

# Basic Tools

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I have often been asked, by new modelers “What tools should I buy?” Their thought is to purchase everything they need to build a ship model. I believe this is the wrong approach. The answer to the question as to what tools to buy is none. Trying to outfit the shop before having a real understanding of what is required will lead to the purchase of a lot of tools not needed or of the wrong type. The next question, then, is “How do I proceed?” The following are some guide lines that I hope the new modeler will find useful. As usual there is always more than one way to skin a cat; this is my way.

First a couple of basic philosophies on tool buying in general:

- Don't buy a tool until you know you need it and have identified the job it needs to perform. Do some research and figure out the best tool for the job. Most tools are designed with a single function in mind. By waiting to purchase a tool until you need it, you will understand the function of the tool and be able to purchase one that will do the job it is designed for. Using the proper tool is a pleasure. Trying to use a tool for a job that it was not intended to perform can be very frustrating.
- Buy quality tools. They will last you and your grandchildren a lifetime. Quality tools will perform their intended function better.
- Don't buy sets of tools. You may get the tool you want but sets always contain tools you will never use. Sets may also be of lesser quality. There are exceptions that will be discussed later.

The first “tool” to acquire is the place where you will work. This can be a kitchen table, a corner of a closet or a two car garage. The work space available will somewhat limit the size of the model you will want to build. It is hard to build a 1:48 Victory in a closet. Plan for the future. Your first project may be a small one but as you gain skills, your projects will get larger and more complicated. Another thing to consider is having a permanent work space that will allow you to leave your project set up. Having to pack everything up and then get it all out each time you want to work can become discouraging. A good light source and a comfortable chair are also

necessary. Ship modeling can become messy. When setting up your shop, depending on the media you choose to work in (wood, plastic, metal, paper or a combination), give consideration to dust control, paint fumes, paint overspray, glue smells, noise etc.

The next step is to pick a project. Spend some time here. Search your local hobby shop and the Internet. Read build logs from MSW. Choose a project that you have an interest in. Being truly interested in the model will help you get through some of the more tedious parts of the project.

Once a project has been decided on, study the plans, instructions and possibly any build logs very carefully. Think through the steps and envision how you will perform them. This will give you an understanding of the tools needed. Again don't rush out and buy a bunch of tools; purchase them as needed and spend time researching what you need and what is available. An example might be that you need a needle file. Files come in various grits, shapes, sizes and price points. Studying the availability on a jewelry supplier's web site will allow you to make an informed choice and purchase the right file for the job.

The following is a list of starting tools and some considerations for their purchase. This is by no means a complete list or a recommendation to purchase.

# Hobby Knife

The standard hobby knife is the X-acto with a no. 11 blade. Some modelers prefer using a scalpel with no. 11 blade. The blades are available in non-sterile bulk packages, lowering the cost. The difference between the two blades is that the X-acto is thicker and will handle heavier cuts than a scalpel blade. It is also possible to sharpen an X-acto blade. Different types of handles are available.



## Sand Paper

Sandpaper is available in grits from 36 to over 1800, with lots of grits in between. The larger the number the finer the grit. Sandpapers come with various types of backings based on the intended purpose. There are paper, wet-or-dry, non-clogging, cloth, and plastic backings. Sandpaper is available in sheets, self-stick shapes and rolls. The most useful initially will be paper-backed 100, 220, 320 and 400 grits. Rubber cementing sandpaper to various shapes of scrap wood is an easy way to create sanding sticks and blocks for that special job.

## Measuring Equipment

Metal 6 and 12 inch rulers in English and/or metric units will be very useful. Architectural scale rulers already have the most common scales marked. Very accurate measurements can be made with a good set of calipers. Calipers come in three types: vernier, dial and digital. I prefer the dial type as they are easier to read than the vernier type. The digital type are the easiest to read but require batteries.



# Drills and Bits

Regardless of your kit complexity, you will have to drill holes. Because most of the holes we drill are very small, a pin vise will be the best option. Try and find one with multiple collets to accommodate the various sized bits. When considering purchasing drill bits, this is one of the few situations where it makes sense to initially buy a set, replacing them as they break. Stick with HSS (high speed steel) bits made in the USA or Europe to ensure good quality. Drills bits come as number sizes as well as fractional sizes and metric. Jewelry supply houses hobby shops specializing in model railroads are good sources.



## Razor Saw

Razor saws are available in various blade thicknesses, teeth per inch and backed (in various heights) or unbacked. The number of teeth per inch or coarseness of the cut is the most important consideration and is governed by thickness and density or hardness of the wood.



## Glue

Superglues or cyanoacrylate (CA) are available in various thicknesses and setting times. I don't use CAs (personal preference) but use Carpenters glue (PVA or yellow) for wood to wood, epoxy (5 or 20 minute setting time) for wood to metal and solder or silver solder for metal to metal. For gluing paper, rubber cement or a glue stick such as Elmer's work well. PVA glue can be debonded with rubbing alcohol.

## Tape

Masking, double-sided and clear adhesive tapes have multiple uses.

## Miscellaneous

Clamps, tweezers, pliers, a vice, squares, plastic triangles, mechanical

pencils, and on and on.

The list is endless. If you are like me, collecting tools is almost a hobby in itself. Have fun and buy wisely.

## Modeling Source List

Below is a listing of resources and web sites for tools and supplies. I have dealt with almost all of these companies. My comments about each are included. Where a resource is referred to as local, that is the San Diego area where I live.

Company	Website	Materials and Comments
<b>123STITCH</b>	<a href="http://www.123stitch.com">http://www.123stitch.com</a>	Sewing supplies <i>DMC cotton thread for rigging</i>
<b>ADMIRALTY MODELS</b>	<a href="http://www.admiraltymodels.com">http://www.admiraltymodels.com</a>	Plans, photo etch, kits <i>Modeling workshops by David Antsherl and Greg Herbert</i>
<b>AGES OF SAIL</b>	<a href="http://www.agesofsail.com">http://www.agesofsail.com</a>	Kits, fittings, tools <i>Amati replacement parts plus paper model kits and RC</i>
<b>BLUEJACKET</b>	<a href="http://www.bluejacketinc.com">http://www.bluejacketinc.com</a>	Kits, fittings, books <i>High quality kits, including work boats and steel navy</i>
<b>BYRNES MODEL MACHINES</b>	<a href="http://www.byrnemodelmachines.com">http://www.byrnemodelmachines.com</a>	Table saw, disc and thickness sanders, etc. <i>The best</i>
<b>CARVING ORNAMENTATION</b>	<a href="http://carvingbook.weebly.com">http://carvingbook.weebly.com</a>	Carving tutorial <i>Techniques, tools, materials for use in carvings for ship models</i>
<b>CINCINNATI SURGICAL CO</b>	<a href="http://www.cincinnati-surgical.com">http://www.cincinnati-surgical.com</a>	Surgical supplies <i>Surgical and hobby blades and handles</i>
<b>CRAWFORD TOOL</b>	<a href="http://crawfordtool.com">http://crawfordtool.com</a>	Screwdrivers, hex drivers <i>Wiha, Bondhus and Knipex tools</i>
<b>DEDECO</b>	<a href="http://www.dedeco.com">http://www.dedeco.com</a>	Cutting tools <i>Rotary tool burrs, stones ,cutoff wheels</i>
<b>ESSLINGER</b>	<a href="http://www.esslinger.com">http://www.esslinger.com</a>	Watchmaker and jewelry tools and parts
<b>FLAGSHIP MODELS</b>	<a href="http://www.flagshipmodels.com">http://www.flagshipmodels.com</a>	Resin & photoetch kits, gun kits. <i>Mostly Civil War Ironclads in 1:192, gun kits in 1:32. Photoetch details in several scales</i>
<b>FOREDOM</b>	<a href="http://www.fore-dom.net">http://www.fore-dom.net</a>	Fore-dom flex shaft tools <i>High end rotary tools, hand pieces and accessories</i>
<b>FORSTER PRODUCTS</b>	<a href="http://www.forsterproducts.com">http://www.forsterproducts.com</a>	Gunsmithing tools <i>Swiv-O-Ling Vise</i>
<b>GESSWEIN</b>	<a href="https://www.gesswein.com">https://www.gesswein.com</a>	Jewelry Supplies <i>High quality hand tools, drills, burs and finishing materials</i>
<b>GRS TOOLS</b>	<a href="http://www.grstools.com">http://www.grstools.com</a>	Jewelry Supplies <i>Ring clamp system, vices, gravers and engraving tools</i>
<b>GYROS TOOLS</b>	<a href="http://www.gyrostools.com">http://www.gyrostools.com</a>	Cutting tools <i>Cut off discs, saws and sanding disks/ drums for use in rotary style machines</i>
<b>HOBBY LINC</b>	<a href="http://www.hobbylinc.com">http://www.hobbylinc.com</a>	Online hobby shop <i>Cars, plane, ship kits, paints and supplies</i>
<b>J.I.MORRIS CO</b>	<a href="http://www.jimorrisco.com">http://www.jimorrisco.com</a>	Miniature fasteners
<b>JAPAN WOODWORKER</b>	<a href="http://www.japanwoodworker.com">http://www.japanwoodworker.com</a>	Japanese Hand tools <i>Chisels, Gouges, Hand Planes, Sharpening tools stones &amp; accessories.</i>
<b>LEE VALLEY</b>	<a href="http://www.leevalley.com">http://www.leevalley.com</a>	Wood working hand and power tools <i>High quality tools, small planes for models, sharpening systems</i>
<b>LITTLE MACHINE SHOP</b>	<a href="http://www.littlemachineshop.com">http://www.littlemachineshop.com</a>	Bench top machinists tools <i>Lathes, mills, tooling and parts. Good prices.</i>
<b>LOYALHANNA DOCKYARD</b>	<a href="http://www.loyalhannadockyard.com">http://www.loyalhannadockyard.com</a>	Kits, parts <i>Predominantly steel navy</i>
<b>MICROMARK</b>	<a href="http://www.micromark.com">http://www.micromark.com</a>	Modeling tools <i>Large selection of hand and machine tools. Mostly made in China.</i>
<b>MINI TAPS</b>	<a href="http://www.minitaps.com">http://www.minitaps.com</a>	Mini taps dies and fasteners

<b>MODEL SHIP WORLD</b>	<a href="http://www.modelshipworld.com">http://www.modelshipworld.com</a>	Internet ship modelling club <i>The NRG modeler's forum. Tips, info and build logs.</i>
<b>MODEL-EXPO</b>	<a href="http://www.modelexpo-online.com">http://www.modelexpo-online.com</a>	Kits, parts ,tools <i>Large selection of kits and parts. Imported tools of variable quality</i>
<b>MODEL MOTORCARS</b>	<a href="http://www.modelmotorcars.com">http://www.modelmotorcars.com</a>	Model cars and scale hardware <i>New owners of Scale Hardware. Miniature nails and bolts.</i>
<b>MODEL WARSHIPS</b>	<a href="http://www.modelwarships.com">http://www.modelwarships.com</a>	Forums, Build logs <i>For the plastic ship modeler</i>
<b>NAUTICAL RESEARCH GUILD</b>	<a href="http://www.thenrg.org">http://www.thenrg.org</a>	For the model builder and nautical researcher. <i>Excellent quarterly paper and digital magazine</i>
<b>OTTO FREI</b>	<a href="http://www.ottofrei.com">http://www.ottofrei.com</a>	Jewelry tools and supplies
<b>PRECISION SCALE MODEL ENGINEERING</b>	<a href="http://www.psmescale.com">http://www.psmescale.com</a>	Parts, materials, tools, lighting <i>Huge selection; order their catalog</i>
<b>PROXXON</b>	<a href="http://www.proxxon.com/eng/">http://www.proxxon.com/eng/</a>	Power hand and machine tools <i>Power tools for modelers</i>
<b>RIO GRANDE JEWELRY</b>	<a href="http://www.riogrande.com">http://www.riogrande.com</a>	Jewelry supplies <i>Files, pliers and other jewelery supplies. Swiss, German and USA made.</i>
<b>ROCKLER</b>	<a href="http://www.rockler.com">http://www.rockler.com</a>	Woodworking supplies
<b>SAN DIEGO SHIP MODEL GUILD</b>	<a href="http://www.sdshipmodelersguild.org">http://www.sdshipmodelersguild.org</a>	Ship modelling club <i>Meets 2nd Wed at the Berkley San Diego Maritime Museum</i>
<b>SEAWATCH BOOKS</b>	<a href="http://seawatchbooks.com">http://seawatchbooks.com</a>	Books <i>Emphasizes model construction. Only place to get Antscherl's and Tosti's books.</i>
<b>SHERLINE MACHINES</b>	<a href="http://www.sherline.com">http://www.sherline.com</a>	Table top lathe, mill, accessories <i>High quality machines and an extensive accessory catalog</i>
<b>SHIP MODELLERS ASSOCIATION</b>	<a href="http://www.shipmodelersassociation.org">http://www.shipmodelersassociation.org</a>	Ship modelling club <i>Largest club on West coast Meets 3rd Wed 1207 N. Lemon Street, Fullerton, CA</i>
<b>Small Parts</b>	<a href="http://www.amazonsupply.com">http://www.amazonsupply.com</a>	Materials, hypo tubing <i>Now part of Amazon supply</i>
<b>SPECIAL SHAPES</b>	<a href="http://www.specialshapes.com">http://www.specialshapes.com</a>	Materials, brass <i>Shapes, bars &amp; sheets: round, square, rectangular tubing 4 wall thicknesses</i>
<b>STARR GEMS, INC</b>	<a href="http://www.silversupplies.com">http://www.silversupplies.com</a>	Jewelry Supplies <i>Silver Solder Supplies</i>
<b>SWAN-MORTON</b>	<a href="http://www.swann-morton.com">http://www.swann-morton.com</a>	Scalpels and blades
<b>SYREN MODEL COMPANY</b>	<a href="http://www.syrenshipmodelcompany.com">http://www.syrenshipmodelcompany.com</a>	Kits and supplies <i>The best scale rope and blocks available. Ropewalk.</i>
<b>THE NAUTICAL MIND</b>	<a href="http://www.nauticalmind.com">http://www.nauticalmind.com</a>	Books and charts <i>Nautical books, some European</i>
<b>TAIG TOOLS</b>	<a href="http://www.taigtools.com/">http://www.taigtools.com/</a>	Table top lathe, mill, accessories <i>Similar to Sherline but more robust. High quality. Can use Sherline accessories.</i>
<b>TRAVERS</b>	<a href="http://www.travers.com">http://www.travers.com</a>	Machine shop tools <i>Drills, end mills, etc.</i>
<b>TROPICAL EXOTIC HARDWOODS</b>	<a href="https://www.tehwoods.com">https://www.tehwoods.com</a>	Exotic hardwoods <i>Dimensional lumber for display bases, etc.</i>
<b>U.S. SHOP TOOLS</b>	<a href="http://www.usshoptools.com">http://www.usshoptools.com</a>	Machine shop tools <i>Drills, end mills, etc.</i>

<b>UMM-USA</b>	<a href="http://www.umm-usa.com">http://www.umm-usa.com</a>	On-line hobby shop <i>Plastic. Detailing kits, for cars, aircraft, armor. Small scale ships and subs</i>
<b>UTOPIA TOOLS</b>	<a href="http://www.utopiatools.com">http://www.utopiatools.com</a>	Jewelry and hobby supplies and tools <i>Hobby and jewelry tools and supplies</i>
<b>WOODEN SHIP MODELING</b>	<a href="http://www.shipmodeling.ca/index.html">http://www.shipmodeling.ca/index.html</a>	Photos and videos <i>"Wooden ship modeling for dummies." French</i>

## About the Nautical Research Guild

Founded in 1948, the Nautical Research Guild (NRG) is an IRS 501(c)(3) approved nonprofit educational organization with an international membership of historians, ship model makers, artists and laypersons with a common interest in the history, beauty and technical sophistication of ships and their models.

The NRG publishes the quarterly Nautical Research Journal, a quarterly magazine whose articles span the broad spectrum of topics in the linked disciplines of nautical research and ship model building. The NRG also holds an annual conference and operates the Model Ship World online community.

For more information about the Nautical Research Guild, including membership options, visit <http://www.thenrg.org>.

## About Model Ship World

Model Ship World is the world's largest ship modeler's forum with over 32,000 members. The forum hosts over 900 scratch build logs and over 2,400 kit build logs.

Free to join, the forum has an active community of modelers across all skill levels. With over half a million posts in more than 15,000 topics, Model Ship World is an incredible resource for any modeler.

Visit Model Ship World at <http://www.modelshipworld.com>