

## **Notes prior to reading this document.**

The pictures of the various species of wood are copied from a number of web sites, mostly specialising in exotic woods. The descriptions and suggestions for usage are, again, gleaned from different web sites. Apart from actually compiling the information into a simple-to-read document, none of this work is my own and I can't guarantee the accuracy of any part.

## **Database of Wood for Ship-Modellers**

**Apple :** Common Name(s): Apple, Crab Apple, Wild Apple.

**Botanical Name :** Malus domestica

**Colour :** Varies in colour from light cream sapwood to a pale to medium pinkish brown

**Description :** Excellent wood for carving, milling and turning. The wood will hold a clean sharp edge and finishes to a smooth polished surface. Apple is strong and flexible, suitable for bending.

**Use:** Because of this wood's versatility it is one of the top choices among model builders. Apple is suitable for natural curved timbers. The wood can be used for all aspects of model work, from fine fittings to delicate turned items and carvings to hull timbering. Excellent for bent or built-up frames, deck equipment, blocks, and deadeyes. The cream colour of the sapwood makes nice planking.



Apple (plain)



Apple (treated)

## **Balsa :**

**Botanical Name :** Ochroma pyramidale

**Colour :** White to pinkish-white wood.

**Description :** A straight grained, coarse textured wood, which is very soft, lightweight and spongy. When cut, it has a tendency to crumble and doesn't hold a clean, sharp edge. It doesn't give a smooth finish nor does it hold pins or screws very well. Extremely sharp tools are required to cut it, and it dents under finger pressure. This wood is at the top of the "don't use" list, as it can't be worked accurately in even the largest scales.

**Uses :** Possibly the easiest wood to cut, shape and sand. Not suitable for steam bending. Finishes fairly well but porous composition soaks up glue finish. Use for filler blocks, but has no other use for ship models.



**Basswood :** Common Name(s): Whitewood, American Basswood, Lime, Linden

**Botanical Name :** Tilia americana

**Colour :** Pale, almost white to creamy white or pale brown, it tends to become more brown with exposure.

**Description:** A straight-grained wood with a uniform texture.

**Properties:** A first class wood for carving with a knife. Not very good for machining as the wood tends to rip or splinter under the pressure of cutting tools. Because Basswood is weak it tends to break when cut into small parts. It has poor steam-bending properties. Sawing produces a woolly surface but it sands easily. Finishing usually requires a sealer.

**Use:** The main use of this wood is cutting the layers for solid hull construction or blocks for carving hulls. The easiness of carving makes Basswood suitable for the joinery work in deck framing. Usable as deck planking and the first layer of planking in POB hulls or planked hulls that are going to be painted.



Basswood (plain)



Basswood (treated)

## **Beech :**

**Colour :** Varies between light brown to red-brown and white to pale brown.

**Botanical Name :** *Fagus grandifolia*

**Description:** Beech is a straight, but coarse grained wood with a good texture. This wood is affected by humidity plus it's brittle. American Beech is slightly coarser than the European variety.

**Properties:** Beech can take extreme bending and will hold its shape. The wood has a very smooth and hard surface making it suitable for polished finishes. Cuts, sands and machines well. One of the best woods in its ability to hold screws and nails. A strong, hard and dense wood, turns well on a lathe. Workable with hand tools and cuts clean with a knife blade.

**Use:** Very good wood for planking and bent hull timbers such as wales and deck clamps. Makes an attractive wood for framing and hull timbering, also used for treenails.



**Birch :** Common Name(s): Hard Birch, Betula wood, American Birch.

**Botanical Name :** *Betula papyrifera*

**Colour :** It has a red-brown heartwood and light-yellow sapwood.

**Description:** Straight-grained wood with a fine, even texture and has good strength and bending properties. It is stiff, very hard, and holds a clean edge.

**Properties:** This is an easy wood to work with hand or power tools. Cuts clean and finishes to a smooth surface. The wood is very tough and flexible, once bent it will hold its shape.

**Use:** Its prime use is for framing, hull timbering and bent hull members, although mostly used by ship modellers as plywood. It is commonly used as dowels for masts and spars. Suitable for planking. Sharp tools are required.



**Bloodwood :** Common Name(s): Bloodwood, Satine.

**Botanical Name :** Brosimum rubescens.

**Description :** Bloodwood is a dense wood, stiff and brittle. Because of the woods' hardness, working with hand tools or a hand carving is difficult and slow going. Best sanded gently by hand as power sanding warms up the wood and brings out the natural oils, leading to clogging of the sand paper. Machining and turning properties are excellent. Joinery work can be machined to a clean smooth surface with a crisp sharp edge. Very delicate fittings can be turned on a lathe. It can be brought to a polished, marble like finish.

**Use :** For small fittings and turned items, railings, blocks, mouldings, cap rails, trim work and wales, planking for decks and on the inside and outside of the bulwarks.



Bloodwood (plain)



Bloodwood (treated)

**Boxwood :** Common Name : European Boxwood.

**Botanical Name :** Buxus

**Colour :** Distinctive cream to yellow colour

**Description:** Fine, evenly textured wood. Dense and heavy and can vary in the straightness of its grain. It carves with great detail although it is relatively hard to cut, even with extremely sharp tools, but the effort is worth the labour.

**Use :** Mainly used for carving, it is a superior wood for modellers, as it retains sharp edges and details to the smallest dimensions.



**Cherry** : Common Name(s): Black Cherry, American Cherry.

**Botanical Name** : Prunus serotina

**Colour** : Has a light to pale reddish-brown colour, which deepens with age.

**Description** : Cherry, like all fruitwoods, is a hard, dense wood, stiff and brittle and is difficult and slow to work using hand tools or a carving knife. Power sanding tends to clog up the sand paper due to the natural oils in the wood. It is best sanded gently by hand. Excellent machining and turning properties. It can be machined to a clean smooth surface with a crisp sharp edge. Delicate fittings can be turned on a lathe. Can be brought to a polished marble like finish.

**Use** : Small fittings and turned items, railings, blocks, mouldings, cap rails, trim work and wales, planking for decks and on the inside and outside of the bulwarks.



Black Cherry (plain)



Black Cherry (treated)



English Cherry

**Douglas-Fir** : Common Name(s): Douglas-Fir.

**Botanical Name** : Pseudotsuga menziesii

Not really recommended for modelling.



Douglas-Fir (plain)



Douglas-Fir (treated)

**Holly :** Common Name(s): Holly, American Holly.

**Botanical Name :** Ilex opaca

**Colour :** Ivory white to grey-white (sometimes greenish)

**Description :** Has a straight, close, very fine grain. Some of which can be irregular. A quality wood with an even texture and beautiful appearance. Requires sharp tools but is an easy wood to work with. Cuts clean and smooth with hand or power tools. Capable of finishing to a very smooth and hard surface. Flexible and strong, bends well due to this low stiffness and high strength. Dry wood is essential as it has a high rate of shrinkage. Glues well. Easy to carve and holds edges better than most other woods. Will accept end fastenings with a minimum of splitting.

**Use:** Holly can be used for framing, planking, decking, trim, carvings, blocks, small fittings, guns, and other turnings, although mainly used for deck planking or bulwark planking. The fine texture makes the wood suitable for delicate fittings and carvings.



Holly (plain)



Holly (treated)

**African Mahogany :** Common Name(s): African Mahogany.

**Botanical Name :** Khaya

**Colour :** Light brown to reddish brown.

**Description :** Has a medium to coarse texture with open pores. The grain can be straight, irregular, or interlocked. Is easy to work with hand or power tools. Glues and finishes well.

**Use :** Hull planking, keel, stem, rudder and general ship fittings.



African Mahogany (plain)



African Mahogany (treated)

**Lime :** Common Name(s): Linden, American Basswood.

**Botanical Name :** Linden

**Colour :** White to pale yellow

**Description:** A straight grained wood with a fine uniform texture.

**Properties:** A first class wood for carving with a knife. Not very good for machining, the wood tends to rip or crush under the cutting tools. Because Lime is weak it tends to break when cut into small parts. It has poor steam-bending properties. Sawing produces a woolly surface but it sands easily. Finishing usually requires a sealer.

**Use:** The main use of this wood is cutting the layers for solid hull construction or blocks for carving hulls. The easiness of carving makes Lime suitable for the joinery work in deck framing. Usable as deck planking and the first layer of planking in POB hulls or planked hulls that are going to be painted.



**Maple :** Common Name(s): Hard Maple, Rock Maple.

**Botanical Name :** Acer saccharum

**Colour :** Pale yellow to deep honey, but can be dull looking.

**Description :** This is a heavy, fine-grained white wood, readily available, stable, and among the hardest of usable modelling materials. A tough strong wood. Cuts nice and clean, with excellent machining qualities. Maple will take a smooth polished surface. Carves sharp and clean with a knife but a little hard to work with using hand tools. Good bending properties.

**Use:** Suitable for hull and deck planking because of its honey colour. Also suitable for small fittings, model bases and display cases.



Hard Maple (plain)



Hard Maple (treated)



**Obechi** : Common Name(s) :

**Botanical Name** : Triplochiton scleroxylon

**Colour** : Very light, pale, straw-coloured hardwood.

**Description** : Texture is coarse and contains a grit, which quickly dulls the cutting edge on tools. End grain has a tendency to crumble when cut. The prominent, open grain usually needs filling. Works and finishes well with very sharp tools.

**Use** : Of minimal use to ship modellers. Can be used instead of Balsa for filler blocks.



**Pine** : Common Name(s) : Sugar Pine, White Pine, Eastern White Pine, Yellow Pine.

**Botanical Name** : Pinus strobus (various sub-species)

**Colour** : Good quality pine is usually pale yellow to light brown.

**Description** : Again, if the pine is of good quality, the grain is fine, straight and even. Easily worked, finishes well, and has low shrinkage.

**Use** : Good for solid hulls and pattern making.



**Spruce :** Common Name(s) : Spruce, Sitka or Silver Spruce.

**Botanical Name :** Picea sitchensis

**Colour :** Creamy white to pale yellow with a slight pink tinge.

**Description :** It has a fine, uniform texture and straight grain depending on the rate of growth. Good bending qualities, works and finishes well hand or machine tools. Good turning properties. Nails and screws without pre-drilling and has good holding properties. One of the easiest woods to cut, glue, and finish.

**Use :** Great for masts and yards due to its long, straight grain and stiffness.



**Padauk :** Common Name(s): Padauk, African Padauk.

**Botanical Name :** Pterocarpus soyauxii

**Colour :** Usually a deep red colour which will age to a deep, orange brown.

**Description :** Has an even, medium-fine grain but numerous pores are open making it unsuitable for most modelling projects.

**Use :** Can be used for hull planking.



Padauk (plain)



Padauk (treated)

**Swiss Pear :** Common Name : Pear.

**Botanical Name :** *Pyrus communis*

**Colour :** Cream to pinkish brown to rose.

**Description :** Pear is a fine, close-grained wood and is excellent for carving, turning or milling. It can be cut with a sharp edge in any direction. Finishes to a polished surface. Pear wood can be stained black to resemble Ebony. Flexible and suited to bending. Can be worked to delicate detail and takes an excellent finish. Selected pieces have a straight grain. Turns and cuts well with a clean sharp edge, and holds sharp detail, but has a slight dulling effect on tools. Bend with dry heat; do not steam.

**Use:** This is the classic wood of ship modelling and it is used for everything from the finest carvings and fittings to hull timbering.



**Walnut :** Common Name(s): American Black Walnut.

**Botanical Name :** *Juglans nigra*

**Colour :** Fairly even dark brown.

**Description :** A very nice wood for working with hand or power tools, although its coarse, open grain make its modelling applications limited. Bends easily when steamed or heated. Sands to an excellent finish. Cuts and carves exceptionally well, but usually can't obtain fine detail. Very stable and will not shrink or expand once in use. For its weight, Walnut is exceptionally strong.

**Use:** Frames, keels, decorative planking and mouldings. Well suited for hull timbering and framing.



Black Walnut (plain)



Black Walnut (treated)

**The following is a suggested usage of woods for different applications :**

<b>Solid hulls:</b>	Basswood, pine (sugar and white) and lime.
<b>Planking and decks:</b>	Apple, basswood, beech, box, cherry, elm, holly, lime, maple, padauk pear, walnut and mahogany
<b>Frames:</b>	Apple, basswood, birch, box, cherry, holly, maple, pear and walnut.
<b>Bent frames:</b>	Apple, ash, basswood, beech, box, elm, holly and walnut.
<b>Masts and yards:</b>	Birch, box, pear, pine, spruce, and teak.
<b>Deck equipment:</b>	Apple, basswood, bloodwood, box, cherry, holly, maple and pear.
<b>Blocks and deadeyes:</b>	Apple, beech, bloodwood, box, holly and pear.
<b>Deckhouses:</b>	Apple, basswood, birch, box, cherry, maple, mahogany, pear and walnut.
<b>Treenails:</b>	Apple, bamboo, birch, box, cherry, holly, maple and pear.
<b>Carving:</b>	Apple, box, cherry, holly and pear.
<b>Turning:</b>	Apple, box, cherry, holly, pear, and maple.
<b>Infill to Bow &amp; Stern:</b>	Balsa, Obeche
<b>Bulkheads, False Keel, Decks &amp; Bulwarks:</b>	Birch Plywood
<b>Keel, Stem, Rudder:</b>	Mahogany, walnut