

Judging Distance

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JUDGING DISTANCE FOR HUNTING:

One of the hardest things about bowhunting is judging distance. An arrow has a lot of trajectory and you need to be able to judge distances fairly accurately to hit a target. Judging distance for hunting is a lot different than judging distance for target or 3-D shooting. You get more points in a 3-D shoot for hitting a small circle within the kill. Hit an animal through both lungs and they are going down pretty fast regardless of what part of the lungs you hit. You don't get more points for hitting a smaller spot. That gives a lot more leeway for judging distance.

How accurate do you have to judge distance to kill a deer at different yardages? The lung/heart/liver area of a deer is 8" - 12", depending on the size of the deer and angle. A steep downhill shot reduces the size of the vitals. The vital area isn't round like on a 3-D target, but this would be the vertical size of the vitals if you shoot for the center of the vital area.

The following chart shows how much you would be high or low if you misjudge the distance by 5 yards. For example, you would be 2" high if you were shooting a 240 F.P.S. bow and you judge 20 yards and the animal was 15 yards. You would be 3" low if the animal was 25 yards and you judged 20 yards.

DISTANCE JUDGED

AND THE ANIMAL WAS 5 YDS CLOSER

ARROW SPEED	20YDS	30YDS	40YDS	50YDS
240 F.P.S.	2	3	4	6
260 F.P.S.	2	3	4	5
280 F.P.S.	1	2	3	4

DISTANCE JUDGED

AND THE ANIMAL WAS 5 YDS FURTHER

ARROW SPEED	20YDS	30YDS	40YDS	50YDS
240 F.P.S.	-3	-5	-6	-7
260 F.P.S.	-3	-4	-5	-6
280 F.P.S.	-2	-3	-4	-5

You can judge the distance 5 yards short out to 40 yards with a 240 F.P.S. bow and still be within an 8" kill area if you were aiming for the center of the kill. You don't have quite the same margin for error when the target is further than you guessed. That is because the arrow is going slower at greater distances and dropping faster. An arrow that leaves the bow at 240 F.P.S. is going only 225 F.P.S. at 50 yards. The arrow from a 240 F.P.S. bow would only be within an 8" kill when you guessed 20 yards and it was 25 yards. You would have a wound if you guessed 30 yards and it was 35 yards. You can see it is better to guess long than short.

Most people can guess within 5 yards of distances up to 40 yards, but the accuracy falls a lot faster after 40 yards and that is at the same time you need to be more accurate. Rangefinders help on

longer shots, but you seldom have the time to use them in a hunting situation. You can use a rangefinder ahead of time to give you an idea to different places you might get a shoot, but that won't help when the deer doesn't walk through those areas. Treestand hunting isn't as common in the west so judging distance is more important.

There are several methods that people use for judging distance. The most common is to break down the distance into 10 or 20 yard increments. You learn what 10 or 20 yards looks like and then keep adding that until you get to the target. Personally I prefer 20 yard increments for hunting because it is faster with fewer calculations. You watch people at 3-D shoots and they guess a distance within a yard and those with moveable sights will set their sight to that distance. Guessing to the yard isn't as important in hunting because you are shooting at an 8"-12" kill compared to the couple inch circle at 3-D shoots.

Some people will just look at a target or animal and just guess the distance because of the size. That can be deceiving because targets and animals come in different sizes. You will see people at 3-D shoots run to the next target to get a view of the group shooting ahead while they are standing at the target. They have figured the size of the people at different distances. That won't work while hunting.

A lot of people use both methods. They first just guess the distance and then follow that up by using increments of 10 or 20 yards and see if they come up with the same distance. It is good when you use two methods and they both give you the same distance. It is bad when you get two different distances because then you don't know which one is correct.

You can also use a combination of three methods. You can first look at the target and guess. Then use increment measurements to estimate the distance. A third method for hunting is the minimum/maximum distance guess. After you have used the first two methods you can guess what the minimum and maximum distance is. Then compare that to your other two guesses. For example, you look at a target or deer and guess it is between 30 and 40 yards. Then you look at 20 yards and double it. You know it is less than 40, but well over 30. You know it is then in the upper 30 yard range. Then to be safe, use a chart like above and figure what the minimum and maximum distance you can shoot and still make a kill.

Here is a method I use for hunting. I like it because it is faster than guessing an exact yardage. I know with my bow that up to 40 yards I only need to be accurate within plus or minus 4 yards. I know that at 30- 40 yards I can hold my 30 yard pin from dead on at 30 to high at almost 40. At close to 40 I hold the 40 yard pin low and high when it gets close to 50 yards. I first guess the distance within 5 yards. Then I measure off 20 yard increments. An example would be I guess a distance to be between 35 and 40 yards. I measure 20 yards increments along the ground and it comes up short of 40 yards. I know I will kill that animal if I put my 30 yard pin high or 40 yard pin low. It doesn't make any difference if the animal is 35 or 40 yards. That is much faster and easier than guessing it is 38 yards and then having to hold 3" low with my 40 yard pin.

You can do the same thing with your bow. The chart above gives you an idea of your trajectory if you know your arrow speed. The chart is an approximate because different fletching and points will affect drop slightly and heavier arrows lose less energy so they have less drop. You can figure out your arrow trajectory to be more accurate. Sight your bow in accurately for distances like 20, 30, 40, 50 yards or any increment you like. Then start shooting at 20 yards and move back until your arrows are hitting 4" below the bulls-eye. Then shoot moving ahead of 20 yards until you shoot 4" high. The difference between those yardages is your kill range for that 20 yard pin. Don't trust your memory. Write it down. Then do the same thing for the rest of your pins. I use an 8" kill because that is about the minimum, which gives me room for error. You will probably find that you have

overlapping kill zones for the closer pins and gaps with the farther pins.

Now with this information you should know where to hold on animals at different distances. You know what kind of kill range each pin has so you don't need to worry as much about distance and can concentrate in making an accurate shot.