

**Operate the Borelight.
071-SAW07 / Version 1.0
Effective Date 08 Mar 2013**

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson	<u>Course Number</u>	<u>Version</u>	<u>Course Title</u>	
	None			
Task(s) Taught(*) or Supported	<u>Task Number</u>	<u>Task Title</u>		
	<u>Individual</u>			
	071-701-0007	Boresight an AN/PEQ-15 to an M16-Series Rifle / M-4 Series Carbine		
	071-702-0003	Boresight an AN/PEQ-2-series Aiming Light to an M16-series Rifle/M4-series Carbine		
	071-702-0008	Boresight an AN/PEQ-2 Series Target Pointer Illuminator/Aiming Light to an M240B Machine Gun		
	071-100-0043	Boresight an AN/PAQ-4 to an M16-Serise Rifle/M4-Series Carbine		
	071-100-0045 071-010-0020	Boresight an AN/PAQ-4 to an M240B Machine Gun Boresight an AN/PEQ-2 Aiming Light to an M249 Squad Automatic Weapon		
Reinforced Task(s)	<u>Task Number</u>	<u>Task Title</u>		
	None			
Knowledge	<u>Knowledge Id</u>	<u>Title</u>	<u>Taught</u>	<u>Required</u>
	071-WPN-0002	Demonstrate Knowledge of Boresight Procedures	Yes	No
	071-WPN-0069	Zeroing Techniques	Yes	No
	071-WPN-0072	Mounting Machine Guns Tripods	No	Yes
Skill	<u>Skill Id</u>	<u>Title</u>	<u>Taught</u>	<u>Required</u>
	071-WPN-0009	Zero Infantry Weapons	Yes	No
	071-WPN-0031	Mount a Machine Gun on a Tripod with T&E Mechanism	No	Yes
	071-WPN-0025	Mount Night Vision Devices to Infantry Weapons	No	Yes
	071-WPN-0027	Zero Night Vision Devices to Infantry Weapons	Yes	No
Administrative/ Academic Hours	The administrative/academic hours required to teach this lesson are as follows:			
	<u>Academic</u>	<u>Resident Hours / Methods</u>		
	Yes	5 hrs	15 mins	Conference/Demonstration
	Yes	0 hrs	0 mins	Test Review
	Yes	0 hrs	0 mins	Test
Total Hours:		5 hrs	15 mins	

Test Lesson NumberHoursLesson Number

None

Prerequisite Lesson(s)Lesson NumberLesson Title

None

Training Material Classification

Security Level: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Foreign Disclosure Restrictions

FD7. This product/publication has been reviewed by the training/educational developers in coordination with the DOTD, MCoE, Ft Benning, GA 31905 FD authority. This product is NOT releasable to students from foreign countries.

References

<u>Number</u>	<u>Title</u>	<u>Date</u>	<u>Additional Information</u>
TM 5860-01-471-2091	Operator's Manual for Laser Borelight System (LBS-300)		

Student Study Assignment

NONE.

Instructor Requirements

Complete a risk management worksheet. It is recommended that you use the ground risk assessment tools provided by the US ARMY COMBAT READINESS/SAFETY CENTER at https://grat.safety.army.mil/ako_auth/grat/default.aspx

Additional Support Personnel Requirements

<u>Name</u>	<u>Student Ratio</u>	<u>Qty</u>	<u>Man Hours</u>
NCOIC	1:32		
Combat Lifesaver	2:32		
Equipment NCO	1:32		

Equipment Required for Instruction

<u>ID - Name</u>	<u>Student Ratio</u>	<u>Instructor Ratio</u>	<u>Spt</u>	<u>Qty</u>	<u>Exp</u>
1005-01-231-0973 - CARBINE,5.56 MILLIMETER	1:1	1:1	No	0	No
1005-01-412-3129 - MACHINE GUN,7.62 MILLIMETER	1:8	1:1	No	0	No
5860-61-471-2091 - AN/PEM-1	1:4	1:1	No	0	No
6135-00-985-7845 - Battery, Nonrechargeable, AA	5:1	0:0	No	0	No
6545-01-254-9551 - MES,COMBAT LIFESAVER-1999	1:18	0:0	No	0	No
6730-00-933-4871 - Screen, Projection	1:32	0:0	No	0	No
6730-01-363-4544 - PROJECTOR,MULTIMEDIA	1:32	0:0	No	0	No
7021-01-487-6268 - Computer, Laptop, Printer Friendly, WWireless Capability	1:32	0:0	No	0	No
M09009X - MACHINE GUN 5.56 MILLIMETER: M249	1:8	1:1	No	0	No

(Note: Asterisk before ID indicates a TADSS.)

**Materials
Required**

Instructor Materials:

TM 5860-01-471-2091 Operator's Manual for Laser Borelight System (LBS-300)

FM 3-22.9 RIFLE MARKSMANSHIP, M16-/M4-SERIES WEAPONS (INCL C1)

FM 3-22.68 CREW SERVED WEAPONS

TM 3-22.31 40-MM GRENADE LAUNCHERS (INCL C1)

TM 5860-01-471-2091 Operator's Manual for Laser Borelight System (LBS-300)

Student Materials:

Note taking material.

Field Uniform.

**Classroom,
Training Area,
and Range
Requirements**

<u>ID - Name</u>	<u>Quantity</u>	<u>Student Ratio</u>	<u>Setup Mins</u>	<u>Cleanup Mins</u>
17120-1080-50 GEN INST BLDG, 1080 SF, 50 PN		1:32	15	15

**Ammunition
Requirements**

<u>DODIC - Name</u>	<u>Exp</u>	<u>Student Ratio</u>	<u>Instruct Ratio</u>	<u>Spt Qty</u>
None				

**Instructional
Guidance**

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Before presenting this lesson:

1. Have on hand identified reference material linked to the lesson plan.
2. Review presentation and develop a list of questions to use during class.
3. Review and prepare conference / discussion material presented.
4. Ensure all equipment listed for this lesson plan (LP) is present, operable, and set up for use before class.
5. Refer to the practical exercise of this lesson plan. When necessary develop additional situations to use during the practical exercise.
6. PowerPoint users: Ensure the SLI file you are using has been called up using Microsoft PowerPoint Viewer and SLI / slide 1 is showing on the screen before class.
7. Whenever noted, slides are available to assist in explanation of task steps. Use slides as needed during class or practical exercise to reinforce training. The instructor may choose to use / not use the LP SLIs as developed, modify the existing SLIs content / order or insert new material as is necessary based on audience analysis to assist in Soldier learning. Changes must be annotated as a pen / ink change on the vault file master LP, VIP LP, and instructor LP. Changes must be approved through Senior Instructor and TDCD 183rd RTI Development Team notified.
8. Whenever necessary, ask leading questions of Soldiers in order to prompt Soldier discussion.
9. Encourage Soldiers to relate their first hand experiences during the activities.
10. Facilitate this lesson using Instructor methodologies.
11. Control group activities using Instructor techniques.

**Proponent Lesson
Plan Approvals**

<u>Name</u>	<u>Rank</u>	<u>Position</u>	<u>Date</u>
Robert Padin	Not available	Approver	08 Mar 2013

SECTION II. INTRODUCTION

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor (4:32/0)
Time of Instruction: 5 mins
Instructional Strategy: Large Group Instruction

Motivator

In our current operational environment a Soldiers survivability depends on the proficeincy, and confidence in their ability to apply the fundamentals of engaging targets, making a more lethal, and deadly combination during combat.

Terminal Learning Objective

NOTE. Inform the students of the following Terminal Learning Objective requirements.

At the completion of this lesson, you [the student] will:

Action:	Operate the borelight series equipment.
Conditions:	During daylight hours, on a 10 meter flat surface, given an unzeroed weapon, borelight device with accessories, and TM 5860-01-471-2091.
Standards:	The weapon must be bore sighted IAW the Borelight Operator's Manual pages 17 through 26

Safety Requirements

Safety Requirements in a Classroom Setting:

Safety is of the utmost importance in any training environment. During the training process, commanders will utilize the 5-Step Risk Management process to determine the safest and most complete method to train. Every precaution will be taken during the conduct of training.

Safety is everyone's responsibility to recognize, mitigate, and report hazardous conditions.

Instructor note: The instructor will brief the students on the unit/facility SOP for classroom contingencies i.e. what doors will be used to exit the classroom, rally points, severe weather, WBGT/Kestrel set up, etc.

Safety Requirements other than Classroom Settings:

Safety must be paramount in the complex outdoor environment. During the training process, commanders will utilize the 5-Step Risk Management process to determine the safest and most complete method to train. Every precaution will be taken while replicating realistic battlefield conditions.

Safety is everyone's responsibility to recognize, mitigate, and report hazardous conditions.

Instructor note: The instructor will brief the unit/site SOP and Risk Management Worksheet for all potential contingencies encountered during that training period/event i.e. WBGT/Kestrel set up, trail vehicles for PT/foot marches, severe weather, fire, evacuation routes, muzzle awareness, range safety briefs, required medical FLA with driver and medics with emergency equipment, student injury procedures, and rally points etc.

Risk Assessment Level

Low - All Army Instructors will conduct a Risk Assessment Worksheet (DA Form 7566, CRM Worksheet, Apr 05) prior to training and brief Soldiers on identified hazards and required controls.

Assessment: The operations officer, in cooperation with the principal instructor, will prepare a

risk assessment using the before, during, and after checklist and the risk assessment matrixes contained in Risk Management FM 5-19.

Controls: See Attached DA Form 7566.

Leader Actions: See Attached DA Form 7566.

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-34.5, Environmental Considerations {MCRP 4-11B}, and ensure students are briefed on hazards and control measures.

Users must comply with all local environmental regulations and guidance while conducting training.s.

Evaluation

Soldiers will be evaluated by task performance measures.

Instructional Lead-in

In order to effectively engage targets with your weapon, you must go out to the range and zero each optical sight and infrared aiming laser to your weapon during the day and at night. This takes time, coordination and ammunition to execute. The Laser Borelight is a support tool that enables a unit to speed up the zeroing process of optical sights while using less ammunition. In the case of infrared aiming lasers, a unit can zero them any where, at any time and with out the need for ammunition. In order to obtain these benefits of using the borelight , you must first familiarize yourself with it and the details needed to accomplish this task. So let's take a closer look at the borelight .

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Identify the Characteristics of the Borelight
CONDITIONS:	In a classroom environment given 1 (AA) battery, a borelight, and TM 5860-01-471-2091.
STANDARDS:	Identify the 7 major components of the borelight device IAW TM 5860-01-471-2091.

ELO A - LSA 1. Learning Step / Activity ELO A - LSA 1. Identify the Characteristics of the Borelight

Method of Instruction: Conference/Demonstration

Instr Type(I:S Ratio/Qty): instructor(4:32/0)

Time of Instruction: 0 hrs 15 mins

Instructional Strategy: Large Group Instruction

Media Type: Actual Equipment

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

WARNING: Before inserting the borelight into the weapon, perform PMCS, clear weapon and visually inspect The chamber to insure that it is clear of obstructions and there are no obstructions, and no ammunition is in position to be chambered. Clean if necessary.

a. System Description: The borelight is a Class IIIa laser that emits a highly collimated beam of visible light for precise zeroing of an aiming light or weapon sight to the weapon. The borelight assembly includes mandrels that are attached inline to the visible laser component of the borelight. The assembly is inserted into the muzzle end of the weapon to accomplish weapon - boresighting. The borelight is used in combination with the aiming light or weapon sight using naked eyes, powered optics, or night vision devices.

b. General Characteristics: Weight (with one battery) 9.25 ounces Length 3.5 in. Width 0.8 in. Height 2.0 in.

c. Description of Major Components: (show slide #3 on characteristics)

(1) Borelight Assembly: The borelight assembly is a compact; lightweight advanced Electro-optical assembly, which provides a highly collimated beam of visible energy for weapon aiming. The borelight assembly incorporates:

(a) Integral Beam Adjusters: The adjuster allows fine alignment of the borelight laser beam when boresighting the borelight to the barrel.

(b) Mode Selector Switch: The Off/On/Tng switch enables the operator to continuously operate the borelight by rotating the switch from Off to the on position. To perform dry fire exercises switch to the training mode.

(2) Mandrels: 5.56mm, 7.62mm, .50 Cal: Mandrels are selectable metal rods, which screw to the rear of the borelight and are designed to fit the muzzle of the selected weapon.

(3) 10 Meter String: The 10-Meter String/Cord provides a precise measurement tool for spacing the borelight from the target when performing the boresighting procedure.

(4) Battery (AA): A single AA battery is used as a power supply for operating the borelight. The use of a high quality battery is recommended.

(5) Manual: The manual details operation, maintenance and

general information on the borelight. (6) Carrying Bag: The borelight is supplied with a carrying bag. The bag is made out of waterproof fabric, neatly holds all components, and is easily attached to the web belt. (7) Targets - Scale 1 CM X 1 CM: The targets have markings for predetermined weapon offsets as derived from the weapon and sight combinations. These offsets when transferred to the weapon will boresight the weapon for 300M. M16A1/A2 (1) Thermal Weapon Sight(AN/PAS-13)(V)2/3 (2) Close Combat Optic w/gooseneck mount (3) AN/PAQ-4B/C On Bracket Assembly (4) AN/PEQ-2A On Bracket Assembly (5) AN/PVS-4 (6) AN/PAQ-4B/C w/spacer on carrying handle (7) AN/PEQ-2A w/spacer on carrying handle M4 Modular Weapon System. (1) Thermal Weapon Sight(AN/PAS-13)(V)2/3 w/spacer (2) Close Combat Optic Top Rail W/half moon spacer (3) AN/PAQ-4B/C Left Side Rail Forward (4) AN/PEQ-2A On Left side Rail Forward (5) AN/PVS-4 With 7/8" Spacer (6) Backup Iron Sight (7) AN/PVS-14 W/mounting adapter NOTE: The M4 Carbine will be configured with the same equipment as the Modular weapon sight, except: All lasers will be mounted with the Bracket Assembly. M249 SAW (1) Thermal Weapon Sight (AN/PAS-13)(V)2 (2) AN/PEQ-2A On Mounting Bracket W/spacer (3) AN/PVS-4 (4) Machinegun Optic (MGO) M240B (1) Thermal Weapon Sight(AN/PAS-13)(V)2 (2) AN/PEQ-2A on Top Rail Forward (3) AN/PVS-4 (4) Machinegun Optic (MGO)

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Summarize the learning activity.

CHECK ON LEARNING (ELO A): Conduct a check on learning and summarize the ELO. QUESTION: What 3 types of mandrels are there for the borelight? ANSWER: 5.56mm, 7.62mm, and .50 cal. QUESTION: Is the borelight eye safe? ANSWER: Yes. QUESTION: Which adjuster moves the laser beam up or down? ANSWER: The adjuster that is on the top or the bottom. QUESTION: How many modes of operation are on a borelight? ANSWER: 4 (OFF, GOGGLE, LOW and PULSE)

REVIEW SUMMARY(ELO A): Conduct a Summary Review

B. ENABLING LEARNING OBJECTIVE

ACTION:	Place the borelight device into operation
CONDITIONS:	In a classroom environment given a 10-meter flat surface, an M16/M4 series weapon, a borelight device with accessories and TM 5860-01-471-2091.
STANDARDS:	Place the borelight device into operation IAW TM 5860-01-471-2091.

ELO B - LSA 1. Learning Step / Activity ELO B - LSA 1. Place the borelight device into operation

Method of Instruction: Conference/Demonstration

Instr Type(I:S Ratio/Qty): instructor(4:32/0)

Time of Instruction: 0 hrs 15 mins

Instructional Strategy: Large Group Instruction

Media Type: Actual Equipment / Equipment Based Instruction

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

DANGER:

- DO NOT stare into the visible laser beam.
- DO NOT look into the visible laser beam through binoculars or telescopes.
- DO NOT point the visible laser beam at mirror-like surfaces.
- DO NOT shine the visible laser beam into other individuals eyes.

a. Battery Installation:

DANGER

· Visible laser radiation- To reduce the risk of injury AVOID DIRECT EXPOSURE TO THE BEAM- Use Ballistic Laser Eye Protection (BLEPs) when handling/operating the borelight and do not store the borelight with the battery installed.

To install the battery, simply unscrew the battery cap and install a single AA battery. Orient the battery with the positive end facing the battery cap. A (+) sign is provided inside the battery cap for reference.

b. The Mode Selector Switch: The Mode Selector switch is conveniently located on the forward end (Opposite the Mandrel attachment point) of the Borelight and can be easily activated when mounted on the weapons barrel. The Selector switch has 3 positions:

SELECTOR OPERATION POSITION

OFF The borelight will not Operate

ON The borelight beam will Operate Continuously TNG The borelight beam will operate for a split second when the trigger is pulled.

c. Mandrel attachment: The borelight comes with three attachment mandrels:

- (1) 5.56mm
- (2) 7.62mm
- (3) .50 cal.

d. Adjusters: The borelight is equipped with boresight adjusters for boresighting the borelight to the weapon. Adjuster movement has tactile clicks. Each click moves the beam 2mm at 10 meters. The borelight adjusters move the beam in true horizontal and vertical directions.

ADJUSTER ROTATION: Zeroing The Borelight Beam

Adjuster movement/Beam movement

Top Adjuster

Elevation: CW

CCW: Up/Down

Side Adjuster

Azimuth (windage): CW

CCW: Right/Left

TRANSITION: Now that you know how to place the borelight into operation, you need to make sure that the borelight is properly maintained

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Summary Review

CHECK ON LEARNING (ELO B): Conduct a check on learning and summarize ELO. NOTE: (show slide #8 on place into operation) QUESTION: Do you use harsh chemicals, like Simple Green to flush the borelight after exposure to salt water? ANSWER: No, use water. QUESTION: Can you use general purpose window cleaner to clean the aiming beam window? ANSWER: Yes. TRANSITION: Now that you know how to keep the borelight clean, you will learn how to operate the borelight.

REVIEW SUMMARY(ELO B): Conduct a Summary Review

C. ENABLING LEARNING OBJECTIVE

ACTION:	Perform maintenance on borelight
CONDITIONS:	In a classroom environment given a borelight with accessories and TM 5860-01-471-2091.
STANDARDS:	Perform maintenance on the borelight IAW TM 5860-01-471-2091.

ELO C - LSA 1. Learning Step / Activity ELO C - LSA 1. Perform maintenance on borelight

Method of Instruction: Conference/Demonstration

Instr Type(I:S Ratio/Qty): instructor(4:32/0)

Time of Instruction: 0 hrs 5 mins

Instructional Strategy: Large Group Instruction

Media Type: Actual Equipment

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

a. Clean the borelight by flushing with water and wiping with a soft cloth. Such cleaning should be done

whenever the borelight becomes dirty or after exposure to salt water.

b. To clean the aiming beam window, wipe using a soft cloth with clean water, alcohol, or general purpose window cleaner.

TRANSITION: Now that you know how to keep the borelight clean, let us use this piece of equipment.

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Summary Review

CHECK ON LEARNING (ELO C): Conduct a check on learning and summarize the ELO. QUESTION: Do you use harsh chemicals, like Simple Green to flush the borelight after exposure to salt water? ANSWER: No, use water. QUESTION: Can you use general purpose cleaner to clean the aiming beam window? ANSWER: Yes. TRANSITION: Now that you know how to keep the borelight clean, let us use this piece of equipment.

REVIEW SUMMARY (ELO C): Conduct a Summary Review

D. ENABLING LEARNING OBJECTIVE

ACTION:	Zero the borelight
CONDITIONS:	In a classroom environment given a 10-meter flat surface, pen and paper, an M16/M4 series rifle, a borelight device with accessories and TM 5860-01-471-2091.
STANDARDS:	Zero the borelight IAW TM 5860-01-471-2091.

ELO D - LSA 1. Learning Step / Activity ELO D - LSA 1. Zero the borelight

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 15 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

WARNING: Failure to complete this task to standard will result in wasted rounds and wasted time. You must meticulously complete each task in order to acquire a good zero with the borelight.

NOTE: This section provides information on zeroing the borelight. The borelight should

be checked for zero at the start of each boresighting procedure.

a. Zero Preset:

(1) The borelight incorporates a unique zero preset feature which enables the laser beam to be nearly

aligned when the borelight is initially inserted into the weapon.

(2) To establish initial zero, rotate each adjuster clockwise to its end of travel. Then rotate each adjuster back 3 turns and align the white dot with the front adjuster flange.

CAUTION: DO NOT OVER ADJUST OR POINT LASER AT SOLDIERS OR REFLECTIVE MATERIAL

b. Borelight zeroing procedure:

(1) Stabilize the weapon. The weapon can be stabilized in a rifle box rest or in a field location by laying 2 rucksacks side by side. Lay your rifle sideways on the rucksacks and then lay another rucksack on top of your rifle to stabilize.

NOTE: Orientation of the weapon is irrelevant.

(2) Select the mandrel for the weapon being boresighted and attach it the borelight.

(3) Insert the mandrel into the muzzle of the weapon. The borelight is seated properly when no further travel of the mandrel into the muzzle is permitted.

(4) Turn the borelight on. With the help of an assistant, secure the zeroing mark approximately ten meters from the end of the barrel so that the laser dot strikes the zeroing mark.

NOTE: The offset and zeroing mark must be kept stable during boresight procedure.

-The ten-meter measurement for the offset should be measured from the end of the weapon.

(5) Slowly rotate the borelight 360 degrees while watching the red dot made by the laser on the zeroing mark. If the red dot spins on itself the borelight is boresighted to the weapon.

NOTE: Only turn the borelight counterclockwise from the gunners point of view or the mantle will unscrew.

NOTE: If the laser dot rotates in a circular pattern, the windage and/or elevation must be adjusted using the following procedures:

c. Adjusting windage and/or elevation:

(1) Slowly rotate the borelight one half turn. Note the new location of the laser dot.

(2) Adjust the windage and elevation until the laser dot moves one half the space from its original location.

(3) Continue the procedure until the laser dot spins on itself when the borelight is rotated. Dot must spin on itself or within a one cm circle.

(4) The weapon - sight combination is now ready to be boresighted.

NOTE: If you cant find the borelight on the offset move the offset to two meters and start there.

It is convenient to start with the adjuster pointing down but not necessary.

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Summary Review

CHECK ON LEARNING (ELO D): Conduct a check on learning and summarize the ELO.
QUESTION: What can you use to stabilize the weapon prior to zeroing the borelight in the field?
ANSWER: Place the weapon on two rucksacks and put one on top of the weapon.
QUESTION: How far away should the offset be in order to place the laser dot center of the target?
ANSWER: Approximately 10 Meters from the end of the barrel.
TRANSITION: Now that the borelight is zeroed, you are now able to boresight an optic or laser to the weapon.

REVIEW SUMMARY(ELO D): Conduct a Summary Review

E. ENABLING LEARNING OBJECTIVE

ACTION:	Operate the Borelight Using Boresight Procedures
CONDITIONS:	In a classroom environment given a 10-meter flat surface, an unzeroed weapon, a borelight device with accessories and TM 5860-01-471-2091
STANDARDS:	Operate the borelight using boresight procedures IAW TM 5860-01-471-2091.

ELO E - LSA 1. Learning Step / Activity ELO E - LSA 1. Operate the Borelight Using Boresight Procedures

Method of Instruction: Conference/Demonstration

Instr Type(I:S Ratio/Qty): instructor(4:32/0)

Time of Instruction: 0 hrs 20 mins

Instructional Strategy: Large Group Instruction

Media Type: Actual Equipment

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

This procedure is used to boresight the weapon for 300 meters. Completing this procedure requires a minimum of two people. For specific weapon and sight combinations, follow the instruction on the offset.

- a. Select the offset for the weapon and sight combination being boresighted.
- b. Position the offset approximately 10 Meters away.
- c. Stabilize the weapon and insert the borelight into the muzzle. Turn the borelight on.
- d. Adjust the offset as required to place the sighting device on the sights zero point.
- e. Adjust windage and elevation until the bore light laser dot is on the small black dot.
- f. Turn the laser off and remove the borelight and mandrel from the weapon carefully so that you do

not damage the borelight device.

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Summary Review

CHECK ON LEARNING (ELO E):

Conduct a check on learning and summarize the ELO.

QUESTION: How many meters is this procedure boresighted for?

ANSWER: M4/16 series at 300m, and M249 at 400 Meters.

QUESTION: What must you do every time after you have boresighted a weapon and a sight device?

ANSWER: Turn the borelight off and recheck zero before boresighting another weapon.

REVIEW SUMMARY(ELO E):

Conduct a Summary Review

SECTION IV. SUMMARY

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	3 hrs 40 mins
Instructional Strategy:	Large Group Instruction

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review/ Summary

Summarize the learning activity.

SECTION V. STUDENT EVALUATION

Testing Requirements

Soldiers will be evaluated by task performance measures.

Feedback Requirements

Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

Appendix A - Viewgraph Masters

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Sequence	Media Name	Media Type
None		

Appendix B - Test(s) and Test Solution(s)

Appendix C - Practical Exercises and Solutions

PRACTICAL EXERCISE(S)/SOLUTION(S) FOR LESSON 071-SAW07 Version 1.0

Appendix D - Student Handouts

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Sequence	Media Name	Media Type
None		

Appendix E - TRAINER'S LESSON OUTLINE

Operate the Borelight.

071-SAWE07 / Version 1.0

Effective Date: 08 March 2013

1. The importance of this lesson: (Why)

Operate Borelight Series Equipment.

2. What we want our Soldiers to Achieve: (Outcomes/Standard)

The weapon must be bore sighted IAW the Borelight Operator's Manual pages 17 through 26.

3. Tasks to be taught

<u>Task Number</u>	<u>Task Title</u>	<u>Task Type</u>
071-701-0007	Boresight an AN/PEQ-15 to an M16-Series Rifle / M-4 Series Carbine	Individual SUPPORTED
071-702-0003	Boresight an AN/PEQ-2-series Aiming Light to an M16-series Rifle/M4-series Carbine	Individual SUPPORTED
071-702-0008	Boresight an AN/PEQ-2 Series Target Pointer Illuminator/Aiming Light to an M240B Machine Gun	Individual SUPPORTED
071-100-0043	Boresight an AN/PAQ-4 to an M16-Series Rifle/M4-Series Carbine	Individual SUPPORTED
071-100-0045	Boresight an AN/PAQ-4 to an M240B Machine Gun	Individual SUPPORTED
071-010-0020	Boresight an AN/PEQ-2 Aiming Light to an M249 Squad Automatic Weapon	Individual SUPPORTED

Additional Non-Standard Tasks

Maintain the borelight.

Zero weapons using the borelight.

4. References:

<u>Reference Number</u>	<u>Reference Title</u>	<u>Date</u>
TM 5860-01-471-2091	Operator's Manual for Laser Borelight System (LBS-300)	

Additional Non-Standard References

Unit Markanmanship SOPs.

5. Resources

TIME: Time of Instruction (Time not specified)

LAND: Classroom, Training Area, and Range Requirements

<u>Id</u>	<u>Name</u>
17120-1080-50	GEN INST BLDG, 1080 SF, 50 PN

AMMO: Ammunition Requirements

<u>DODIC</u>	<u>Name</u>
None	

MISC: Materiel Items and TADSS Requirements

<u>Id</u>	<u>Name</u>
1005-01-231-0973	CARBINE,5.56 MILLIMETER
1005-01-412-3129	MACHINE GUN,7.62 MILLIMETER
5860-61-471-2091	AN/PEM-1
6135-00-985-7845	Battery, Nonrechargeable, AA
6545-01-254-9551	MES,COMBAT LIFESAVER-1999
6730-00-933-4871	Screen, Projection
6730-01-363-4544	PROJECTOR,MULTIMEDIA
7021-01-487-6268	Computer, Laptop, Printer Friendly, WWireless Capability
M09009X	MACHINE GUN 5.56 MILLIMETER: M249

(Note: Asterisk before ID indicates a TADSS.)

Additional Non-Standard Resources

None

6. A possible technique to achieve the outcome:

Maximise hands on training time to allow the students to achieve task mastery.
Grade the Soldiers using the task performance measures.
Retrain Soldiers who do not receive a GO.
Re-test Soldiers until they achieve a GO.

7. Conduct AAR with Soldier and Cadre.

AAR's are essential to ensure the quality of the instruction and the efficiency of the course.

Schedule AAR's with Instructors to solicit feedback on the techniques and procedures in use.

Schedule AAR's with the Student's to solicit feedback on Instructional techniques, information being presented, and efficiency of the course.

NOTE: Before presenting this lesson, Instructors must be thoroughly prepared by studying the appropriate lesson plan and identified reference material.