# What's the Distance? Are You Sure?

We all have to know the correct distance to the pin to select the proper club for those all-important approach shots. Unfortunately most people look at their GPS, or zap the pin with their rangefinder, grab the club for that distance and go. So then by doing that how many times have you ended up short or long of the green by one or more club distances?

Many times 100 yards is NOT 100 yards. What I mean by that is due to wind, elevation, and just as importantly temperature, what 100 yards will PLAY can actually be vastly different. Many understand the concept of the wind on ball flight, because the effect is pretty obvious... for the most part. The effects of elevation are probably somewhat understood by most golfers, but few actually account for it. However the effect of temperature on ball flight is just as important, but largely overlooked by most players.

First let's talk a little about the mindset of how to compensate for this problem, and then we'll talk about each of the factors. Most golfers make an allowance for these effects, but many are probably still struggling with their end result. This is largely due to the fact that the common mindset is to focus on clubbing up or down rather than the actual issue of ***calculating the proper distance***, then selecting the proper club for the ***adjusted distance***. While thinking of clubbing up or down will help, the root of the problem with that mindset is actually more of a psychological one. This is because the last number you remember is the one your GPS or rangefinder just put in your head.

You remember 100 yards, but you just clubbed up or down, and now the golf engine in your head is out of sync with the club in your hand, and it is probably really confused. So suddenly (while you're standing over the ball to make that all-important shot), you start having all of these thoughts run through you mind, and you don't really know how hard you are supposed to hit this silly thing. My buddies and I have given this confusion factor a name. We like to call it "War Between the Ears". So then your end result is something other than plan 'A'. If this is what happens to you, then let me offer a little different mindset.

You got a 100 yard reading and now that number is in your head. So then we apply the temperature factor, which adds about 5 yards. Then we apply the wind factor, which adds another 10 yards. Finally we apply the elevation factor, that's another 5 yards, okay you tell yourself, so now I have to make a 120 yard shot, yep 120 yards. So you pull out the club you need to make that 120 yard shot. Now what is the number in your head? Get the picture? The number in your head actually matches the club in your hand, and the golf engine in your head is in complete agreement with everything. So then you can just focus on landing that 120 yard shot next to the pin.

To review, I am suggesting that a more psychologically friendly mindset is to calculate an adjusted distance, and get that number fixed correctly in your mind. Then pick the correct club for that distance. Now let's talk about the different factors, and some ways to calculate an adjusted distance. Please bear in mind that some of the formulas I use may seem weird when put into writing, but with regular use they are really pretty simple to implement.

**The Temperature Factor:**

I will begin with temperature, mainly because it has a relative impact on the wind factor, but also because it is the most overlooked. Please note for the purpose of this discussion temperature is assumed to be Fahrenheit. The temperature has a compound effect on ball flight in 3 ways. The first way, and most obvious, is that when it is colder the air is more dense, which applies more friction to the ball, thus slowing it down. When it is mid-temperature the air is less dense, more stable, with a more stable humidity, and the ball flies a little better as it spins, thus it goes a little further. On hot days if the air is dry the ball will fly even farther, but keep in mind hotter days can also be more humid, and high humidity has the opposite effect. When the air is humid it can require more ball speed for the ball to fly the same distance, thus high humidity can require a few yards to be added, as it would if the temperature were cooler.

The second way temperature effects distance, is that when it is cold outside we are wearing several layers of clothing, and our swing speed slows down because of it. On warmer days our arms and body are much less impeded. When it is cold outside, try wearing layers of clothing that don't restrict your arms, as this can help you stay closer to your normal swing speed. I usually wear a short sleeve polyester Tee shirt, under a long sleeved polyester dress shirt, a sweater vest, and an outer down padded reversible vest. That's a good 4 layers, and it will keep your core warm, but not restrict your arms as much. If it is really cold then I may consider a thin long sleeved polyester turtle-neck Tee, along with the short sleeve polyester Tee, the long sleeved polyester dress shirt, and the sweater vest. The outer down reversible vest can then be an additional option, if needed. I like to keep the layers on my arms on the thin side, so even with 4 to 5 layers my arms are relatively flexible. Of course if it is a 5 layer day outside, then I'm probably going to reconsider going out there in the first place. Also, on cold days wear a warm hat. A hat will help hold your body heat in by keeping it from escaping from your head.

The third way temperature effects distance (and probably the most overlooked of all), is that on cold days a cold ball is NOT going to compress very well. It will become more like a rock than a golf ball when the temperature is below 60 degrees. The best thing you can do here is to keep the balls you are going to play in the house overnight. I always keep mine indoors at all times anyway. This will keep their core temperature warm for several hours once you start a round. On those cold days I also alternate the full sleeve of 3 balls on every hole. Two stay in my

pocket to help keep them warm for their next hole. By doing this you can use your preferred fair weather ball for several hours, even when it is cold outside.

As a rule of thumb I have a simple method I use to add yardage to my reading based upon temperature.

| **Temp Range** | **Yards Added** |
|---|---|
| 70+ | 0, else if Humidity is 70% and above, add 3-5 |
| 69-65 | 2-3 |
| 64-60 | 3-5 |
| 59-55 | 5-8 |
| 54-50 | 8-12 |
| 49-45 | 12-15 |
| 44-40 | 15-20 |
| Below 40 | Stay Home, Have a warm beverage, Watch Golf on TV! |

**The Wind Factor:**
Compensating the distance based upon wind is relatively simple, but remember that the temperature will weigh into the calculation. I use the following formulas:

Below 60 degrees: add 2 yards per mph of wind when hitting into the wind. When hitting with the wind subtract 1 yard per mph, then round it down to the next multiple of 5. Why only subtract 1 yard when hitting with the wind you may ask? Simple, the air is still very dense, and the ball will still be slowed initially because of it, but by rounding the distance down to the next multiple of 5 yards, the remaining help from the wind gets compensated.

60-70 degrees: add 1½ yards per mph of wind against, and subtract 1 yard per mph of wind with the wind.

At 70 degrees and up, add 1 yard per mph of wind against, but with the wind subtract ½ yard per mph of wind, then round the distance down to the next multiple of 5 yards.

**The Elevation factor:**
The elevation does in fact affect the distance more than expected. When hitting the ball to a higher elevation the ball will not be able to stay aloft as long as it would with a level elevation, and therefore it will not carry as far. When hitting to a lower elevation the ball will stay aloft longer, and therefore carry a little further. There are rangefinders that factor the elevation into the distance calculation, but for the most part they are all illegal when playing in any tournament using USGA guidelines. Given that, here is a simple formula I use to compensate for elevation.

First you will need to make an educated guess of how far the green (or target) is above or below you. When hitting to a higher elevation add 1 yard per yard of elevation. When hitting to a lower elevation subtract ½ yard per yard of elevation, and round the distance down to the next multiple of 5 (i.e. actual distance = 125,

elevation is 15 yards below, -7 yards for elevation (just use integer math) = 118, rounded down to next multiple of 5 = 115 yards).

**Summary:**

So then to summarize, a more psychologically friendly mindset for distance compensation is to get an adjusted distance in your head, then use the correct club for that distance. This way your mind and body are both on the same page. First we get the actual distance, adjust for temperature, adjust for wind with temperature, then adjust for elevation.

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