

Combat Archery Inspection Standards: Middle Kingdom

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Combat Archery Inspections

- Be familiar with the Society Combat Archery Rules, have a printed copy of the rules in a three ring binder and have this binder present during inspection.
- Be familiar with the Middle Kingdom Combat Archery Rules, Construction Standards & Inspection Standards, have a printed copy of these in a three ring binder and have this binder present during inspection.
- Be on the DEM for Combat Archery's list of people who are qualified to inspect. For lack of a better term, these people will be called Combat Archery Inspectors. Armored Combat marshals who are authorized in Combat Archery are automatically allowed to do armor inspections, but are NOT allowed to inspect bows, crossbows, or ammunition unless they go through the DEM for Combat Archery and get on the list.
- Useful items for inspections (as applicable): tape measure, bow scale/gauge, calculator, etc; string to simulate pressure on release mechanism; helm or gauge with similar 1 inch opening; examples of partially-built ammo. A rubber-tipped arrow or small wood dowel with arrow nock that has a mark at 28 inches is handy for measuring bow draw and using with the bow scale/gauge. For certain events, you will also need inspection stickers and / or paint to mark the combat arrows and bolts. Note: bow scales/gauges may need calibrated on a regular basis.

Who is qualified to inspect

Only a qualified Combat Archery Inspector may inspect combat archery bows, crossbows, arrows and bolts. This inspector does not have to be a warranted marshal to be qualified.

You may only inspect the items for which you are a qualified Combat Archery inspector. You may be qualified to inspect one or more of the following items:

- a. Combat Archery Ammunition: Arrows for Bows and Bolts for Crossbows
- b. Combat Archery Equipment (everything except poundage): Bows and Crossbows
- c. Poundage of Combat Archery Equipment (using a bow scale/gauge): Bows and Crossbows

To become and remain a qualified Combat Archery Inspector, you must:

1. Take a written / open book test at the proscribed intervals showing knowledge of:
 - a. Society rules for Combat Archery
 - b. Middle Kingdom rules for Combat Archery
 - c. Middle Kingdom combat archery ammunition construction standards
 - d. Middle Kingdom combat archery inspection standards for ammunition
 - e. Middle Kingdom Inspection procedures for Combat bows and crossbows

2. Demonstrate hands-on familiarity with inspecting combat archery ammunition and/or equipment (as applicable) at the proscribed intervals.
3. Maintain some level of Current SCA membership.
4. Be on the list maintained by the DEM for Combat Archery that shows those people who are qualified inspectors for combat archery ammunition and/or equipment in the Middle Kingdom.

Bow Inspection

Check to see that it meets the standards for combat archery use

If a person brings a bow for inspection that isn't strung: inspect the bow unstrung, then ask the person string it, and then inspect the bow again. If a person brings a bow that is strung, inspect the bow as it is.

Parts of the bow

Hold the bow by the handle in a shooting position. The upper limb is the part above the handle, and the lower limb is the part below the handle.

Draw Length

A bow that will be used in Combat Archery must be designed/constructed to draw 28 inches or it cannot be used in SCA combat. Check the limb to see if the bow specifications are marked there. If the draw length is marked, move on to check the poundage. If not, measure the draw weight of the bow with a bow scale/gauge to ensure it is within appropriate specs. Pull the bow back to 26 inches and use a visual reference check to see if it looks like the bow is at full draw. If the bow does look like it is at full draw at 26 inches, fail the bow. If the bow looks like it is NOT at full draw, then continue to pull slowly back to 28 inches to see if that seems to be the proper draw length for the bow.

Comment: Using a bow that is not designed/constructed to be drawn to 28 inches is not only against the rules, it can be dangerous. For example, a bow with a 26 inch draw length could fail catastrophically if over drawn to 28 inches.

Poundage

All Middle Kingdom Combat Archery heavy bows must be a minimum of 35 lbs. to a maximum of 50 lbs. pull at 28 inch draw. Measure the draw weight of the bow with a calibrated scale to ensure it is within appropriate specs.

Comment: Due to the slight variance that there may be in bow poundage gauges, use some discretion. The poundage can be a little under, but not a little over. For example, a bow measuring 32 or more pounds is OK, but a bow measuring 52 pounds must be failed.

Limb Marking

Check to see that the upper limb on the bow has a wrap of at least 4 inches of red material (tape, cloth, etc.) to show that it is a heavy bow and only shoots tubular ammunition, never fiberglass shaft ammunition.

Condition of the Bow

Start at the tip of the upper limb and work your way down to the handle, checking each surface. Look at the front side of the limb, and then repeat with the backside, and then each edge. Turn the bow over and repeat the inspection process on the lower limb, working your way from tip to handle on each surface.

You are looking for any cracks or stress cracks in the limbs of the bow. Wood Bows: Small chips or scrapes in the finish are not a problem if they do not affect the wood. Fiberglass Bows: Very small chips or scrapes must be judged on a case-by-case basis. Fiberglass usually has no finish, and the marks may affect the fiberglass.

Condition of the Bow String

1. Check bow string length: If the string is too long, the bow isn't bent enough; if the string is too short, the bow is bent too much. Of the two problems, too short is more dangerous. The manufacturer often marks the string length on the limb. If the string length is not marked, then the "rule of thumb" will give a good approximation.

Comment: The "rule of thumb" is not a precise or entirely 100 percent accurate way of measuring the string. The "rule of thumb" is a field method for measuring brace height / proper string length.. The brace height is the distance from the string to the belly of the bow. To check that this height is correct, place the side of your fist up against the belly of the bow with your thumb extending towards the string. The string should be about at the tip of your thumb.

2. Check the condition of the string: Start at the tip on the upper limb, and work your way down the string to the other end.
 - a. End loops: Is the loop binding on the bowstring unwrapping at the limb tip ends? If either end is in bad enough condition, then the bow should be failed.
 - b. Broken strands: If only one strand of the bowstring is broken, you should inform the combat archer, but use your judgment as to whether or not to

fail the bow. If two or more strands of the string are broken, then the bow should be failed.

- c. Frayed string or serving: If the string or the serving where the arrow nocks on the string is fuzzy or frayed, you should inform the combat archer, but the bow does not automatically fail. If there is significant fraying of the string, or the string is exposed through the serving, or the serving hangs away from the string, then the bow fails.
- d. Dry String: A very dry bowstring is not a reason to fail the bow, but suggest to the combat archer that they may want to put some wax on their string. A dry string will deteriorate quicker than one that is kept waxed.
- e. Knots: If the bowstring has any knots, then the bow fails.
- f. Metal: If the bowstring has any metal other than nocking points, then the bow fails.

Check limbs for limb twist

Stand behind the archer to watch for limb twist. Ask the combat archer to pull the bow back as if to shoot, hold that position for a few moments, and then slowly return the string to its at rest position. Watch to see if the string pulls off center at either tip end (check both upper and lower limb ends). If the string does not stay centered when the bow is pulled, then there is a limb twist, and you need to check further to see if the bow is safe.

Put the bottom tip on the ground and hold the top tip with your thumb to check the top limb. Sighting down the string at the backside of the limb, line up the string with the sight window or the center of the bow (as appropriate). The string should line up with the center of the top limb from the tip all the way down the limb. Turn the bow around and repeat on the other limb. If the string does not line up with the center of a limb, then there is a twist in that limb. If the alignment is only off a little, the bow probably can be used. If there is significant limb twist, then the bow is unsafe, and the bow fails.

If there is significant limb twist during any of the tests, then the bow is unsafe.

Feel free to get a second opinion from another qualified Combat Archery Inspector, Target archery marshal or the marshal in charge of combat archery.

Crossbow Inspections

Check to see that it meets the standards for combat archery use

Crossbows should always be strung when presented for inspection.

If you are unfamiliar with the crossbow style, either get assistance from another qualified Combat Archery Inspector with more knowledge of the crossbow style (if possible) or ask the combat archer to describe/explain its features.

Parts of the crossbow

Hold the crossbow in a shooting position. The left part of the prod is to the left of the stock, and the right part of the prod is to the right of the stock. The prod is sometimes referred to as the bow. The tips of the prod are the nock ends.

Poundage

All Middle Kingdom Combat Archery heavy crossbows must be a minimum of 600 inch pounds and a maximum of 1000 inch pounds. Measure the draw weight (in inch pounds) of the crossbow with a bow scale/gauge and ruler to ensure that it is within appropriate specs.

Comment: Due to the slight variance that there may be in bow poundage gauges, use some discretion. For example, a crossbow that comes in at 595 inch pounds is fine, but a crossbow over 1000 inch pounds must be failed. It can be a little under, not a little over.

Limb Marking

All Middle Kingdom Combat Archery Heavy crossbows must have a wrap on their right prod of at least 4 inches of red material (tape, cloth, etc) to show marshals at a glance that they are heavy crossbows and may not shoot fiberglass bolts in combat.

Condition of the string

Start at the left prod tip and work your way across to the right prod tip.

1. End loops: Check for any fraying of the bowstring loops. If any parts are in bad enough condition, the crossbow fails.
2. Broken strands: If only one strand of the crossbow string is broken, you should inform the combat archer, but use your judgment as to whether or not to fail the crossbow. If two or more strands of the string are broken, then the crossbow fails.
3. Frayed string or serving: If the string or the serving where the bolt goes against

the string is fuzzy or frayed, you should inform the combat archer, but the crossbow does not automatically fail. If there is significant fraying of the string, the string is exposed through the serving, or the serving hangs away from the string, then the crossbow fails.

4. Dry String: A very dry crossbow string is not a reason to fail the bow, but suggest to the combat archer they may want to put some wax to put on their string. A dry string will deteriorate quicker than one that is kept waxed.
5. Knots: If the crossbow string has any knots, then the crossbow fails
6. Metal: If the crossbow string has any metal, then the crossbow fails.

Condition of the Crossbow

1. General: The safe condition of crossbows is critical because of the stored energy in a cocked crossbow.
2. Lock Mechanism: Check that it releases smoothly under simulated pressure. Check that the mechanism is solid and will not fire accidentally. If the mechanism will permit the crossbow to fire unintentionally, then the crossbow fails.
3. Stock: Examine the stock closely on all sides. You are looking for cracks in the wood, especially between the prod and the lock. Check also for loose hardware, stripped screws, and other structural unsoundness. If you find any significant problems, the crossbow fails.
4. Prod twist: Check for prod twist. Watch to see that the string is centered on the tips when at rest, and stays centered on the tips when pulled back. If there is significant prod twist, then the crossbow is unsafe and the crossbow fails.
5. Security of the Prod: Check that the prod is securely attached to the stock. Holding the stock firmly, grip the prod and gently attempt to move it. The prod as a whole should not slide back and forth, and should not move or wiggle much in its bindings. If the prod can be moved excessively, then the crossbow fails.
6. All Prods: Closely examine the nock ends of the prod to determine any stress damage, and check the entire prod for cracks or gouges. If the prod is not wrapped, examine the actual surface material of the prod.
7. Metal Prods: Check for parallel cracks in metal prods that may indicate possible metal fatigue.
8. Fiberglass Prods: Fiberglass prods should be checked for discoloration and cracks. When fiberglass separates just under the surface, the thinner top layer becomes more translucent (lighter in color). These conditions are cause for concern.

If there is any visible damage to the prod, then the crossbow fails.

Ammunition Inspection

Tubular Shaft

Each combat arrow or bolt must be inspected. For smaller events, inspection will occur before use on that day. For larger or multi-day events, inspection may be required each day or before each battle. When gleaning, the combat archer must inspect every gleaned arrow or bolt before using it.

Check to see that the shaft is Sil-o-flex (or approved equivalent) tubing with the following specifications: 100 PSI pressure rating and either 1.25 inches exterior diameter or 1 inch interior diameter.

Comment: be especially watchful that the proper PSI Sil-o-flex is being used.

If a Sil-o-flex equivalent is used, you need to see a copy of the manufacturer's specifications sheet and a sample of the shaft with all the specifications printed on it.

Check the shaft for signs of cracking or other failure.

Check that each combat arrow or bolt has the owner's name and Kingdom displayed clearly on it in English. If it is group ammunition, the group name must be used as the owner's name.

Check to ensure the head is covered with red duct tape.

IMPORTANT: Check that the top edges of the head are firm, and that the tip cannot be forced more than ½ inch into a legal face guard.

IMPORTANT: The total diameter of the final head assembly must be at least 1½ inches.

Measure all applicable dimensions.

Crossbow Bolts

The maximum length of a tubular (sil-o-flex or equivalent) combat crossbow bolt is 28 inches as measured from where the prod string touches the bolt to the base of the approved tip. There is no minimum length for a crossbow bolt.

Arrows

Both the minimum and maximum length of a tubular (Sil-o-flex or equivalent) combat arrow is 28 inches long as measured from where the bow string touches the nock to the base of the approved tip.

Suggested questions to ask the combat archer about their ammunition

Are the shafts Sil-o-flex or an equivalent?

(Show markings on shafts)

(Show/know the proper PSI)

(Show a copy of manufacturing specifications documentation)

How long are the shafts?

(Arrows = 28 inches) (Bolts = max. 28 inches)

What type of tips did you use?

(Approved types are Rubber Stopper and Baldar Blunt)

(1/4 inch hole in stopper)

(Inserted stopper 1/2 inch into shaft)

How did you secure the tips?

Rubber Stoppers –

Did you lace or tape them into the shaft?

(tape down lacing)

Baldar Blunts (tape only)

(fiberglass reinforced strapping tape)

(approved method from construction standards)

How did you apply and secure the foam on the heads?

Rubber Stoppers –

(1/2 inch padding on tip)

(Side wrap with at least 1/2 inch overlap on shaft)

(Final diameter of head at least 1 1/2 inches)

Baldar Blunts

(padding on tip is at least 1/2 inch thick and at least 1 1/2 inches in diameter)

(fiberglass reinforced strapping tape)

(approved method from construction standards)

How did you do the nocks on your arrows?

(No deeper than 1/2 inch)

(NO wooden nocks)

How did you construct your fletching?

(Can't project farther than 1/2 inch from shaft if less than 1.5 inches thick)

Reference Sources

Society for Creative Anachronism Marshal's Handbook revision date 2 Nov. 2008
The 35-Foot Spear: Combat Archery Resources
<http://www.havenholde.net/35footspear/>

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Deputy Earl Marshal for Combat Archery
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