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 A Portrait of Mr. Adam Karpowicz

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The powerful composite bows that were used to the maximum effect and efficiency in the Middle East and Asia have been the source of fascination for many researchers and archers over a long period of time. Making composite bows was a very difficult task, and I am happy to announce that there are still a few composite bowmakers who follow the tradition of our Iranian ancestors. In my opinion and also in the opinion of many professional archers and researchers, the best composite bows of today are made by Mr. Adam Karpowicz. I was specially honored to have Mr. Karpowicz as one of my technical editors who made very useful and essential contributions to my book Arms and Armor from Iran: The Bronze Age to the End of the Qajar Period. Mr. Karpowicz is a true gentleman and truly a source of knowledge on making composite bows. He resides in Canada and holds an M.A. degree in art conservation and an M.Sc degree in chemistry. He has consulted different museums on the storage of composite bows and worked as an art curator.

Mr. Karpowicz explains that bows were made of four components: wood, horn, sinew, and glue. The core, of high quality wood (possibly maple wood), was made first. It was usually made of three, five, or seven parts spliced together. Persian bows were usually made in seven sections. Turkish bows were made in three. In the next step, strips of horn were glued to the core on the belly side (the side facing the archer). Water buffalo horn was the common material and dominated composite bow making whenever it was available. In northernly areas as water buffalo horn was not available, other types of horn, such as strips of ibex horn, were used. Two identical strips of horn were attached to each limb to meet at the center of the grip. In Persian bows, due to the greater width of limbs, each belly strip was composed of several narrow strips, glued side by side to the core. The tips of the bow were left exposed.

Once the horn belly was finished, the bow was carefully carved, almost to its final shape, in preparation for sinew. Sinew that was used in this stage was possibly the tendon/sinew of cows and bulls (also the back tendon of cattle). This is important to take into consideration that, technically, the sinew referred to as the Achilles tendon is not that tendon at all. The equivalent tendons in the human body are those that run under the foot to the toes. Sinew was attached to the back of bow (the side opposite to horn). Animal tendons were shredded into fine fibers and soaked in glue. This glue was made from sinew and other materials. The main advantage of such glue was in its affinity to sinew, wood, and horn for superior bonding strength. Glue made of skins and fish bladders were also used. Thus, glue for bows was made from a very wide range of animal (never vegetable or mineral) materials, softened by long cooking in water. The glue was applied hot, and its melting point did not have to be so high as to cause the sinew to cook. When hot, the glue had to soak well into the wood and sinew. Up to three layers of sinew would be laid on and glued to a bow. Once the sinew was dry, the bow was filed to its final shape and left to season for several months. Certain types of bows, such as Persian bows, were wrapped with sinew across the limbs as reinforcement.

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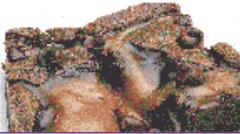
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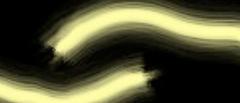
Then, the bow was covered with birch bark and decorated with paints based on oleo-resinous binder (*rowghan-e kaman*), similar in composition to paint used for bookbinding. The finished bow was varnished for added protection from moisture. Mr. Karpowicz explains that most old bows he had a chance to examine were at least 90lb draw weight, usually above 100lb (the draw weight is the force felt by the archer when the bowstring is pulled to the full extent of the arrow). For comparison, recreational bows of today are usually no more than 50lb.



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It means the bows, used for warfare, were powerful enough to penetrate mail armor and to pierce flesh with ease to kill or maim enemy men and horses.

Bows played a very important role in Iranian military history. In our history, all Achaemenian kings had pride in their bows and skills in archery. The legend "Arash Kamangir" describes that the borders of Iran were determined by the archer Arash who put all his force in drawing a powerful bow to the extent that all his life energy transferred to the arrow, a shot which flew for a very long distance. The legend describes that Arash died immediately after shooting that arrow. Many Iranian children read this story and are sad about the tragic end of it and are proud of the heroic act of Arash Kamangir. It is time to learn about how these bows were made. I would like to stress and emphasize how proud I am of the performance of Mr. Adam Karpowicz in making such wonderful composite bows. I am truly proud of him and would like to congratulate him. Up to now, I have not been able to find any contemporary Iranian bowyer. Therefore, I hope that Mr. Karpowicz would teach our craftsmen in Iran one day so that this ancient art will be revived in Iran again. I would like to thank Mr. Karpowicz again for his contributions to the art and military history of Iran.

Figure 1: Mr. Karpowiz is drawing a composite bow

Figure 2: Two composite bows made by Mr. Karpowicz

Figure 3: Two other composite bows made by Mr. Karpowicz

Figure 4: Surface pattern of a bow made by Mr. Karpowicz with gilded inscriptions from a poem by Molana Jalaledin Rumi

Figure 5: Surface pattern of a bow made by Mr. Karpowicz with gilded inscriptions from a poem by Molana Jalaledin Rumi

Figure 6: Surface pattern of a bow from the Safavid period

Figure 7: Surface pattern of a bow from the Zand period

Figure 8: Surface pattern of a bow from the Qajar period

Figure 9: Surface pattern of two bows made by Mr. Karpowicz

Figure 10: Surface pattern of two bows made by Mr. Karpowicz

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#### **ABOUT THE AUTHOR**

Manouchehr Moshtagh Khorasani writes for PersianMirror from Germany. He is the author of the book "[Arms and Armor from Iran - The Bronze Age to the End of the Qajar Period](#)".

More information is at [www.legat-verlag.de/\\_e/programm\\_e.html](http://www.legat-verlag.de/_e/programm_e.html).

Manouchehr is also the moderator of the American organization of Swordforum International, where he answers questions on Middle Eastern Swords. He is considered the specialist on Middle Eastern Arms and Armor and responsible for the forum Edged Weapon from the Middle East, Asia and Africa. For more visit: [forums.swordforum.com/index.php?s=](http://forums.swordforum.com/index.php?s=)

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