UNITED STATES MARINE CORPS
MARKSMANSHIP PROGRAM MANAGEMENT SECTION
WEAPONS TRAINING BATTALION
MARINE CORPS COMBAT DEVELOPMENT COMMAND
QUANTICO, VIRGINIA 22134-5036

INSTRUCTOR GUIDE

ZERO A MINI INTEGRATED POINTER ILLUMINATOR MODULE (MIPIM) TO A SERVICE RIFLE/INFANTRY AUTOMATIC RIFLE

0300-M16-1010
0300-M16-1007 (REV.)

ANNUAL RIFLE TRAINING POI

APPROVED BY _____ **DATE** _____

INTRODUCTION **(3 MIN)**

1. **GAIN ATTENTION**. We seek to gain superiority over our enemies by training to operate in all conditions. Part of that concept is training to conduct operations at night and in low light conditions. Technology has provided us with many devices that allow us to effectively engage in darkness without the aid of visible light. One of these devices is the AN/PEQ-16 mini integrated pointer illuminator module (MIPIM). When paired with the AN/PVS-14, we own the night.

(Slide #2)

2. **OVERVIEW**. Good morning, my name is _____. The purpose of this lesson is to discuss the design of the laser aiming device, mounting the laser aiming device, zeroing the laser aiming device, and weapons presentation while using the AN/PEQ-16.

INSTRUCTOR NOTE:
Have Shooters read the learning objectives.

(Slide #3)

3. **LEARNING OBJECTIVES**

a. **TERMINAL LEARNING OBJECTIVE**.

(1) Given a service rifle/Infantry Automatic Rifle (IAR), sling, Mini-Integrated Pointer Illuminator Module (MIPIM), night vision device, individual field equipment, magazines, ammunition, a target, and a dark environment, zero a Mini Integrated Pointer Illuminator Module (MIPIM) to a service rifle/Infantry Automatic Rifle to achieve point of impact on point of aim at a specific range (0300-M16-1010)

b. **ENALBLING LEARNING OBJECTIVE**.

(Slide #4)

(1) Given a service rifle, common combat sling, mini integrated pointer illuminator module, night vision device, individual field equipment, magazines, ammunition, a target, and a dark environment mount the MIPIM to the service rifle in order to achieve point of impact on point of aim at a specific range

(0300-M16-1010a)

(Slide #5)

(2) Given a service rifle, common combat sling, mini integrated pointer illuminator module, night vision device, individual field equipment, magazines, ammunition, a target, and a dark environment, set the MIPIM laser adjusters to the zero preset position in order to achieve point of impact on point of aim at a specific range (0300-M16-1010b)

(Slide #6)

(3) Given a service rifle, common combat sling, mini integrated pointer illuminator module, night vision device, individual field equipment, magazines, ammunition, a target, and a dark environment, activate the MIPIM and direct the aiming laser on a target in order to achieve point of impact on point of aim at a specific range (0300-M16-1010c)

(Slide #7)

(4) Given a service rifle, common combat sling, mini integrated pointer illuminator module, night vision device, individual field equipment, magazines, ammunition, a target, and a dark environment, make zeroing adjustments off 5-round shot groups in order to achieve point of impact on point of aim at a specific range (0300-M16-1010d)

INSTRUCTOR NOTE:
Assign specific Shooters to fill out Instructor Rating Forms (IRFs). Have them set aside and fill them out after the completion of the class.

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4. **METHOD/MEDIA**. This lesson will be taught utilizing the informal lecture and demonstration methods, along with supporting media and my assistant instructor.

5. **EVALUATION**. You will not be formally evaluated on the period of instruction.

6. **SAFETY/CEASE TRAINING (CT) BRIEF**. There are no safety hazards identified with this lesson. However, cease training

can be called by an instructor or student who identifies or observes any unsafe condition. The lead instructor will then evaluate the situation.

(Slide #9)

TRANSITION: Now that we have discussed what will be covered in this class, how it will be presented and evaluated, are there any questions? If not, let's begin by discussing the design of the laser aiming device.

(Slide #10)

BODY **(25 MIN)**

1. **DESIGN OF THE LASER AIMING DEVICE** **(7 MIN)**

a. **Description**: The AN/PEQ-16 is a multifunction laser device that:

(1) Emits visible or infrared (IR) light for precise weapon aiming and target / area illumination.

(2) Provides for active target acquisition in low-light and close quarters combat situations without the need for night vision devices.

(3) Provide for active, covert target acquisition in low light or complete darkness when used in conjunction with night vision devices.

(4) Can be used as either a handheld illuminator / pointer or can be mounted to weapons equipped with a MILSTD-1913 Rail.

(5) The AN/PEQ-16 is also equipped with a white light illuminator.

(6) The AN/PEQ-16 uses a laser and all laser safety precautions should be taken in training environments. The AN/PEQ-16 operates on three different laser classifications: Class 1, Class 3A, and Class 3B. Eye damage can occur if pointed at a naked eye less than 220 meters away; eye damage can occur if pointed at a person looking through binoculars less than 1,300 meters away.

(Slide #11)

b. **Specifications**

Specs	AN/PEQ-15	AN/PEQ-16
Weight w/ Batteries	7.5 oz	9.9 oz
Length	4.6 in	4.1 in
Width	2.8 in	3.2 in
Height	1.6 in	1.7 in
Power Source	(1)3v DL123A	(2)3v DL123A
Battery Life	6 hours dual high	4 hours normal operation, <1 hour white light
Water Proof	1 hour @ 6 meters	a. hour @ 6 meters

(Slide #12)

c. **Components**

(1) Visible Aiming Laser: The visible aiming laser provides for active target acquisition in low light and close quarters combat situations without the need for night vision devices.

(2) Infrared (IR) Aiming Laser: The IR aiming laser provides for active target acquisition in low light or complete darkness when used in conjunction with night vision devices.

(3) IR Illuminator: The IR Illuminator provides for active, covert target acquisition in low light or complete darkness when used in conjunction with night vision devices. It provides variable focused IR illumination of the intended target area. A focus knob is used to vary the IR illumination beam spread from flood to spot, based on the range and size of the area to be illuminated.

(4) Tri-function Lens Cap: A tri-function lens cap can be installed over the tri-laser assembly to diffuse the laser energy from the IR illuminator and to modify the IR Aiming Laser into different patterns.

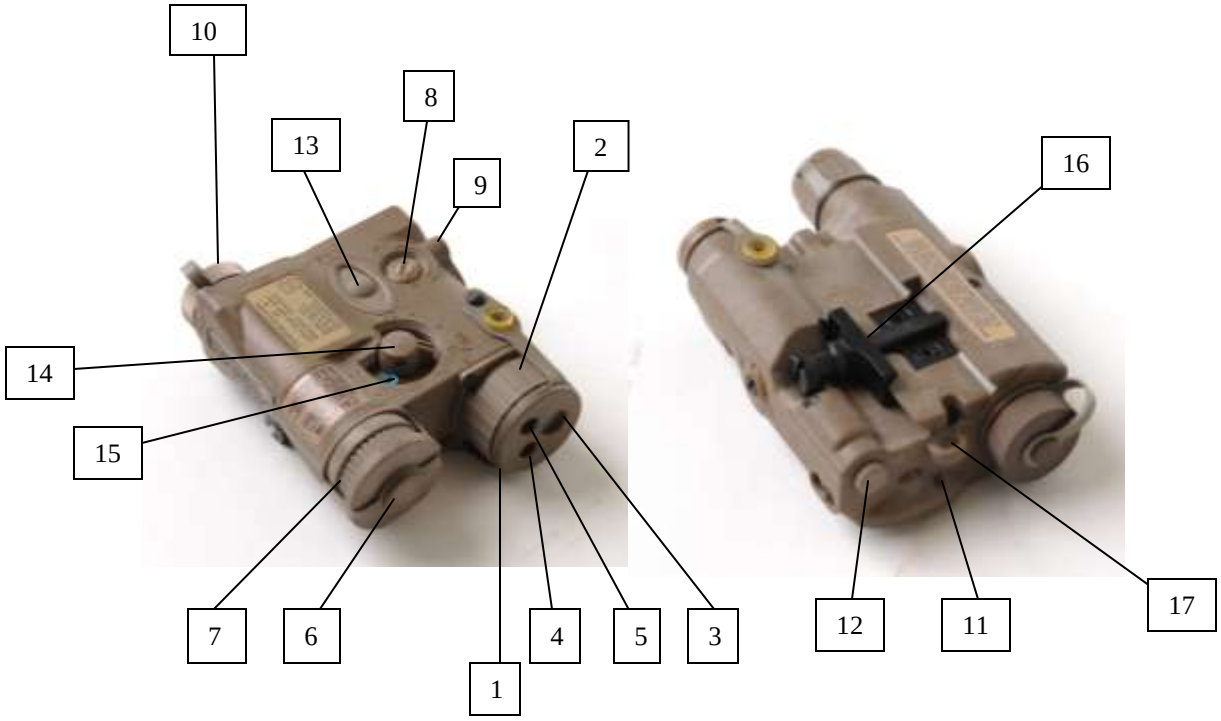
(5) LED Status Indicator: The LED is used to indicate whenever the AN/PEQ-16 is emitting laser and/or white light energy, when the battery power is low or displays the pulse rate during the operation of the IR. Green light is displayed unless the battery is low, and then the red light will be displayed.

(6) White Light Illuminator (AN/PEQ-16): The white light illuminator provides for target identification/ illumination without the need for night vision devices. A focus knob provides a variable focus, white light beam designed to allow for facial recognition at 25 meters. A lens cap is an opaque filter that, when installed over the white light illuminator significantly reduces the output.

(7) Illuminator Adjusters: Illuminating light adjusters move the aiming beams at a rate of 2 clicks = 1/2 in (1 box on a 25 meter zeroing target) at 25 meters.

(8) AN/PEQ-16 Components:

Label	Description
1	Tri-Function Lens Cap
2	IR Illuminator Focus Knob
3	Infrared Illuminator
4	Visible Aim Laser
5	Infrared Aim Laser
6	White Light Lens Cap
7	White Light Illuminator/Focus Knob
8	Illuminating Light Adjustors
9	Safety Screw Storage Location
10	Battery Cap/Battery Compartment
11	LED Status Indicator
12	Remote Jack/Jack Plug
13	Activation Button
14	Mode Selector
15	Safety Screw
16	Rail Grabber Bracket
17	Tie-down Attachment Point



(Slide #13)

d. **Modes of Operation**

(1) Mode Selector Position:

Position	Mode	Remarks
VIS AL	Visible Aim **Class 3a**	Visible Aim Laser is selected.
O	Off	The Device will not operate.
P	Program	Programming Mode is selected to set the desired Infrared (IR) Illuminator pulse rate.
AL	Aim Low **Class 1**	IR Aim Laser is selected a low power.
DL	Dual Low **Class 1/3a**	IR Aim Laser and IR Illuminator are both selected at low power.
AH	Aim High **Class 3b**	IR Aim Laser is selected at high power.
IH	Illuminator High **Class 3b**	IR Illuminator is selected at high power.
DH	Dual High **Class 3b**	IR Aim Laser and IR Illuminator are both selected at high power.

(Slide #14)

(2) Mode Activation:

(a) Momentary Operation: press and hold the Activation Button to operate the Laser Aiming Device in the operational mode set by the Mode Selector. When the button is released, the Laser Aiming Device turns off.

(b) Continuous Operation: Press the Activation Button twice in rapid succession (double-tap) to turn the Laser Aiming Device on. The device will remain on until the Activation Button is pressed a third time.

(c) The device will automatically turn off any laser that has been activated for five continuous minutes. To reactivate, press the Activation Button once.

(d) Remote Cable Switch: When installed, the Remote Cable Switch may be used to provide the same functionality as the Activation Button and is operated in the same manner.

TRANSITION: Now that we have discussed the design of the Laser Aiming Device; does anyone have any questions? I have questions for you.

QUESTION: How long does it take for the AN/PEQ-16 to power off by its self?

ANSWER: Automatically turns off in 5 minutes.

Now that we have discussed the Design of the Laser Aiming Device, we will now move on to mounting the Laser Aiming Device.

(Slide #15)

2. **MOUNTING THE LASER AIMING DEVICE** **(6 MIN)**

The AN/PEQ-16 may be mounted on the top, left or right side of the rifle. If mounted on the side of the service rifle, the AN/PEQ-16 should be mounted on the outboard side (i.e., right-side mount for right-handed shooter) so the sling or gear does not interfere with its operation. To mount the AN/PEQ-16:

a. Loosen the clamping knob on the integral rail grabber bracket until the jaws have sufficient space to fit over the MIL-STD-1913 rail.

b. Position the integral rail grabber bracket on the rail ensuring that the recoil lug is seated in the desired recoil groove of the rail and that the device is flush with the rail.

c. Hand-tighten the clamping knob clockwise. Once hand tight, turn an additional 180 degrees clockwise with a tool.

d. Make a note of where the device is mounted so if the AN/PEQ-15/16 is removed for any reason, the zero can be retained.

TRANSITION: Now that we have discussed mounting the Laser Aiming Device; does anyone have any questions? I have one for you.

QUESTION: When tightening the clamping knob, how far past hand tight should it be tightened?

ANSWER: 180 degrees

Now that we have discussed mounting the laser aiming device, let's discuss zeroing the Laser Aiming Device.

(Slide #16)

3. **ZEROING THE LASER AIMING DEVICE** **(6 MIN)**

The AN/PEQ-16 is equipped with illuminating light adjusters for independent adjustment of the aiming and illumination beams in both elevation and azimuth.

a. Adjustments: Depending on where the AN/PEQ-16 is mounted on the weapon the adjustment screws move the shot group in different directions. Do not force the adjusters beyond their end of travel

AN/PEQ-16

Mount	Adjuster	Rotation	Shot Group Movement
Top	Top Adjuster Elevation	CW CCW	Up Down
	Side Adjuster Windage	CW CCW	Left Right
Left Side	Side Adjuster Windage	CW CCW	Left Right
	Bottom Adjuster	CW CCW	Down Up

	Elevation		
Right Side	Top Adjuster Elevation	CW CCW	Up Down
	Side Adjuster Windage	CW CCW	Right Left

(Slide #17)

b. Preset Zero: The AN/PEQ-16 incorporates a unique zero preset feature which enables the co-aligned Visible and IR Aim Lasers to be nearly zeroed when initially attached to the weapon (within 4 inches vertically and horizontally of the mechanical axis of the weapon's barrel at 25 meters). To establish this zero preset:

(1) Rotate both the azimuth and elevation Aim Laser Adjusters to the full counter-clockwise end of travel

(2) Rotate them back 2.5 turns to align the slotted head in a 12 o'clock / 6 o'clock orientation.

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c. Co-Witness Procedures: This method is used when employing the RCO. It allows a quick zero at 100 meters. (Note that point of impact will be about four to five inches low at 200 meters.) It may only be used with a weapon/RCO that has an established zero. This method is performed in low light or dark conditions in which the visible laser may be seen.

(1) Place a target (e.g., 'E' silhouette) 100 meters from the firing line and hang a Chem-Light on the target at a height that can be engaged from a prone position.

(2) Assume a supported prone position.

(3) Rotate the AN/PEQ-16 mode selector to Visible Aim (VIS-AL).

(4) Aim in on the E-silhouette target using the tip of the RCO chevron as the aiming point.

(5) While the shooter with the weapon maintains a steady aim on the E-silhouette target, the other shooter (co-witness)

finds the visible laser and adjusts it onto the E-silhouette target using the AN/PEQ-16 adjusters.

(6) Once the AN/PEQ-16 weapon combination is zeroed, apply a positive load to each adjuster by turning each one eight clicks Clockwise, then back (Counter Clockwise) to the zero position.

d. Co-Witness Confirmation.

(1) With a magazine of fifteen rounds fire a group of five rounds into the center of the target.

(2) Adjust the AN/PEQ-16 utilizing the illumination beam adjustment knobs of the AN/PEQ-16.

(3) Repeat steps one and two until the IR laser of the AN/PEQ-16 is centered on the target along with the shot groupings.

(4) Once the shooter is satisfied with his/her IR lasers' placement, ensure the AN/PEQ-16 is turned off and the protecting caps are slid back onto the front of the AN/PEQ-16.

TRANSITION: Now that we have discussed Zeroing the Laser Aiming Device; does anyone have any questions? I have questions for you.

QUESTION: At what range is the Co-Witness method conducted?

ANSWER: 100 Meters

Now that we have discussed Zeroing the Laser Aiming Device, we will now move onto Weapons Presentation.

(Slide #19) **(6 MIN)**

4. **WEAPONS PRESENTATION:** After mounting and zeroing the AN/PEQ-16, it should not be removed. The aiming device is effective out to 250 meters if zeroed properly. The exact range will depend on the quality of night viewing system being used. When employing the aiming device, night vision should remain on, the laser mode selector should be turned to the appropriate setting, and the Marine should be ready to activate the laser when

needed. Activate the laser when presenting the weapon to a target. Activating the laser prematurely or excessively can result in the Marine's position being detected by the enemy. Activate the illuminator to check for targets or scan the area.

INTERIM TRANSITION: Now that we have discussed Weapons Presentation; does anyone have any questions? Let's move into the demonstration portion of the class.

DEMONSTRATION. (15 MIN) The purpose of this demonstration is to show the Shooters how to use the laser aiming devices. The demonstration will be conducted outside or inside utilizing the assistant instructor, all gear and equipment related to the range. The assistant instructor will identify each part of the laser aiming device, and then proceed in mounting and zeroing procedures. The primary instructor will walk the assistant instructor through each step of the process and then step by step in fault checking. The primary instructor will ensure that the assistant instructor moves along with the instruction during the demonstration. Student to instructor ratio will be **30:2.**

STUDENT ROLE: The students will report to the designated area for the demonstration. The students need to ensure that they are in an area where all procedures are able to be seen and are asking questions as needed and when applicable.

INSTRUCTOR ROLE: Primary instructor will explain to the students in what order the demonstration will be conducted. The assistant instructor will identify each part of the laser aiming device, and then proceed with mounting and zeroing procedures. The primary instructor will walk the assistant instructor through each step of the process and then step by step in fault checking. The primary instructor will ensure that the assistant instructor moves along with the instruction during the demonstration.

1.SAFETY BRIEF: As per ORAW.

2.SUPERVISION AND GUIDANCE: Ensure all steps of the demonstration are able to be viewed by all students.

3.DEBRIEF: Upon completion, ask if there are any questions and provide feedback. Allow for student comments and review key points.

INTERIM TRANSITION: Now that we have covered the demonstration

portion of the class, are there any questions? Let's summarize.

(Slide #20) **(2 MIN)**

SUMMARY

During this period of instruction we have discussed the design of the laser aiming device, mounting the laser aiming device, zeroing the laser aiming device, and weapons presentation while using the AN/PEQ-16. I am confident that with this knowledge you will have the ability to conduct night operations using the PEQ-16 to gain the advantage over the enemy.