

Page



CC



Instructions to Developer:

Allow user to click and drag answer selections to the box – make lines for the answers to go.

Correct answers are:

Signage

PPE

Engineering controls

Nonbeam hazards

Instructions to User:

Select your answers, then select SUBMIT to check. Select NEXT to continue.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective:

Laser Safety Program- LSO/RSO Responsibilities



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Scenario

Not all lasers are military exempt; as you will work with Class 3B and 4 however, why would a laser be granted military exempt status?

- a. The post commander has signed a memo granting it exempt status
- b. Lasers in a military hospital are exempt
- c. No lasers are ever exempt
- d. Designed for actual combat

SUBMIT

Page



CC



Instructions to Developer:

Allow user to click on the blank in front of their answer choice, make the click and checkmark and allow them to click on SUBMIT to check their answer.

D: Designed for combat is the correct answer.

Feedback boxes. allow either to pop-up depending on accuracy of response. Allow user to try again if incorrect. After second attempt show 2nd Incorrect feedback with correct responses then allow them to select next to continue.

Number: LSO_01_12d

Audio:

[There is no audio.]

Instructions to User:

Select the best answer and select SUBMIT.

Graphic:

Ref:

LASER | Laser Safety Program

Lesson: Title Laser Safety Program – LSO Responsibilities

Enabling Learning Objective: Identify the Fundamentals

Laser Safety Program- LSO/RSO Responsibilities



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Summary

Identify the fundamentals of the Laser Safety Officer



Page



CC



Instructions to Developer:

Have avatar say the audio for this slide.

Avatar is speaking in sync with audio markers. Need Army avatar.

Number: LSO_01_13

Audio:

This lesson provided the knowledge and skills necessary to identify the fundamentals of the Laser Safety Officer duties. Use the resources included to help you find out more as you learn in your position.

Instructions to User:

Select NEXT to continue.

Graphic: Need Army Avatar

Ref: