

Meeting Notice:

- **March meeting: Tuesday the 20th at 5:00.**
- **Main Plant Cafeteria**
- **Sharpening**
- **March Project: Accurate measurement.**
- **Door Prizes!!**



Knot News

COLLINS WOODWORKERS GUILD NEWSLETTER

Sharpening

Sharpening blades is pretty fundamental stuff for most woodworkers. Even the “strictly power tool” guys have a couple of things that they need to sharpen themselves. We all use the occasional pocket knife, and chisel. The turners and carvers among us sharpen chisels and gouges. Do we have anyone that makes traditional Windsor chairs? They use draw knives, adzes and spoon bits that the rest of us have never worked with much less tried to sharpen.

This whole subject came up because several people expressed concern about their ability to get the plane kit set up and working acceptably. The most basic part of that is getting the blade shaped and sharpened. The discussion this time will focus on flat, straight blades used in planes, chisels and knives.

If you have a method you really like bring it to the meeting and show us. Similarly, if you use blades that aren't flat and

should show us how to maintain a gouge.

There is an endless choice of abrasives and everyone has a favorite. From diamond dust to toe edge of a crock they all work for somebody, take your pick. No matter which one you use there are three steps. You shape the edge, sharpen it and hone it.

Besides abrasives there is a wide variety of jigs to hold the tool while you shape and hone. Like your choice of abrasives everybody has a favorite.

We want everybody to bring in whatever you use. Because there is such a wide variety of methods the discussion should be interesting.



straight bring those too and show how you keep it sharp. Hint: Some of the turners

March Project:

This is a project that the machinists in the group should love. Those guys routinely work to tolerances that the rest of us rarely think about; sometimes well under a thousandth of an inch. Considering that the cellular structure of most species is larger than that and even if you could cut it to that size it wouldn't be there an hour later, that level of precision would seem to be overkill.

So just how accurate do you need to be? Of course that depends on what you are trying to accomplish. An overlay door

can look fine if it's a quarter inch oversized but an inset door wouldn't close. That's why the cheapest cabinets use overlay doors. Better cabinets will probably use inset doors but they are much more fussy to fit so they look right.

Some of us try not to measure at all. There is a lot to be said for the old “cut to fit” technique and even some virtue to the “beat to fit” approach. “As long as this door fits that hole it's the right size.” That approach takes time but when it works it looks good.

Accurate measurement



Most of us at least use a tape measure and a steel ruler. There are cheap dial calipers that can get us closer over short distances. The limit is generally well under a foot. Some of the machinists in the group will have a micrometer.

So show us what you use: Witness stick or a yardstick.



February meeting

Bryan brought in parts for a set of chairs that he is building for his daughter and her family. These are a pretty traditional frame style design. He is using floating tennons for most of the joints.



Bryan needed to make a whole bunch of pieces that all matched. If you take a close look at the chair in the picture you can count fifteen individual pieces and most are in right/left or front/

back pairs. That's ninety pieces that all need to match. He described the process and showed us the patterns and how he set up the cuts so that they would all work right.

The back supports are curves that he roughed out and then routed with a pattern. The problem was that once cut, the stresses in the wood caused it to move so the curves were no longer the same. He ended up sorting out matching pieces. The pieces in one chair aren't quite the same as another chair but the differences aren't noticeable.

Bryan says that all six chairs are now as-

sembled. His daughter hasn't chosen the final color so they are pretty much white for now. She also



needs to pick the upholstery fabric. So while she's deciding he has a chance to get started on the matching table...

Steel

Do you have a tool or a knife that just won't seem to take an edge? You work at it until you are fed up and it's still dull. Lots of blades are made from materials that can't be sharpened.

A lot of the time someone tries to save money by using mild steel rather than tool grade steel. Mild steel can't be made hard enough to sharpen and even if you could sharpen it you would never get it to hold an edge. Sometimes they try to prevent rust using an alloy of iron, nickel, chromium, vanadium, or several other things. That's what stainless steel is made for and it can take an edge but like mild steel it won't last long.

Most hand tools use pretty basic carbon steel. It's just iron with a .7– 1.5% carbon and made under very carefully controlled conditions. It's been around for centuries and it's chemistry is well understood. The foundry incorporates other things to determine other characteristics.

Upcoming projects:

April: Table Saw Jigs

May: Router Jigs

June: Hardboard

Steel, at least the kind of steel that we use, is usually specified using a single letter and number like O1 or A6. The letter specifies the grade and the number specifies the exact alloy within that grade. Most of the steel we use in woodworking hand tools are Oil hardened (O grade), Water hardened (W grade) or Air hardened (A grade).

Water hardened steel is pretty much Iron and Carbon but sometimes includes very small amounts of other things. It can be made much harder than woodworking tools require but you can temper it. Water hardened tools can be very brittle if they are too hard and would be difficult to sharpen.

Oil hardened steel includes other metals in the alloy. It will be tougher but won't get as hard. Oil hardened steel will get hard enough for most woodworking hand tool applications except files. The blade in the plane kits that we are working on is O1 Oil

hardened steel that has been hardened and tempered to about Rockwell C 60.

Air hardened grades have more (and different) metals in the alloy and generally are used for things besides woodworking tools. They can be really tough and abrasion resistant but won't get as sharp.

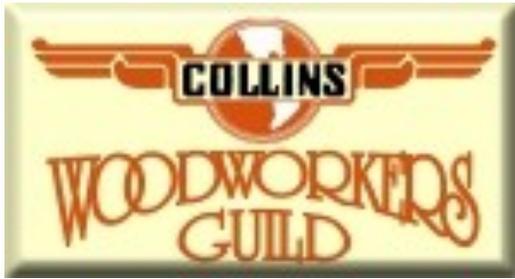
There are a lot of other choices that we might run into. Lathe tools are frequently "high speed" steel that work at higher temperature and resist abrasion but won't get as hard or as sharp.

There is a lot of information on steel chemistry on the web. Hock tools has some great information on sharpening: <http://hocktools.com/>.

You can buy tool steel in small quantities from McMaster Carr: <http://www.mcmaster.com/>. Their website has some good information on steel properties too.

an opportunity to show off something that you have made. Suggest it as a project of the month.

We need ideas for new projects. Here is



The Collins Woodworkers Guild is a club dedicated to preserving the age old practice of creation using the medium of wood. CWG members gather monthly to share tips, ideas and experience to further the knowledge of all members. From creating heirlooms for their families to Toys-For-Tots, members help each other get the most out of their woodworking experience.

Membership in the Collins Woodworkers Guild is open to ALL Rockwell Collins, Inc. Employees, Spouses, Retirees, and Contract Employees, AT ALL ROCKWELL COLLINS LOCATIONS!! Everyone is welcome at our meetings and yearly dues, renewed each September, are \$15.00

GUILD BENEFITS

- Access to our EXTENSIVE library of books, magazines and Tool Collection
- Open exchange of ideas, from project help to house building; and a hand when needed
- Social Activities
- Workshops
- Toys-For-Tots and other Programs to help our Community
- Educational and Informative Presentations
- Open Houses
- Tours

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