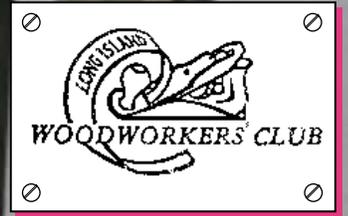


.Woodrack

March 2003



Ernie
Conover

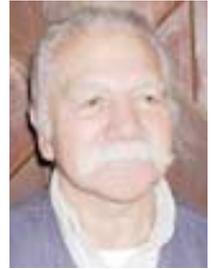
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President's Message

Gabe Jaen



I think I had an epiphany. I attended a workshop on hand planes with Daryl Rosenblatt in Connecticut. The instructor was Garrett Hack, author of *The Hand Plane Book*, master craftsman, and farmer. He has a one-man shop, one he built and is featured in *Fine Woodworking Magazine* in their workshop edition. But on to this revelation I had.

I questioned my judgment for signing up for a two-day workshop on hand planes, but I had never done anything like this before. Most of my woodworking skills are a result of some high school shop courses, and just having to make room for a growing family by building extensions, garages and dormers, you know like many of you did. So tools came as a result of all this, and their use came as a result of my various jobs.

Well, I have sat in on some sharpening sessions and I watch the talent we bring to the club to gather as much knowledge as I can. So what was the difference? I may not do Garret Hack all the credit he deserves for his turning me around but here goes. Daryl has written an article on our trip and I don't want to steal his thunder so this is just about what I learned and me.

First of all I had to unlearn all I knew about sharpening and hand planes. First, I was too heavy on the plane iron while sharpening; I was polishing the back of the iron on every grit I was using on the cutting edge. Once the back is polished, sharpen the edge through the various grits leaving the burr till the very end, and then polish the back. Polish the back of the clamp iron, and grind the edge that sits on the iron so there is no light coming in between the clamp and iron. The micro edge on the iron does not have to be exactly 25 degrees, it can be 23, 27, maybe even 30, as long as it's sharp. There's a lot more, but I only have so much space. Now to the hand planes, which of course you must flatten the sole. As long as the front, rear and the area of the mouth opening is on the same plane, it's flat, but polish the sole to get it flat when it is fully loaded with iron, and clamped. Then there's the frog; its mating surface should be flat and adjusted so when the iron is in place you have the minimum of an opening. Now to use the plane, you bring up the iron so that you can feel the two extreme edges of the iron are about the same, and then the center of the iron. Take a trial cut and read the shaving, and adjust the lateral adjustment and depth of cut accordingly. So what's the big deal? Well, the big deal is that I went home and started to work my smoothing plane, a number 4. I went through all these steps and more and ended up with a plane that I used to make a project where I flattened and planed stock that I didn't have to sand. I shot an edge that was square, I planed end grain, I planed wild grain, and I can read grain better then ever. My surfaces were shiny, smooth and the color of the wood was brighter then any sanded surface.

I'm on my third plane and I only have 15 to go.

Am I there yet? No, but I've made a giant leap forward with the use of hand tools. So if I have a message to you, it's simply this; if I can do it, so can you.

In this issue...

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- A class with Garrett Hack
- A reivew of Shapton Stones
- Scrollsaw Workshop

Columns:

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- Secretary's Report*
- Notes From the Editor*
- Crosswood Puzzle*



The Woodrack

Volume 14 Number 7

Next meeting:

Wednesday April 2nd
7 PM at Brush Barn
Smithtown, NY

Panel Discussion



Secretary's Report

Owen Brady &
Steve Costello



February's meeting was a full house. Gabe started off by telling everyone that Ernie Conover was to be the guest speaker for the night and indicated that he needed little introduction since he has authored several books on woodworking, has a patented lath, lectures, teaches and heads a woodworking school. More was to follow on this talent later on.

Gabe said that the board was working on a revision of the by-laws so that they conform with the changes in the club due to the expanded exposures to the public. The changes will cover club liability, committee accountability, election of officers and prorated dues to new members

Gabe came across a fine English publication "Furniture and Cabinet Making." He indicated that it can be purchased at Borders or Barnes and Nobles in the magazine rack. He noted that the articles are very good (once you learn the "English") and the drawings provided were excellent.

The recent scrollsaw workshop was well attended and Gabe reviewed the video of it on our website and said he was very pleased. Even though there was no heat in the barn at the start that day, all had a good time and said it was a very educational experience. He thanked **Alain Tiercy**, **Charlie Felsen** and **Brian Hayward** for making this a successful workshop. We hope in the future to have more of these informal workshops at the barn that are given by some of our more talented members.

New members include **Jim Lyman**, who is a builder and furniture maker, **Steve Gazes**, who is interested in scroll work and intarsia, **Tom Ciardullo** from Stony

Notes From the Editor

Mike Daum



Sharing newsletter editorial duties with Show co-chair responsibility, you probably know what my next words will be. The Show is in a few weeks, and we need YOUR projects. Projects from club members are the lifeblood of our annual Show. Because we have many new members, I will reiterate that the criteria for projects are, well, there are none.

The project(s) can be unfinished, a prototype, many years completed, and even exhibited previously. Just bring something to show our community that we have a strong and active club, not one with members who just want to be entertained at the meetings. It is up to you whether you want your work judged in the competition or not. That need not scare you. One new category for the judges panel will be for the NOVICE woodworker. If your work is honest and thoughtful, it will show quality. Skill level is not a factor. Once you make a project, you are no longer a beginner.

I have heard too many excuses made for not having enough time, shop in disarray, lack of tools, knowledge, and the like. There are 5 weekends left before the Show. Everyone who shows up for the March meeting is making the effort to attend. It is support of the club. Can we not make the same effort to build or clean up a project to exhibit April 5th and 6th?

We are not anywhere near the exhibit list we had in 2002. As exhibits manager, naturally I am concerned. I must stress that there are many members, myself included, who are willing to help out with whatever obstacle befalls you. Tools, shop space, ideas, designs, transportation – all shared by many. All you have to do is ask. To contact me, you can call (516)528-1426 or email me at twstudio@aol.com. Talk to others at the March meeting.



Notes From the Programming Committee

Bob Urso

No new developments to date with our grant program, we will keep you posted. Rich Macrae is the grant committee chairman.

MARCH 5TH MEETING: We had announced at the last meeting that Mac Simmons would do a talk on glazing. This had to be cancelled but we hope to be able to run a glazing workshop sometime in the future.

Our speaker for March will be Mario Rodriguez who kindly agreed to step in on short notice. Mario's topic will be veneering using yellow glue and a common household iron. This procedure works well for small projects and has been the topic of a past article in Fine Woodworking as well as a Taunton book on veneering. This is a nice technique to familiarize yourself with the working properties of veneers.

MARCH 8TH: Traditional Finishing workshop at the Barn. Presenter will be Joanne Campisi. Joanne was the speaker at our October meeting and several members requested this workshop. This will be a hands-on workshop. Attendees will have the opportunity to use various finishing materials including oils, polishes, dyes, waxes and glazes. Wood sample panels and finishing materials will be provided, as will lunch. Please try to sign up as soon as possible as materials and sample workpieces need to be secured. We will only have two days after the meeting to arrange for food and materials. Cost is \$35. Contact Bob Reimertz to sign up.

MARCH 22ND: Bus trip to the woodworkers' show in Saratoga Springs N.Y. This has been sold out. We had to secure a smaller bus because of low turnout. We are sorry for those who will miss this event.

Additionally this year we have been offered the opportunity to exhibit our pieces at the Saratoga Springs show. I will be going up on Friday and returning on Sunday and will bring and return any items members wish to exhibit. Naturally I will be limited in the size of the project. Small furniture or table displayed pieces only. Please take advantage of this opportunity if you can, it is a plus for both organizations. Please contact Bob Urso ASAP if interested as arrangements need to be confirmed.

APRIL 2ND MEETING: Due to the close proximity of this meeting to our show we will present a panel discussion at this meeting. We have been toying with this concept for

some time and this will be a good opportunity to explore this concept. Approximately 5-6 members proficient in various areas will form a panel and field questions and hopefully create a dialogue among our members. More information on this as it develops.

April 4th Show set-up

April 5&6th LIWC 8th Annual Show and Exhibition

Our show planning is coming along well. We are still a bit concerned about the members exhibits. Although last year was great, the numbers signed up for exhibiting this year are not what we would like, but there is still plenty of time. Lack of support in this area could ultimately lead to the failure of the show. After all the years of hard work establishing the show it would be ironic that lack of member participation could spell failure to the event.

The vendor area is over 80% full with a good variety of quality products. Please make every effort to support these vendors, it is important. If you do, they will return. If not, they will be unable to and we will not be able to maintain the quality of speakers at both the show and our monthly meetings.

The success of our past shows is beginning to show improvement in all aspects of club activities. The organization is well respected and well known.

MAY 7TH MEETING: Norm Roberts of Roberts Plywood

JUNE 4TH MEETING: Annual picnic and barbeque. Show winners award ceremony.

Future events: Garrett Hack will host a workshop on **October 4&5** along with an evening event on Friday the 3rd. Garrett has authored several books on hand planes and related subjects. Details as they develop.

Show Notes

For members planning to sell their projects in the Woodshop Gallery, please contact Dennis Taddeo at the March meeting.

Tools are needed for the Tool Garage Sale. Any item involving woodworking can be sold here. There is a 10% fee for selling it at the show. You do the pricing. Any item can be donated to the club and the proceeds will go to the club. You can bring in any large item as long as you can get it home if it does not sell. Call Steve Costello 631-427-8070 or Email Scostel@optionline.net

Ernie Conover Weekend

Bob Urso

Starting on Wednesday, February 5th, and through Sunday the 9th, the LIWC was fortunate to have Ernie Conover present as our meeting speaker and as the host to four days of seminars and workshops. Topics included lathe, bandsaw, and router workshops and a talk at our meeting on the balance between hand and power tools.

Ernie was staying at my home while here and arrived at my house about 5 pm on Wednesday afternoon after driving straight through from Ohio. That is about an 8 hour drive, but he seemed no worse the wear at our meeting.

The meeting featured a talk about why and when to use power tools vs. hand tools. Ernie loves his power tools (he has about 20 or more routers) but he stated there are times it is easier and more efficient to simply grab a hand tool than it is to set up a power tool. His talk was intertwined with an excellent slide show and a lively question and answer session. It was a fun and informative meeting. The attendance was one of the largest ever at a monthly meeting.

Shortly after Ernie arrived he received a call from home informing him that his father was gravely ill. There was a good chance that he would have to drive home before the weekend was over. Those at the workshops might have noticed the constant cell phone monitoring. His father's condition did stabilize a bit but when Ernie left on Sunday the prognosis was not good. We all hope that the outcome was positive and wish him and his family the best.

On Friday we had two lathe workshops in my shop, one during the day and one in the evening. Due to space restrictions these accommodated only 7 members at each session. I really enjoyed these sessions as I believe most of the attendees did. They were virtually a one on one event, the topics were tailored to the attendees and



having it in a shop setting allowed flexibility not usually available at the barn. I would like to see more of this smaller more focused workshop. If any member has the ability to host a small workshop let me know. We will explore the practicality of running smaller workshops tailored to member's facilities and matched to the desired topics. Time and dates could be mutually agreed to. I will begin to make some inquiries with available speakers as to times and fees. Cost will likely be a bit more than our usual \$35 fee. Interested?

The bandsaw workshop was scheduled for Friday, but what I have always been concerned about with winter events finally happened. We were snowed out. We tried to wait as long as possible to cancel and we likely waited too long, as some members were on their way. Once it was established that the machinery could not get to the barn we had no choice but to cancel. The only solution was to combine the lamp turning and the bandsaw





on Saturday. I decided to drive to the barn and post a notice on the door. There I found some hardy souls had arrived for their workshop. We decided to meet back at my shop and held an impromptu workshop for 8 members. This was Ernie's first snow day as a teacher. My wife (a teacher) tried to explain to Ernie that he didn't quit grasp the concept of a snow day (he worked). He took my bandsaw apart and put it back together, showed us some tricks to tuning up the saw, showed us how to re-sharpen a dull blade. He then showed us how to make a "quick and dirty" circle gauge. The most amazing part was that he didn't repeat any jokes, and this was his third group! This was one of my requirements, if I was to be attending all the seminars he had to have new joke material for each one, and he did except for one repeat. We checked.

The barn was accessible on Saturday and we proceeded to try to squeeze in both the colonial lamp turning and



the bandsaw workshops. We expected if everything went right we would finish up the lamp project by lunch. It took longer. Ernie had to repair part of the lamp and that set us back some. We did however learn some good repair techniques along the way. We may all get lucky and build a perfect project now and then, but we become true craftsmen when we learn how to correct mistakes. The now repaired, signed, and almost finished lamp was raffled off and won by Jim Macallum. Jim generously donated it back to the club to be used as a raffle prize for our show.

About mid afternoon we finally tackled the band saw. Time did not allow an in-depth look at the bandsaw, but Ernie covered the major aspects of setup, blade selection, troubleshooting, etc. A question and answer session completed a busy day. Ernie visited with two of his daughters in Brooklyn that night, and returned early Sunday morning for our router workshop.

This workshop concentrated primarily on router jigs and setups. We discussed the qualities of various jigs which Ernie compared to the Leigh jig he had brought along for the workshop. We discussed router types and preferences, setup, bit selection, etc. I observed that all router jigs, including my original \$29 Incra Jig, involve a learning curve. If you don't use them often enough you need to re-learn how to use them. It just takes a little less time for setup on the next go around. For me, I think I will concentrate on learning how to cut dovetails by hand unless I plan on a project with many drawers, and then I will invest in a new jig. The day ended with an informative question and answer session.

Overall it was a fun and informative week; the attendance for all the seminars was about 80 people. This was the third visit by Ernie to the LIWC. We consider him a good friend of the club and are looking forward to seeing him again in April at our show. Our members should consider attending his school, Conover Workshops in Ohio, if at all possible. Might be a good choice for your grant application. You can reach Ernie's school at <http://conoverworkshops.com>

For more pictures on Ernie Conover's weekend with the Club, click on the link below:

<http://liwoodworkers.org/woodrack/images/conover2003.pdf>

You're On The Right Track

Daryl Rosenblatt



Garrett Hack with Daryl Rosenblatt & Gabe Jaen

Gabe Jaen and I spent a very pleasant weekend in Manchester Connecticut, where the Connecticut Valley School of Woodworking is located. The course was Handplanes in the Workshop, taught by Garrett Hack, a contributing editor of *Fine Woodworking*, and the author of several excellent books on hand tools. The two days we spent could best be described as divided among these subjects:

1. Lectures
2. Hands-on experience
3. Facilities

Much of each day was spent with Garrett giving demonstrations, and imparting more information than I ever knew was important about planes. I wish I did know this information, however, since the entire weekend was filled with those "Duh" moments, when suddenly, things became obvious and clear.

Garrett is an excellent speaker. You could tell he not only knows his subject matter (something all club members will find out in October, by the way), but he enjoys sharing his knowledge with others.

The opening hours were spent watching, listening and learning. Like all hand tools, planes have to start out sharp and tuned. He started out with the statement we expect for seasoned hand tool pros, "My definition of sharp is probably a lot different from yours." When he asked for a blade someone brought up, another student offered his, saying, "It's sharp, I just sharpened it. Except for the back, and that it's crooked." Garrett then showed us his definition of sharp: not if you can shave with it, but if it can take a clean shaving in pine end grain. That's a definition that makes sense: after all, we are using the tool to cut wood with, not our skin.

He also passed around a shoulder joint he quickly made, which looked pretty good to me. Gabe sat next to me, and we both thought it looked fine. Two passes with a sharp shoulder plane, and we found out what Garrett really thought was sharp. The joint was perfect, no gaps.

I'm not going to review an entire two day course here, but I will get into the next phase: hands-on experience. We all learned what sharp meant. Not by watching a master at work. We've all done that. We've seen the ease with which a Frank Klausz sharpens a blade beyond what we could imagine. We had to sit there and actually do it. Over and over. Learning and relearning what a flat back looks like, feels like. How to hold a blade, how hard to press, (in truth, one of the secrets is how hard to NOT press). Suddenly, Gabe and I had on our hands the two sharpest blades we ever did ourselves. The great part is we know we can duplicate this feat. Through the entire process, Garrett kept assuring us we were on the right track. Finally, I got a "this is pretty good."

We learned how to adjust the cap iron, how and where to smooth a plane, both cast iron and wood. The differences between a high angle and low angle plane. We finally understood that some of the things we read or heard about, like body position, is unimportant. If your planes are tuned right, it really doesn't matter how you stand. We also learned that you cannot own too many planes. The key to making a handplane work is to understand that each one has a personality, and that each one, once adjusted for a specific task, is best left adjusted for that job. So you might have one smoothing plane with a larger throat to do some quick smoothing work, another set to take the finest shaving, another with a higher angle for tricky grain. Once you change the adjustment, you have to go back to square one.

A well tuned plane will give you a finish you cannot match with any other tool. Garrett showed just how easy it is to get a polished surface with the trickiest curly maple. A few passes with the smoothing plane, and this impossible to plane wood became as smooth as glass, with no tearout. The conventional way is to plane if you can, get out the sander, sand through a bunch of grits, wet the wood down to raise the grain, then sand again when the wood dries, to take the raised grain out. I guess I forgot to mention that a properly planed surface **DOES NOT RAISE THE GRAIN**. The hand-

plane is the symbol of our club, and almost every professional woodworker uses a picture of one on his or her business card. I've met any number of woodworkers who love the sound and feel of the plane (if only they could get it to work right), but have never met a woodworker yet who loved to sand, or has as their logo, a Porter Cable 333 random orbit sander.

Another thing Garrett demonstrated was a task most of us have attempted, sometimes many times: gluing up panels. Garrett planed down some walnut, then demonstrated how to prepare the stock for gluing up. He showed how to correct the flaws in each panel easily and quickly so you can get to making that larger panel quickly. He also demonstrated a technique I've been told our own John Keane showed the club.

Ladies and gentlemen, woodworkers of all ages, may I present to you the "wiping hide joint." (This is the point where every woodworker should applaud.)

We've all seen jigs and clamps in catalogues, some to hold panels vertically, some horizontally. I use pipe clamps. You sort of get the boards together, and clamp, then reclamp, change the pressure, move the boards around, until finally, it's near what you want (except for the big sanding job you have, of course). Plus, waiting hours for the glue to dry, not to mention probably stopping all work if your shop is the same size as mine, since you now have this giant panel, made bigger with all the clamps around it. Or you can plane your edges right (maybe 30 seconds), check with a straightedge, readjust the blade angle in the throat, and fix what you planed (another 30 seconds, recheck, maybe add another 30 seconds to finish the process. Now take some hide glue on one surface. Then wipe the second board over the first and set it where you want it. Let the glue set for maybe a minute until it cools, then move on. No fuss, no clamps, no waiting. *(if you didn't applaud before, you probably should now).*

There was so much more, I cannot begin to write it all down. I do want to speak a bit about the facilities though. Manchester Connecticut is less than 2 ½ hours from Long Island (it's a bit beyond Hartford, and one block from the highway). It's in the back of what we've been told is the largest Woodcraft Store in New England. It's a wonderful store, filled with every high quality tool you could want, from Delta and Jet power tools, to Lie Nielsen planes and Hock Blades. They house a staff of people who really know what they are talking about. The school has two large, well lit rooms, with all the equipment needed for the task at hand. Bob Van Dyke, who runs the school, was also available

to help out and answer questions. He is very knowledgeable, and was a great asset to the students. I took home copies of the school's schedule, and will be passing them out at the March meeting. When Gabe and I left for home, we were both jealous that our area, the largest metropolitan area in the United States, does not have a store or a school of that caliber.

I would write more, but I have a lot of planes and blades to take care of.

For more photos of the class, click below:
<http://liwoodworkers.org/woodrack/images/hackclass.pdf>

The Connecticut Valley School of Woodworking is available at:
<http://schoolofwoodworking.com>

The Stone Cold Truth

Daryl Rosenblatt

I've tried them all: Ceramics, waterstones, sandpaper. At last year's Round Robin, I gave a demonstration of what I thought the best sharpening system was; sandpaper on a granite plate. I liked the ease of use, and after trying them, I was glad to exchange my King Japanese waterstones for this cheaper, lower tech, yet elegant method. I still think there is a place for sandpaper, but only up to a point. For honing, nothing beats the new Shapton Stones.

Shapton Stones are manufactured in Japan, and are a ceramic based "almost" waterstone. I say almost, because unlike most waterstones, you cannot soak a Shapton Stone without ruining it. Shaptons cut more aggressively than any other product I have ever tried. As a result, they cut faster and more easily. Using them cuts sharpening time in half. Since I hate sharpening, but like sharp tools, it's a combination I am happy to live with.

Try this hybrid method for your blades. For lapping and basic grinding, start off with 220 grit sandpaper on either 1/2" plate glass or machined granite plate. The best lubricant is probably lamp oil, which is basically kerosene with some fragrance added. Water can be used, but the lamp oil is just a bit better, and causes less chance for rust. Use paper in the following order: 220, 320, 400, 600 grit.

Then you get out the Shapton Stones, starting with either 1000 or 2000 grit, and a quick spray of water. Some easy light strokes just to get a burr on the blade, then go to 5000 grit. Repeat for a slightly larger burr and move on to the 8000 grit stone. After that stone (maybe 10 strokes per stone by the way), you can then stroke the back of the blade, to eliminate the wire edge for good. That's it.

Shapton also makes a lapping plate and special powder to keep the stones flat. Bernie Hunt raved about them, but I thought he was just into some new fad. At least I thought that until I tried them myself. Now I think Bernie might have even underrated them.

Shapton Stones will be available at our show, at Harrelson Stanley's booth (Hirade America), where he sells Japanese tools. No, this is not an ad, just a review. I am recommending that club members do patronize the vendors who come to our show though.



The January 25th Scrollsaw Workshop was held at the barn, led by Alain Tiercy and Charlie Felsen, Alain is not in these pictures, because he was busy in his other official capacity as Scrollsaw Workshop photographer. For more photos of the workshop, click on:

<http://liwoodworkers.org/woodrack/images/scrollsaw2003.pdf>



Secretary's Report from page 3

Brook, who is interested in furniture making, **Todd Jette**, who is an instructor and tool lecturer at Home Depot, **Nick Connolly** from Selden, **Elliott Silverman**, who is into recovery and repair of furniture from Melville, and finally **Peter Profeta**, who is from Huntington and is the manager of a Woodworker's Warehouse. We welcome them all and are looking forward to sharing common interests with them.

For Show and Tell, **Dennis Taddeo** presented a toy truck which was very detailed, **Gene Kelly** showed a tool carrier, **Tom Devaney** brought "the ultimate crosscutting sled" and new member Steve Gazes showed us a sample of his intarsia work of a dog which was passed around for the members to see. Lots of "Oohs and Ahhs"!

Joe Bottigliere indicated that there are 165 members in good standing and there were seventy some odd members who did not renew and we hope that they do so. Any members who have not paid their dues will not be receiving the March newsletter.

Jim Clancy indicated that he would need some tools for the toy workshop at the show which would include two scroll saws, two or three table top drill presses, a chop saw, a table saw, and a shop vac. He also mentioned that he had plans ready for the toys that would be handed out to children at the show. Anyone that can help Jim with his needs please contact him at our meeting.

Notes From the Editor from page 3

With such dignitaries speaking and judging at our show, it would prove an embarrassment for the club if we couldn't show them what they really want to see. Our work. They will be more than willing to provide ideas and constructive feedback if you ask them. Therein lies the great opportunity I feel we don't take advantage of. Every good woodworker has the potential to become a great woodworker. To raise the bar, you need to know where to improve. Who better to explain how than the likes of Frank, Ian, Ernie, Mario, Strother, Aimee, and others?

I trust I will be bombarded with project entries at the March meeting. Hope to see you there!

HELP WANTED: Richie from Dynamite Tool is seeking two (or more) club members to demonstrate tools at the show in April. He is asking for a turner in the JET tool booth, and a scroller in the Dewalt tool booth. If interested, please contact **Bob Urso at the meeting or call him at (631)724-4625.**

The Evolution of Carbide-Tipped Saw Blades

By Bill

In order to understand carbide-tipped (CT) saw blades, one has to go back to the time when only steel saw blades existed. Any segmented piece of steel or disk will suffice to cut a piece of wood in half if the quality of the cut is negligible, or if the time and energy it takes to do it is of no consideration.

Imagine holding a bunch of straws in your fist, and you can visualize the cells in a piece of wood. It's easy to take a scissors and crosscut them, yet it's not so easy to cut them along their length (rip cut). The scissors get tangled between the straws or stringy fibers. Ripping takes 3 - 5 times the power than does crosscutting. Ripping handsaws accomplish this task by having fewer teeth, deep gullets, square tooth grind (or swaged) with a very aggressive hook (or angle) and a heavy set. Crosscutting handsaws have more teeth, shallower gullets, and alternated pointed teeth with a less aggressive hook and set.

The rip handsaw blade, with its square grind, plows through the fibers of the wood in a straight line. If you use a crosscut blade, with its alternate bevel grind (ATB) to rip wood, its points will take the path of least resistance and wander into the cell's (or straws) hollow centers, separations, and stringy fibers as it advances while the stiff blade body struggles to stay straight.

Using a rip handsaw blade to crosscut takes a lot more energy and makes a very rough cut. The crosscutting blade (with its alternating points) however, when crosscutting, snips the fibers (or straws) and stringy materials. Both saws need to have their teeth set to provide clearance for the blade body to reduce binding of the blade. The cut kerf has to be wider than the saw body. A steel circular saw blade has to follow the same principles as a hand saw.

Rip blades usually have 20- 30 square teeth and deep gullets to remove large crescent-shaped chips. The hook (about 30 degrees), is very aggressive. Our example is a

10" diameter blade. The blade is designed to be all the way up on the table so that just a few teeth are in the wood at any one time and the 30 degree angle is cutting down on the table, with less chance of kickback. The more teeth in the wood, the more resistance in the cut, and greater the chance of kickback. However, for safety's sake, having the blade all the way up is more dangerous and exaggerated moves with your hands above the blade should not be practiced. Perhaps a compromise in the height of the blade should be used. But whatever you are cutting, the minimum height of the blade should be ¼" above the gullets exposed to carry away the chips.

Before you rip a piece of wood, it is stable or has reached an equilibrium of the different stresses in the wood. It could be straight, crooked, cupped, have a wind or whatever. That's why it's that shape, but the point is it is in balance. Once you rip it, you disturb that balance and the wood changes shape. The kerf can close together and pinch the blade, or spread out against the fence. Both can cause a kickback. That's why you need a heavy set and a spreader (splitter) behind the blade. Ripped boards should always be jointed. If a rip blade had many teeth, each tooth would cut a small chip and it be cut many more times, causing friction.

Crosscut blades usually have about 40 to 100 teeth, depending on the quality of the cut. Remember we are referring to 10" diameter blades. They have small gullets with an average of a 10 degree hook. They have alternate top bevels or points to snip the fibers of the wood. It is not necessary to have a very heavy set, because in crosscutting you usually don't disturb the balance of the wood; this is usually a finish cut.

Combination blades usually have 40 to 55 teeth. Four alternate top bevel teeth with about a 10 degree hook with small gullets followed by a deep gullet and a square raker tooth or rip tooth, about 1/32" shorter than the ATB teeth. The ATB teeth each take away ½ a chip, the raker takes away a full chip and clears away the sawdust. If you were using it to groove-plow or dado, it

leaves a flat bottom. If you wanted to leave one blade in the saw, the combination blade would be a good choice, because it can rip and crosscut.

Hollow ground blades are like combination blade, but with no set. That's why their cut is very fine. The body of the saw is tapered down from the rim to the arbor hole to get clearance. It is designed to be fully exposed to maintain clearance. This is an extremely dangerous blade. Kickback is very common. If you have one, get rid of it and don't give it to anyone.

Plywood blades have many teeth, as many as 250 with tiny gullets. They are meant to cut thin plywood, or thin plastic.

Thin rim blades are like plywood blades. This blade is ground very thin, and it is meant to cut very thin materials to stop flutter and to cut very thin exotic materials to reduce waste. It should only be used to cut up to 9" in length or it will overheat. Good steel blades have high steel and high carbon content.

Because of the shortage of forests in Europe, substitutes for lumber had to be used. Plywood, manufactured boards or panels like particle board, MDF, etc. became a necessity. The glues and binders in these boards were so abrasive, a steel blade dulled very rapidly. A new blade had to be invented to cut these materials.

CARBIDE TIPPED BLADES

This new great invention in nothing more than another great old invention, when indigenous peoples started putting stones or steel points on their wood arrows. Carbide is very resistant to abrasive materials. A carbide-tipped (CT) blade can stay sharp 50 times longer than a steel blade. However, carbide-tipped blades must still follow the same principles of hand saws and steel circular saw blades. Setting of the teeth is not necessary because the carbide teeth are wider than the plate of the blade. The plate of the carbide blade is usually heavier than that of a steel blade.

When CT blades first came out, the most popular blade was a 10" 60 tooth ATB blade. The cost of blades was about a dollar a tooth. Because it stayed sharp for so long, it was never taken out of the saw. This was not doing the saw justice. Remember that CB blades still have to follow the same principles as steel blades, and should be changed with the application.

Carbide is made in various densities as follows; C-1, C-2, C-3, C-4. Some manufacturers use different letters. The lower numbers are softer and break down faster than the higher numbers, but are more elastic and resilient than the higher numbers, which are denser but more likely to shatter. For ripping, you would use a lower number because ripping lumber is not as abrasive as, say particle board, but in ripping (usually at faster feeds) you could suddenly hit a hard knot that might shatter a more dense carbide. Ripping or crosscutting particle board, you would use a denser carbide or higher number carbide because it will stay sharper in the very dense and abrasive material. This is true for a material consistent in density where you wouldn't worry about hitting a hard knot. There is always a trade-off, but the manufacturer decides which carbide is used for specific blades. Most carbide blades are C-2. There are several types of grinding or CB blades:

Square – for ripping wood or aluminum.

Alternate Top Bevel (ATB) – for crosscutting, general use, and soft materials. They have points going in opposite directions on every other tooth.

Combination – which has 4 alternate top bevel teeth followed by a square raker

Triple Chip Grind (TCG) – which has a square tooth, followed by a square tooth with the corners knocked off at 45 degrees. TCG is used almost exclusively on manufactured boards for cleaner cuts. A low hook around 5 degrees.

One should have one each of the following:

20-30 tooth rip blade

60-80 tooth TCG blade for crosscutting

40 tooth ATB grind or combo blade for both

ripping and crosscutting

The 40 tooth ATB blade can do 90% of your work and stay on your saw indefinitely, unless you are doing production. CB dado blades and groovers follow the same principles as steel blades.

It's generally easy to get a good clean cut on the top side of your workpiece. In order to get a clean cut on the bottom, try lowering the blade hook to 5 degrees or less. Use a wooden zero clearance throat plate, raise or lower (mostly lower) the blade, use the largest possible blade stiffener, and slow the feed rate.

Almost all of the sawing is done with a feed cut (going into the blade). A radial arm saw operates on a climb cut when crosscutting. The blade on a radial arm saw should have a -3 to +5 degree hook to keep the blade from climbing over the material instead of cutting it. Manufacturer's materials usually tell you what blade is good for what.

Years ago blades would lose their tips, but with new methods, that seldom happens anymore. If you have a blade that has too much run out, sometimes moving it around the arbor will cancel the runout, if the arbor is also out. Blade stiffeners greatly straighten blades that are not straight and scream. But the best method is to have the manufacturer re-tension the blade for about \$15. Missing or chipped teeth can usually be replaced for about \$5 per tooth. If a blade needs more than 5 teeth replaced, discard it as the plate is probably tired.

Never throw blades on the saw table or bounce them together. Never change saw blades by placing a screwdriver against the teeth. This could fracture the fragile carbide. It's a very good idea to purchase a small hand-held scope to check the sharpness of your blade. You can tell just by looking at it. The carbide breaks down as it gets dull and looks like the broken edge of a concrete stoop under the scope. With this tool, you can also check a new blade, or see how good your sharpener is.

One way to clean gum and pitch from a saw blade is with ammonia in a beer tray and cleaning the teeth with a toothbrush after soaking for a while. Afterwards, clean up with paint thinner. Always place your table saw so that you can see someone entering while you operate it. Always wear eye protection, and if you need reading glasses, get a pair that gives you the best vision about 3 feet or arms length. This is where the blade is in relation to your body.

The size of dado blades or groovers should be 4" less than the capacity of the saw. If the capacity is 10", use 6" dado blades. When you install dado blades, make sure that the teeth of the chippers go into the gullets of the neighboring chipper or outside blades.

Beginner or student CB blades are designed for safety. They have as few as 8 teeth with standard gullets. They have high shoulders behind the teeth and are about 3" long so that you cannot over feed the saw and cause a kickback. Newer professional blades have small shoulders and gullets after the teeth to keep from over feeding the material and to help to stabilize the blade.

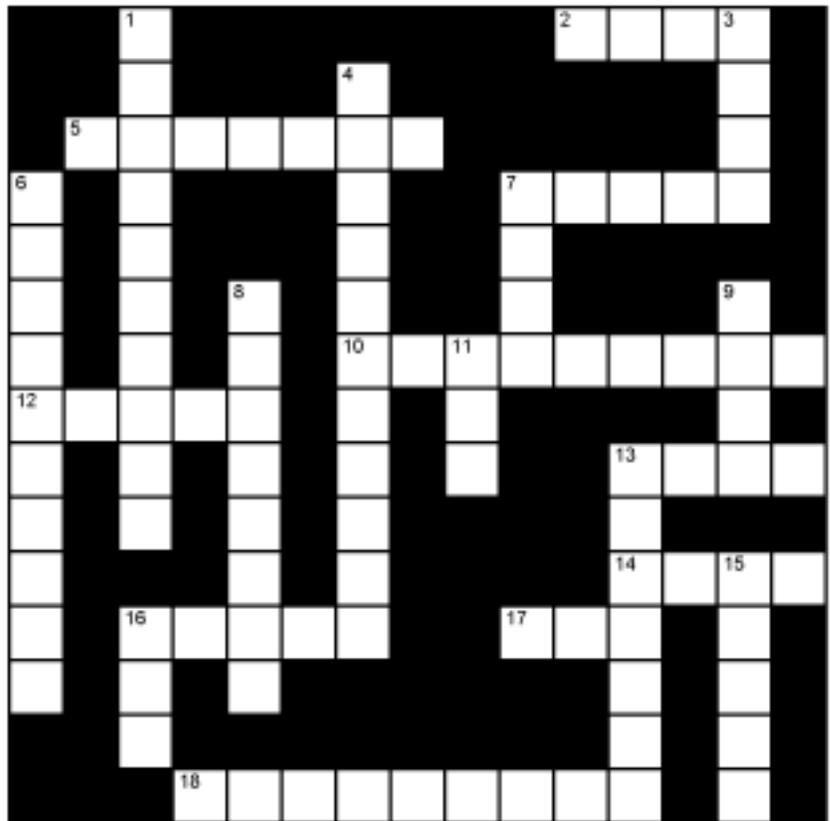
Kickback is always talked about because of its danger and frequency. It is generally predictable and avoidable. It is dangerous not only because the board violently gets thrown back at you, but also because it removes the piece of wood that is between the blade and your fingers, and you are always pushing towards the blade. There is the danger of your hand coming in contact with the blade.

There are many other types of CB blades, but for the average woodworker a 40 tooth combo blade is all that's necessary. Try to buy the best blades you can afford. Find a good, reliable sharpener. Industry is now using diamond-tipped blades, which stay sharp 50 times longer than carbide. And don't throw out your old steel blades yet. They're still good to use when you think you might encounter a nail in the board.

W C
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Wood Technology

Mike Daum



Answers to February



Across

- 2. tree tissue outside the cambium, living and dead
- 5. layer of cells which form new bark and wood cells
- 7. deviation of end to end straightness along the edge of a board (banana board), sighted with face of board on top.
- 10. term for first-formed growth rings
- 12. warp determined by tapping the four corners of a board on a flat surface
- 13. another word for a tree trunk
- 14. the soft, spongy tissue at the center of tree stems, branches, and twigs

- 16. the upper portion of a tree; with branches, leaves
- 17. warp seen in lengthwise flatness of a board, sighted with narrow edge on top
- 18. in most species, the darker portion of wood; once considered sapwood

Down

- 1. diagonal growth rings in a square or rectangular board may cause this drying affect
- 3. board crook due to a knot
- 4. most stable form of board, growth rings perpendicular to the face
- 6. added to the stem of a tree in an annual growth period (2 words)

- 7. basic structural element of wood
- 8. formed after earlywood; smaller cells, higher density
- 9. portion of tree suitable for timber or veneering
- 11. cell groups radially (horizontally) extended outward from the pith
- 13. usually lighter in color than heartwood; the living portion of the tree
- 15. also known as 9 down; the main stem of a tree
- 16. deviation from flatness across the width of a board; the end grain can determine the direction of warp

The Marketplace



Daryl Rosenblatt
DarylRos@AOL.com or at the club meetings

Inca 10" Jointer/Thickness Planer 220V
Complete with base cabinet, mobile base and power feeder (Grizzly Baby Feeder).

The Inca is a Swiss/French made machine with Tersa 3 knife cutterhead. A Tersa Cutterhead means the blades can be changed in under 1 minute (additional blades are available from Garrett Wade.

\$2,000



Jet 610 CFM dust collector with fine mesh filter bags.

\$100



Six 24" x 72" infrared ceiling panels. Although made for a lay-in type of hung ceiling, I have had them mounted on a plaster ceiling, simply screwing them into the ceiling. They are very light, but generate a lot of direct heat. Complete with thermostat. They require 220V.

Bob Urso (631) 724-4625 or through the club website

Performax 25 x 2 Dual Drum Sander with Power Feed; 5 HP 220 V Leeson Motor. Machine has "low mileage" Asking \$2,000 firm.

Brian Hayward (631) 549-9096

Ryobi Drum sander 16-32 inch, comes with some sanding belts
\$200