

The five-tiered-target

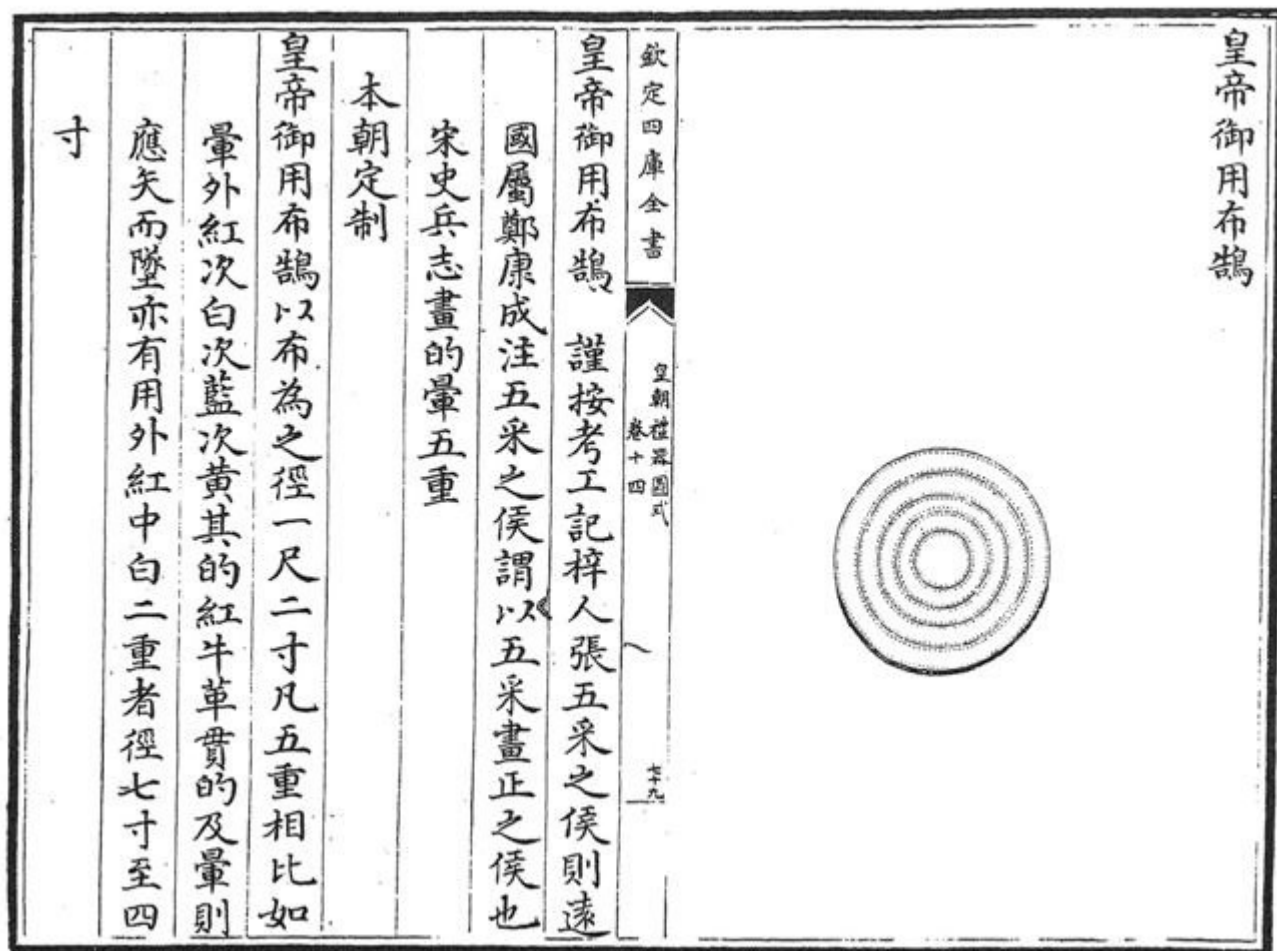
By Peter Dekker, April 28, 2013

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In order for an arrow to transfer its full kinetic potential to a target, it needs to hit the target with its nock neatly behind the tip in relation to the arrow's path. This can be a challenge especially on the shorter ranges because of the [archer's paradox](#). Any so-called "fish tailing" on impact may result to the loss of valuable kinetic energy as the arrow's tail sways sideways instead of having its full weight push upon the target. In penetration tests with heavy bows, this seemingly little detail may decide the difference between the arrow piercing the target or disintegrating on impact without doing much damage.

Conventional target shooting is excellent training for accuracy but neglects this aspect of archery. If your arrow hits the centre of the target the only thing it needs to do is keep stuck in the target, regardless of the tail end swaying out or not, the hit counts as a score. In order to test penetration we can of course try to pierce leather, steel, ballistic gel or clay. But such tests are cumbersome and rather expensive for regular, everyday training.

The Manchus, large game hunters and members of a warrior elite of mounted archers, were all about dealing high damage on relatively short ranges. Their records describe a most elegant way of training accuracy and clean releases at the same time; the five-tiered-target or *tunken* in Manchu. It consists of four concentric rings around a bullseye. All parts are loose but fit neatly into each other. The target is suspended from its outer ring and in order to score a perfect hit the arrow does not only need to hit the center but it needs to pass through cleanly without its tail taking along any of the other rings. Here is the woodblock print of a page in the 1766 *Huangchao Liqi Tushi* describing such a target:



My translation, an excerpt from my upcoming book:

His Majesty's Cotton Target

According to:

THE RECORDS OF EXAMINATION OF CRAFTSMEN; THE WOODWORKER: "Plans for the five-tiered target; Its regulations comply with those that belong to a distant kingdom."¹

Zheng Kangcheng notes: "On five-tiered targets is said: Using five colors makes the proper target."

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HISTORY OF THE SONG; MILITARY RECORDS: "A halo is drawn with five layers."

The regulations of this dynasty; His Majesty's Cotton Target:

Made using cotton, it is 1 *chi* and 2 *cun* in diameter.² All five rings are like bi discs.³ The outer ring is red, the next white, blue, and then yellow. The center is red and made of the skin of a bull.⁴ When hit it will come along with the arrow and fall out. The white and two layers outside the red center also work in this manner, their diameter being from 7 *cun* to 4 *cun*.

Notes

¹ The "Records of Examination of Craftsmen" is generally believed to date from the [Spring and Autumn](#) period. One wonders which distant kingdom they are referring to.

² A *cun* in this text is probably about 34 mm.

³ *Bi* are old jade discs with a hole in the center. It is interesting that this text states that *all* five layers are like such discs, while the center has no hole.

⁴ Bull skin, how appropriate a material for a bullseye!

Reproduction

For those interested in reproducing the above target, the target itself is 12 *cun* in diameter. The individual rims of each ring are probably 1 *cun* wide with a center disc, or bullseye, of 4 *cun* wide. Colors from outside to inside are: red, white, blue, yellow, red.



A *tunken* acquired in China in 1903 by Berthold Laufer, now held in the [Chicago Field Museum](#), Catalog No: 70 / 9844, Field No: 2639. Materials: Cloth, thread, hide, metal, pigment. Dimensions: 50 cm diameter, 34 mm height.

In practice

I recreated a number of these targets and have been using them since in practice and on annual workshops at [Guoshu](#) in Bad Krozingen, Germany, and the [Chinese Archery Program and Lectures](#) in Georgia, U.S.A. last March 2013. It has also become a regular target at the S.P.T.A.'s annual St. George shoot. It was found to be very unforgiving. What struck most of us is how many times one hits the center without the arrow being in complete alignment. Something you don't pick up in your regular practice because regular targets don't provoke one to do better if one has already hit the bullseye.

Target whistle arrows

Five-tiered-targets or *tunken* were typically shot with a [whistle arrow](#). The whistle head being wider than a normal arrowhead makes the game a little more difficult, it not being sharp spares the target, and the whistle surely adds to the fun of the spectacle. Special target whistle arrows were called shègǔ bàojiàn 射鵠飽箭 in Chinese or *tunken yoro* in Manchu.





A Qing *tunken yoro* from my own collection.

Making a five-tiered-target

It doesn't become apparent from the regulations what material is used inside this target, but the easiest way to construct something similar is using a piece of foam.



A shot at the *tunken*



