



AN / PEQ-15

ADVANCED TARGET POINTER

ILLUMINATOR AIMING LIGHT

(ATPIAL)





AN/PEQ 15



References:

1. TM 9-5855-1914-13&P
2. TC 3-22.9



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Equipment Data

- The Advanced Target Pointer Illuminator Aiming Light (ATPIAL) is a multifunction laser device that emits visible or infrared (IR) light for precise weapon aiming and target / area illumination.
- The Visible Aim Laser provides for active target acquisition in low-light and close quarters combat situations without the need for night vision devices.
- The IR Aim and Illumination lasers provide for active, covert target acquisition in low light or complete darkness when used in conjunction with night vision devices.
- The ATPIAL can be used as either a handheld illuminator / pointer or can be mounted to weapons equipped with a MILSTD- 1913 Rail.
- The ATPIAL is a ruggedized system designed for operation in battlefield



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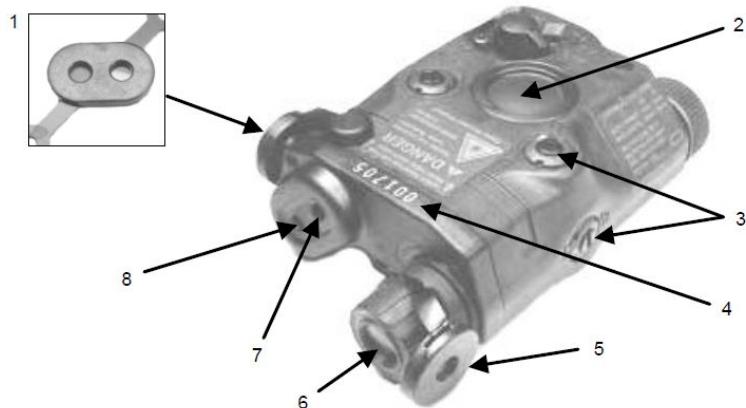


1. Aim Neutral Density / Opaque Lens

Double-sided lenses cap that, when placed over the Aim Lasers, reduces power output from the IR Aim Laser and completely prevents emission from the Visible Aim Laser.

2. Activation Button

When in P (PROGRAM) mode, the Activation Button allows for programming the IR Illuminator pulse rate. When in one of the six operational laser modes (i.e., VIS-AL, AL, DL, AH, IH, DH), the Activation Button is used to actively emit laser radiation that corresponds with the position of the Mode Selector.





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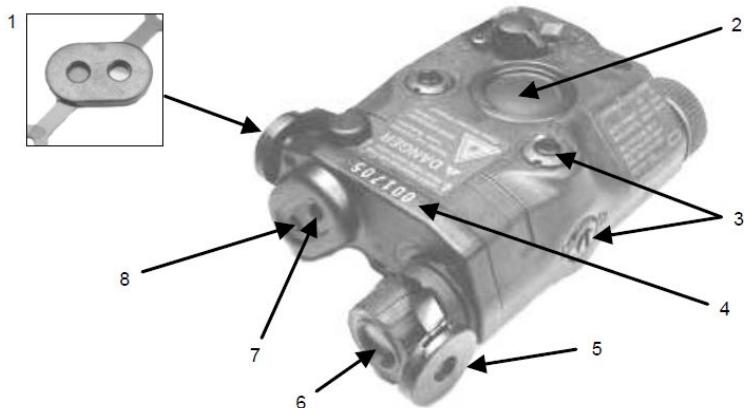


3. Illuminator Adjusters

These adjusters can be rotated in azimuth and elevation to bring the illumination area over the aiming beam, and can be used to align the IR Illuminator with the barrel of the weapon.

4. Serial Number

Stamped serial number location for easy visibility.





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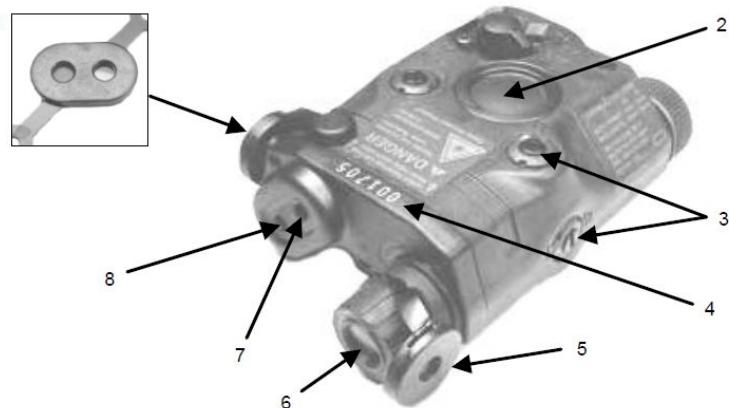


5. Illuminator Diffuser Lens Cap

When installed over the IR Illuminator, spreads the laser energy over an angle of approximately 180 degrees, allowing for illumination of a 20' x 30' x 8' room. This is useful for illuminating a small room and is most effective when used with the IR Illuminator Focus Knob adjusted to the widest beam (flood) setting.

6. Activation Button

Used with night vision devices to provide variable focused IR illumination of the intended target area. The Illuminator Focus Knob is rotated to vary the illumination beam spread from flood to spot, based on the range and size of the area to be illuminated.





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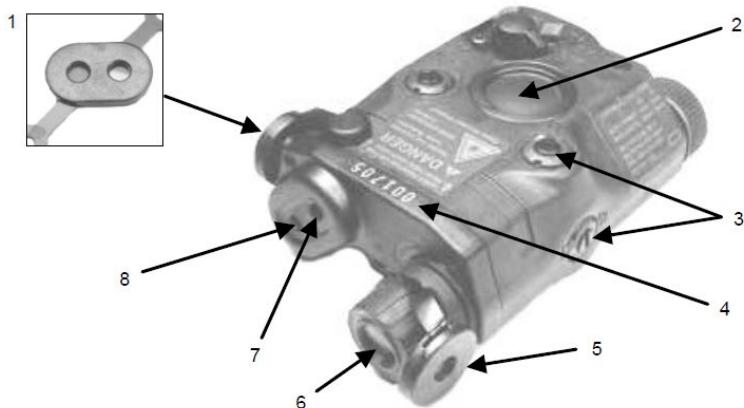


7. Infrared Aim Laser

Used with night vision devices to provide a precision aim point or to mark targets.

8. Visible Aim Laser

Used to provide a precision aim point or to positively identify/mark targets at close range during the day or night, without the need of night vision devices. It may also be used for bore-sighting the AN/PEQ-15 during daylight hours.





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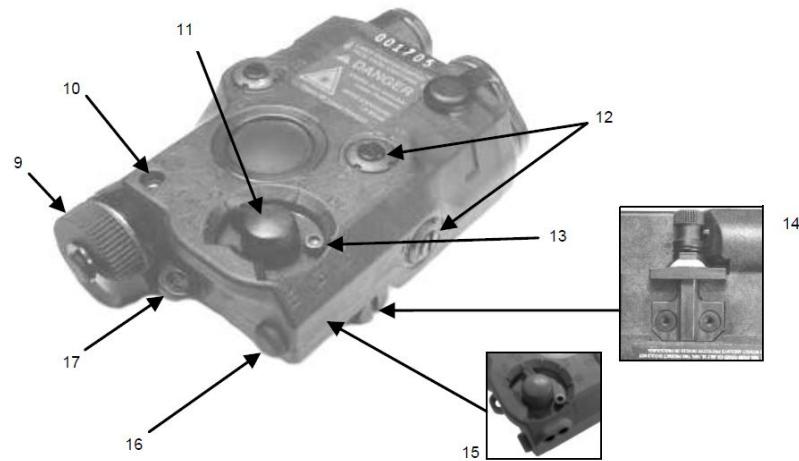


9. Battery Cap

Provides secure housing for the 3-volt DL123A battery that powers the AN/PEQ-15.

10. Visible Aim Laser

Allows for secure storage of the Safety Screw after it has been removed from the Lockout Position.





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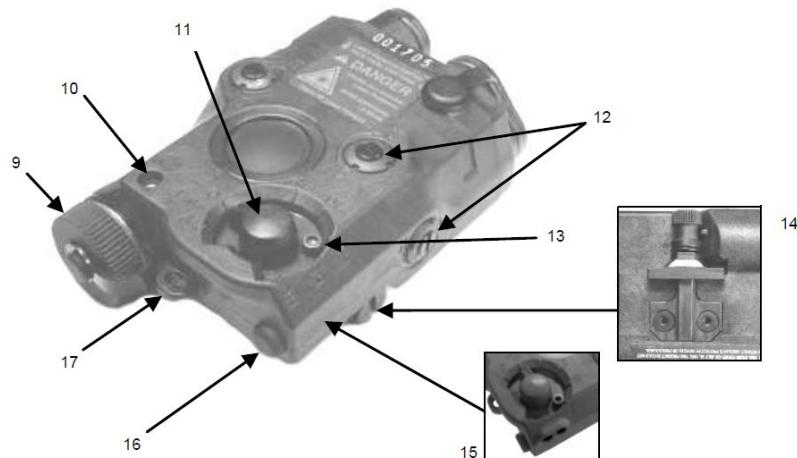


11. Mode Selector

Allows the user to select the desired mode of operation for the AN/PEQ-15. When switched to O (OFF), the AN/PEQ-15 will not emit laser energy.

12. Aim Laser Adjusters

These adjusters can be rotated to simultaneously bring the Visible and IR Aim Lasers into azimuth and elevation alignment with the barrel of the weapon.





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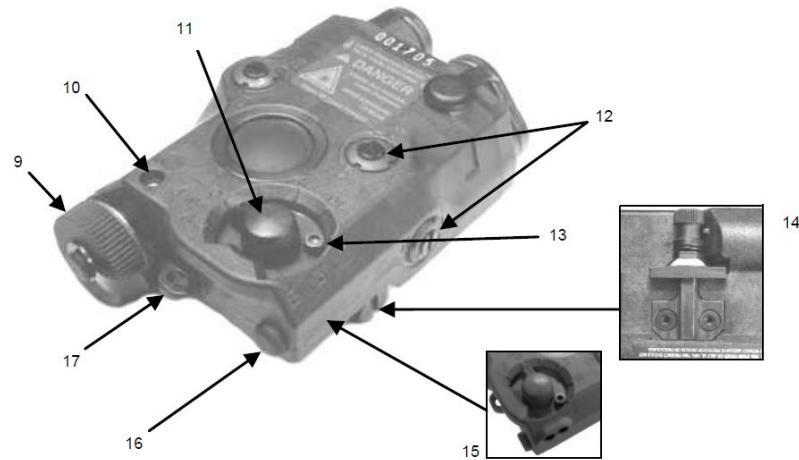


13. Safety Screw

When installed in the Lockout Position, the Safety Screw prevents the Mode Selector from being turned to the high power laser settings (i.e., AH, IH, DH). Removal of the Safety Screw allows for access to all modes of operation.

14. Integral Rail Grabber Bracket

Secures the AN/PEQ-15 to a weapon equipped with a MILSTD-1913 rail.





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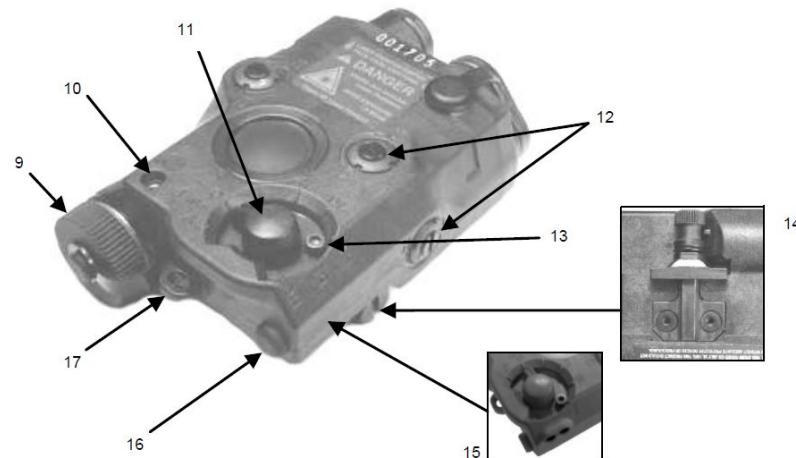


15. Safety Screw Storage Location

Allows for secure storage of the Safety Screw after it has been removed from the Lockout Position.

16. Remote Jack / Jack Plug

Provides an interface for the Remote Cable Switch. The AN/PEQ-15 comes with a Remote Jack Plug installed to protect the Remote Jack from debris and moisture.



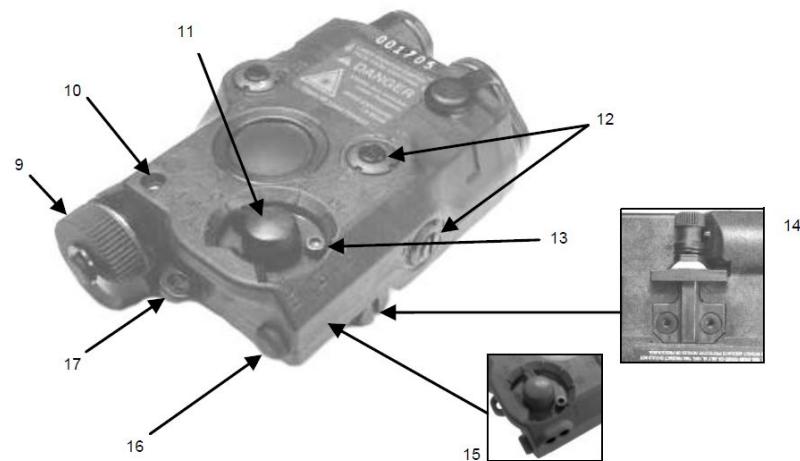


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17. Tie Down Attachment Point

Allows for the attachment of a lanyard to the AN/PEQ-15 when used in the handheld mode.



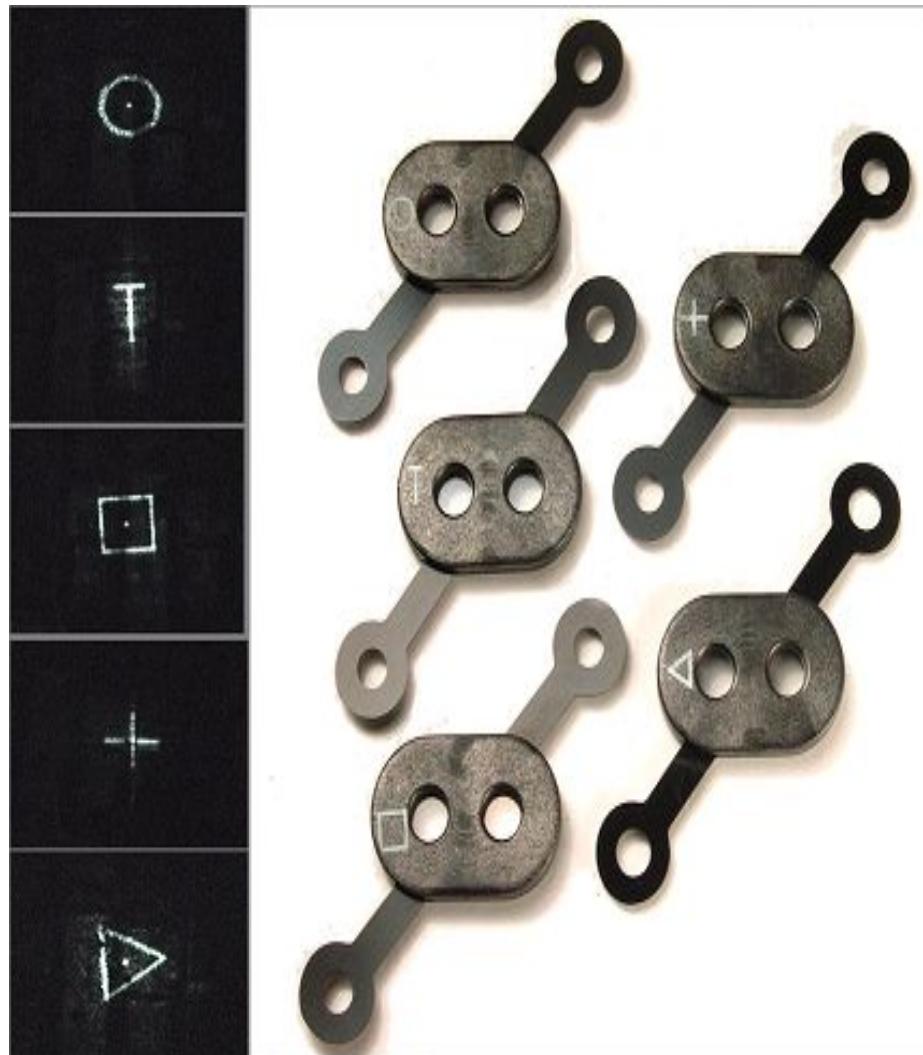


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PATTERN GENERATORS

- Allows the Squad / Platoon Leader to discriminate his commands from other leaders.
- Used for hand-held and weapon mounted command & control.
- 5 Patterns being fielded.
- Mounts over the Aiming Exit Port.
- Projects a 2.6 meter pattern at 300 meters.

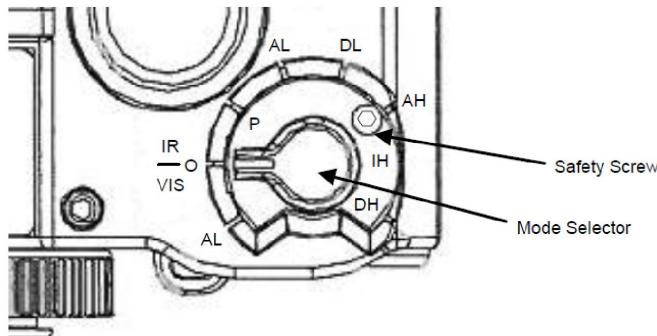




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Modes of Operation



POSITION	MODE	REMARKS
VIS AL	VISIBLE AIM Class 3R	Visible Aim Laser is selected. Visible without the use of night vision devices.
O	OFF	The AN/PEQ-15 will not operate. Prevents inadvertent emission of laser energy.
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 at low power. Visible with the use of night vision devices.
DL	DUAL LOW Class 3B	IR Aim Laser and IR Illuminator are both selected at low power. Visible with the use of night vision devices.
AH	AIM HIGH Class 3B	IR Aim Laser is selected at high power. Visible with the use of night vision devices.
IH	ILLUMINATOR HIGH Class 3B	IR Illuminator is selected at high power. Visible with the use of night vision devices.
DH	DUAL HIGH Class 3B	IR Aim Laser and IR Illuminator are both selected at high power. Visible with the use of night vision devices.

NOTE: The Safety Screw must be removed and stowed for access to AH, IH & DH. Accessing the high power laser setting is only authorized at the Commander's discretion & should not be removed otherwise.



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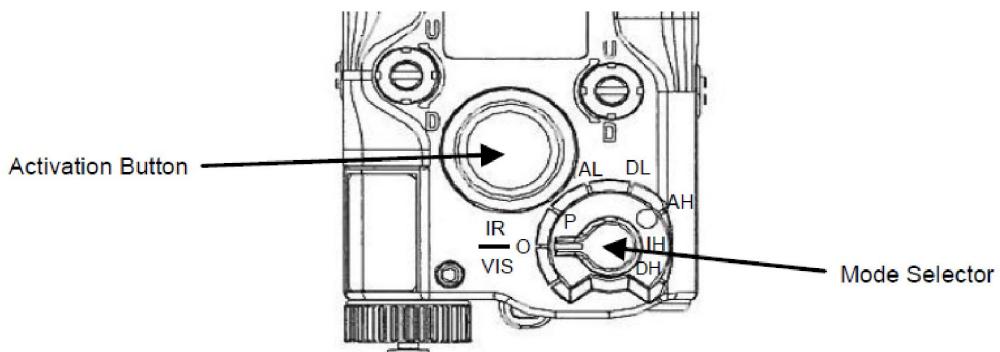
Modes of Activation

Momentary Operation

Pressing and holding the Activation Button operates the AN/PEQ-15 in the operational mode set by the Mode Selector. When the button is released, the AN/PEQ-15 turns off.

Continuous Operation

Pressing the Activation Button twice in rapid succession (double-tap) will turn the AN/PEQ-15 laser(s) on. The laser(s) will remain on until the button is pressed a third time (single-tap) or for a period of 5 minutes.





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LED Status Indicator

A Light Emitting Diode (LED) used to indicate when the AN/PEQ-15 is emitting laser energy, when the battery power is low, and displays the pulse rate during programming of the IR Illuminator.

Depending on configuration, the LED Indicator will be found either within the Mode Selector Switch well or at the rear of the chassis.



Black Chassis
(Top View)

LED Status Indicator

Tan Chassis
(Rear View)



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LED Status Indicator

Indicator Color	Indicator Rate	AN/PEQ-15 Status
GREEN	SOLID	Laser(s) activated or continuous IR illumination.
GREEN	1 Flash per second	1 illuminator pulse per second
GREEN	2 Flashes per second	2 illuminator pulses per second
GREEN	4 Flashes per second	4 illuminator pulses per second
GREEN	8 Flashes per second	8 illuminator pulses per second
RED	SOLID	Laser(s) not activated, AN/PEQ-15 low battery power
GREEN/RED	Solid Green with Red Flash every 5 seconds	Laser(s) activated, AN/PEQ-15 low battery power
RED	Steady for 2 seconds	IR programming failed
ORANGE	3 Orange Flashes	IR programming successful



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Program Pulse Mode

Pulse Mode

In addition to momentary and continuous modes of operation, the IR Illuminator may be programmed to operate in pulse mode at either 1, 2, 4, or 8 pulses per second.

Program the IR Illuminator pulse rate as follows:

1. With the Mode Selector turned to the P (PROGRAM) position, hold down the Activation Button.
2. Turn the Mode Selector to the desired pulse rate as shown in the table. The LED Status Indicator will display a green light flashing at the same frequency as the corresponding pulse rate.
3. Release the Activation Button. Successful programming will be indicated by three orange flashes on the LED Status Indicator. If programming was unsuccessful, the LED Status Indicator will display a steady red light for two seconds. The set pulse rate will remain until it is programmed differently.

PULSE RATE	MODE SELECTOR POSITION
Program	P
Continuous (no pulse)	AL
1 pulse per second	DL
2 pulses per second	AH*
4 pulses per second	IH*
8 pulses per second	DH*

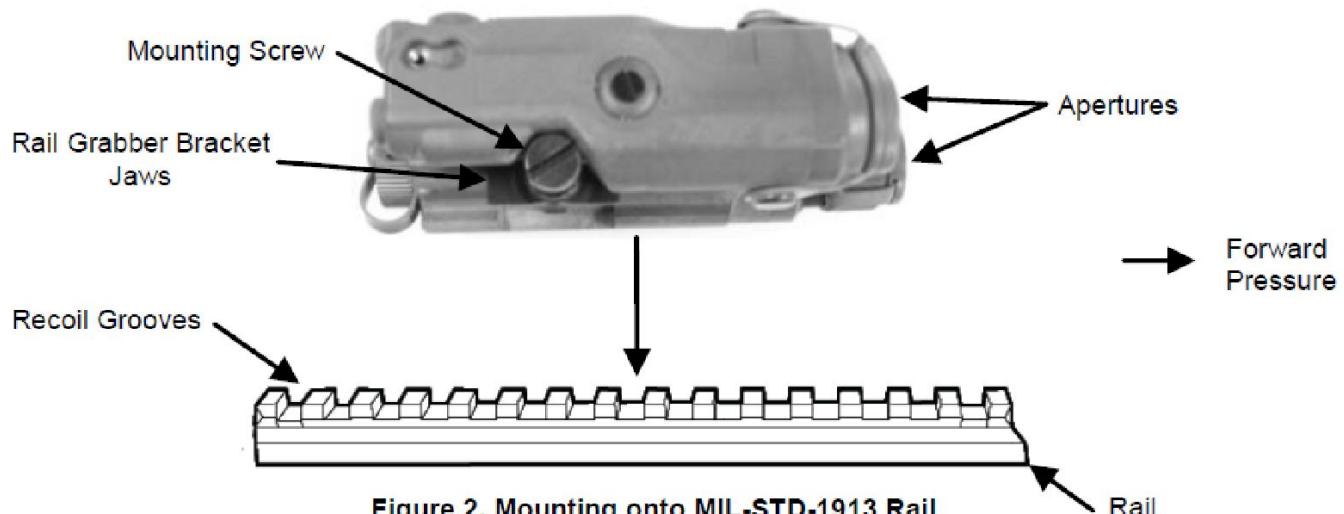


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The ATPIAL contains an integral Rail Grabber Mounting Bracket enabling the ATPIAL to mount directly to any MIL-STD-1913 Mounting Rail of the host weapon.

Weapon	Configurations
M16A4	Top, Left, or Right Mount
M4/M4A1	Top, Left, or Right Mount
M240B M240G	Feed Tray Cover Rail Mount
M240B M240G	Left or Right Side Mount on Forward Rails
M249 SAW	Feed Tray Cover Rail Mount
M249 SAW	Left or Right Side Mount on Forward Rails





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MOUNTING PROCEDURES

1. Loosen the clamping knob on the ATPIAL Rail Grabber until it has sufficient space to fit over the rail.
2. Hold the AN/PEQ-15 with the laser apertures facing in the direction of the muzzle of the weapon.
3. Position the AN/PEQ-15 on the rail ensuring the Mounting Screw in the mounting channel engage.
4. While pushing down and forward on the AN/PEQ-15, firmly tighten the Mounting Screw (Figure 2) by turning clockwise, ensuring not to over tighten.





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ZEROING PROCEDURES – TOP MOUNT

AIMING BEAM MOVEMENT	ADJUSTER ROTATION	SHOT GROUP MOVEMENT
Top Adjuster Elevation	CW CCW	UP Down
Side Adjuster Windage	CW CCW	Right Left

ILLUMINATION BEAM MOVEMENT	ADJUSTER ROTATION	LASER MOVEMENT
Top Adjuster Elevation	CW CCW	Down Up
Side Adjuster Windage	CW CCW	Right Left





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MOUNTING PROCEDURES

- Each click represents approximately .5 cm at 25 meters and 2 clicks = 1cm
- Directional indicators are adjusted to the strike of the round not the movement of the laser.
- For factory preset zero turn the adjuster CW to the mechanical stop then turn CCW 2.5 revolutions.





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There are two methods for zeroing the ATPIAL to your weapon.

1. 10 Meter Laser Bore Sight (LBS) and Target Offset numbers
2. 25 Meter Range (Live Fire Zero) & Target Offset numbers

Utilize DA Form 7476 10-meter Boresight Offset Target for both.

NOTE: All Target offsets can be found in TM 9-5855-1914-13&P or TM 9-5860-226-13&P (LBS)



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10 Meter Boresight (Top Mounted)

1. Hang the target at a distance of 10 Meters from the weapon muzzle.
Calibrate the LBS to the barrel.

2. Extract the Offset calculation from the TM for the device / weapon.

3. Considering the Offset calculations, determine the best location on the target and draw the LBS symbol at the crossing of the squares. (eg: if offset calculations are to the Right (R) and UP (U), place the LBS symbol left and below center of the target).

10-METER BORESIGHT OFFSET TARGET									
For use of this form, see TC 3-22.249 or TC 3-22.240; the proponent agency is TRADOC.									
See back of this form for quick reference to possible weapon configurations.									
<ol style="list-style-type: none">1. Use the correct offset for the weapon, sight, and location configured.2. Stabilize the weapon and the offset.3. Zero the bore light while it is inside the barrel of the weapon.4. Align the laser of the bore light with the dot on the 10-meter offset.5. Align the MILES laser with the MILES rectangle on the 10-meter offset (if applicable).6. Adjust the aiming laser until it centers on the crosshair.7. Center the optic aim point on the crosshair. Adjust the optic until the bore light laser aligns with the dot on the 10-meter offset.8. Confirm that all devices still align to their aiming mark.									
DA FORM 7476, MAY 2017 PREVIOUS EDITIONS ARE OBSOLETE.									
Page 1 of 2 AFD LO v1.00									

NOTE: Only full-sized targets should be used for bore-sighting.

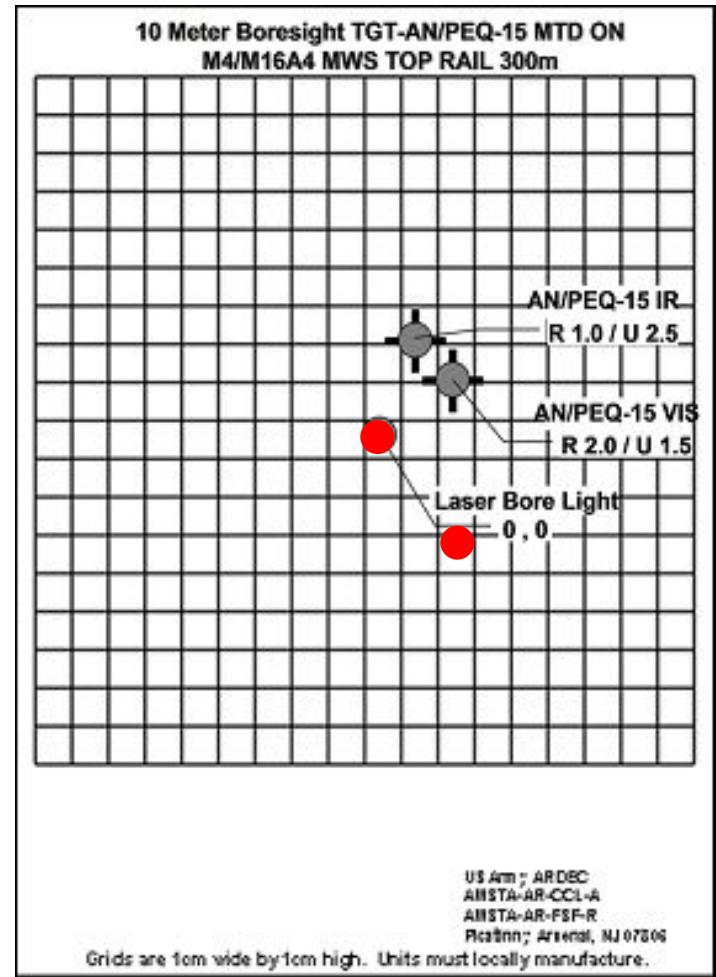


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10 Meter Boresight (Top Mounted)

4. Move the Aiming Neutral Density/Opaque Lens Cap to the store location.
5. Double Tap the Laser Activation Button for Steady-on.
6. Rotate the AIM Windage Adjuster on the side of the ATPIAL to move the Visible Laser beam to the proper Horizontal position on the Offset Target (labeled VIS AIM).
7. Rotate the AIM Elevation Adjuster on the top of the ATPIAL to move the Visible Laser Beam to the proper Vertical position on the offset Target (labeled VIS AIM).



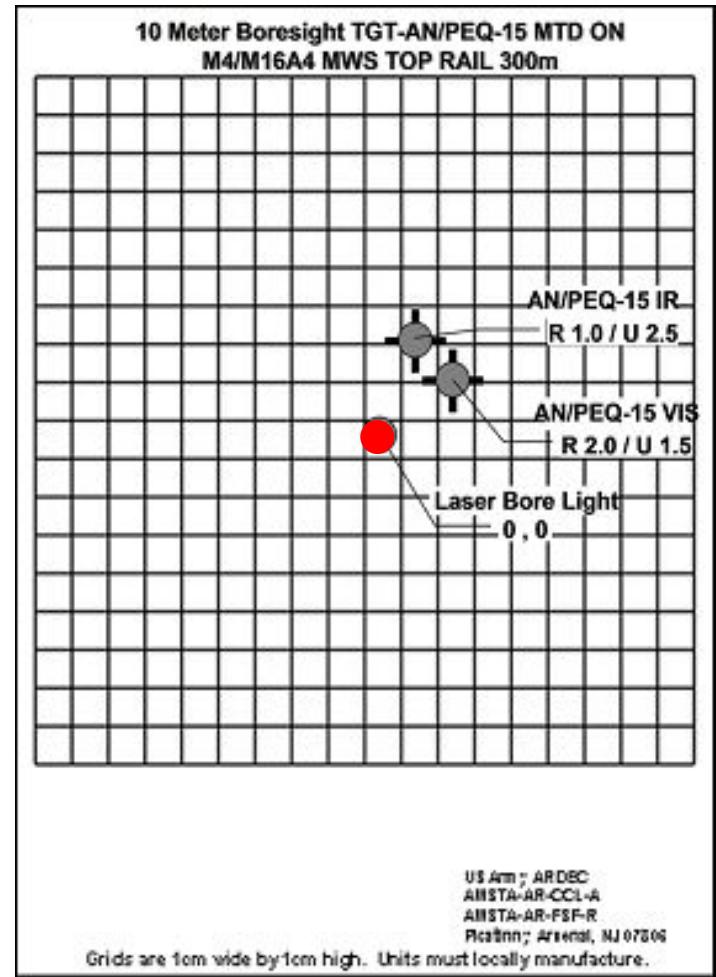


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10 Meter Boresight (Top Mounted)

8. Press the Laser Activation Button once to shut off the AIM Laser.
9. Move the Aiming Neutral Density/Opaque Lens Cap from the stored location by stretching it out and over the front of the aiming laser exit ports so that it is snug and firmly in place.
10. It is better to adjust the illuminator on the range so the Soldier can see how it will light up the target area.





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25 Meter Boresight (Top Mounted)

Use the Offset chart to determine the correct alignment for the weapon configuration.

BORESIGHTING PROCEDURES-(Continued)

M4A1 with a TOP mounted PEQ-15.

Table 7. Mounting Configurations and Weapon Offsets.

Weapon	Mount	Range Zeroed To	10m Boresight Target Offset Squares	25m M16A2/A4 Target Zero Offset Squares
M4/M16A4 MWS	Top Rail	300m	VIS 2.0R / 1.5U IR 1.0R / 2.5U	VIS 2.5L / 1.5U IR 1.5L / 0.5U
M4/M16A4	Top Rail	300m	VIS 3.0L / 0.0	VIS 2.5R / 3.5U

Looking at this we see there is a difference in the old M16A2/A4 zero target and the A8 bullseye target we shoot now.

Each Up or Down square was 1 “click” on the front sight (1.25 MOA per click).

Each Left or Right square was 3 “clicks” on The windage (.5 MOA per click)





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25 Meter Boresight (Top Mounted)

Offset is 2.5 squares Left & 1.5 squares Up on the old M16A2 / A4 target.

Each Left or Right square was worth 1.5 MOA, so that is about 3.75 MOA
Left (make it an even 3.5 MOA)

Each Up or Down square was worth 1.25 MOA, so that is about 1.83 MOA
Up (make it an even 2 MOA)

Strike point offset on the A8 target is 3.5L / 2U (squares).

This adjustment is made from the VIS laser POA to the strike point offset. A box, 6x6 squares (6MOA) in size, should be drawn around the strike point offset.

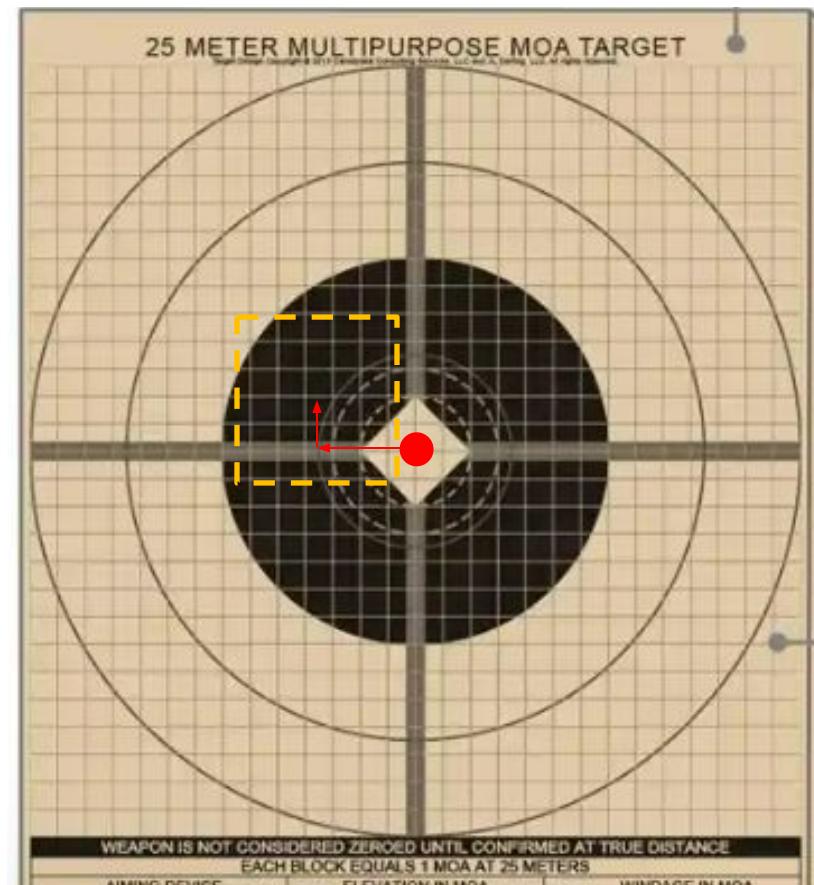


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25 Meter Boresight (Top Mounted)

1. Strike point offset on the A8 target is 3.5L / 2U (squares).
2. Draw a box, 6x6 squares (6 MOA) centered on the strike point offset.
3. Activate the PEQ-15 VIS aim laser. Aim the laser the center point of the target.
4. Fire a 5 round shot group (3 round is also fine).



If Soldiers are struggling with grouping then fire consecutive groups until grouping is achieved.



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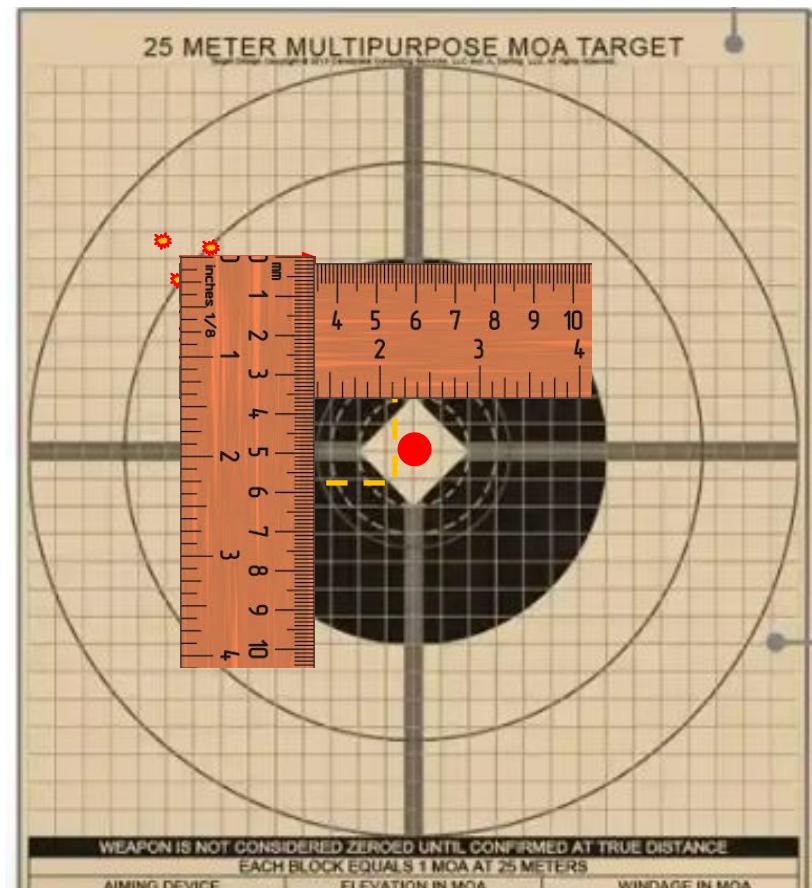
25 Meter Boresight (Top Mounted)

5. The adjusters are .2 MRAD per click. This will move .5cm per click at 25 meters.

6. Use a metric ruler and measure the adjustment in cm's. This would be about 3.5cm R & 3.5CM

7. Use a metric ruler and measure the adjustment in cm's. This would be about 3.5cm R & 3.5CM.

8. Adjust the Windage 7 clicks R & the Elevation 7 clicks D.



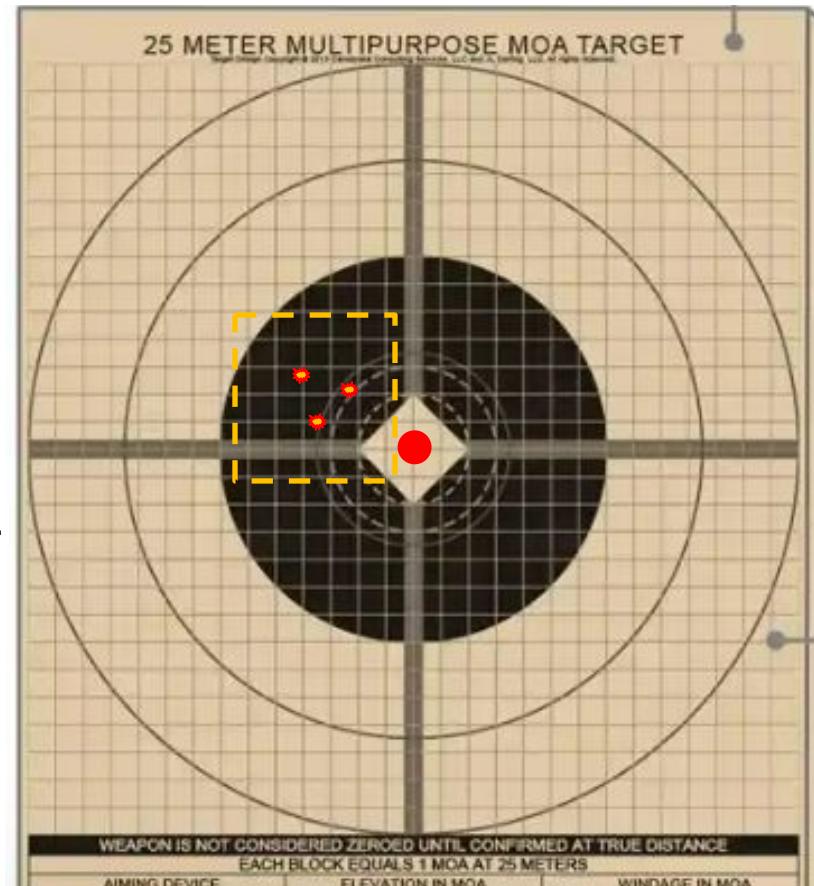


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25 Meter Boresight (Top Mounted)

9. Fire another shot group aiming the laser at center of the target. The rounds should impact in the center of the strike point offset square. (If they don't then repeat Steps 4 – 9).
10. Once zero has been established, apply a positive load to each adjuster. Turn each adjuster 8 clicks CW and then 8 clicks CCW.
11. Field zero the illuminator at the 300 meter berm to ensure proper coverage of the target area.





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Qualification

The strike point offset used at 25m gets the line of bore co-aligned with the IR / VIS aim lasers. This means the aim lasers and the line of bore will never cross or intersect. In a perfect world this means the center of your shot groups will always be slightly left and / or lower than the aim lasers.

The IR aim laser is only like 1 cm right of the center line of bore. Not enough to push shot groups off target. This means the IR laser should be close to POA / POI at 300 meters. The bullet drop at 200 meters is +5" or 6", with the 300 meter zero. The bullet drop at 100 meters is +4" or 5", with the 300 meter zero. This means you will impact **higher** than your point of aim by about 4 – 6 inches. So place your IR aim laser around beltline or belly of the target to ensure maximum coverage area for your shot group.

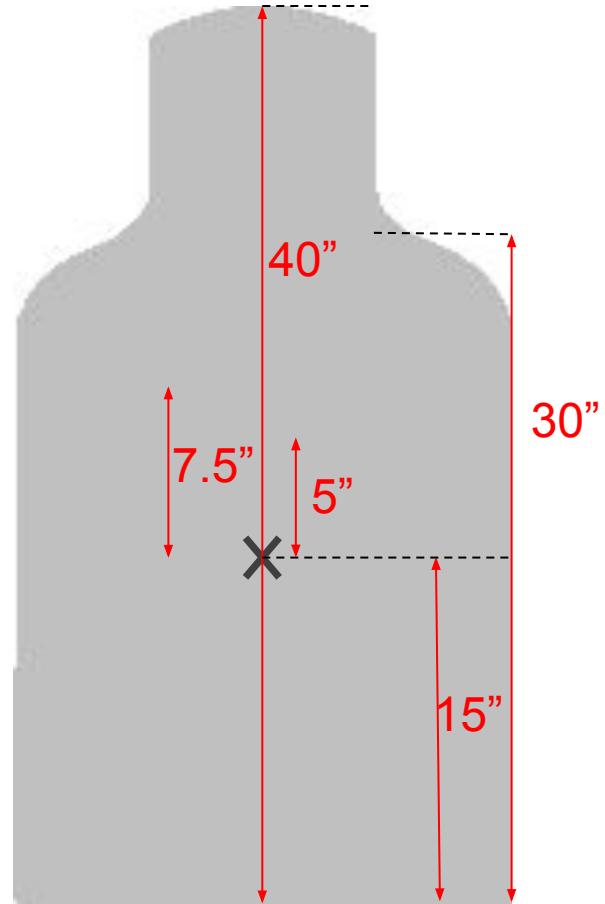


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Qualification

1. These are some basic dimensions of the qualification target. They are not exact but field use numbers to make the math easy.
2. If you aim CM at 100m & 200m then you will impact 4 – 6 inches higher. If your shot groups are larger than normal, then you increase the possibility of missing over left or right shoulders.





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Qualification

1. The 5" and 7.5" just show how much lower you need to aim. This is what we call belt line or belly. This does not seem like a large amount, but it gives you the largest area for your shot group to impact.
2. This is also the technique used when qualifying with the M68 CCO.

