Care & Maintenance of your Bokken, Jo & Tanto

Bokken, Jo & Tanto Maintenance: It is important to keep your wooden weapons clean, smooth and straight. One reason for properly caring for your wooden weapons is to slow down the exchange of atmospheric moisture. The existing oiled finish can be improved by regular handling of the weapon and routine reapplication of a suitable oil. Do not use wax or any surface treatment like varnish, varathane etc. Oil finishes can be found at hardware or woodworking supply stores. Oil finishes not only give a feeling of control but also allow the wood to slide somewhat through the hands, which is especially important for jo techniques. Teak oil is preferable, however other common choices for oil finishes are Tung oil, Boiled Linseed oil, and commercially available mixtures like Watco Danish Oil. Teak oil and Watco Danish Oil are more commonly used because the mixtures have a low viscosity and penetrate the wood more easily. When applying the oil, rub in a thin coat. Wait at least 15 minutes, remove any excess oil and let the wood dry at least overnight. Finally, thoroughly buff out with a clean cloth. Never train with a slippery or just oiled weapon.

Method of conditioning a new weapon: Preparing a bokken or jo for heavy impact takes time, patience and a high degree of skill and control. Consider the outer layer of wood when the weapon is used paired practice: If the weapon is used in an uncontrolled manner, or too aggressively – especially when it is new – there is potential for more noticeable denting. On the other hand, if it is subjected to slowly increasing impact energies, the surface becomes progressively compressed and thereby hardened with continuous striking. If the weapon is used with precision and restraint until the impact areas have been uniformly "hammered," as in the forging of steel, it will become a tempered weapon. Over time, instead of having concentrated dents in isolated areas of heavy contact, it will have a much more subtle patina, only noticeable upon close inspection, of an even compaction and the surface will be hard and tough. This is the condition to be sought. Often the weapon of an experienced practitioner will achieve this state naturally. This is because a high-level swordsman uses the weapon in such a controlled manner, using the entire weapon, that the whole surface is evenly worked.

Moisture and Warpage: Just think of the wood as still alive, and treat it as such. Therefore, try to minimize your bokken, jo or tanto's exposure to large changes in humidity; for example, don't leave them in the hot sun, don't store them near a hot woodstove or in the car. Don't lay them down in wet grass, and ensure that you always store them in an upright position. All wood is subject to constant cyclical exchange of atmospheric moisture which tends to expand and contract the fibres. This exchange is responsible for movement and can result in warpage. Warpage is usually permanent in hardwoods. The woods used for weapons training have a cellular structure that allows for some straightening. The method used to straighten the wood is to bend the weapon in the opposite direction in order to help relieve internal stresses in the wood that caused the warp. If correction is necessary, consult an expert, who will use a vice that will firmly hold one end of the weapon in a relatively softer wooden support, like pine wood blocks, so that the weapon will not unnecessarily dent at the pressure points. It is not recommended that you attempt this yourself, but if you do, always use extreme caution and common sense safety practices.

When to replace your weapons: With proper care and use, your wooden weapons should last many years. However, they are essentially disposable, and you must throw them away at the first sign of a crack or split (whereas if it was as expensive as a shinken you might be tempted to get it repaired in order to get just a little bit more life out of it). Wooden weapons can also be sanded down to get rid of the sawtooth dents that you would rapidly get in a metal practice blade. Your bokken, jo & tanto are made of the very best materials and are unlikely to fail if used sensibly, but you are cautioned to exercise good judgment in their use, and replace them if any obvious damage is evident.

Contact in paired practice: Due to its cellular structure, the wooden weapons are very resilient, and suitable for sensible martial arts practice. While Aikido-Yoga practitioners do not engage in abusively heavy impact training, there are two important physical considerations for paired practice:- shock strength and dent resistance. In most materials, extreme hardness is associated with brittleness. Your bokken, jo & tanto, while amongst the hardest woods available, are not as hard as some tropical woods. They have, however, a much higher shock strength than practically any wood and so it is not surprising that some harder species, with higher density and hardness, would superficially appear to be stronger but actually have a much lower overall shock strength. The advantage of a very hard (but brittle) weapon would be its resistance to denting but the drawback is its lower shock strength.

Bokken Bashing: The respect with which you treat your weapon directly impacts the effectiveness of your training. It also directly reflects your maturity level as a martial artist, and openly reveals the attitude with which you approach your training. Wooden weapons are designed to allow students to practice in a controlled and concentrated manner without the unnecessary risk and danger associated with razor sharp steel edged or tipped weapons. However, when I get asked questions regarding "full contact" training, such as "what's the best wood for hard contact?" or "are your bokkens and jos guaranteed for life against breakage"? it reveals some people's misunderstanding of what wooden weapons are meant for. They are not, were not, and never will be intended as "safe" for full contact.

Although the wooden weapons are not designed to cut flesh, serious injury can occur as a result of bone fragmentation. Recovery from shattered bones, or severe fragmentation of bone into vital organs of the body is often much more complex, requiring delicate surgery and usually requiring a much longer rehabilitation period than a clean superficial cut. Bottom line is that you don't hit full force unless you don't know what you're doing.

All weapons training is performed under the direct supervision of a qualified instructor. If you do it without proper training and supervision, if you do it with weapons that are in poor condition, if you do it without the greatest concentration and care you can manage, you or your training partners could be seriously injured. You wouldn't swing a hockey stick or baseball bat with full force at a team-mate even if they were wearing helmets, so why would you do it with a bokken at someone who is unarmoured? In addition, the proper safety equipment required to make that kind of practice even remotely survivable would severely impact movement and visibility. The use of bamboo, foam weapons, kendo-like armour, protective gloves and helmets etc. not only have the potential to increase the risk of injury, but also have the potential to build incorrect technique and mental conditioning based on the false sense of security and the feeling of invincibility that all that padding gives you.

SOME FREQUENTLY ASKED QUESTIONS

Will any wooden bokken or jo out there stand up to full contact practice?

NO. Nor will any steel, titanium, aluminium, or plastic. Some will last longer than others but none will last forever.

What is the best wood for hard impact?

None are good, none will last. Those that will perhaps last longer, more safely, are those that will flex - woods like ash and hickory, woods that will dent and splinter but usually not snap in half to become projectiles.

What wood will resist denting well?

A wood that is dense and hard... but that usually means stiff and brittle which of course means prone to snapping in half. Please note that wood is not homogenous, and some weapons may snap in half while some others may split without snapping. When you talk about different woods you need to talk about their "tendencies" rather than what will happen to them when they fail. Grain has much to do with the strength of wood, as do knots and other flaws.

What do you recommend?

A lighter wood that is flexible with a reasonable degree of resistance to denting and also a reasonable resistance to snapping in half, one that will usually splinter, crack and split first, giving some warning before complete failure. Hickory, oak, perhaps ash. Do not partner practice with different types of wood if more than very light contact is made. Receiving a heavy strike from a cocobolo bokken with one of ash is asking for trouble, the difference in density and weight will ensure that the cocobolo digs well into the ash. **For this reason all weapons are either purchased through the club or approved for use by the Chief instructor.**

Can you make a wooden sword that mimics a shinken?

No. Steel is a lot denser than wood. To get the same weight you need to make the bokken a lot thicker than a shinken, so it won't feel the same. You could, in a lighter weapon, approximate the balance but then my problem becomes which shinken? Shinken are different weights, lengths, and balances. Some are tip heavy, some hilt heavy. Some are more curved than others and that affects the way they feel while being swung, regardless of the balance point. Then, when all that is said and done, your wooden blade is going to feel different than a steel blade when it hits something. Most sword steel is a hell of a lot more stiff than most wood. It breaks or bends rather than flexing when deformed.

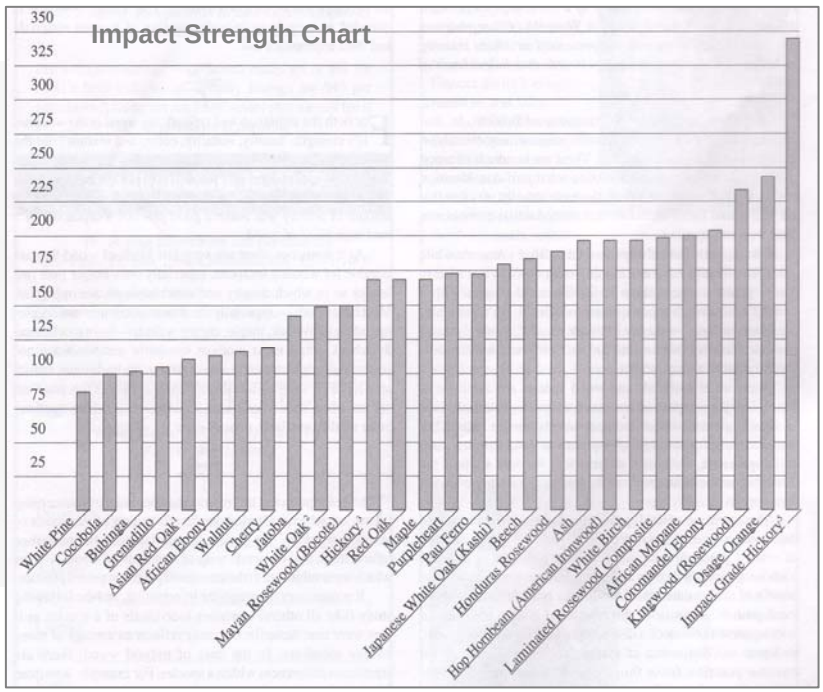
How long should a sword last?

That depends entirely on how you use it and what you use it against. The jo is heavier and is swung quite fast, but if it strikes the bokken at right angles, and doesn't snap it out of your hands, or you do not move the bokken to absorb the impact – it might break either the bokken, the jo, or both. In proper practice, with the correct grip and correct hits according to the good practice methods handed down by experienced instructors, they ought to last a long time. To break a bokken or jo, you only have to hold it really strong and strike it against a hard object at 90 degrees. Wood, as most things, breaks if abused and/or neglected.

Impact Strength & Density

Impact Strength of Wood:

A primary safety concern in relation to wooden weapons is strength during sudden impact. The following chart shows the strength of various woods when subjected to impact shock with other wood of the sort experienced during paired *bokken* and *jo* practice.



Density of Wood:

Along with impact strength, wood density is a key consideration in relation to weapon quality. It is measured as a ratio called “specific gravity”. When wood floats in water, its specific gravity is less than 1, but there are a few varieties of wood that have a specific gravity greater than 1 and will sink. Although high density doesn't necessarily translate into high impact strength, it has a major influence on performance and manoeuvrability. High density materials may give the appearance of being practically indestructible, and sometimes may not even show damage prior to failure – but an unexpected, complete break may create a dangerous situation. Bottom line is that different wood is appropriate for different weapons and different uses. For this reason all weapons are either purchased through the club or approved for use by the Chief instructor.

Specific Gravity / Density Chart

Wood	Specific Gravity	Impact Strength
White Pine	.35	86
African Ebony	1.10	110
Red Oak	.63	169
Purpleheart	.79	173
Pau Ferro	.73	173
Shiro Kashi (Japanese White Oak)	.82	179
Honduras Rosewood	1.00	189
White Ash	.60	196
Birch	.62	196
KWW Laminated Composite	1.30	198
Coromandel Ebony	1.10	202
Osage Orange	.80	243
Impact Grade Hickory	.75	345

CONDITIONS OF TRAINING:

**** Note:** Extreme care must be exercised with the handling, training with, care, maintenance and repair/correction of your wooden weapons.

The realistic nature of advanced Aikido-Yoga weapons training necessitates the highest level of awareness, skill and care. In order to establish a firm foundation upon which advanced weapons training becomes feasible, in the formative years of your training, all weapons training should be undertaken under proper supervision from trained and experienced instructors until you have completely mastered the safety aspects of the training.

For the safety reasons outlined in the above document, all weapons must either be purchased through the club or approved for use by the Chief Instructor.

As stated in the Elwood Beach Aikido Dojo / World Aikido-Yoga Martial Arts Contract:

- The practitioner assumes the risk of all injuries, losses and damages and will hold the Elwood Beach Aikido Dojo, World Aikido-Yoga, its instructors, agents, students and other persons otherwise connected with the Aikido classes, harmless from any and all liability (including legal costs) for all claims, actions or damages arising from any injuries, losses or damage suffered by the practitioner or caused to a third party during the activities occurring on the premises of Elwood Beach Aikido Dojo or elsewhere in connection with such classes.

- For the effectiveness of the practitioner's own training and safety and that of other participants, the practitioner will conduct themselves at all times in a manner consistent with the rules of martial arts etiquette made known by the Dojo Chief Instructor, and follow all the directions of instructors, and observe and apply common sense safety.