

JOHN HOLLIGER

white oak precision
 [contact information is in source pages]

[This next little bit was added in 2001. I don't like messing with a manuscript in this way but will when I think it's something important. This is. Hooded apertures are approved for use in CMP and NRA Service Rifle events, and these have created a problem in the AR15 sight, or, more correctly, pointed out a problem that "didn't exist before." Here's the man who can fix it, and also, incidentally, the one who's doing all my Service Rifle work now. He's the best. Much more on sights, and Mr. Holliger, in the next installment in my semi-auto saga: The Competitive AR15: a technical guide, or, as I call it, "ARII."]

The standard A2 rear sight is windage adjustable via a 32 pitch threaded screw. That's equivalent to 1/2 minute of angle graduations per click. There are 10 holes on the inside flat area of the wind knob and a spring and ball detent to secure each click stop. That's fine.

The issue elevation adjustment is via a large ring threaded around a center post; stops are controlled by the same sort of ball and spring detent. That's fine too.

What's not fine about either of these setups is poor parts fit, and that's a problem (or can be).

Changing elevation value is done through parts replacement: an elevation post and wheel assembly with finer threads. That's easy.

Now the sight doesn't move as much up and down with each click. Problem is that some can move every other direction, and now we're in the machine shop to get that fixed. I spoke with John Holliger of White Oak Precision about his sight modifications. John is Distinguished and a High Master, and has gained the reputation among the more serious AR15 Service Rifle pilots as the

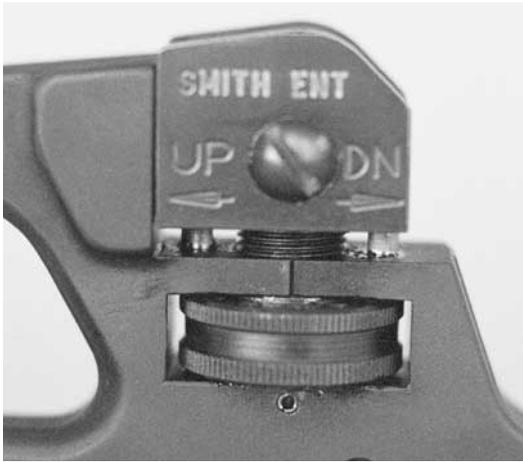
"sight man." John's full rifle work is equally outstanding, but he has developed and applied a few tech tricks to AR15 sights that, honestly, no one else is doing. The most noticeable and notable modification is the addition of two pins down through the sight base and into the rifle receiver. These pins fix and locate the orientation of the base and support it equally against any unwanted movement. The next few paragraphs are all his...



1. Extra detent added to elevation wheel for equal support.
2. Bushing fitted to right side to match windage screw diameter.
3. Addition of cut 64 tpi windage screw, with additional 0.002 diameter added under the shoulder at the head.
4. Addition of two hardened steel pins; removal of base spring and detent (used as the extra detent at #1).
5. No more worries.

Problems in the windage assembly:

"The hole on the right for the wind screw can be up to .156 and GI screws are usually .142. I make my screws so the boss is .146. Most of the good after-market bases out there run about .146-.147. If I'm working with a receiver hole that's .149 or so I drill and tap the hole and thread a bronze bushing into it and then ream the bushing to size."



The most noticeable modification on this base is the addition of two drill rod pins. These locate the sight and secure it against unwanted movement. The Army gunsmiths use one pin, and that has worked very well for them also. These pins eliminate the “spring loaded” base arrangement standard on the AR15.

Problems in the elevation assembly:

“There can be problems in the fit of the elevation post and its hole in the receiver. It can rock from side to side, and movement at the bottom of the elevation post causes the opposite movement at the aperture – it’s tipping. I saw this even after putting the pins in place at the top. The movement comes with turning the elevation wheel: change directions on the wheel and it leaves it in a different position. The receiver hole is .502, and if the post diameter is under .495 I turn a bronze bushing and press it into the receiver under the elevation wheel. I also add another detent to the elevation wheel.”

Now back to me: Everyone has noticed that the sight base on their AR15 sits cockeyed. It’s supposed to. There is a spring pushing against the left side (shooter’s perspective) of the base to index the base location. That is, itself, not a problem – it doesn’t make the sight imprecise. What is the problem is that if the wind screw fit is loose it

levers the screw against its hole in the base. The hard coat anodizing will eventually wear and then that really digs at the metal, and the resultant tolerance increase causes backlash. Holliger’s modification ultimately eliminates this spring as the dual pins fix the base against any possibility of twisting. Eliminating the spring reduces drag.

Hooded rear apertures, as any M14 shooter knows, help improve the sight picture by recessing the aperture from sunlight. Some also move the location of the aperture away from its position centered above the windage screw. The rotational play in the rear base doesn’t hurt anything with an aperture that’s sitting right over the wind screw, but moving the aperture itself behind or in front of the original location complicates things. Since the spring pushes against the left side of the base, a hooded aperture can point to the left. Installing some hooded units on an unmodified sight can move zero (and it can be a bunch). The dual pin modification outlined straightens the base and keeps the hood looking straight at the front sight.

Holliger machines two flats on a barrel that accommodate opposing set screws drilled and tapped into the front sight housing. Another single set screw is added at the underside rear. The two in the front are used for windage adjustments; the rear screw is locked down after the wind is set to better seal around the gas port.

