

Build An Heirloom Rocking Horse



For Your Child or Grandchild

by John Michael Linck Toymaker

Build an Heirloom Rocking Horse for Your Child or Grandchild

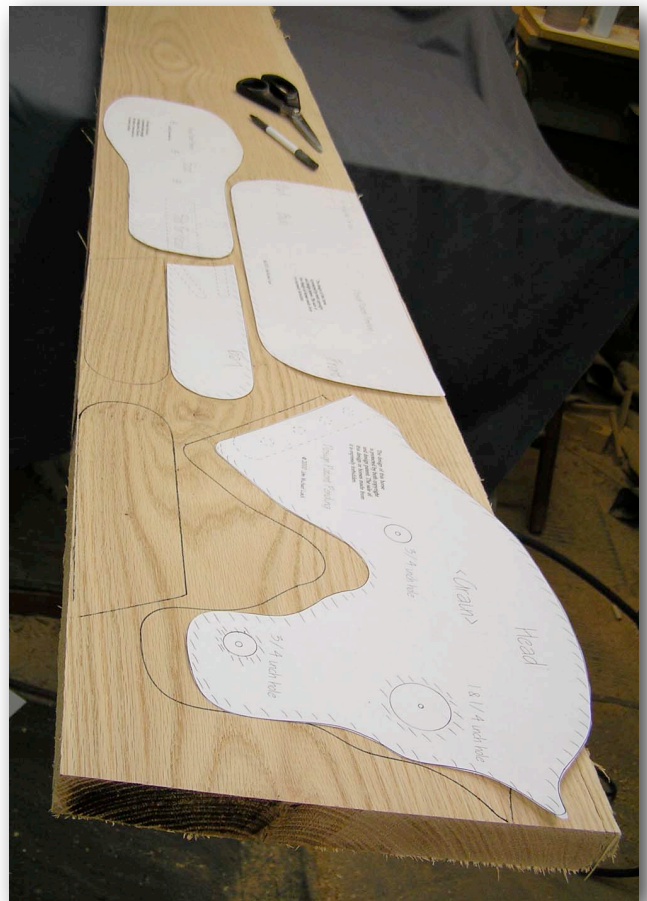
Preface

Each year Americans alone spend over twenty-four billion dollars on toys for their children. Most of these toys are disposable and are enjoyed for a few years, at best. They are made on high-speed automated machinery, untouched by human hands. Much of the price paid goes for packaging and advertising, rather than the toys themselves. Part of a toy's cost funds the creation of children's television; which is designed to instill desire in children for a toy manufacturer's latest products. This year's hit movie will spin off a complete line of toys that will need replacing when the next blockbuster film is released.

Remember the toys that were part of your childhood. Do you think today's children will have similar memories of Teenage Mutant Ninja Turtles, Mighty Morphin Power Rangers, Monster High Meowlady or Furby? I hope your children will remember you when their child gallops away on the horse you made thirty years earlier. I hope they have a set of wooden blocks or a special doll from a special aunt. So few things in life are permanent today. We need to cultivate memories to insure they are always vivid. Handmade wooden toys can help.

You can use the ideas in this book to build any rocking horse. If you want to build my design full-size plans are available. See page 36.

The newest trend is that of a manufacturer developing a licensed concept and producing both the entertainment (television, movies) and the product (toy or licensed character). With this arrangement, the toymaker/licensor has nearly total control of the character's development and the marketing of new products based on the license. Television series and specials, movies, books and cartoons are examples of how this control has been exercised in recent years. TMA estimates that nearly half of the toys sold are licensed products. (Toy Industry Fact Book 1995-96)



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I want you to give the children in your life not only better toys, but better memories. A wooden toy requires more of the child's imagination and creativity than the toy industry's current offerings. This means more play value, more education, more cognitive development. They cannot turn on the switch and watch it; they need to touch and manipulate it. They will combine it with other toys in ways completely unexpected. You have probably seen children who are more attracted to a box than its contents. Children's imaginations are on high speed and need very little encouragement.

Making a basic toy of a natural material is even more special because of the relationship you share. "My grandpa/ma made it.", is good to hear. And, since well made wooden toys will last far beyond us makers, you get the memories as a bonus. I hope your children and grandchildren will have fond memories of you. Durable wooden toys will help call those memories to mind.

God has cared for these trees, saved them from drought, disease, avalanches, and a thousand tempests and floods. But he cannot save them from fools.

John Muir



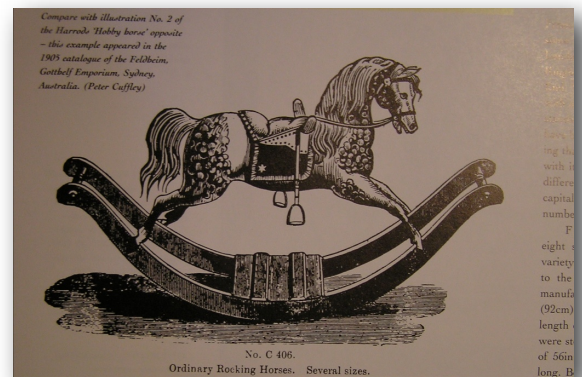
Trees are sanctuaries. Whoever knows how to speak to them, whoever knows how to listen to them, can learn the truth. They do not preach learning and precepts, they preach undeterred by particulars, the ancient law of life.

Hermann Hesse, *Wandering*



John's Doll Bed of Walnut, Cherry and Hickory. See it at www.woodentoy.com

Feel free to share this book with anyone. Though it is protected by copyright I am happy to have more folks build horses for children. However you may not sell it in any form.



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Time is a dimension of all workmanship. It all fails, to be sure, but it fails either sooner or later. Durability is thus a preoccupation of every worker.

David Pye

The Nature and Art of
Workmanship

I have a wonderful axe! It's had two heads, seven handles, and it's still going strong!

unknown woodsman



Build an Heirloom Rocking Horse for Your Child or Grandchild

I made this horse for the first time in 1975. In 1979, Fine Woodworking Magazine chose it as an example of outstanding work in America, including it in their Design Book Two. It has evolved over the decades, although the first horse is a recognizable ancestor of the latest. I now build a few dozen horses each year, and I am pleased with their simple and sturdy design. The shallow arc of the rockers and the mass of solid hardwood allow children to rock in a fluid back-and-forth motion, rather than the rapid up and down of a spring horse.

The horse is sized for riders aged one to five. Older children will still ride, but most seem to lose interest about kindergarten. My children learned to ride at twelve months old with a bit of help and were mounting and dismounting by themselves at thirteen months. By two years they were both accomplished trick riders.

The design and construction of this horse make it very durable. The relatively large pieces of wood are unlikely to break and the use of wood dowels for the joints gives a permanence lasting long past loose screws or nails. Wood moves with seasonal changes in humidity; steel fasteners do not. This causes toys fastened with metal to come apart. Joined with wood dowels, your horse will happily hold a 300 pound cowhand. Minimal care and feeding will insure that it will carry generations of children on many happy trails.

This project requires some skill with woodworking tools. I don't recommend it as a first woodworking experience, but you don't have to be a professional. Your care and time can make up for much in experience. I hold an advanced degree from the woodworking school of hard knocks, and I hope my experience will smooth your project.

Woodworking is an inherently dangerous activity. While many companies will sell you sharp tools, they do little to help you become a safe worker. Look for instruction, preferably from an experienced craftsman. Some wood shops and many community colleges, etc. offer instruction in safe woodworking. Use their expertise. No book can teach these lessons.



It's always a little difficult for me to begin talking about wood because it is usually a matter of looking at it in one of two ways. One way is a generality, as just a material that we make things of and that for me, is too wide, shallow, and impersonal. But there are people for whom wood and working with wood is not simply a profession but a very intimate thing: the relationship between the person and the material, and how they are doing it. I mean how they are doing it in the most intimate detailed sense; the relationship between wood and the tools that they use, between their feelings, their intuitions, and their dreams. Wood, considered that way, is to me alive.

James Krenov
A Cabinetmaker's Notebook

Build an Heirloom Rocking Horse for Your Child or Grandchild

Design

The design for any toy I make must satisfy three important criteria. First, the shape and appearance must be pleasing to the eye. I prefer a simple design that suggests the horse, yet leaves the imagination free to add the details. Also, if the appearance is nice, the horse will become a permanent part of a home's decor when children grow, rather than garage sale fodder. Once the child climbs on, the second criterion becomes important. Any toy has to be safe. It should not have sharp edges or a toxic finish. It should be low to the floor to minimize falls and their consequences. In a rocking horse, which moves by its nature, the motion should be limited. I use a gradual curve on the rockers to make over-turning difficult. Finally, a toy needs to be durable. Nothing is as disappointing as a broken favorite toy. The "acquire and cast-off" cycle of mass-merchandised toys doesn't teach values I respect. I want my children to be good judges of quality and value. Finely made toys help teach these lessons.

Many people have told me stories of their favorite childhood toy and how they continue to derive pleasure from it. Others have expressed sadness that a favorite toy was given to a cousin or friend. They never seem to come back. The most emotional stories come from those who have a toy made by a parent or grandparent. They value it far more than its objective worth.

I recommend that you personalize your horse in some way. This can be simply carving an inscription, attaching an engraved brass plate or signing and dating in permanent ink. This vastly increases the chances that your horse will become a family heirloom. Heirloom seems an overworked word in our modern world, but your horse will deserve the description.

A consideration important to me, but less so to you, is the ease of construction. Because I trade my toymaking for dollars in the marketplace, I need to make a horse quickly so that I can sell it at a reasonable price. You can spend more time on yours and make it even more wonderful. I expect you can complete your horse in about twenty hours. Balance this small effort against decades of happy rocking children.

The only trouble with designing and working in wood is that it has the advantage – or disadvantage, however you look at it – of being beautiful in itself...take a piece of wood – plane, sand and oil it, and you will find it is a beautiful thing. The more you do to it from then on, the more chance that you will make it worse. Therefore, working with a material of such natural beauty, I feel that we have to design very quietly and use simple forms.

Tage Frid - Tage Frid Teaches Woodworking – 1979

The Skin Horse had lived longer in the nursery than any of the others. He was so old that his brown coat was bald in patches and showed the seams underneath, and most of the hairs in his tail had been pulled out to string bead necklaces. He was wise, for he had seen a long succession of mechanical toys arrive to boast and swagger, and by-and-by break their mainsprings and pass away, and he knew that they were only toys, and would never turn into anything else. For nursery magic is very strange and wonderful, and only those playthings that are old and wise and experienced like the Skin Horse understand all about it.

"What is REAL?" asked the Rabbit one day, when they were lying side by side near the nursery fender, before Nana came to tidy the room. "Does it mean having things that buzz inside you and a stick-out handle?"

"Real isn't how you are made," said the Skin Horse. "It's a thing that happens to you. When a child loves you for a long, long time, not just to play with, but REALLY loves you, then you become Real.

Margery Williams, The Velveteen Rabbit

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Wood for Horses

American woods vary considerably in texture, hardness, color and figure. Sugar Maple, a very pale wood, contrasts sharply with a dark wood like Black Walnut. Some woods are a joy to shape with sharp tools, others notoriously contrary. I usually choose a wood like Black Walnut, Black Cherry or Red Oak. These hardwoods show less wear and tear than softer woods like Pine, though pine is certainly strong enough. Many antiques are made of Pine and have proven quite durable; yet if you envision their antique surfaces, the word distressed comes to mind.

Black Cherry is my favorite. Cherry lumber is medium red in color and darkens over the years. When your riders reach their teens it will be a deep red. I especially like its property of wearing smoother and smoother with use, a quality that weavers find useful for loom shuttles, and I find pleasant in toys. Red Oak is the hardest of the three and an excellent choice, with its prominent grain that becomes golden with time. Red Oak's coarser texture has a different character than Cherry or Walnut, yet it feels pleasant to your touch. One of the most abundant trees east of the Great Plains, Red Oak has a long tradition of usefulness, beginning before colonial times. Its abundance translates into a lower price at the lumber company. Deep brown in color, Black Walnut has been revered by woodworkers for centuries, prized for both its working qualities and its color. Today this reverence is expressed in price; walnut is the most expensive of the three.

All these woods are hard, heavy, and strong enough to support a 300 pound horseman. This overcapacity will ensure a graceful old age with no sway-back. Importantly, they are all favored for their working qualities, and sharp tools leave crisp, smooth surfaces that need little sanding. Other good choices include: White Ash, Beech, Sugar Maple and Hickory, although they are difficult to find in thicknesses appropriate for this rocking horse.

As a youth on an island in Maine, I started designing spontaneously. I didn't draw something on paper and ask a carpenter to build it for me. I executed my own designing. I often had to make my own tools and procure my materials directly from the landscape. I would go into the woods and cut my own trees, dress them out, cure them, and then fashion them into their use form.

R. Buckminster Fuller
Introduction for the book
Design for the Real World Papanek 1972

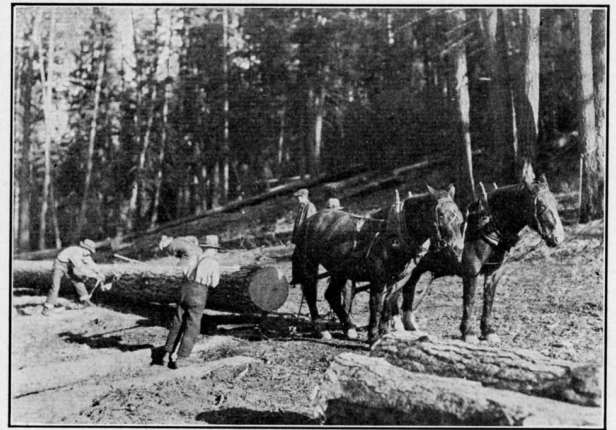


FIG. 39.—Bucking ponderosa pine logs at the landing. Long lengths are hauled to the landing by horse team or tractor, then bucked to shorter lengths to facilitate log loading and haul to the mill.

The master would choose and buy standing trees, and they would be felled and trimmed and brought to his yard to await the arrival of the sawyers...When the timber had been sawn into the required planks and pieces it was carefully stacked so that air, atmosphere and time did their full work upon the wood to season it, and this would take a matter of years.

Jocelyn Bailey The Village Wheelwright – 1975



Build an Heirloom Rocking Horse for Your Child or Grandchild

Construction

While you can build this horse using only hand tools, I hope you can use a power band saw at least. I also recommend a router, a drill press, a table or radial arm saw and an electric sander or two. A complete shop will speed construction, but you can build this horse with very few tools. Here is a list of the tools I use.

My Tool List for Horses

Power tools

- Bench mounted belt sander
- Inflatable drum sander
- Table saw
- Band saw
- Electric hand circular saw
- Drill press
- Table-mounted router

Hand tools

- 2 bar clamps - 2 large C-clamps
- Hammer
- Shallow sweep gouge

Minimum Tool List

These will get you a horse, but with more work.

Power tools

- Table mounted router
- Saber saw or band saw
- Drill press or electric hand drill

Hand tools

- 2 bar clamps - 2 large C-clamps
- Spoke shave and hand plane

Nearly any woodworking project can be accomplished with only a sharp knife. As generations of toolmakers and craftspeople have added refinements and fixtures to hold various cutting edges, our work has gotten much easier. The point at which you start along this tool evolutionary line determines how long a project will take, not the quality of your finished work. Whether you have a dream shop or just a space in the basement with a few tools you can take pride in your work. Quality work comes from many differently equipped craftspeople.



The cabinetmaker's first task was to see that all his tools were in excellent working order and that he had every tool he would possibly need. Each of the many tools in his shop had its own special function, and the cabinetmaker had to know just how, where, and when to employ each one.

The Cabinetmakers - Leonard Everett Fisher



...and it was after long searching that I found a carpenter's chest, which was indeed a very useful prize to me, and much more valuable than a ship loading of gold.

Daniel Defoe - Robinson Crusoe, 1719

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Build an Heirloom Rocking Horse for Your Child or Grandchild

Materials You Will Need

1. Approx. 10 board feet of $\frac{5}{4}$ hardwood lumber 9 inches wide. (planed to $1\frac{1}{16}$ inch) You could get by with a short piece 9 inches wide for the head and the rest could be 7 inches wide.
2. 4 dowels – 36 inches long by $\frac{3}{8}$ inch diameter. (hickory, maple, oak, birch) Most of these will be cut to $2\frac{1}{4}$ inches in length.
3. 1 walnut dowel – 9 inches long by $\frac{3}{4}$ inch diameter. A dark colored (walnut) handle will show fewer handprints.
4. 1 dowel – 6 inches long by $\frac{1}{4}$ inch diameter, any species.
5. 20 feet of jute macrame fiber for the tail.
6. 2 oz. of walnut oil.
7. 4 oz. wood glue. – Titebond or Elmer's Carpenter's Wood Glue.

It was indeed a small shop, and crowded. There was little chance to organize the work areas...Still some surprisingly complicated pieces of furniture were made in meager surrounding like this. One man admitted that when he had a board longer than eight feet, he had to carry it out into the yard to turn it around! Yet the same board turned up finally as part of a dovetailed hope chest for one of his marriageable daughters.

Aldren Watson - Country Furniture

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There were a few tools in a corner of the cellar – a vise, files, a hammer, chisels, etc. that father had brought from Scotland, but no saw excepting a coarse crooked one that was unfit for sawing dry hickory or oak. So I made a fine-tooth saw suitable for my work out of a strip of steel that had formed part of an old-fashioned corset, that cut the hardest wood smoothly. I also made my own bradawls, punches, and a pair of compasses, out of wire and old files.

John Muir – 1912
The Story of My Boyhood and Youth



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Lumber Sellers

Finding hardwood lumber is not difficult, but may require a bit of creativity. Major chain lumber companies do not carry many hardwoods, so you need to seek out those unfamiliar companies that do. They are often small and tucked away in an industrial park. Check your yellow pages under lumber/hardwood or *query the google* with the same terms. Telephone a few folks and inquire about their stock. Do they have many species, or the one you are interested in? What thicknesses do they carry? Are you allowed to handpick your boards? Can they plane and sand the lumber? If you are not getting encouraging words check again under cabinetmakers or woodworkers. Pick the smallest ads and telephone for advice. Most of these folks will be happy to help you find a supplier or may be willing to sell you some lumber themselves. When you arrive at the lumber company you will likely find stacks of lumber in a seemingly disorganized warehouse. But, in contrast to the chains, the employees know their stock and are often woodworkers themselves. The lumber for your horse should cost between \$30.00 and \$50.00.

He who fails to plant a tree...
Shall go coffinless to the grave

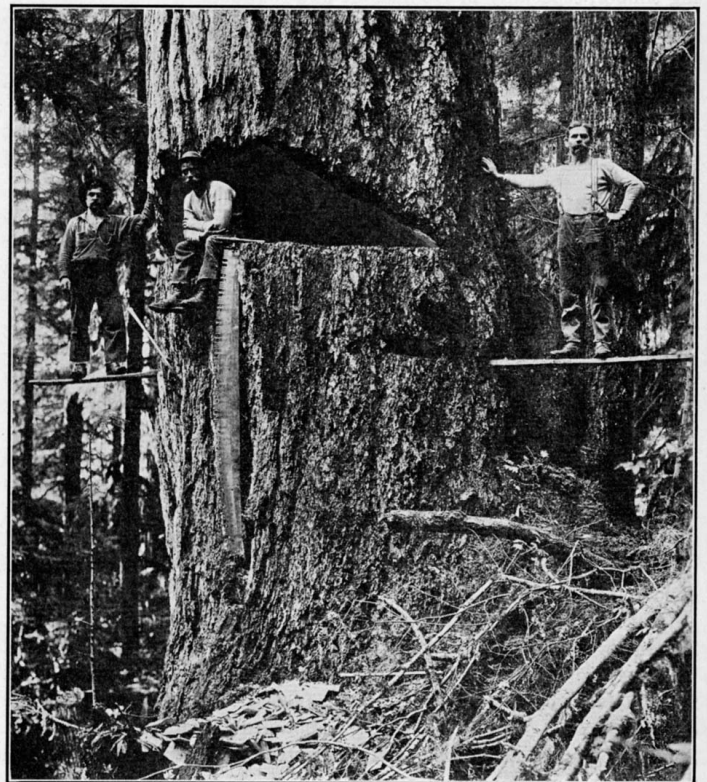
A Chinese proverb

Too often we are restricted and limited by defects in the wood. But defective according to whom? To some of us the perfect tree would be straight, square and free of limbs and branches. What a forest that would make!

Dale Nish - Artistic Woodturning

“Leave the beaten track occasionally and dive into the woods. Every time you do so you will be certain to find something that you have never seen before. Follow it up, explore all around it, and before you know it, you will have something worth thinking about to occupy your mind. All really big discoveries are the results of thought.”

Alexander Graham Bell



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Talk Like A Woodworker

Before you telephone a lumber company you may need to learn a little lumber talk. Hardwood lumber is sold in several grades, several thicknesses and in random widths and lengths. Lumber grading is a complicated endeavor. The grading rules were developed by the furniture industry where boards are cut into small parts and seldom used as large pieces. A desirable board will yield many of these small useful parts. Therefore, the number and size of clear cuttings available in a board is the main consideration in these grading rules. A mostly clear board, with a big knot in the middle, can still earn a high grade.

Lumber suppliers generally handle one or two grades. The highest grade available at most dealers is called Select & Better. These boards have few knots and are “wide” and long. Another, lower quality and harder to find, grade is Number 1 common. With more defects and knots, Number 1 boards tend to be narrower, and about 30 percent cheaper. Some dealers will take a picked over pile of Selects and sell it as Number 1. This pile may have a whole range of defects: twist, decay, warp, checks, splits, wane, knots, honeycomb and crook. These are not truly Number 1 common. A Number 1 board should be flat and consist of sound wood. The grading rules only allow for it to be narrower with fewer possible clear cuttings. Since Number 1 boards often come from the heart of a tree, they likely have developed deeper color and more interesting grain than the Selects. Knots are easy to band saw around, so I choose No. 1 when I can, and order about 10% more to account for defects..

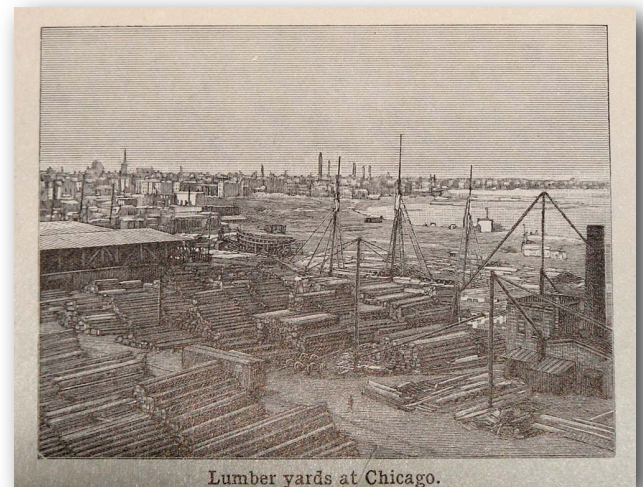
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They were friends, as only a craftsman can be, with timber and iron. The grain of the wood told secrets to them.

George Sturt - The Wheelwright's Shop

There are ways of killing a cat besides choking it with butter, says a popular phrase, and it is the same with any particular thing in the workshop – if it cannot be done in one way it can in nine cases out of ten be successfully accomplished in another.

Hans Cassal - Workshop Makeshifts 1898



“I don’t say that I could afford to buy burl maple, walnut, and cherry for wood-work,” said the Harvester. “I could not, but since I have it, you can stake your life I won’t sell it and build my home of cheap, rapidly decaying wood. The best I have goes into this cabin and what remains will do to sell. I have an idea that when this is done it is going to appear first rate. Anyway, it will be solid enough to last a thousand years, and with every day of use natural wood grows more beautiful. When we get some tables, couches, and chairs made from the same timber as the casings and the floors, I think it will be fine. I want money, but I don’t want it bad enough to part with the BEST of anything I have for it. Go carefully and neatly there; it will have to be changed if you don’t.”

Gene Stratton Porter - The Harvester

Build an Heirloom Rocking Horse for Your Child or Grandchild

Lumber thicknesses are measured in the rough (before planing) and are $\frac{3}{4}$ (four quarter), $\frac{5}{4}$ (five quarter), $\frac{8}{4}$ (eight quarter), etc. When smoothed with a planer they lose almost $\frac{1}{4}$ inch of thickness; therefore, $\frac{5}{4}$ lumber will plane to $1\frac{1}{16}$ inches thick. Since hardwood is cut in random widths and lengths, it is sold by volume. The standard unit of measure is the board foot. One board foot, (bd.ft.), is equal to 144 cubic inches or a piece 12 inches by 12 inches by 1 inch thick. This horse can be made from somewhat less than 10 bd.ft. Check the prices; at \$3.50 per bd.ft. your wood will cost about \$35.00. Also pay the lumber company to plane the wood and sand it if they can. A fee of \$10.00 is fair for this service. Let their large machines do the brute work so you are able to concentrate on the fun parts. An industrial sized thickness sander will remove planer marks and leave you with less sanding to do. If you choose a board $\frac{5}{4}$ inches thick by 9 inches wide by 10 feet long, with few defects, you will have more than enough wood for the horse. (*About 9.5 bd. ft. — Remember to multiply by 1.25 to compute the board footage of $\frac{5}{4}$ lumber.*)

I recommend you choose a board as wide as the horse's head; 9 inches.



Lumbering, Michigan.



Each variety of tree has its own particular characteristics, influenced by soil, light, altitude, seasons and weather. Each individual tree has its own individual growth patterns. While two pieces of oak plank may look similar, nature with her infinite variations has decreed that two pieces can never be identical.

Phil Brodatz - Wood and Wood Grains – 1971



John's Riding Airplane made of Red Oak.
See it at www.woodentoy.com

When you enter a grove peopled with ancient trees, higher than the ordinary, and shutting out the sky with their thickly intertwined branches, do not the stately shadows of the wood, the stillness of the place, and the awful gloom of this cavern then strike you with the presence of a deity?

Seneca

Build an Heirloom Rocking Horse for Your Child or Grandchild

Another important characteristic of lumber is moisture content. Trees are saturated with water and they begin drying as soon as the roots are detached. Careful control of the rate and conditions of this drying is vital to make quality lumber. As wood loses moisture it begins to shrink and many defects in lumber result from drying too fast. A great deal of experimentation has determined the proper temperatures, air circulation and humidity needed for the production of quality lumber. The drying process is controlled by placing lumber in a dry kiln. A kiln is a large oven where wood is stacked carefully with spacers between the boards. Powerful fans and heaters warm the wood and evaporate most of the moisture. The kiln operator is usually the most experienced worker available. Wood dried too fast will be suitable for only firewood. Wood dried too slowly wastes expensive energy and kiln space. The kiln operator has a great incentive to push the lumber through the kiln as fast as possible, sometimes too fast. A small percentage of boards will degrade under the best kiln operator, so check the boards you choose carefully.

Ask the lumber company folks how dry the wood is. You want your wood to have a moisture content of about 7 to 8 per cent. A claim that the lumber is kiln dried isn't a guarantee of quality, since the wood may have been improperly kiln dried or it may have picked up moisture during storage. Nearly all lumber sold by reputable hardwood lumber companies is about 7 to 8 percent. Ask them to be sure. (Lumber purchased and used in dry climates should be about 6 percent.)

It is remarkable what a value is still put upon wood, a value more permanent and universal than that of gold.

Henry David Thoreau - Walden – 1854

This fellow will but join you together as they join wainscote; then one of you shall prove a shrunk panel and, like green timber, warp, warp.

William Shakespeare
As You Like It – 1598

Someone's sitting in the shade today because someone planted a tree a long time ago.

Warren Buffett

The only really good place to buy lumber is at a store where the lumber has already been cut and attached together in the form of furniture, finished and put inside boxes.

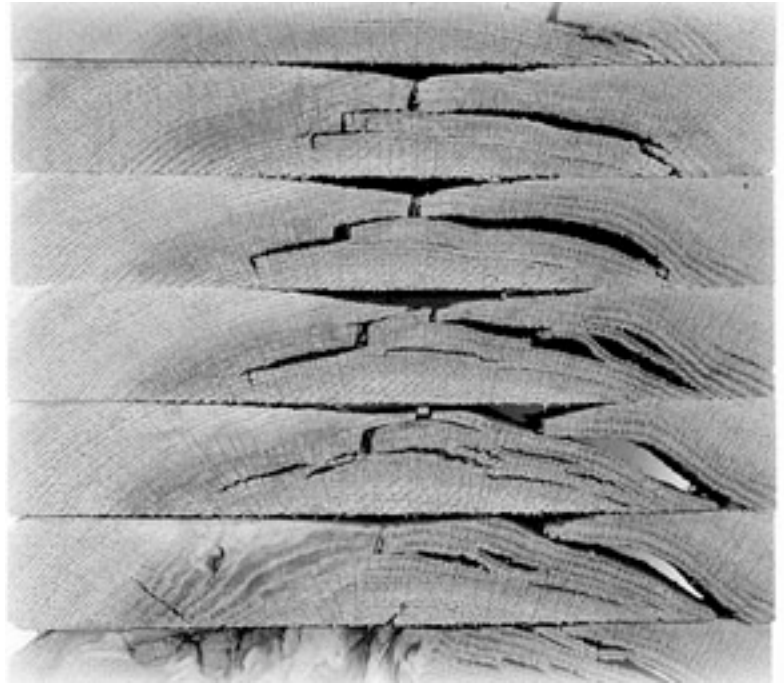
Dave Barry
The Taming of the Screw



One of my newer train cars, the Tilting Hopper Car.
See more at www.woodentoy.com

Build an Heirloom Rocking Horse for Your Child or Grandchild

Beware of that stack of lumber stored in Uncle Fred's basement or barn. This can be a great source of lumber, but haul some to a local cabinetmaker and ask them to check it with their moisture meter before you spend hours working it. Lumber stored haphazardly can have moisture levels of 12 to 20 percent; far too moist. Shrinkage occurs as this wood dries and it is not uniform. Uneven grain around knots will shrink unpredictably. The change in dimension across the grain can be ten times that along the grain. Exact moisture levels are difficult to determine without an electronic moisture meter, but high moisture levels will cause significant problems weeks or months later. Such wood will twist and crack as it dries and ruin your horse.



Picture of a severe case of honeycomb. This was one bad board in a large shipment. Most vendors will replace boards like this.

People offer me various piles of lumber that are claimed: to have been stored thirty years in grandpa's barn, or to have been purchased long ago for a never completed project, or to have come from resawn barn beams, etc. I have occasionally found beautiful and unusual wood in this manner. So these sources are interesting and worth checking out, but the lumber frequently is too moist, too warped and too infested with powder post beetles. Unfortunately, most of my finds have been of the latter quality. Be cautious.

When uneven drying progresses, especially in air drying, an outer dry shell develops, isolating by a sort of "case hardening" the center part of the stick, which cannot dry; or at best dries exceedingly slowly, taking perhaps years. Not uncommon for the core, when it finally does dry, to then pull away from the outer shell, causing what is known as "honey comb," or "hollow horn."

Samuel Record - The Mechanical Properties of Wood 1914

To dwellers in a wood, almost every species of tree has its voice as well as its feature.

Thomas Hardy
Under the Greenwood Tree

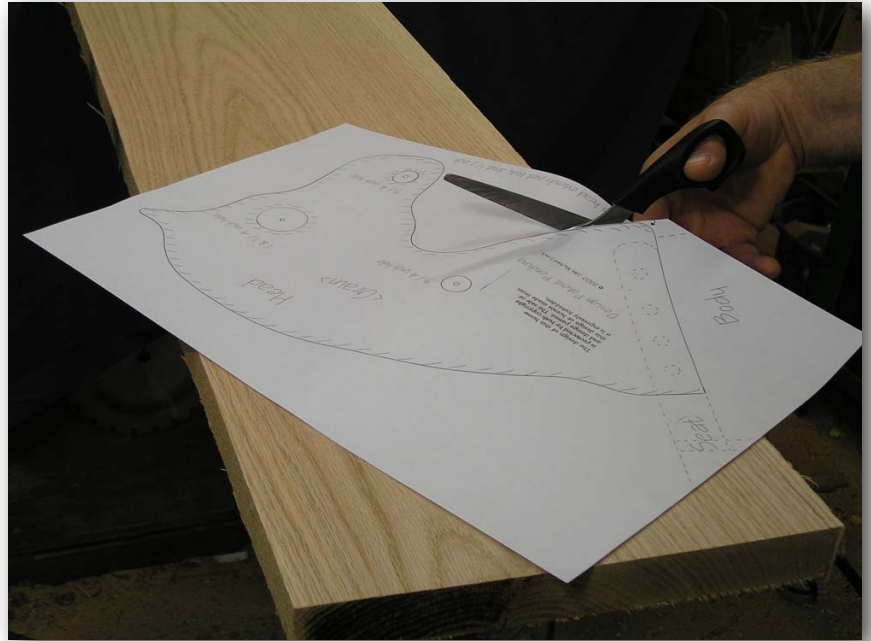
Suburbia is where the developer bulldozes out the trees, then names the streets after them.

Bill Vaughan

Build an Heirloom Rocking Horse for Your Child or Grandchild

Lay Out the Pattern

Begin by cutting the pattern apart with scissors. Save the pattern scraps as they have other information you will need. Lay the pattern pieces on your board paying attention to the grain direction arrow on the horse's head. Leave some space between the parts when you are laying the pieces out to make cutting them apart easier. Small pieces of tape are helpful in holding the patterns in place. The pattern for the rockers overlaps two sheets. Join them with tape, aligning carefully as indicated. This rocker pattern is used twice. Choose an arrangement to take advantage of the natural characteristics of the wood. The horse's head, for instance, is its most prominent part. Choose an interesting wood grain to represent the speed of a running horse with flowing mane. When you are pleased with the layout of the pattern, trace the edges carefully onto the wood with a ball point pen.



To the creative workman who makes things with his hands belongs an efficiency and a merit of a peculiarly substantial and definitive kind; he is the type and embodiment of efficiency and serviceability.

Thorstein Veblen -
The Instinct of Workmanship (1914)



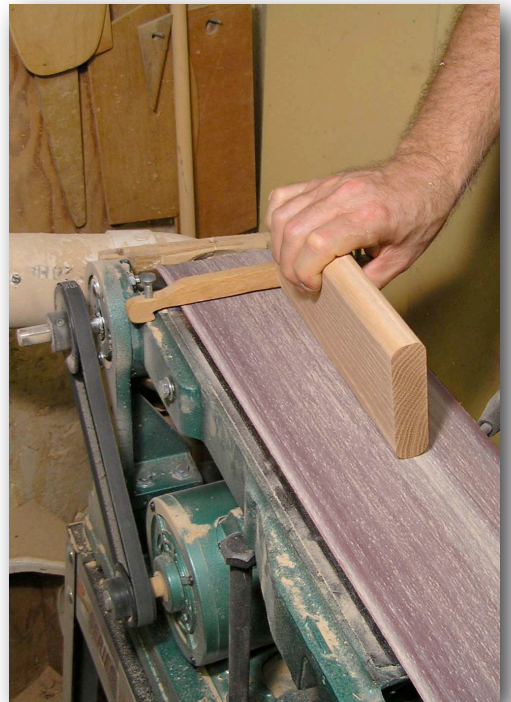
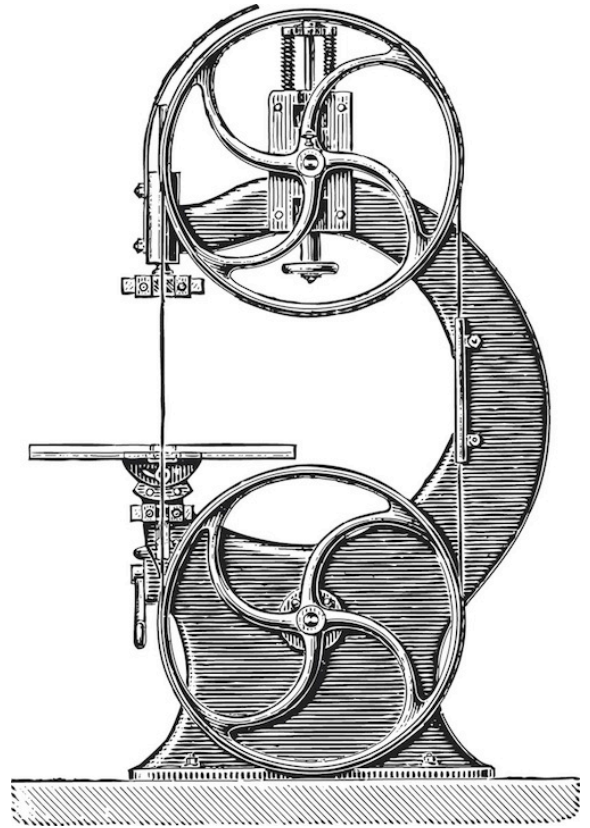
The tree which moves some to tears of joy is in the eyes of others only a green thing that stands in the way. Some see Nature all ridicule and deformity, and some scarce see Nature at all. But to the eyes of the man of imagination, Nature is Imagination itself.

William Blake, 1799, *The Letters*

Build an Heirloom Rocking Horse for Your Child or Grandchild

Sawing

Use a hand saw or portable circular saw to cut the boards into manageable pieces for cutting on your band saw. Your saw kerf will be wider than your pen lines, so try to split them, sawing on the waste side of the lines. You can use a saber saw at this point if you don't have access to a band saw, but be sure to buy a few premium quality blades. They will make the cutting much easier, faster and more precise. Use either saw to cut your pieces, carefully making the saw kerf a smooth even line. Once the pieces are completely cut out, remove the saw marks and smooth the edges with your belt sander. In wooden boat building there is emphasis on getting a "fair" curve in the hull. Fair curves are smooth and even? Look at your curves. Are they smooth and "fair"? A carefully applied belt sander can even out bandsawn hills and valleys. This smoothing can be accomplished by hand, but allow extra time. If I didn't have a bench mounted belt sander, I would use a combination of hand plane, spoke shave and hand sanding, and I'd have thicker calluses on my hands. The below picture shows all the pieces needed to make a horse.



Sanding the band sawn rough edges.



Wood is universally beautiful to man. It is the most humanly intimate of all materials. Man loves his association with it: likes to feel it under his hand, sympathetic to his touch and his eye.

Frank Lloyd Wright - Architectural Record – May 1928

I like trees because they seem more resigned to the way they have to live than other things do.

Willa Cather (1873-1947), *O Pioneers* 1913

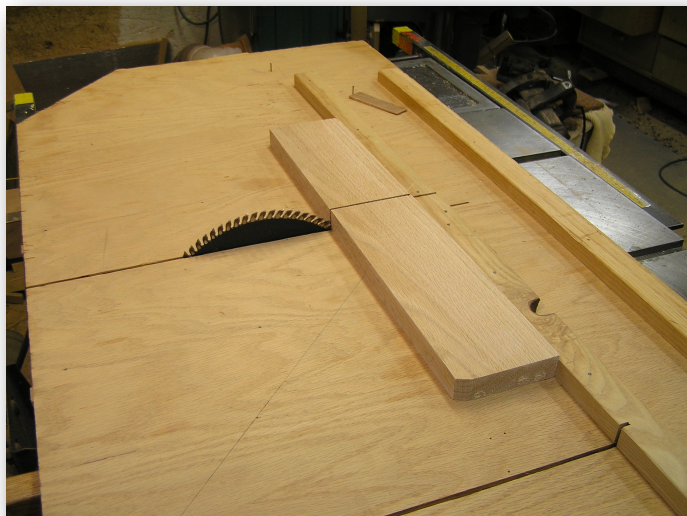
Build an Heirloom Rocking Horse for Your Child or Grandchild

Now, trim the bottom ends of the legs on your table saw, chop saw or radial arm saw to an angle of 24 degrees; the ends should be very smooth. Be sure to back up the cut with a piece of scrap to prevent chipout.

Drill a “ $\frac{3}{8}$ ” inch hole through either end of the foot rest as shown on the pattern. I usually use a size V or W bit here. (*See the section ahead on Dowels and Drills for more information on drill sizes V & W.*) This hole is close to the end grain and splitting is likely, so make the hole a little larger than ordinary. Drill sizes V and W are each a few thousandths over $\frac{3}{8}$ inch. The horse’s head needs 3 holes drilled completely through. Two are $\frac{3}{4}$ inch diameter and one is $1\frac{1}{4}$ inch. See the pattern for placement. Be careful when the drill bit exits on the bottom of the board. You want to avoid the possibility of chip out. A good method is to clamp a piece of scrap to the back of the work before you drill. If you use a contrasting color of scrap you have a visual indicator of your depth as the shavings appear. I use brad point bits for these holes because of the smooth holes they bore. A brad point bit can cost from five to fifteen dollars, but less expensive spade bits will work if you touch up their edges with a stone and feed them slowly through the wood.

I had never handled a tool in my life, and yet in time, by labour, application, and contrivance, I found at last I wanted nothing but I could have made it.

Daniel Defoe - Robinson Crusoe – 1719



Cross cutting the cross pieces of the rocker assembly on a table saw with a shop made sled.

I frequently tramped eight or ten miles through the deepest snow to keep an appointment with a beechtree, or a yellow birch, or an old acquaintance among the pines.

Henry David Thoreau, 1817 - 1862

Copyright 2013 by
John Michael Linck - Toymaker
email john@woodentoy.com
<http://www.woodentoy.com>

Build an Heirloom Rocking Horse for Your Child or Grandchild

Routing

Use a $\frac{3}{8}$ inch radius, ball bearing pilot, round over bit in your table-mounted router to round all the edges as indicated by the slash marks on the pattern. Don't forget the eye and nose holes, but not the handle hole, in the horse's head. Please use care with the routing. The two times I have hurt myself in 38 years involved a router. The side thrust generated by a round over bit cutting hardwood is substantial and varies with the shape of the part. Watch out!

Clamp a board on the router table making a fence to rout the straight pieces. I drill or cut a small notch just large enough for the router bit. (See sketch on pattern) Extending the fence very close to the cutting edge allows the fence to act as a chip-breaker; this gives a much smoother finish. After the straight pieces are routed, remove the fence and use the ball bearing pilot for the curved pieces. Feed the stock into the cutter at appropriate speeds according to the direction of the wood grain. Feed slowly when cutting against the grain, faster when cutting with the grain. The curved portion of the horse's legs seem to give me the most trouble. Be cautious! The routing is complete as shown in the picture below.



The one grand stage where he enacted all his various parts so manifold was his vice bench; a long rude ponderous table furnished with several vices, of different sizes, and both of iron and wood....A belaying pin is found too large to be easily inserted into its hole: the carpenter claps it into one of his ever-ready vices, and straightway files it smaller...A sailor takes a fancy to wear shark-bone earrings: the carpenter drills his ears. Another has the toothache: the carpenter out pincers...whirling round the handle of his wooden vice, the carpenter signs him to clap his jaw in that, if he would have him draw his tooth. Thus, this carpenter was prepared at all points.

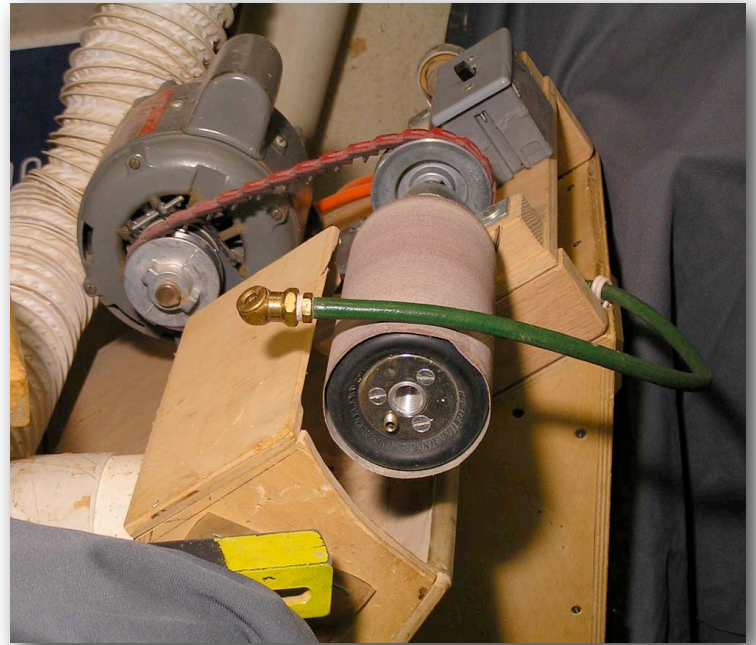
Herman Melville - Moby Dick - 1851

Build an Heirloom Rocking Horse for Your Child or Grandchild

Sanding

One of the most frequently used tools in my shop is an inflatable drum sander. Mine is 3 inches in diameter and 7 inches long. The advantage of this drum lies in the ability to vary the air pressure to change the firmness of the sanding surface. I use pressures between 3 and 15 pounds. At these low pressures the sanding cloth conforms to the curved wood parts and the resulting sanded contour closely matches the original shape. These drums are available from several manufacturers and tool supply houses. *(see appendix)* You also have to attach this drum to a motor or drill press. If you plan a lot of work with this tool you will want to build a separate machine base for it. I use a drum from Nu-Matic Grinders (#3270) that costs \$115.00. It has the advantage of soft ends while the others have rigid end caps. It also costs substantially more than the others. *(about double)* *(Nu-Matic Grinders is under new ownership of late and I am not sure my drum is still available.)* Other vendors sell similar drums. This tool saves a lot of time and the quality of your work will improve.

Use the drum to sand all the flat surfaces and the rounded edges of the horse's parts. If I could not use an inflatable drum I would choose a vibrating pad sander. The curved edges of the horse would require a lot of hand sanding as well. Try to keep the sanding motion parallel to the wood grain as much as possible. Sanding scratches across the grain are far more visible than those parallel to the grain when you apply oil or varnish to your work. Be careful not to sand the sharp non-rounded edges, especially the ends of the legs and cross pieces. Keeping these edges sharp gives a much higher quality appearance in the finished horse. You might start with a 120 grit sandpaper and then use a 220 grit and a 320 grit. Care taken here has a big payoff in the final horse.



Workmanship is the application of technique to making, by the exercise of care, judgment, and dexterity. As opposed to design, workmanship is what for practical purposes the designer cannot give effective instructions about by drawings or words, although he can envisage it perfectly well. The designer is apt to imagine he has more control over workmanship than he has.

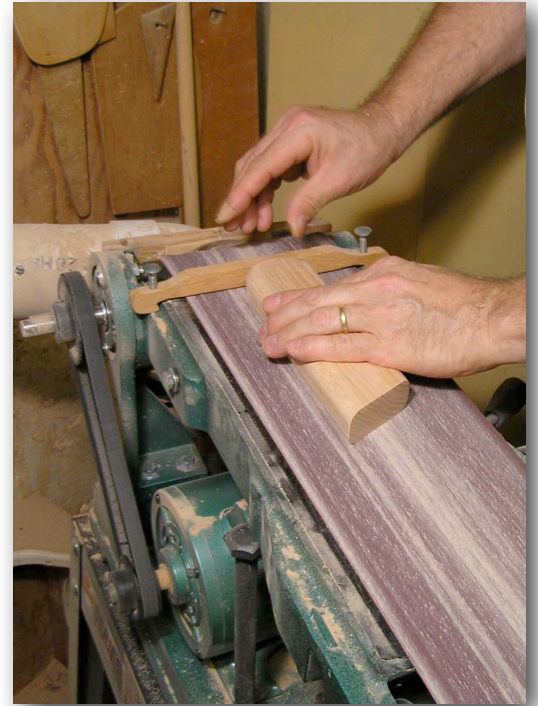
David Pye - The Nature and Art of Workmanship



Build an Heirloom Rocking Horse for Your Child or Grandchild

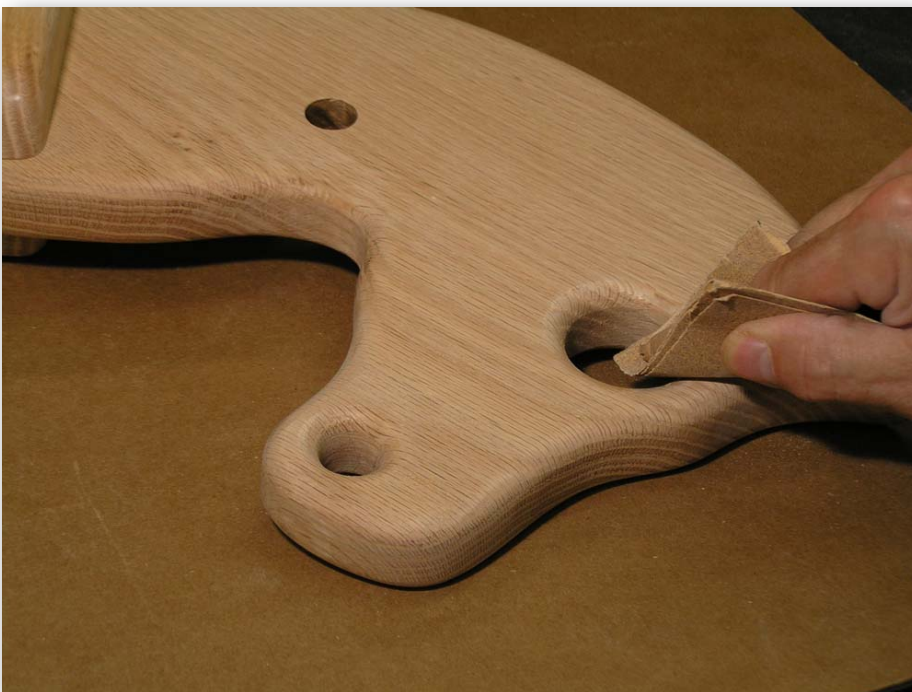


The horse's rounded over eye and nostril need hand sanding, or perhaps finger sanding. These are the first places children explore with their fingers; take your time.



...and it was after long searching that I found a carpenter's chest, which was indeed a very useful prize to me, and much more valuable than a ship loading of gold.

Daniel Defoe Robinson Crusoe, 1719



You might wonder that I recommend so much sanding before assembly. Hardwood routed surfaces can be rough with tiny chip outs. Smoothing rounded shapes like these can require a lot of wood removal. Sanding the parts individually allows you to better use your sanding machines and prevent cross grain scratching of adjacent pieces than when sanding after assembly. Hand sanding hardwood routed surfaces is very time consuming and exhausting. Use your machines as much as possible.

Build an Heirloom Rocking Horse for Your Child or Grandchild

Dowels and Drills

At this point you should have all the pieces of your horse carefully sanded and ready for assembly. I use wood dowels for all the joints on this horse, and some discussion of their use is necessary. Carefully fitted dowels make a very strong joint. Carefully fitted is the critical phrase. I hope you have a drill press to bore the dowel holes because it is much easier to get a quality result, although I built many horses without one in the early years. Whatever tool you choose, practice on some scrap pieces to perfect your technique. Practice, no kidding! All of these dowel ends will show, and ragged holes are a sign of careless craftsmanship.

Purchasing hardwood dowels can be very frustrating. The lumber yard variety are often of an obscure wood species and quite random in size and quality. Sometimes they are noticeably outof-round. I use $\frac{3}{8}$ inch diameter hickory dowels from Atlas Dowel Company. Their catalog offers a wide variety of sizes and species. Hickory is very strong, yet inexpensive. Sugar Maple and Birch are also very good. All dowels are usually somewhat rough and also vary in size from order to order and season to season.



Build an Heirloom Rocking Horse for Your Child or Grandchild

Once you have your dowels you need some drill bits. Since dowels vary in diameter you need to match your drill bit to the dowels you will be using. I use common high speed twist drills in a variety of sizes. Most hardware suppliers sell these bits in $\frac{1}{16}$ inch increments. These won't do, so you may need to locate a more professional hardware store. You will be looking for letter size bits. These vary by only a few thousandths of an inch in diameter. I own sizes T, U, $\frac{3}{8}$, V, W. This range seems to fit nearly any " $\frac{3}{8}$ " dowel I've found.

I also regrind the drill points to produce a brad point. Master woodworker James Krenov says, "*A simple way to make what we in Europe call a cabinetmaker's drill is to regrind an ordinary straightshank metal drill. This may sound complicated but...you can easily produce drills with a sharp center spur and very sharp, clean-cutting edges.*" (*The Fine Art of Cabinet making, page 133*) A center spur or brad point reduces the chance of error. I use my belt sander to regrind my drills. Some supply houses are selling brad point drills in slightly under and over sizes today. Years ago I had to make my own and still do. It's much cheaper.

When you have your drill bits and dowels experiment with some scrap pieces of wood. You want a snug, hammered in fit, but not too tight. Too tight can split your parts, especially near end grain. Too loose will not be strong enough. On a properly fitting dowel you don't get much of a second chance while driving. Don't hesitate; the glue will seize up in a very few seconds. Hammer steadily with care. Trial and error on scrap will save you costly mistakes on your horse. Practice will show you the ideal combination of drill bit and dowel.

Hickory dowels are harder than nearly any wood you can choose for your horse. This can present problems if you need to drill out a partially driven dowel. Your drill bit will tend to slide off the hard hickory and go into the softer cherry or walnut, particularly if you use a electric hand drill. If you are having trouble during practice you might want to substitute cherry dowels which are softer and easier to drill out. Cherry is not quite as strong, but it should be adequate for this horse.

Sometimes richness of effect is no farther than is obtained by the natural beauty of the wood which is employed; and when this natural beauty is considerable, this simple kinde of furniture is most highly valued.

John Phin - Hints and Practical Information for Cabinetmakers-1884



My letter size V bit reground with a Krenov pilot.



But they [craftsmen] keep stable the fabric of the world, and their prayer is in the practice of their trade.

Sirach 38:34

Build an Heirloom Rocking Horse for Your Child or Grandchild

Assembly

My joinery methods are unusual, but I believe you will find them easier and more accurate than conventional methods, which use dowel centers and doweling jigs. Among other things I am a production woodworker. The processes I use have evolved with the goals of quality, speed and safety in mind.

Begin assembly by marking the two rockers, in pencil, to show the locations where the cross pieces attach. (see pattern) Lay the rockers, curved side up, on your bench. Find a piece of $\frac{3}{8}$ inch thick material (scrap wood strips, plywood, sheetrock, whatever) and place it between the rockers to support the cross pieces $\frac{3}{8}$ inch off the bench. The cross pieces should now meet the rockers just above the $\frac{3}{8}$ inch rounded over edges of the rockers. Push the pieces together and check the alignment. Place two bar clamps on top, over the joints, and check where their pads will apply the pressure. You will probably want to add small pads to the ends of your bar clamp jaws to apply the pressure directly over the joint. Place a small amount of yellow wood glue on the ends of the cross pieces and clamp the whole together with light to medium pressure. These glue joints are not for final strength. The dowels you run in later will supply that. Set this assembly aside to allow the glue to set up. I wait at least an hour, overnight is better.

A person walking in the woods or along the shore is apt to pick up a stick, break it to length, snap off the twigs, tidy the bark. This is basic woodworking....This is the first tool. But naked wood isn't much more durable than flesh. Few ancient artifacts of wood have survived, which is probably why the Stone Age is considered so important. But the Wood Age must have come first, and is still with us. Wood is our favorite material, so much so that we try to make acres of plastic laminate look just like it.

Fine Woodworking Biennial Design Book – 1977



My original storefront workshop in 1976. I persuaded the high school art class to paint a train image on the side of the building.

Build an Heirloom Rocking Horse for Your Child or Grandchild

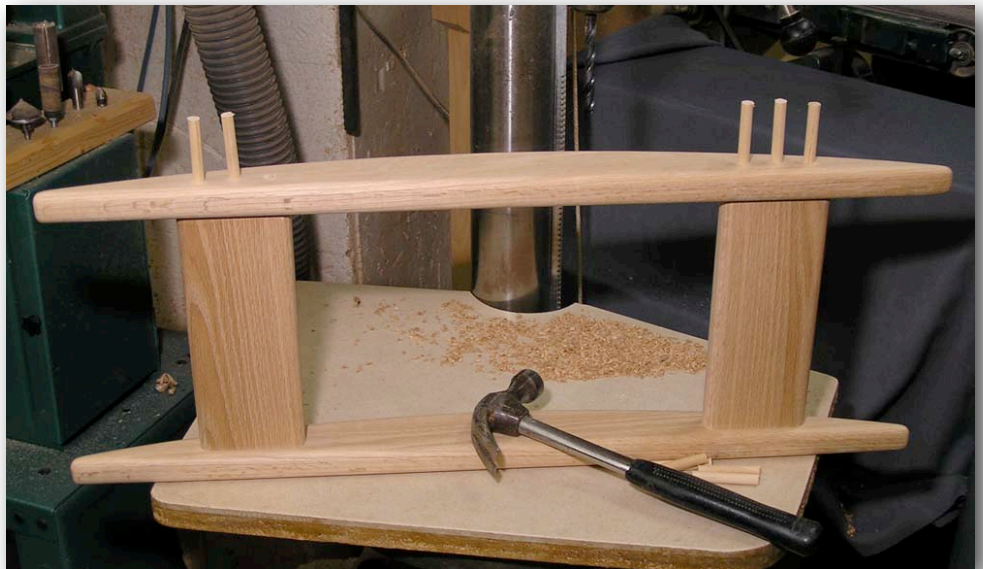
Later, remove the clamps and drill holes for the dowels. (see pattern) Cut the dowels $2\frac{1}{4}$ inches long and drill a 3 inch deep hole. The extra space is to prevent the dowel from bottoming in the hole. Glue is not compressible and will develop tremendous hydraulic pressure if you run out of room. This pressure can split any wood. Apply a thin layer of glue to the side of each hole and the side of each dowel and carefully hammer them in. Don't drive dowels below the surface of the rocker. Let the dowels protrude about $\frac{1}{64}$ of an inch to be cut or sanded off later. I cut off the dowel ends with a sharp shallow sweep gouge, but a carefully applied belt sander will work and may be easier.

For in the true nature of things, if we rightly consider, every green tree is far more glorious than if it were made of gold and silver.

Martin Luther



My pull toy block wagon. See more at www.woodentoy.com

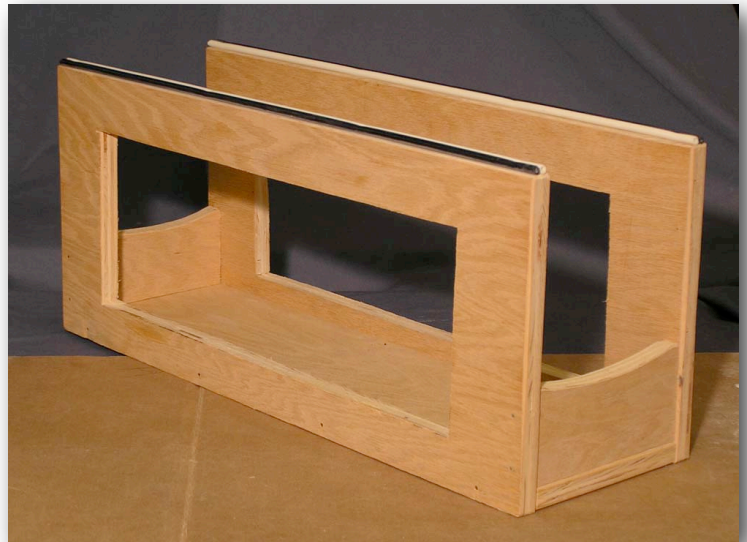
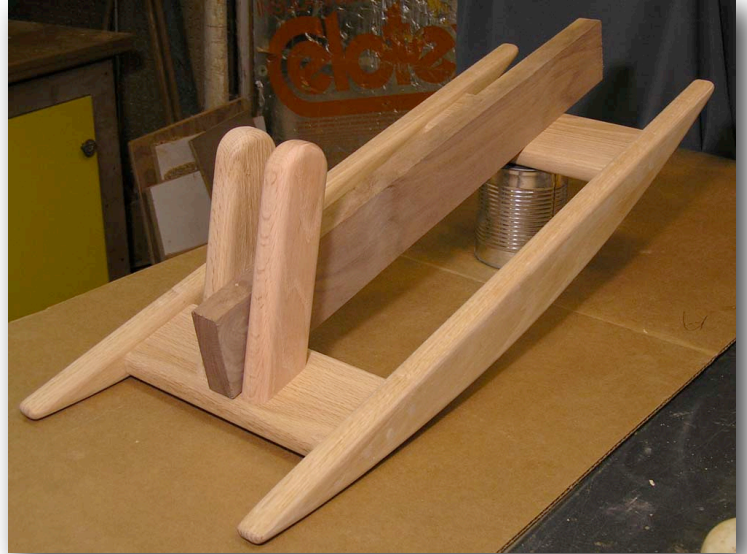


Build an Heirloom Rocking Horse for Your Child or Grandchild

Place the resulting rocker assembly on your bench and mark the locations on the cross pieces where the legs will stand. Start by dividing the cross pieces in half, making a very light pencil line at 5 inches. The legs should be $\frac{17}{32}$ of an inch from either side of this line if your horse's body is $1\frac{1}{16}$ inches thick. Remember the distance between the legs must equal the thickness of the horse's body. Place a coffee can under one end of the rocker assembly to make a leg placed on the other stick up straight. Apply a small amount of glue to the bottom of one leg and carefully place it in position on the lower cross piece. Hold a try square alongside the leg or use a piece of scrap wood as pictured to align it while pressing hard to squeeze the glue. A couple dozen seconds of pressure is all that is necessary for the glue to hold. Now do the same for the second leg. After 5 minutes switch your coffee can and repeat for the other two legs. Let these glue joints set up for a few hours or overnight. The following day drill and dowel the leg joints. Turn the assembly upside down and drill these holes with your drill press. Use a U-shaped block for support when drilling these holes. (see the U-shaped block diagram on the pattern) Drill two holes for each leg using care not to let your drill emerge through the side of a leg. I often drill one of these holes at an angle, with one dowel ending up parallel to the leg. (see pattern)

Workmanship of the better sort is called, in an honorific way, craftsmanship. Nobody, however, is prepared to say where craftsmanship ends and ordinary manufacture begins. It is a word to start an argument with.

David Pye - The Nature and Art of Workmanship



Build an Heirloom Rocking Horse for Your Child or Grandchild

Now, while holding the assembly on end, carefully drive in dowels to secure the legs. Take your time here. It can be tricky holding things upright and driving dowels at the same time. It's a good time to call your spouse or friend to lend a hand. Again, hammer steadily. The glue can seize, and hard panicky hammering will knock off the legs. Drive one dowel into each leg and then go around a second time. Unlike the photograph my left hand always holds the leg as I drive the dowel.



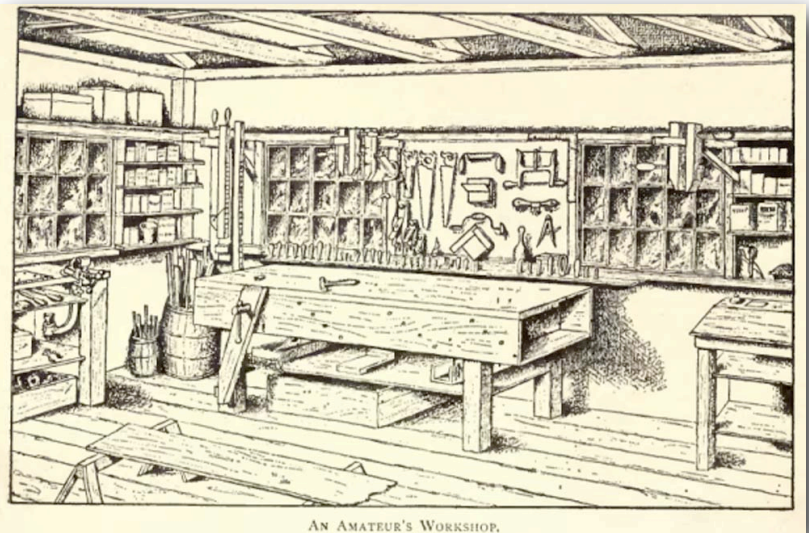
A recent photo in my workshop as I sand the seat of a rocking horse while listening to a book thru headphones.

Trees are poems that earth writes upon
the sky,

We fell them down and turn them into
paper,

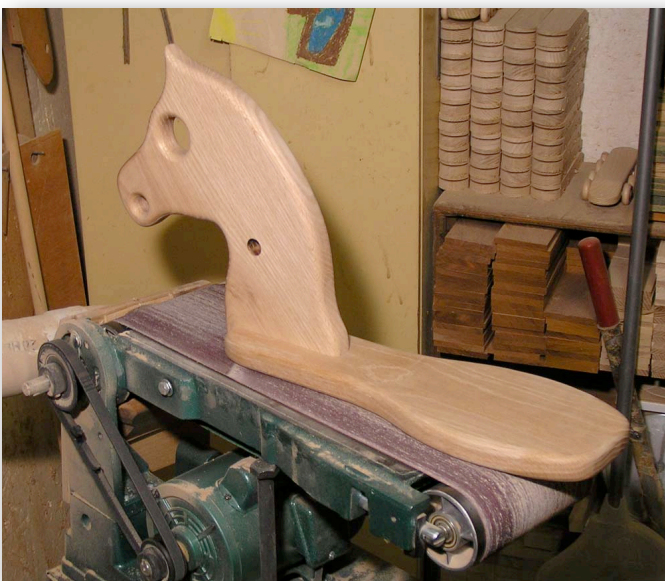
That we may record our emptiness.

Kahlil Gibran



Build an Heirloom Rocking Horse for Your Child or Grandchild

Congratulations! The hardest part is behind you. Now you need to try some careful band sawing. Take the horse's head and place it in position on top of the seat, leaving the head over-hanging on the front about ½ inch. (*see pattern*) Scribe around the base of the head with a fine-point pen or sharp pencil. Band saw away the waste, making a slot for the head. Carefully split the scribed line, sawing on the waste side. Remember, it is much easier to saw a bit again than to put wood back on if you've sawn too much. Saw and fit, saw and fit. Don't let this fit be too tight. That can set up stresses which can cause the seat to split next Winter. Also, leave a bit of the head protruding below the seat to be sanded off later (*as shown in the picture below*). Use care. This joint shows clearly for all future generations to see. When you are satisfied with the fit, smear some glue on the inside of the band sawn slot and push or tap the head in. If you have made a careful fit, no clamping is necessary. Use a C clamp if you have sawn away too much wood. About an hour later sand off the portion of the head protruding



Build an Heirloom Rocking Horse for Your Child or Grandchild

Place the horse's body upon the upside down head/seat assembly. Do the surfaces fit closely along their length? If not, get out the hand plane. When you are satisfied with the fit, apply some glue to the body and place it on the seat. Use some hand pressure and move the pieces around slightly. You are making a classic rub joint. But, be conservative and apply a couple of clamps as well. If your clamps don't engage deeply enough, place a heavy weight on top to apply pressure. After an hour or two, drill the 7 holes (*see pattern*), add glue to the hole's sides and the dowel and hammer in the dowels.

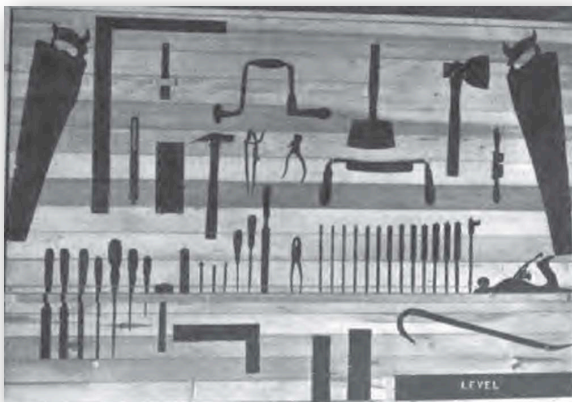


We have nothing to fear and a great deal to learn from trees, that vigorous and pacific tribe which without stint produces strengthening essences for us, soothing balms, and in whose gracious company we spend so many cool, silent and intimate hours.

Marcel Proust, Pleasures and Regrets,
1896

As an instrument of planetary home repair, it is hard to imagine anything as safe as a tree.

Jonathan Weiner



The steam engine, strong enough to pull my 24 piece train set, made from at least ten hardwoods.

Build an Heirloom Rocking Horse for Your Child or Grandchild

Now place the foot rest on the rocker assembly, just inside the legs on one end. (see picture on cover) Leave a gap large enough for your thumb between the foot rest and the legs. You don't want a child's finger getting stuck. Use a hand electric drill to drill holes through the foot rest into the rocker assembly, using the foot rest as a drill guide. Drill one side and hammer in the dowel, then the other. This avoids the need to carefully space your holes.

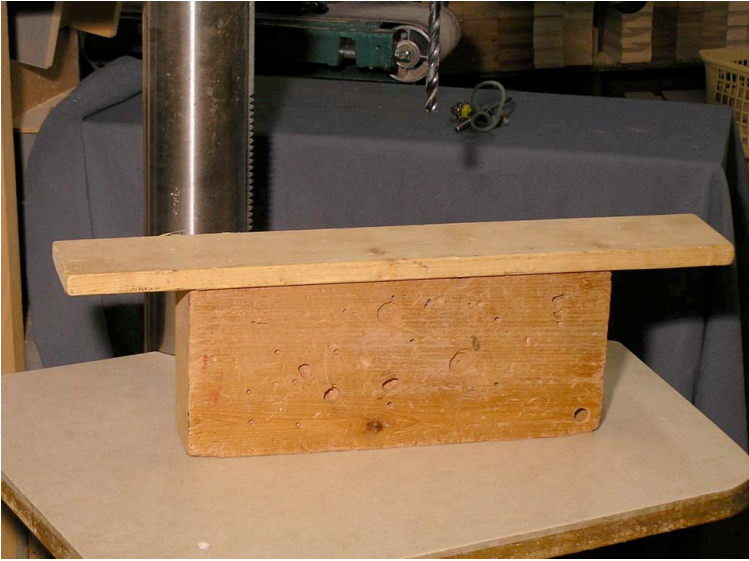
It is now time to join these two assemblies and make a horse. Insert the body of the horse between the legs of the rocker assembly. Make sure the foot rest and the horse's head are on the same end. Make 4¼ inch high blocks to prevent the body from going down too far between the legs. When you are satisfied with the alignment up and down and fore and aft, use a couple of C clamps on the legs to hold things steady. Place these about halfway down the legs and out of the way of your drilling. I use small leather pads to prevent clamp marks on the sanded wood. Drill 2 holes through each leg into the body of the horse. Mine go through the body and into the opposite leg. Stagger the hole positions on each side of the horse so they don't meet. Hammer in the dowels. Your creation should look something like a horse by now.

A society grows great when old men
plant trees whose shade they know they
shall never sit in.

Greek Proverb



Build an Heirloom Rocking Horse for Your Child or Grandchild



The block I use to support the horse laying on its side as I drill the holes thru the legs into the body.

Picture showing the horse positioned on its side on the drill press table ready for the drill.



Another view of the horse on the drill press table.

Build an Heirloom Rocking Horse for Your Child or Grandchild



Picture showing shop made block to aid in drilling 7 holes in the steed's seat.

Though all wood is basically similar, every fragment shows the variability found in all natural materials. No two pieces of wood in the world are exactly alike. This gives timber its unique fascination, for no other common durable substance shows patterns and properties peculiar to each piece.

Herbert Edlin

What Wood is That – 1969



Using a shallow sweep gouge to trim protruding dowel ends.

Here are a few of my 24 train cars.



Build an Heirloom Rocking Horse for Your Child or Grandchild

Stand the horse upright on his rockers and insert the handle. Here a snug fit is desirable. If you are lucky, your dowel is a bit oversized and you can carefully sand it to fit. Run a $\frac{1}{4}$ inch dowel in through the horse's throat to lock it in place. Turn the horse around and drill a $\frac{3}{4}$ inch hole in the body, just below the seat, for its tail. Make this hole about $1\frac{1}{2}$ inch deep. Use care. There is not much wood thickness on either side. Scraps clamped on the sides before drilling provide good insurance. A mistake would be a pain in the ...



Your horse's assembly is complete. Check all the dowel ends and trim those that are proud. Now go over the entire horse with a series of sandpaper grits ending in a very fine 320 or 400 grit. Thirty minutes of liberal use of elbow grease now will be very noticeable later.



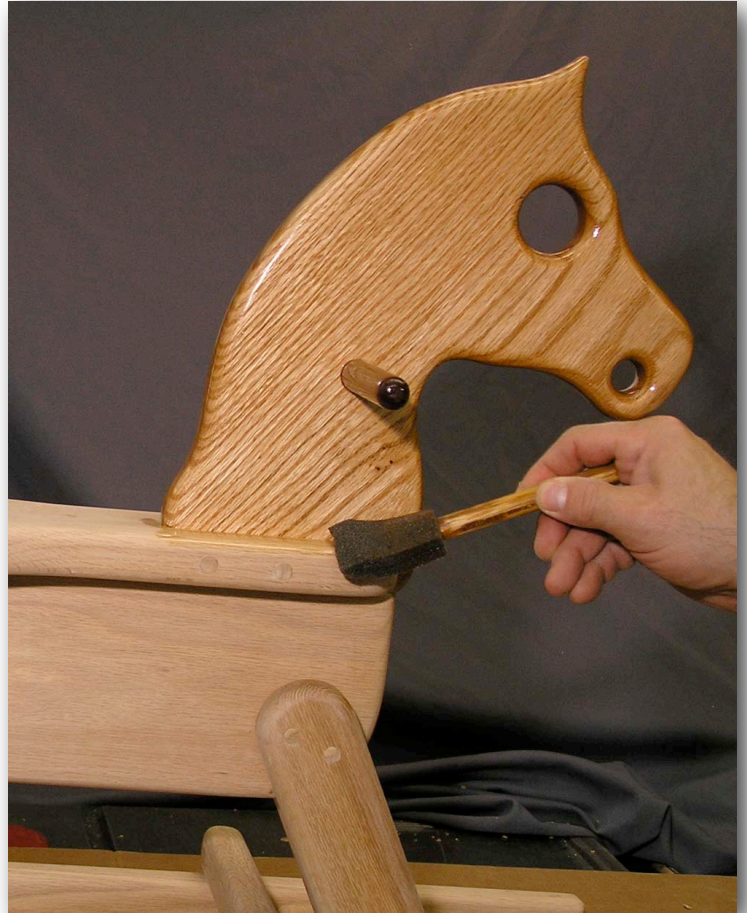
Build an Heirloom Rocking Horse for Your Child or Grandchild

Finishes

You can choose from a variety of finishes for your horse or no finish at all. A clear finish will make the horse more soil resistant and bring out the color of the wood. I have never done it, but you could choose a paint if you like.

Clear vegetable oil is my choice as a finish. I use Walnut oil and brush it on quite heavily. Thirty minutes later I wipe off all I can. Don't try to build up layers of oil. They never get very hard and many layers can be gummy. I buy my oil at grocery stores so it is completely nontoxic, even edible. Walnut oil has a long history as a wood finish and is similar to Tung oil, without its toxicity. It is a drying oil and after a few days is completely dry.

If your horse is to be used in a preschool or office I suggest a clear poly-urethane finish. Poly is more work to apply, (*sanding between coats*) but is both more durable and more protective than oil. You need just such a tough, washable, plastic finish for the hundreds of little hands found in schools or offices. For home use though, I prefer the look and texture of a natural oil. It is easy to apply and needs little care. Once a year a little mineral oil renews the luster of the original vegetable oil finish. Once every generation a bit of work with sandpaper will restore the original looks.



The forests of America brought out in us, as fate will do, both our best and worst; they molded and they exposed us...First the trees were barriers and ambushes, then the became blockhouses and cabins, gunstocks and cradles, wagon wheels and railway ties. Now they are airplanes and newsprint, plastics and prefabrications. They remain our greatest renewable resource...Always they have been, and will be, beauty and peace. They are the best we have left of wilderness...

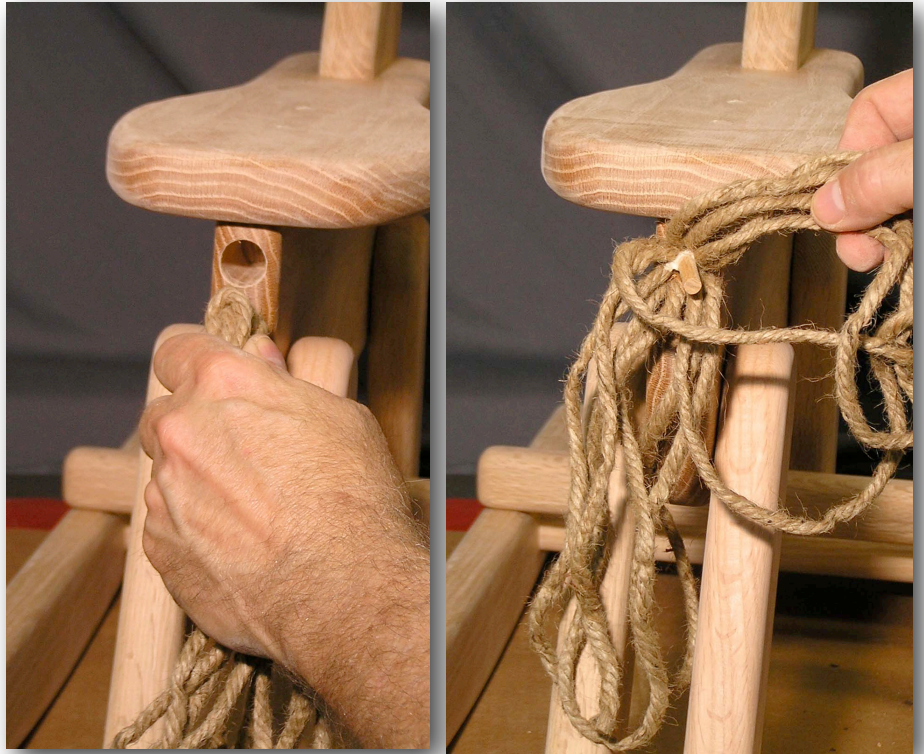
Donald Culross Peattie - A Natural History of Trees

Build an Heirloom Rocking Horse for Your Child or Grandchild

When your finish is dry gather about 15 strands of jute fiber together in one hand to make a tail. Add or subtract strands until you have a bundle about $\frac{3}{4}$ inch in diameter and 8 to 10 inches long. Use a lot of glue in the tail hole and between the strands before inserting the bundle into the hole. Drive a small dowel into the center of the jute and into the hole to secure it. That's the tail. Trim and fray to suit.

Now just add the maker's name and the child's name to make it all the more memorable in 50 years.

I hope your horse is beautiful and brings your memory to the minds of generations of children.



Do not be afraid to
go out on a limb...

That is where the
fruit is.

Anonymous

Sometimes Thou
may'st walk in
Groves,
which being full of
Majestie will much
advance the Soul.

Thomas Vaughan,
Anima Magica
Abscondita

Build an Heirloom Rocking Horse for Your Child or Grandchild

Sources of Supply

Atlas Dowel & Wood Products Company
5819 Filview Circle, Cincinnati, Ohio 45248
513-574-3164

Many species of high quality dowels, other small wood parts. Catalog.
<http://www.atlasdowel.com>

Woodworker's Supply, Inc.
1108 North Glenn Road, Casper, Wyoming, 82601
1-800-645-9292
Router bits and various hand and benchtools. Under-over sized bradpoint bits, Catalog.
<http://woodworker.com>

Econ-Abrasives
P.O. Box 865021, Plano, Tx. 75086
1-800-367-4101
<https://www.econabrasives.com>
Many sanding materials, Inflatable drums, inflatable drum sleeves. Catalog.

Woodcraft Supply Company
313 Montvale Avenue, Woburn, Ma. 01801
1-800-225-1153
High quality hand tools, electric tools and hardware. Catalog.
<http://www.woodcraft.com>

Grizzly Imports
2406 Reach Road, Williamsport, Pa. 17701
1-800-523-4777
Wide variety of mostly imported tools. Catalog
<http://www.grizzly.com>



Pictures showing other joinery techniques; Dowels in my Clacker and Dovetails in my Block Wagon.

Build an Heirloom Rocking Horse for Your Child or Grandchild

Do you want to build your own wooden rocking horse?

Building a children's rocking horse is a rewarding project in many ways, but making this horse is not a project for a beginning woodworker. While I include dozens of pictures and step by step instructions in my free book it is not a basic woodworking "How-To". I do not discuss the difference between a band saw and a table saw, a try square and a carpenter's square, or a belt sander and orbital sander. I do discuss many techniques I have discovered and developed in my lifelong love of woodworking. Most of the ideas in my book I use daily in my work as a professional toymaker. The techniques described are designed to achieve quality work with minimum effort. If you are new to woodworking look for a more basic book about tools and their use. When you have a foundation of knowledge and experience read my online book and build yourself a fine heirloom.

When your Rocking Horse is complete please give instructions to your young buckaroos. The 10 month old rider needs help in staying on and the older rider needs cautioned to avoid being bucked off. As with any ride-on toy a child can fall off or ride so energetically that the toy can overturn. Use caution and vigilance. Happy Trails to you . . .

When your steed is complete I would love to see a picture of your work or even better a picture of your horse and rider.

Plans

You can use the techniques in my book to build any wooden rocking horse. If you would like to make this rocking horse for your loved one I offer full size plans for \$12.00 in the U.S. or \$13.00 international both postpaid. This payment gives you license to make this horse for your family or friends. Making my horse for sale is expressly prohibited, both by copyright and design patent. I earn a of living of sorts by my woodworking which includes making these horses and dozens of competitors would make

life difficult. These full size plans are just that "plans only". Complete instructions are in my free downloadable book. I encourage you to read the book and judge the construction difficulty for yourself.

If you would like to undertake building this horse send me \$12.00/\$13.00 US check or Paypal or telephone/email me your MC/VISA/DISCOVER/AMEX number. You can also use my [online form](#). I will send the plans via US Mail.

Thanks, I hope you can give a child a treasure.

John Michael Linck - Fine Hardwood Toys For Your Children's Children

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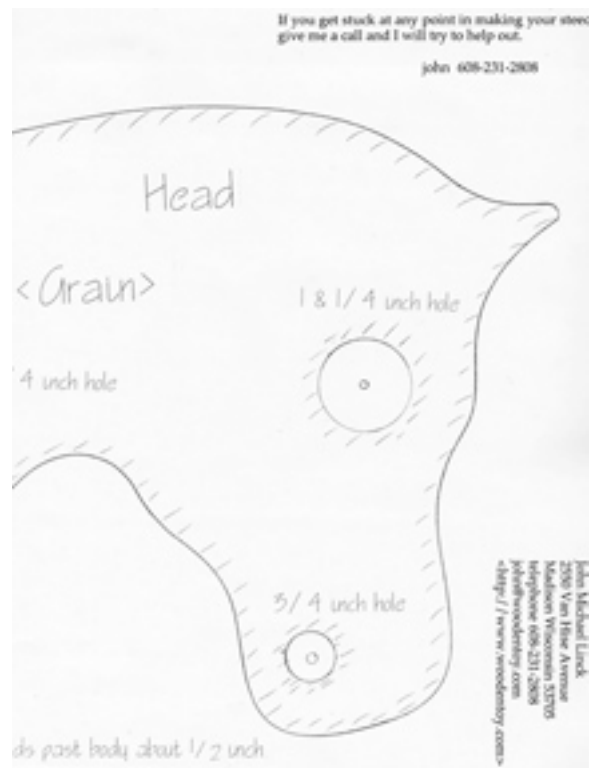
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Musings from the toymaker's workshop

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The Toymaker

Fine woodworking has been a family tradition for more than a century, starting with my great grandfather, John Michael Dreher. He sailed to America in 1867, after completing his apprenticeship as a cabinetmaker in Germany's Black Forest. Here he taught and worked with his son, my grandfather, for many years. I see the results of their partnership in the ornate wood interiors of many churches and public buildings in my home town, Danville, Illinois.

One hundred years later, I continue their tradition in fine hardwood toys. My apprenticeship began in my childhood basement workshop and ended in the study of Forest Science and Design at the University of Illinois; B.S. 1974. I build each toy with care, using Wisconsin hardwoods. Wood is beautiful, durable and timeless. I want my toys to provide an alternative to some of the throw away aspects of life today.

John Michael Linck

Make a Better Book

I want your help to make this a better book. While I have made many horses over the years, describing the process in print is a challenge. Please send me your ideas, questions or comments describing where my instructions are unclear to you. I will use them to make revisions in future copies. If you have discovered other methods you favor, send them as well. I hope to never stop learning.

Feel free to share this book with anyone. Though it is protected by copyright I am happy to have more folks build horses for children. However you may not sell it in any form.

I make several other wooden toys including a train, a doll bed, a block wagon, a clacker, and a riding bi-plane. While plans are not available for these, I'd be happy to make one for you.

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I'm sure I heard about chlorophyll and photosynthesis when I was in school, but I don't believe they ever struck me as having any more importance than, say, the Declaration of Independence—or geometry. No one ever impressed upon me...the astonishing priority held by the green plants of the third planet: priority number one....Take away all governments and armies, take away all businesses and industries...electricity, clothes, medicine and police...and most of us would survive. But take away the plants and we would all die.

Malcolm Wells - Gentle
Architecture – 1981

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