

Co-Witnessing Lasers to Optics

A FASTER MORE ACCURATE WAY TO ZERO LASERS FOR THE NIGHT FIGHT

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I have searched the Army's manuals and Center for Army Lessons Learned (CALL) literature for a night-fighting technique that many infantry units use. I'll call this technique the "co-witnessing" technique for lack of a better term. I have yet to find this technique described in any manual or professional journal. This article is intended to put a little more in our kit bag and put into published word a very effective night fighting technique that our Army's literature has so far omitted.

Co-witnessing

This technique is most often associated with the use of back-up iron sights to assist us in zeroing our Close Combat Optics (M-68) or Eo Techs. The Soldier zeros his back-up iron sights in the normal fashion. After he is zeroed, the Soldier mounts his CCO on the appropriate rail, assumes a good supported firing position, sights down his iron sights. He then turns on his CCO. The Soldier then has his coach adjust the red dot of the CCO until it is "lollipopped" onto the front sight post. (See Figure 1.)



Figure 1 - Lollipopped CCO Red Dot

The Soldier then folds down his rear sight aperture and his CCO is "mostly" zeroed. He will still need to confirm his zero using only the red dot, ignoring his front sight post.

This same concept can be applied at night when using infrared (IR)-capable optics, an aiming laser, and a set of monocular night vision goggles. The technique is simple and can be done almost anywhere in less than a minute.

Setting the conditions

- a. Zeroed CCO, Advanced Combat Optical Gunsight (ACOG), or M-145 Machine Gun Optic (MGO) with laser filter removed.
- b. Properly adjusted PVS-14, mounted on firing eye. (Switch it to your nonfiring eye later if you like.)
- c. Mounted PEQ-2A, PAC-4C or other laser aiming device.
- d. Distant aiming point, 200 meters or more, (100 meters will work if that's all you have).

Process

Soldier gets into a supported aiming position, kneeling, or standing supported work best. Soldier switches his optic to the IR mode, usually position 2 and 3 on the CCO. (The ACOG Chevron will also be visible and significantly brighter.) Soldier will have to modify his cheek-to-stock weld so that he can look

through his optic with his PVS-14s. With a little practice he will be able to see his IR aiming dot as quickly as he can acquire his iron sights. Soldier then picks a known distant aiming point, the further the better, stabilizes his weapon and activates his laser. The Soldier will now see two IR dots down range, he then directs his coach to adjust his laser onto the CCO dot or ACOG chevron. Bold adjustments initially, then slowly as the laser gets closer to the CCO's IR dot or ACOG chevron. Once the two dots have merged, the laser is ready to be fired at a field fire range, known distance targets, or if in a rush go on a mission. That's all there is to it; it works very well and can be done in a minute or less if you practice.



Figure 2 - Step 1: Find CCO dot/ACOG chevron at a distant aiming point.



Figure 3 - Step 2: Stabilize weapon and activate laser.

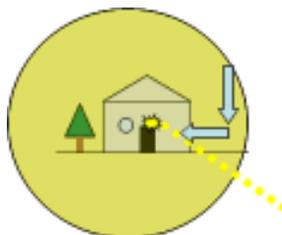


Figure 4- Step 3: Coach adjusts laser onto CCO dot/ACOG chevron.



Figure 5 - Step 4: Once the dots merge the laser is mostly zeroed. .

Techniques for better accuracy

Align the laser offset to the right of the CCO IR dot/ACOG Chevron, checking to make sure it's horizontally flush. (See Figure 6.)

Once the dots get close, start counting the clicks. Once the laser becomes visible again to the left of the IR dot, count back in the other direction, the middle number is the zero point. (See Figure 7.)



Figure 6 - Viewing with a horizontally flush plane.

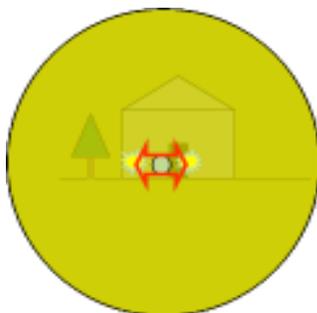


Figure 7 - Once the dots merge, the Soldier can refine his accuracy by counting clicks left and right uncovering the laser by one full click in both directions.

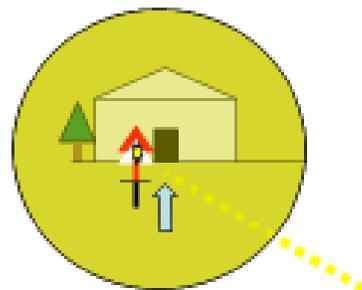


Figure 8 - It may be easier to work the IR aiming point from the bottom into the legs of the ACOG chevron.

For the ACOG, align the laser offset to the right and count it to the left until the laser is set between the two legs of the chevron. It may be necessary to cover the fiber optic filament of the ACOG, dimming the chevron to a more acceptable light level. (See Figure 8.)

For the M-145 MGO, the Soldier must remove the laser filter that is attached to the front of the MGO. Once the Soldier is finished zeroing his laser, he will put the laser filter back on. (See Figure 9.)

Just as in daylight, keep the CCO dot as dim as you can, while still being able to identify it.

Range to zero your laser

This is a source of debate, obviously the farther the range of your distant aiming point the more accurate the shot will be. I believe the best guidance to give is that the Soldier should zero the laser at a range from which he can identify a target. A M-240 gunner with PVS-14s and a 3x magnifier may be able to identify a target out to 500 meters, while a rifleman with a set of PVS-7Bs can only identify to 150 meters in good lighting

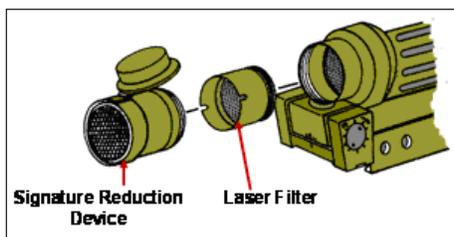


Figure 9 - Remove the laser filter from the MGO and replace after the weapon is zeroed.

conditions. I think the CALL Own the Night Two Table 1-4 has overly ambitious tables for what our IR phase lines really are. Go with what Joe tells you he can see. The bottom line is to zero out as far as you can identify an enemy to engage; 200 meters and further is more than sufficient to ensure that you have removed the bore axis, laser aiming light disparity.

If you can see your CCO without using your laser, why not just omit the laser and not present a laser signature you ask? Good question, and you're right; don't use the laser if you don't have to or if you are identifying a target or directing fires.

To ensure you are getting the accuracy

you want to better kill at night you'll need to fire at KD targets, making minor adjustments to the IR aiming light. Pop-up targets will work and are much faster but unless you get hit location feedback you won't be able to refine your zero. A good technique is to put a small swatch of glint tape, or use a 1/2 by 1/2 inch square cut from a PT reflective belt, and place it center mass of the target's kill zone.

Unfortunately, you will still have to teach and utilize the laser borelighting technique for those Soldiers who only have iron sights.

This technique is much faster than the current doctrine of laser borelighting at 10 meters, and the 25-meter offset zero, field fire confirmation then qualification. Additionally, it is more accurate and easy to teach; good hunting!

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