

ARROW CRAFTSMANSHIP AWARD - JUDGING CRITERIA

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In keeping with the movement of Traditionalism in archery these days, it has become part of this ideal to re-teach those skills which are being lost to the average archer with the advent of modern industrial supermarket archery. The skills of the bowyer and Fletcher which were the property of all archers in former times have been removed into the design laboratories of modern technology. Those skills have been lost to the ordinary archer who no longer believes that simple woodworking tools and sweat can produce efficient and deadly bows and arrows capable of killing very large animals if necessary.

Archers no longer believe that those simple tools can produce bows and arrows that are STILL far superior to the abilities of most of us to master. Modern technology has simply removed the effort which was once required and given us "quick-fix achievement and the supermarket approach to archery. The ad men even lead us to believe that success comes with the product and not from the sweat.

The spirit of the Australian Longbow Muster and now by Traditional Archery Australia is about preservation of ancient skills, and re-teaching those skills. The 'Arrow Craftsmanship Award' scheme is about just such a principle. The giving back to the people that which modern industrialism has taken from them.

The following is an explanation of the criteria used to judge sets of arrows submitted for judging at the muster for the award system in the hope that with understanding of those criteria, more people will understand what is required in the making of a high standard matched set of wood arrows. This is not a 'how to' article, but more of a 'what to look for'. An actual 'how to' article could be the topic of a later article of a more technical nature.

There are more advanced skills which can and should be learned and preserved, such as tapering, barreling, footing, self nocking, vane splicing, etc... But for the present, it is more important that the sound basics of wooden arrow making are learned and understood. This is what this article is about.

In assessing the sets of arrows that are submitted, there is a bottom line and it is this. No matter how fancy a set of arrows looks, if they do not possess the characteristics which make for good flight, then they are junk. To fly straight, arrows must possess certain specific properties. The following are the seven most important properties. The last two relate to craftsmanship in the finishing of arrows. That makes nine in total.

Each of the nine categories of assessment carries a maximum of 3 points, -one point for each arrow. All sets of arrows submitted begin with the maximum 27 points, and lose points for sub-standard workmanship. Remember that these arrows are a 'matching' set, and so all three must be as nearly identical as possible. If not, then the Fletcher has not demonstrated consistency of workmanship. And consistency of workmanship is the basis for assessment. Anyone who scores 21 points or greater is awarded a certificate for "**Arrow making Craftsmanship**". Anyone who scores 25 points or greater is awarded the once in a lifetime award for "**Master Fletcher**" in recognition of outstanding craftsmanship.

The areas of assessment are:

1. Stele (shaft) straightness
2. Nock straightness
3. Head straightness
4. Spine consistency
5. Mass (weight) consistency
6. Balance point consistency
7. Fletching
8. Gluing
9. Cresting

1. STELE STRAIGHTNESS

All three arrows must be straight. There must not be greater than 20 thou of bend in any shaft. One point is lost for each arrow outside this criterion. If two arrows lie outside this criterion, then none of the arrows match and 3 points are lost. Straightness is ascertained by rotating the arrow on a spine jig.

2. NOCK STRAIGHTNESS

Crooked nocks affect the direction of thrust upon the arrow and consequently its ability to recover from paradox quickly. Lose 1 point for each crooked nock. If two arrows, have crooked nocks, then there is no match between the set and 3 points are lost.

3. HEAD STRAIGHTNESS

A crooked head imparts oscillation to the arrow in flight which reduces cast and penetration. Lose 1 point for each crooked head. If two arrows have crooked heads, then there is no match between the set and 3 points are lost

4. SPINE CONSISTENCY

Spine is tested with the cock feather down on a spine jig. All three arrows must have a spine reading which has a maximum spread of no more than 50 thou for the three arrows. So, if one of the set spines 450, then the other two must be no more than 425 and less than 475. The lower the spine number, the stiffer the arrow.

For those who do not understand spine, it is the amount of bend in a stele measured in thousandths of an inch when a two pound weight is hung from the middle of the stele. It measures stiffness of arrow relative to bow draw weight. Lose one point for each arrow outside the spine criteria. If two arrows fall outside the range, then the set does not match and 3 points are lost.

5. MASS (WEIGHT) CONSISTENCY

Excessive variation in mass adversely affects cast and the ability of the arrows to group together at the target. All three arrows must fall within a maximum spread of 50 grains. One arrow is weighed, and the other two cannot weigh more than 25 grains above or below that weight. Lose 1 point for each arrow outside this criterion. If two arrows fall outside, then 3 points are lost because the set does not match.

6. BALANCE POINT CONSISTENCY

The ideal balance point for an arrow is from 7 per cent to 15 per cent ahead of the exact middle including the head and nock. Where does this range of 7-15% come from? It is a compromise between a lighter weight, higher speed arrow and a more aerodynamically stable, heavier arrow. Needless to say, an arrow which has its balance point close to centre or tail heavy will want to do loops.

In assessing the balance point of arrows, a practical position will be to examine all three arrows to see that the balance point for all three is within an extreme spread of 5mm, and so long as that point is greater than 7 per cent ahead of centre and no more than 15% ahead of centre. One arrow will be selected and the other two will be compared to it. Lose a point for each arrow which falls outside these criteria. If two arrows fall outside, then 3 points are lost because the set does not match.

7. FLETCHING

The Muster rules stipulate that all arrows have vanes of natural feather only. Therefore, judging is concerned with evenness of shape, length, positioning and consistency in the amount of offset. Some practical allowance will be made for minor variation in manufacturing in keeping with the spirit of home-crafting, but significant differences will lose points. As with the other categories, 1 point will be lost if one arrow is significantly different to the other two. If two arrows are significantly different then the whole set is not matched and 3 points are lost.

The foregoing seven aspects of fletchery are the most fundamentally important in regard to good arrow flight. The final two are more in the realms of pure craftsmanship and are not critical to good arrow flight. They are included however, to introduce an additional aspect of quality into the fletcher's craft which raises the overall standard and yet is not beyond the capability of the average home crafter. They are the areas of gluing and crestring.

8. GLUING

The simple principle in gluing is this; No glue should be visible. Glue should be used sparingly. It should not be oozing from any joints. A minor amount is acceptable, but obvious carelessness is not. This does not include the necessary 'dob' on the leading tip of the vane to stop it rising. Glue must not ooze from under vanes, from around heads or nocks. A significant amount of visible glue on one arrow in any place will lose 1 point. If two arrows have significant amounts of glue visible, then the whole set does not match and 3 points will be lost.

9. CRESTING

Cresting is assessed on the evenness of spacing and position on the arrow, as well as even thickness of any lines and bands. The moral is -if you can't do it well, then don't do it at all. And if you can do it, keep it simple because it is easier to get it right. Don't submit your first attempt at crestring, obviously, practice it first and get it right. The usual demerit system applies. However, if no crestring is applied, no points can be awarded.

Final note: All arrows MUST be waterproofed. Waterproofing is fundamental to keeping arrows from changing shape and losing straightness and condition. Non-waterproofed arrows will be disqualified.

The weight of arrows can be matched by simply waterproofing the stele and gluing on the head, then floating those steles point down in a capped PVC tube filled with water. Arrows which weigh the same will float at the same level. We are after a match in arrow weight, not in actual weight. Steles which float within one centimeter of each other will usually weigh within 15 - 20 grains of each other.