

READING THE WIND

By Shawn Carlock



If you are new to long range hunting or an experienced veteran, most will agree that the ability to accurately read the wind is what separates a fair shooter from an exceptional one. Let me say that reading the wind is like most anything else; a lot of people have a lot of ideas about how to do it and how to apply it. I have had a fair number of successes in long range competition and in long range hunting and I will cover what I do and what works for me. The way I read wind and apply that info to my shooting may not work for everyone but check out the information and use it as you see fit.

When do I worry about the wind? This is a seemingly simple question and the answer is simple. I always read the wind and always correct for it, even if that only means a $\frac{1}{4}$ MOA change. The reason is simple, if you don't do it every time in your flow chart of things to do you will forget to do it when you need it. If it becomes a natural and always done part of the shot it will just happen every time. The other reason is to say that a given wind won't affect us much at a given distance is the beginning of compounding errors. If I estimate the wind at 6" worth at a given distance and not worth compensating for and the wind is actually 10" worth I would have had a good hit within 4" instead of the possibly bad hit at 10". Don't get in a big hurry and always give your shot your best effort.



“ PREPARING FOR A 2000+ YARD SHOT EVERYTHING MUST BE PERFECT”

How do I estimate wind velocity? Any way you can. By this I mean use anything at your disposal to accurately estimate the winds velocity. I keep and use a Kestrel for reading conditions. The Kestrel has a wind function and can tell you wind velocity in current, low gust, high gust and average speed. It can also give you direction where you are standing by rotating the instrument until reaching its highest velocity. The Kestrel is very accurate but will only tell you what the conditions are where you are standing. The Kestrel is a very good tool for teaching you how to read the wind. I practice by looking at grass, brush, trees, dust, wind flags, mirage, rain, fog and anything else that will give me info on velocity and then estimate the speed. I follow up by using the Kestrel to see how close I am. With some practice you can get very good at wind velocity estimation. The reason for learning the fieldcraft of wind reading by how it effects the environment is that the Kestrel will read the wind at your location but the wind will seldom be constant all the way to the target. If you hunt mountainous or canyon country you can count on the wind being different maybe several time on the way to the target.

Notes on wind velocity:

- 2-4 mph - you can just feel on your face, large leaf, light stems move like maple leaves
- 4-8 mph – will make small leaf, heavy stalks move like alder
- 6-10 mph – will move the tips of short needle trees like larch & spruce

- 8-12 mph – will make brush like alder, small aspen etc start to move
- 10+ mph will make trees start to move
- 5-6 mph - mirage tips 45 degrees
- 10 mph – mirage starts to flat line
- 5-6 mph – flat lines a 24” piece of flagging ribbon
- 1-3 mph will move dry tall grass
- open air moves faster than air close to the ground, if you are on a canyon wall and the wind is 10 mph it is a pretty safe bet that in the open of the canyon where you have to shoot across it will be 25-50% stronger.

Wind speed estimation takes practice. With practice you can get very good at making an accurate estimate of wind speed and affect, however no matter what it will always be you best guess it is not an exact science for the field shooter.

How do I estimate wind direction & value? Wind value is fairly easy to do one you have established the direction. Wind direction is just like wind speed there are easy ways to determine direction at you location like the Kestrel or dimply turning you face to feel the direction but it is seldom the same down range so it is back to fieldcraft. Determining speed is a lot of times easier than direction. When looking for direction look for the most sensitive indicators available. I like tall grass and thin tall brush to give direction. The problem with using the materials on the ground will come when shooting across a bowl, canyon or any other open air shot. In the open air mirage will help but is not always visible. I like a small patch of fog (as long as it is not in front of my target) and a very light rain the best for determining direction. Sometimes direction is determined by simply looking at what the wind is doing where you are and knowing what the terrain is going to make it do, this takes practice.

Giving a value to the wind is easy once a direction is determined a 90 degree wind from either direction is a full value wind. The following angles get the following values:

- 90 degrees - full value
- 60 degrees - .85 value
- 45 degrees - .70 value
- 30 degrees - .50 value

If you are using a pocket PC (I hope you are) most programs have a block for direction or value and will compute the windage correction for you. Again enter all of the details you can for the most accurate shot placement possible and don't start a series of compounding errors.

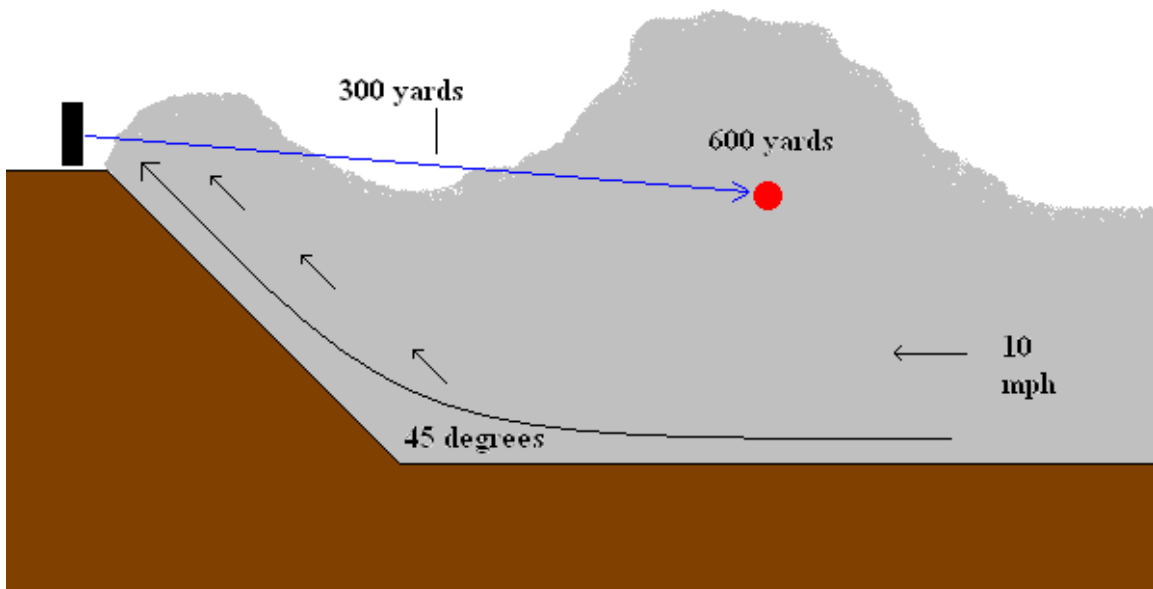
How do I correct for windage? Most people agree that wind affects the bullet and that it must in most cases be compensated for. How to compensate for wind is one of those areas where a lot of people have a lot of different ideas about what to do. Here is what I do:

- I like to make my best estimate of speed and direction.
- I dial in direct for both windage and elevation.
- If the wind holds steady I break the shot
- If the wind is “twitchy” I try to wait for the same wind condition I dialed in for to take the shot.

- If the wind is changing around rapidly I will hold off a small amount if needed to correct for the quick change.
- If I need to fire a follow up shot because of poor windage and the correction is small I hold off, if it is a big correction I dial the correction (if the correction is big I am a lot more likely to stop and see what I have done wrong as long as I have not made a poor hit on the animal).
- I do not like to hold off for wind as this is just not accurate enough for the shots and distances I want to work at.

Can my elevation be affected by the wind? Yes, it certainly can in two areas. The first I will explain but for the most part is not a factor most will worry about. When shooting a righthand twist barreled rifle, a left to right wind will cause the bullet to impact to the right and slightly low. The same barrel in a right to left wind will cause an impact to the left and slightly high. The elevation affect is slight in most flat shooting calibers you will have to test to see this but in my experience it is usually 1/8-1/4 MOA. For most shooters and most distances this is a not an issue.

Now on to “the” issue, elevation affected by wind blowing over certain terrain features. I believe that this gets a lot of people in the field simply because they just don’t realize that it is happening. The simplest example is to shoot down a canyon from the head with a head wind, a common midmorning occurrence. As the wind blows up the canyon life is normal, when it reaches the end it has to go somewhere. The only place for the wind to go is out by going up. If you are shooting across this effect it will lift the bullet as the bullet flies across this wind blowing up the face. How much lift becomes a matter of the angle of the face, velocity of the wind & the distance the effect is in place. If you will look at the diagram below we have a flat canyon bottom with a 45 degree face at the head end for the wind to blow into. We are shooting level out to a 600 yard target in a 10 mph headwind. If the 45 degree distance is ½ of our 600 yard shot, then 300 yards of the shot is affected by a .7 value 10 mph lift. It has the same values and windage but applied to elevation. The wind has in this case pushed our bullet up and we need to back off our elevation accordingly.



Let us say that our 300 Win Mag. drops 11.50 moa @ 600 yards and we determine the affected distance to be 300 yards @ 45 degrees in the 10 mph wind. The most accurate way I have found to compensate is to go to the 300 yards wind and take 1.50 moa for a full value 10 mph wind and treat it like a 45 degree wind multiplying it by .70. This will give you 1.0 moa, now subtract it from your dope of 11.50 moa to shoot a corrected dial of 10.50 moa. Now in this example we have corrected an error of about 6 inches, but this was an affected distance of only 300 yards. If the shot were longer or the effected distance longer it could have resulted in a miss high. This can be done pretty accurately, but as with all aspects of wind it takes practice and experience to do consistently. Watching light fog patches will give a great idea what happens to open air, especially when 2 air masses come together. In this same canyon in the diagram a tail wind will have a similar effect in pushing the bullet down as the air drops in to the canyon. The tail wind effect will not be as radical due to the fact it is not running up against a solid wall to redirect, it is simply displacing lower pressured air in the canyon. It will however last over a longer period and the drop is generally speaking about the same as the head wind rise.



“ 900+ YARD MULE DEER SHOT PREPERATION IS EVERYTHING”

Study of the wind and its' affects on a given long range shot will never end and you can never know too much. They more time you spend studying the wind and its affect over varying terrain the more successful you will be as a long range shooter and hunter. Remember the cardinal rule, “There can be a no wind shot, but in the field if there is wind it has a value in windage, elevation or both”.