

Aluminum vs. Carbon Arrows

What is the best arrow for you?

Article Courtesy C.L. Zwar

In order to answer what seem to be an easy question you must first think of several factors:

1. How much do you want to spend? With the cost of carbon arrows being considerably more than aluminum arrows, this is often a major factor. Prices on both carbon and aluminum arrows vary depending on manufacturer, straightness, quality, and material. For the most part the more you spend the straighter and more durable the arrow will be. Although you can now buy carbon arrows for as low as \$50.00 per dozen, you need to look at the quality your getting for you money. As an example, you might spend \$50.00 on a dozen carbon arrows that are rated at +/- .008 straightness when you can go out and buy a dozen aluminum arrows for \$40.00 and they will be rated +/- .003 straightness. This leads us into the second question.

2. What will you be using your arrows for? Do you use your arrows for hunting, target shooting, 3D shooting, or backyard shooting? Most archers like to use the most accurate arrow they can get for target and 3D shooting while most hunters want value. The truth is that 90% of archers won't be able to shoot an arrow with a straightness of +/- .002 any better than they will be able to shoot an arrow that has a straightness of +/- .006. One thing you might want to keep in the back of your mind is if you are going to shoot targets or 3D's, lines do count. Therefore if you shoot a larger diameter arrow you might get a few extra points at the end of the day. Now for the hunters out there, weight is another item to consider. Weight = KE (Kinetic Energy) right? Well this is a whole other topic which has been discussed for years so we will leave it alone for now. I will add one thing about KE. It is very simple to figure out for your self. The formula is as simple as $(WEIGHT \times SPEED^2) = 450,240$

3. What kind of speed do you want? This seems to be a favorite topic when arrow selection is brought up. When archers start looking for the "fastest" arrow they can shoot they go right for the carbons. For the most part Carbon arrows are faster than aluminum arrows. Now you did notice that I said for the most part. In the last few years aluminum arrows have stayed pretty much the same but carbon arrows have made some major changes. You can now go out and purchase carbon arrows in many different camo patterns. This might look nice but what you need to pay close attention to is how much weight the camo wrap adds to the arrow and more weight means a slower arrow. An example would be the Terminator carbon arrow by Game Tracker. Just by going with the neat looking camo you are going to add 1.7 grains per inch to your total arrow weight. This turns out to be 47.6 grains to a 28" long shaft, which translate to 10-15 feet per second loss of speed. Now this might not be a problem if you're going hunting but if you were expecting a fast arrow you might be disappointed. Another item to look at is the weight of the components. What kind of nocking system does the arrow have? Will you use carbon inserts; aluminum inserts, or use glue in target points? These are all things to be considered when talking arrow speed. What it comes down to is if you want a fast arrow, look at the whole picture not just the weight per inch.

4. How much time do you want to spend? One thing that most archers don't think about is how easy the arrows tune. If you are trying to ride the edge with a fast light arrow it might take you a little more time to get your bow set up and your arrows flying true. On the other hand, a heavier arrow with a spline better suited for your bow will be easier to tune, especially when using broadheads.

Quality! Let's take a closer look at it. When we talk about arrows and quality we need to look at several things:

1. **Straightness:** Although arrow manufacturers will publish their arrow specs, it never hurts to verify them yourself. This is something you can ask the shop where you buy your arrows from to show you. Most pro shops will have an arrow straightener that will show just how straight an arrow is. Check a few and get the average.

2. **Weight tolerance:** This is generally a huge surprise to archers when they find out for the first time that they might buy a dozen arrows and have a weight difference of 10, 20, or 30 grains between arrows. The only way to really control this is to weigh your arrow before you buy them. This is another reason to find a type of arrow that you like and stick with it.

3. **Durability:** How tough is the arrow? For aluminum arrows you need to look at the size. An example would be a 2312 Easton Super Slam. Now the size (2312) actually represents two things. The first is the outside diameter and the second is the wall thickness. When talking durability with aluminum arrows you need to pay close attention to the second two numbers (the wall thickness). The thicker the wall the more durable the arrow will be. Now you also need to know that the thicker the wall the more the arrow will weigh. Arrow wall thickness ranges from 12-19 in most cases. Carbon arrows are a little different. The keys to a durable carbon arrow is Type of carbon used, type of wrap, thickness of the arrow wall. This should be an after thought. If you buy a good arrow it should hit where your aiming and you shouldn't have to worry about how durable it is. If you decide to buy the most durable arrow you might not be happy with the performance of the arrow.

Who knew there was so much to think about when buying arrows. Well, it's not all that bad. If you are shooting an arrow that has been working for you then stay with that arrow. If you want to try something new then spend the time and do the research and it will save you time in the long run. Please remember that when you go and buy arrows at a shop, you are the customer. Ask if you can check the arrow out. Let the shop prove to you that you are buying the best arrow for your needs.

A few last things to consider:

- Carbon is more forgiving than aluminum.
- Carbon reacts faster than aluminum so it straightens out faster.
- Aluminum arrows can be straightened, carbons can't.
- Although carbon arrows don't bend, they will get "out or round".
- Tests have shown that carbon will penetrate better than aluminum.
- Some carbons are much harder to remove from targets than aluminum.
- KE (kinetic energy) is a combination of weight and speed.
- Do your homework and if you have any more questions, ask your local pro shop.
- Stay with a company that has been around for a while. Some companies pop up, get you to buy their products and then vanish into thin air. By staying with one of the big companies you might spend a few dollars more but the next time you need arrows they will still be there.