

# Samurai fighting arts (bujutsu)

## Why do people use aluminum training swords?

Sooo, it's story time at The Samurai Workshop again. This time we'll talk about training swords!

Since you're a member of our amazing community, chances are you are aware of the many martial arts practitioners who still use swords for their daily practice. Depending on the style and the level of the practitioner, one would choose either a blunt or sharp sword to train with. Now for decades, iaidoka en kenjutsuka have trained with Japanese zinc / aluminum swords and some even feel that this is the traditional way.

It appears that some people disregard the fact that samurai swords are in fact made of steel, which is a completely different material than an aluminum alloy.

Aluminum is an amazing metal which is used in thousands of products. However aluminum is definitely not the ideal material to make swords. It's softer, lighter, more flexible and has a very short life-span in terms of metal fatigue.

So why are Japanese iaito manufacturers solely making swords in aluminum alloy?

The real reason lies in the complicated Japanese sword laws which all circle around the phenomenon 'Nihonto': genuine forged Japanese samurai swords. Japanese sword laws are clear about one thing: if it's not Nihonto but looks like a Japanese sword, it's forbidden and it will be seized and destroyed. The following guidelines are used to identify nihonto as such:

- 1) The sword must be made of Tamahagane or oroshigane steel; steel ore made through a similar smelting technique.
- 2) The steel must be forged in a traditional matter and should be folded.
- 3) The steel should be given a differential hardening.
- 4) The sword should be made in one of the existing traditional geometries

Other features such as a curvature or steel lamination may be (somewhat) unique to the Japanese sword but are not a requirement for nihonto. After all, straight blades exist in Japanese history as well as a maru steel lamination - which essentially means, no lamination. Also the sword laws only concern the actual sword blade and not the way the blade has been mounted.

In Japan swords are made by licensed sword smiths or katana-kaji. Due to the very important role in Japanese culture, the making of a Japanese sword is bound to many rules. Katana-kaji are allowed to make two katana-sized (<2 shaku - 60 cm nagasa) swords per month or 24 per year and this limitation is definitely the cause of an artificially high price of Japanese swords.

However there's more, especially if you look at this restriction through the eyes of a Japanese sword smith:

The costs of living in Japan and the operational costs of a forge are high, very high to say the least. Taking care of you family, paying rent for the house and the workshop, raw materials, electrical or gasoline costs (for a power hammer) and let's say about 1500kgs of charcoal per month. All those costs are to be earned by selling two (long) swords per month.

Also, after a sword blade has been forged, the sword smith needs to commission a polisher, saya maker, lacquerer and handle wrapper before he can deliver a finished product. Perhaps even a kinko-shi should one desire hand-made sword fittings.

Most sword smiths are also working through an agent, who will also add a commission to the final price.

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In short, due to the sword eco system the product will be quite expensive. From our perspective: the chance of average Joe owning a genuine commissioned Nihonto seems galaxies away...

Luckily, for training and decorative purpose the Japanese sword industry has found a loop-hole in these regulations. The key is the word 'steel' as the law specifies a hardened and magnetic material. An alternative - non magnetic - material comes to play and aluminum alloys are introduced to make blunt 'mogito' swords. By using certain aluminum alloys, the industry is able to create swords which are suitable for training, though they still are a shadow of the original hardened steel swords.

Would Japanese martial artists prefer a steel sword over a aluminum sword? Of course! Even for Japanese martial artists a modern made Japanese shinsaku sword is very expensive as they start at (give or take) 3000-4000 euro for just the blade. Antique swords of moderate quality are found at a lower price so this may be an option for advanced students. You have to be prepared to train with a sharp sword though because blunting an antique sword is out of the question

For beginners the aluminum alternative seems much more interesting now. However from a technical perspective; on almost every level, aluminum is a lesser material than steel.

Looking at the cons of aluminum:

- shorter life-span (metal fatigue) of 15 years vs 600 years for steel (approx.)
- lower density, about one-third lighter than steel
- fast oxidation process, which is why aluminum swords are chrome plated
- lower mechanical strength and rigidity, allow easy bending and wobbling and crisp geometrical edges will not hold



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A smooth ending without really crisp edges is the typical bo-hi termination on Japanese zinc / aluminum iaito.



Due to the low pulling strength of aluminum, the area touching the habaki needs to be as solid as possible. Japanese zinc aluminum swords therefore often use a kaki-dome bo-hi that ends above the habaki to prevent stress at the hamachi / munemachi.

An interesting misconception is the difference between the terms mogito and iaito. The term mogito is used to describe blunt training swords but also play swords, cosplay swords and decorative swords.

The term iaito usually refers to blunt swords but in fact is translated as 'training sword'. So in fact, a iaito can be sharp.

So what do you choose? Perhaps a Japanese forged sword or antique sword blade restored for training if you have a bigger than average wallet. But what about a Japanese aluminum alloy sword and the Chinese blunt or sharp swords?

Important to know if that the quality of the hammer does not define the skill of the sword smith. More likely; an apprentice sword smith will not see the difference between a good and a bad hammer, nor a starting martial artist will see or feel the difference between a good and bad sword. Talk to your teacher and fellow students or visit one of the numerous iaido, kenjutsu or koryu bujutsu groups on Facebook.

There's a lot of knowledge in here and martial artist do like to talk about what interests them :)

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Lastly without adding a commercial agenda to this article, find a good sword shop. They should be familiar with the specific sword school you are following and they should be able to give some good advice about what NOT to choose. After that, you'll eventually have to make your own decision on which sword to choose.

We are currently working on another article on how to recognize several quality details in Japanese swords. It will not tell you which sword you should buy, just how to recognize the ones you should avoid :)

Thanks for your time and namaste!

### Epilogue

It's been quite a while since we posted a more in-depth article about something and the discussed subject is one that has been on my chest for quite a while now. It may annoy some people, perhaps even fellow sword sellers.

Anyway, as with all of our articles, everything is written from an author's perspective. There is no absolute truth and no one should read anything as being an absolute truth :)

The first weapon that you should learn to use is your mind. Do you research and grow; not only as a martial artist but also as a scholar. Scientists saved more lives than warrior's... ya know ;)

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