

# COUNTER SNIPER

## SPECIAL ADDENDUM TO THE OPERATING GUIDE - COUNTERSNIPER TDRM-DI TACTICAL DISTANCE RANGING MILDOT-DOUBLE IMPACT.(US & INTL. PATENTS PENDING)

### SPECIAL ADDENDUM FOR UTILIZING THE HORIZONTAL/VERTICAL INCLINATION/DECLINATION AND MOTION RANGING SYSTEMS.

(VI/DRS) CounterSniper, not only offers above advantages of the double point of impact Mil-Dot grids, but includes separate measuring stadia for the purposes of rapidly acquiring range info on big objects and great distances. Both the vertical scale on the left side of the cross-hairs and the horizontal/vertical scales on the upper right quadrant allow for calculations in either English or Metric systems.

Ranging and doing the math of the MilDot system is complicated, particularly under the duress of battle. These other ranging systems can help immensely.

#### LEFT Side Vertical Ranging Grid

1. The horizontal stadia on both the left and upper right quadrant are numerical correspondents of the MilDot Grid.

2. At 1000 yards, each four lines equals 1 yard (35.3 inches specifically, but inclusive of the thickness of the lines it reads exactly 1 yard). These numbers run 0, 4, 8, 12, 16, 20 etc. At 1000 yards a reading of 16 covers a distance of 4 yards. For English calculations in yards use the left side numbers. Each line represents 1 quarter mil. At 100 yards, the distance for every 4 stadia is 3.53 inches, but inclusive of line thickness it can be read at 3.6 inches, exactly 1 tenth of a yard. At 500 yards, four lines equals 1 half yard (17.67" inches, but 18" including line width). At 1000 yards, an elk, 6 feet at the head, would be 8 lines high-corresponding to two mils of the centergrid. At 1000 yards the shoulder through chest area, roughly 36" would be 4 lines high-corresponding to 1 mil. The simple beauty of the Counter-sniper System is that once you have the range in easy numbers, your holdover



(for your chosen barrel length and load) can also be referenced numerically. For each distance, you can calculate the distance in numbers and correspond to the mil-dot grids in the crosshairs. If you have a holdover of 72 inches, simply pull up two full dots and you will have the equivalent of 72 inches of bullet drop at 1000 yards. Please note that bullet drop is barrel and load specific and the drop is logarithmic, not linear. A flat shooting magnum load may only drop 3 inches in the first 300 yards, but will drop 12 inches over the distance from 300 to 600 and an additional 24 inches over 300 to nine hundred. Bullet drop compensators that are not specific the weapon system and bullet weight and load wont give accurate points of aim at longer ranges on anything other than specific load and barrel length. At 1000 yards each horizontal stadia equals 1 foot, inclusive of line thickness. Each English side stadia equals one quarter of a milliaradian.

3. The right side numbers equal meters, and they go 0, 5, 10, 15, 20... For metric calculations use this scale, as each 5 stadia equal 1 meter at 1000 yards, 1 half meter at 500 meters and 1 tenth meter at 100 meters. This allows for sportsman or those with military background or ranging equipment to use the same optic without converting. The mil dot system stays the same, but the operator can range in either yards or meters. It is important to note that while the Left Side Vertical Ranging Index offers distance measuring in both yards and meters, the mil-dot grid follows the US Army Standard mildot system. Metric shooters should convert their meter measurements to yards when utilizing the TDRM reticle. 100 Meters equals 109.36 yards. Simply multiply the meter distance by 10 percent and you will still be within a range of 9.3 yards at 1000 yards, a negligible effect on accuracy, without worrying about the decimals.

### DETERMINING INCLINATION/DECLINATION IN RELEVANCE TO TARGET UTILIZING THE TDRM VERTICAL RANGING SCALE

For Determining Inclination/Declination in relevance to ones target, the same absolute scales as above apply. The left side ranging stadia is used for an absolute above/below reading off the center cross hair - how high a target is above or below the shooters horizontal shooting plane. If the shooter is elevated, simply hold the scope horizontal and perpendicular (at 90 degrees) to the earth-if your target is above or below, the leftward vertical ranging strata will give you the above or below reading of your target (of course, ranged for the appropriate distance). With a known power on the optic, weapon specific tables can be established for proper inclination/declination.

How high above or below the shooter is relative to his target is a critical factor in elevation settings. The human body has a remarkable ability to determine level center. Our inner ears provide the balance that keeps us perpetually upright and allows remarkable ability to level a weapon with the horizon. Visually ranging distance is an order of magnitude more difficult as the closeness together of our eyes makes estimating ranges beyond 50 yards a skill which must be acquired. To use the Inclination/Declination function of the CounterSniper TDRM reticle in an open field, align the weapon so the barrel is parallel to level ground. Even if you are position on an incline, your sense of balance will allow you to hold the rifle at 90 degrees to a straight vertical plane. If your hide allows, sweep the weapon so that the Left Side Vertical Ranging Scale can be seen in same sight picture as the target. If the target distance is 1000 yards, each stadia represents 9 inches, up to the 27 yard range (at 1000 feet) of the scale. For greater heights you can "stack" the LSVRS by finding a point on the target plane and then holding over again from there. The Key to accurate shot placement when engaging targets above or below you is to understand gravity. When shooting up hill you must aim above normal. When shooting downhill, you must aim lower on the target. Again, bullet, barrel and distance dependent!

### UTILIZING HORIZONTAL/VERTICAL STADIA IN THE UPPER RIGHT LARGE OBJECT/MOTION INTERDICTION QUAD (LOMR-QUAD, ARMY VARIANT) OF THE COUNTERSNIPER TDRM-DI RETICLE.

With the horizontal/vertical stadia in the upper right, Large Object/Motion Ranging and Interdiction Quad (LOMR-QUAD, Army Variant) the shooter can instantly grab a distance read on larger objects of known size and get a distance range accordingly. You will get far greater reads of accuracy calculating the measurement of a known size aircraft or truck sitting on a runway than you will trying to range off a mechanic at 1000 or greater meters. This was brought on by the deployment of 30mm extreme range-large target sniping systems, which would allow small teams with elevation advantages to deny vehicle motion from ranges as far as 6 kilometers away.

The Vertical Scale on the LOMR-QUAD, Army Variant is exactly the same in measurement and ranging operation as the Left Side Vertical Ranging Scale. At 1000 yards, each four lines equals 1 yard (35.3 inches specifically, but inclusive

of the thickness of the lines it will read exactly 1 yard). These numbers run 0, 4, 8, 12, 16, 20 etc on the left side of the left scale. At 1000 yards a reading of 16 covers a distance of 4 yards. For English calculations in yards use the left side numbers. Each space represents 1 quarter mil. At 100 yards, the distance for every 4 stadia is 3.53 inches, but inclusive of line thickness it can be read at 3.6 inches, exactly 1 tenth of a yard. At 500 yards, four lines equals 1 half yard (17.67" inches, but 18" including line width). At 1000 yards, an elk, 6 feet at the head, would be 8 lines high-corresponding to two mils of the centergrid. At 1000 yards the shoulder through chest area, roughly 36" would be 4 lines highcorresponding to 1 mil.

The right side numbers (on the left vertical ranging scale) equal meters, and they go 0, 5, 10, 15, 20... For metric calculations, use this scale, as each 5 stadia equal 1 meter at 1000 yards, 1 half meter at 500 meters and 1 tenth meter at 100 meters. This allows for sportsman or those with military backgrounds or ranging equipment to use the same optic without converting. The mil dot system stays the same, but the operator can range in either yards or meters.

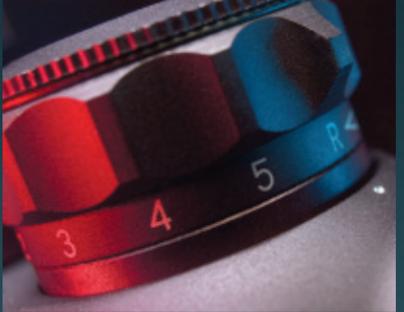


The Horizontal Scale of the LOMR-QUAD, Army Variant uses exactly the same measuring scale as the Vertical Scale, but in the horizontal plane. For ranging large objects such as standard large frame late model pick-up truck, if you have only a partial view range off the height of the vehicle. If you have a full front or side view, range off the view that gives you the biggest sight picture for greatest accuracy. Simply place the closest corner of the vehicle or what you can see of it at the intersection of the LOMI-QUAD grid. A pick-up truck that is six feet tall at 1000 yards will be 8 stadia markings high. If you have a front view, a six foot wide pick-up at a thousand yards will be 8 stadia markings wide. If you have a side view of the truck at 12 feet long, at 1000 yards it will be 16 stadia markings wide. (Multiply meters by 10% if using metric to give you the readings in yards.) Correspondingly, if that pick up truck appears 16 stadia markings high it is 500 yards away, and so on.

### DETERMINING SPEED OF MOVING TARGETS WITH THE TDRM-DI LOMR MOTION RANGING AND INTERDICTION QUAD

Please Note; Scales related to the interdiction of moving vehicles are considered to be an exclusively non-sporting application under the International Traffic in Arms Act. The information below is intended for sporting purposes only for game animals at a walk, trot or run. Details on military applications can only be released on Defense Dept request. These applications involve vehicles or aircraft who are moving generally towards a shooter where the increase in size over time would allow snipers the proper lead.

For Sporting Applications, the Horizontal Scale fills yet another function as a speed gage for moving targets. Simply put, at slow walking speed about 2 feet per second, the animal would cross the range of the Horizontal Scale in 13.5 seconds To measure the speed, put the scope viewpoint at one end of the Horizontal



Motion Scale on the animal as it enters your view and hold steady as the animal walks across the length of the grid. To cover the 9 horizontal yards would take 13.5 seconds. A stopwatch is helpful, but you can get close by counting "1, one thousand, 2 one thousand, 3 one thousand, etc." At 500 yards a walking animal will cover the distance in the horizontal scale in 6.75 seconds. A trotting game animal

will increase these speeds by a factor of two. Determining how much "lead" is a factor of bullet weight, but this horizontal scale is useful in getting a sense of the targets speed, particularly on treeless planes, grass lands, desert, etc.

With the TDRM equipped optic, the shooter can spend an afternoon overlooking an airfield at known distance and come away with a wealth of useful items to range from. If a person knows the size of an F-18, and knows from his flash cards that enemy aircraft is x or y longer or shorter, he can use those larger objects to range off and then engage individual enemy combatants amongst the targets. The optical founding that CounterSniper optics are built to take on these 30mm guns is one of the reasons that they have proven so reliable on .50 cal and .338 systems sniper deployed, and also the reason that CounterSniper is the only optics company in the world that offers an unconditional guarantee (inclusive of battle damage) on our titanium line and a conditional life-time guarantee on our Aircraft aluminum line. (Please note our NDI/ COTS/ or Contract Overruns offer a full 10 yr. manufacturer warranty.)

