

EFFECTS of ERRORS

ZERO CONDITIONS
 range 500m
 temperature 15° C
 Cant 0°, Wind 3 m/s @ 90°
 Altitude 100m
 Shooting angle 0°

Several factors affect the bullets trajectory and therefore the point of impact (POI). On the target below, variations in different factors are calculated separately. The shift in the POI caused by each factor is described with black & red dots. The prevailing conditions and zero conditions are marked in the boxes as well as the effect that the change had. For example, if the temperature drops 10 degrees Celsius lower to what it was when the rifle was zeroed, the POI drops 3.2 centimetres (1.3") from the POI / POA.

shot angle
 0 deg u 15 deg
 9,2 cm from POA

altitude
 100 m u 700 m
 7,2 cm from POA

wind angle
 90 deg u 50 deg
 10,9 cm from POA

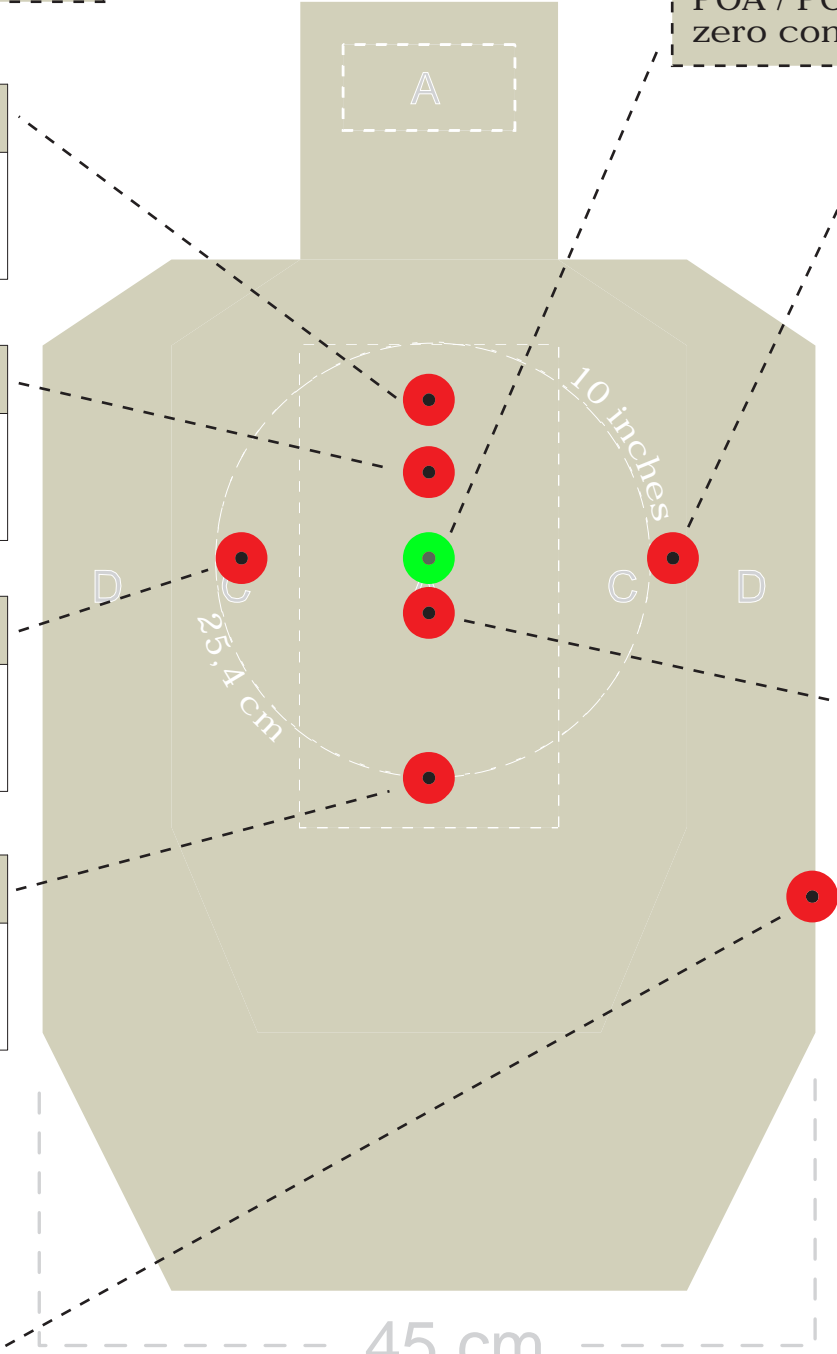
distance
 500 m u 510 m
 12,8 cm from POA

POA / POI under original zero conditions

cant angle
 0 deg u 3 deg
 affects 14,2 cm

wind speed
 3 m/s u 5 m/s
 affects 31,2 cm

temperature
 15 deg u 5 deg
 affects 3,2 cm



combination of errors

range 500m	u 515m
temperature 15° C	u 5° C
Cant 0°	u 1°
Wind 3 m/s @ 90°	u 4 m/s @ 70°
Altitude 100m	u 250m
Shooting angle 0°	u 1°
22,2 cm right from POA, 19,9 down from POA	

Even small errors in reading the wind direction and speed can result in a miss. Also canting the rifle even slightly dramatically moves the POI.