

THE CHARLOTTE SAWDUST

The Official Journal of
The Charlotte Woodworker's Association

www.charlottewoodworkers.org

Small Talk

It's about the end of another year in the woodworking club. As I finish another newsletter I reflect back on a year in which I have probably learned more than anyone else with the articles that I have included. I look forward to next year as I move further into retirement and can enjoy the knowledge that I have just begun to gain and spend much more time in woodworking.

I hope that a new group of officers will take the reins and bring some new ideas into the meetings, newsletters, activities and programs. Don't feel shy that you may not know as much about woodworking as the oldtimers. I certainly have just touched the surface and still have the (##@+*#) comments everytime I make one of those stupid mistakes on my projects (which we all do).

I hope you all will come to the Christmas event at the **Ole Smokehouse #1** restaurant at 1513 Montford Drive in Charlotte at 6:30 on December 11th for a great bar-b-que dinner.

Please let us know at this weeks meeting or email or phone me before the 8th of December so that we can call the restaurant for a head count.

Remember to bring a small woodworking item for a drawing. This is fun so don't miss it.

Sincerely.

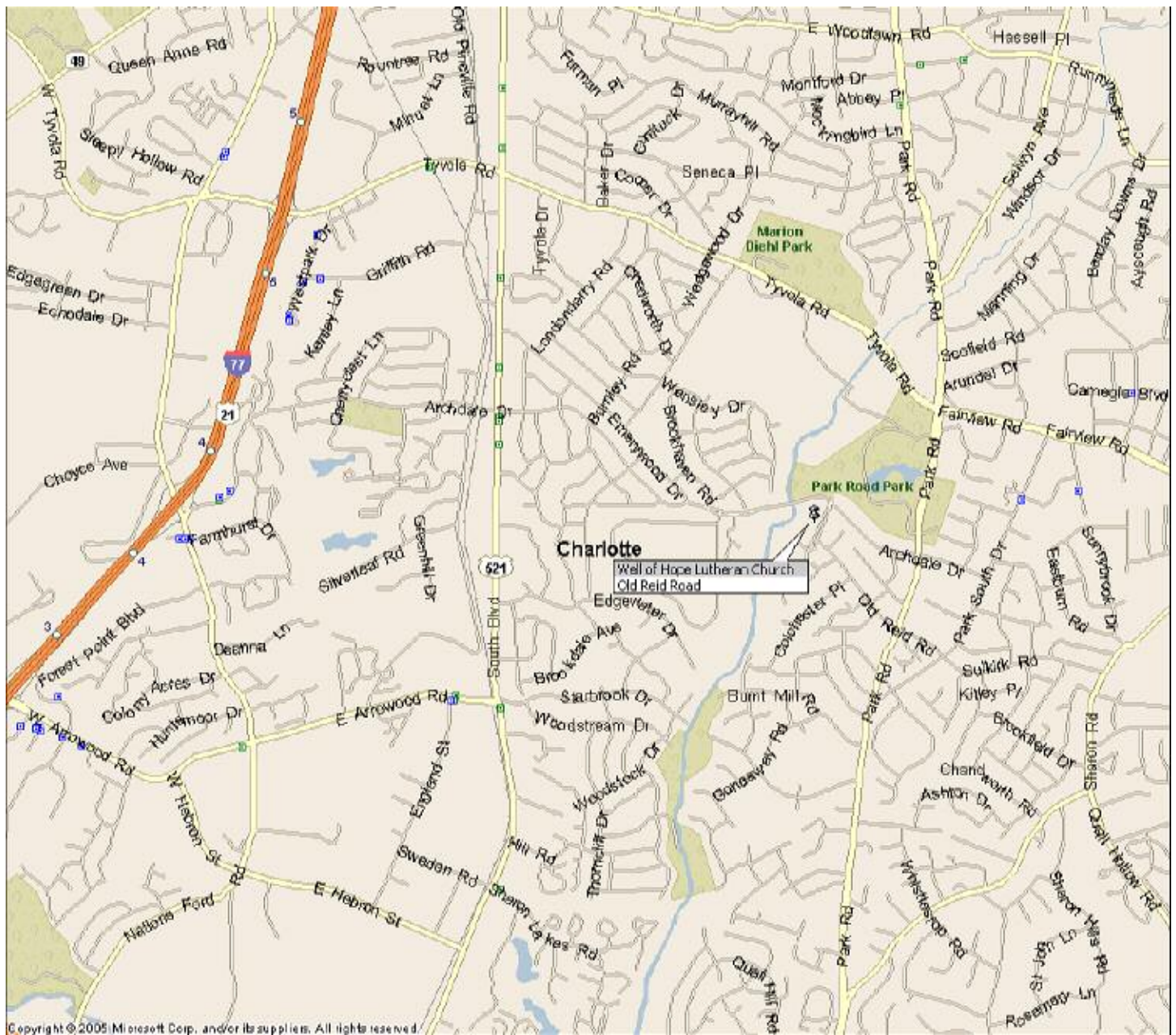
Mike Dyer
mdyer@adwarchitects.com
(704) 379-1919 days
(704) 814-9580 evening

November Program

Unknown at time of printing.

Meeting Time

Meetings of the Charlotte Woodworker's Association are held the third **Tuesday** of each month, except for December. Meeting is to be held at the Well of Hope Lutheran Church, 6400 Old Reid Road, Charlotte, NC (just off Archdale Drive).



Following a social and refreshment time that starts at 5:30pm, our meetings start at 6:30pm. Get to the meeting early and get to know your fellow woodworking enthusiasts. This will be our first time at our new meeting place but we hope that it will become a great home for us.

Write an article for Sawdust (thanks for all the help from those that have)

Please consider writing an article for The Sawdust, this is your newsletter what do you want from it? What do you want to share with your fellow woodworkers? Everyone likes to share, share your successes, failures, and mistakes, have fun with it and share with others at the same time. Contact Mike Dyer @ secretary@charlottewoodworkers.org or call (704) 379-1919 days or (704) 814-9580 evenings.

CWA Mentor Program

The following members have offered their help to anyone interested in learning skills or new techniques in their area of interest. Contact each person to arrange times to get together if interested.

Name	Area of Interest	Phone	Email
Bill Golden	Shopsmith & Accessories	704.519.6826	popstoyshop@juno.com
Dwight Hartsell	Woodturning	704.598.6029	woodwight@aol.com
Wayne Manahan	Sharpening	704.786.0768	wmanahan@vnet.net

Classified Section

\$\$ For Sale \$\$

Contact me if you have any tools, wood or services for sale. This section is offered for free.

Shopping for Saw Blades

By Charles Self

The world's greatest table saw can't give you good work when it has a poor blade bolted to its arbor. The table saw (as well as the miter saw and radial arm saw) sees its single greatest improvement in work results when you install a properly sharpened, top quality blade suited to the job you are getting ready to do.

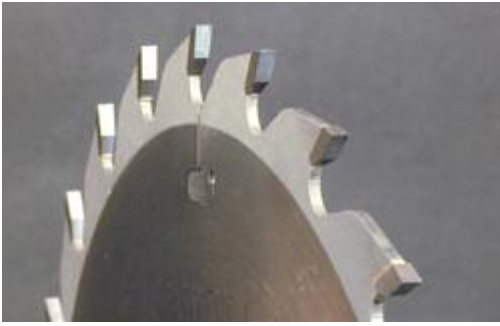
A rough and ready blade produces rough and ready work. What is suitable for cutting framing lumber is totally unsuitable for general woodshop use, and even less suitable for fine cabinetry or furniture building.

Select the best blade you can afford, keep it clean and sharp, and use it only for those jobs for which it was designed.

Saw Blade Types

It may look like there is a saw blade type for almost every piece of wood to be cut, but the selection chore isn't quite that bad. For many woodworkers, a top quality general or combination blade can do all that is needed. For others, a blade designed and made for each job is a better bet.

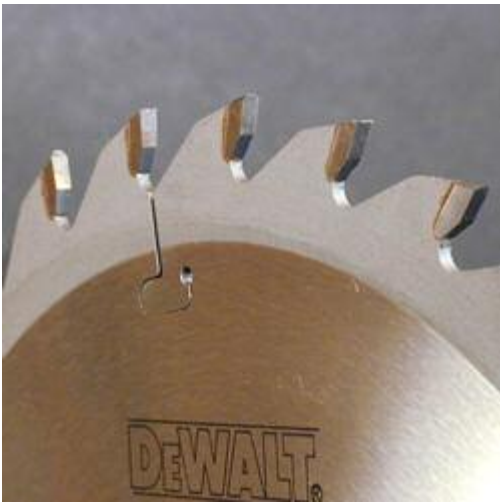
The basic blade division starts with rip and crosscut blades. A rip blade cuts with the wood grain, often removing a great deal of wood with long cuts. A crosscut blade is designed to cut across the grain, most often in shorter miter cuts.



DW7612 Fast Ripping Blade is ideal for fast cuts in natural wood. Flat-top grind, aggressive hook and low tooth count provide fast and easy cutting in thick stock without burning.

Rip Blades for Every Woodworker

For most woodworkers, a rip blade and a crosscut blade for the table saw suffice. Rip blades should produce a clean, reasonably smooth, but not slick, finish cut for glue joints. These blades usually have 24 teeth in their 10" size and are used exclusively on table saws. Gullets are large and deep, which leave plenty of room for the large amounts of cut material to escape from the kerf. The hook angle on the fast ripping blade is an aggressive 20 degrees, and a flat top grind (FTG) chisels wood out along the grain.



Fast Ripping Blade with its Triple Chip Grind reduces saw marks in the workpiece.

Rip blades are essential for a table saw and should be chosen with great care. The thin kerf blade is a consideration here, as the power needed to rip is great and lower horsepower table saws can benefit from a thin kerf (as low as .079", compared to a standard .120"). The downside to some thin kerf blades is that they can more easily deflect and warp from heat because of their thinner plate (plate thickness may be as little as .055", as compared to a standard plate that is usually about .087"). Some thin kerf blades use an industrial anti-stick coating on this blade body to reduce friction and increase blade life.

Woodworkers sometimes need a rip blade to produce a smoother rip cut. For these situations, finish rip blades are a good bet. These blades have more teeth (30 in a 10") and a less aggressive hook for glue-line applications. Often finish rip blades will offer a triple-chip grind (TCG) instead of the FTG to reduce saw marks and extend blade life. The higher tooth-count rip blades are typically recommended for cutting hardwood-laminated plywood, veneers and laminates.

Across the Grain: Crosscut Blades

Crosscut blades vary widely in tooth number, though most have 60 to 80 teeth in the most popular 10" size. Most crosscut blades are offered with an alternate top bevel (ATB) tooth grind since this grind works best in cutting against the wood grain. When using a crosscut blade on a table saw, a hook angle in the +10 degree range allows a fast feed without creating overfeed problems.

Since the cutting action of a slide miter saw is markedly different than with a table saw (or fixed head miter saw), it is important to select a blade for a slide miter that has a less aggressive hook angle. Slide compound miter saws, as well as radial arm saws, require a blade with a hook angle of -5 degrees to 0 degrees. Both types of saw have a tendency to overfeed, which result in torn up work surfaces. In some cases, especially with the radial arm saw, this type of overfeed can create potentially dangerous situations for the woodworker. For these tools, a blade with a less aggressive hook angle is a big help in reducing such problems.



60 Fine Crosscut Blades use a High Alternate Top Bevel Tooth grind to produce mirror smooth finishes.

Single Blades for the Small Shop

For some woodworkers, “one size fits all” may apply when it comes to saw blade selection. Combination and general purpose blades are similar approaches to designing a single blade to both rip and crosscut well enough to please even persnickety woodworkers. Some of the best ones are amazingly good at both jobs, and can save the small shop woodworker a lot of time that might otherwise be lost in changing blades.

Combination blades feature a series of four tips with small gullets, followed by one tip with a deep gullet. The deep gullet is necessary to clean out the kerf on rip cuts, while the small gullets between cutting tips helps produce a smooth cut. The alternate top bevel plus raker (ATB + R) grind is a pair of alternately beveled tips, followed by a flat raker tip. A 15 degree hook makes the blade suitable for both ripping and crosscutting on a table saw, although ripping is limited to relatively slow feeds and woods 2" thick and under.



Combination Blades are ideal for small cabinet shops when minimal blade changes are desired.

General-purpose blades are super-useful and seldom changed cutters. The 10" general-purpose style blade has 40-50 teeth, an ATB grind, and a fairly aggressive 15 degree hook on the tip (and a 15 degree bevel on the tip, too, which is a lot more aggressive than the 10 degrees on a combination blade). Gullets are deep, almost as deep as on a rip blade, and allow for higher feed speeds during rips. My personal ideal for an all-around blade is closer to the general purpose blade than with any other.

Manufactured Wood Products Blades

Many woodworkers use melamine, which has been laminated to particle board for cabinet interiors, shop surfaces and in other places. It is easy to clean and very durable. It is also abrasive and rough on saw blades. The particle board interior uses glues that are abrasive, and the melamine itself is abrasive. The melamine also chips like crazy if extreme care and the right blade isn't used.



The High Alternate Tooth Bevel of a melamine and veneer blade provides chip-free cutting on both top and bottom surfaces of melamines and veneers.

A melamine blade is a good choice if you expect to cut a lot of this material. A blade that works well in melamine also works well with standard wood veneers on plywood. Important considerations here are ease of cutting, finish of the entire cut surface, and reduction or elimination of chip-out in the melamine coating or the veneer.

The blades that best handle melamine and veneer come in 60 and 80 tooth versions (the more teeth, the smoother the cut, but also the shallower that cut must be). These blades use an H-ATB (High Alternate Top Bevel) grind to slice through the material. The hook angle is 0 degrees, and the gullet is small. When combined on a .087" saw plate these features give a smooth almost slick cut with minimal, if any, chip-out.

Laminate Blades

The thicker final material of factory-installed laminates, along with a different chemical make-up of the plastic, means we need a different blade than that used for melamine (though melamine blades will work decently in a short-term pinch).



Laminate Blades use a Triple-Chip Grind to provide long cutting life in laminates, particle board and MDF.

The ATB tooth grind changes to a TCG (triple chip grind). One tooth is ground flat on top, while the next tooth (and the one preceding) is ground with an angle at each edge and a flat center, which delivers a lower edge tear out. Another important benefit of this tooth design is that the blade will last longer since there are no sharp angles on the tooth (like an ATB grind) to break or chip. A 10-degree hook angle is used to reduce force needed to feed wood into the blade. These blades work very well with table saws, and excel at cutting MDF (medium density fiberboard), which is often a substrate (base material) for laminates. The 10-degree hook angle makes them too aggressive to work well with slide miter saws.

Slide Miter Saw Blades



This board was cross cut with a 96-tooth Fine Cross Cut Blade on a Sliding Compound Miter Saw.

A specifically designed blade for the power miter box may also be needed. For woodworking, a glass smooth cut is a desirable characteristic when making crosscuts with a sliding miter saw. There are a number of blades today that produce such cuts. Most often, these blades have a -5 degree hook angle, very small gullets and a very large number of teeth. Generally, the bigger the blade, the greater the need for the negative hook, which helps keep feeds under control. In addition to the negative hook angle, look for at least 72 or 60 teeth (12", and 10" respectively). Tooth count may rise to 96 in 12" slide miter saw blades, and 80 in 10" blades. The bevel (side-to-side) angle on the ATB tips is 20 degrees, making an HATB, or high alternate tip bevel for clean cuts.

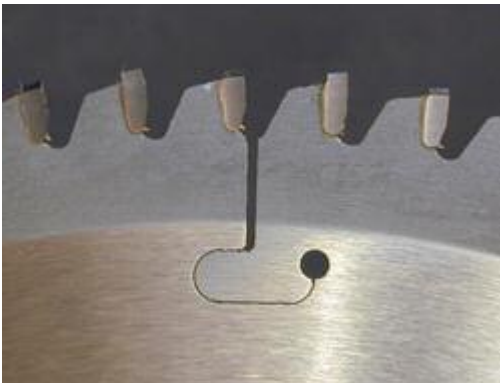
Other Features To Find

Today, carbide is nearly ubiquitous, though there are some times when it is best to use a blade that doesn't have carbide tips. When cutting wood that might have metal inclusions, whether nails, bullets or other items, a relatively cheap non-carbide blade is a much better possible sacrifice than is your top-of-the-line rip blade.

When selecting carbide tipped saw blades, look carefully at the size of the tips. The tips must have enough material to allow multiple re-sharpenings before they're beyond help.

Look for C3 or C4 carbide in the tips. These are super fine micro grain carbide that takes, as well as holds, a very sharp edge. C4 is used only in premium blades.

Sharpening should be carried out with grits from 400 to 600, depending on blade quality (the finer the grit—600—the smoother the cut). Get to know a reputable saw sharpening shop in your area, and your blades will last a long time.



Expansion slots in the blade are laser cut and reduce vibration and noise.

Expansion slots in the blade body serve to prevent warping problems that can happen as the blade heats up from cutting friction.

All premium woodworking blades on the market today feature laser cut plates.

Blade Care

Compared to the steel-tooth saw blades of the past, the modern carbide-tipped saw blade doesn't take a whole lot of care, and doesn't require sharpening very often (intervals between sharpening with carbide may be as much as 30 or 40 times greater than those with steel blades). Most saw blades will withstand an amazing amount of on-saw abuse (too fast feed, too slow feed, green wood, pressure treated wood, wood thicker than the blade is designed for, use when gummed, and on).

That said, it makes sense to take care of your saw blades, because your project results depend in large part on how well and accurately they cut. There are really very few rules.

1. Do not drop blades. Sounds almost simple-minded, but it is very important. Even a short drop onto a benchtop from shoulder or eye level can ruin a blade.
2. Keep the blades clean. Whenever build-up of resins is visible, use Simple Green or even 409 cleaner to remove build-up before it gets excessive. Do not use oven cleaner: it is said that the caustic (lye) in such cleaners might affect the brazing that holds the carbide tips in place.
3. When feed becomes difficult, have the blade sharpened by a professional saw sharpener.
4. Store blades flat on wood or cork surfaces. If blades are stacked one on another, make sure there is a piece of wood, cork, or cardboard between them. Carbide is very hard, but also very brittle and will chip if carbide hits carbide.
5. Protect blades from rust. This can be done with any of a dozen substances, including Top-Cote, Boeshield T-9, WD-40...even floor wax. When any such substance is used, run about a foot and a half of scrap through the blade before running project material through.

Start by buying the best blades you can afford. Then care for them well. In turn, they'll make the work easier, more fun, and product better results.

Cocobolo (*Dalbergia retusa*)



Common Names:

Cocobolo
Nicaraguan rosewood
Granadillo
Caviuna
Jacarandaholz
Palisander
Palissandro
Nambar
Rosewood

Pau preto
Urauna
Palo negro
Funera
Cocobolo prieto
Palisandre

Mechanical Values

<u>Category</u>	<u>Green</u>	<u>Dry</u>	<u>Units</u>
Weight		68	lbs/cu. ft.
Density (air-dry)		69	lbs/cu. ft.
Specific Gravity	0.82	1.00	
Hardness		1136	lbs
Stiffness	930	1050	1000 psi
Bending Strength	8397	10067	psi
Shearing Strength			
Max. Crushing Strength	4203	5776	psi
Work to Maximum Load			
Radial Shrinkage (G->OD)		3	%
Tangential Shrink. (G->OD)		4	%
Volumetric Shrink (G->OD)		7	%

Environmental Profile

This species is reported to be relatively secure within its natural habitat in most areas in its range, including Mexico, Nicaragua, and Panama, but it is officially classified as either in Extinct, Endangered, Rare, or Vulnerable Costa Rica. The actual status in Costa Rica is uncertain because of inadequate information (Source - World Conservation Monitoring Center - 1992).

Distribution

Cocobolo is reported to be found in limited quantities in the Pacific regions of Central America, from Panama to southwestern Mexico. It usually grows in the drier uplands.

Product Sources

Some material from this species is reported to be available from environmentally responsible or sustainably managed sources.

Supplies of Cocobolo are reported to be dwindling and the price is becoming more costly. Veneers with highly figured grain patterns are reported to be occasionally available on the market.

The following species in the database has been suggested as a substitute for Cocobolo for the production of knife handles:

Goncalo alves (*Astronium fraxinifolium*
A. graveolens)

Tree Data

The size of the tree is reported to be small to medium. Mature tree heights are reported to be often 45 to 60 feet (13 to 18 m), with trunks that are usually of poor form reaching diameters of about 20 to 24 inches (50 to 60 cm).

Sapwood Color

The freshly cut wood is reported to be variable in color.

Heartwood Color

The color of the heartwood varies when freshly-cut, and is described as a rainbow-hued. Exposure is reported to darken the lighter colors and merges them with the darker colors. The wood becomes deep red with irregular markings of purple or black and various colors of the rainbow. Boiling the wood in water is reported to remove some of the color.

Grain

The grain is usually straight, but it is occasionally interlocked.

Texture

The wood is usually fine textured.

Odor

The wood has an odor, which has been described as slightly pungent and mildly fragrant becomes noticeable when the wood is being machined. There is no characteristic taste.

Ease of Drying

The wood is reported to dry out very slowly, and should be air-seasoned prior to kilning to prevent degrade.

Drying Defects

Casehardening, warping, and checking are reported to be common if the wood is kiln-dried from the green condition. Air-seasoning prior to kiln-drying is recommended.

Kiln Schedules

T1 - B1 US

H & S Lumber

Mr. Robert Boland, Manager
 4115 Monroe Road
 Charlotte, NC 28205
 704.333.3130 (sponsor)

Harbor Freight USA

Mr. Martin Treadwell, Manager
 3852 E. Independence Blvd.
 Charlotte, NC 28205
 704.569.0182 (contributor)

The Woodworking Shop of Charlotte

4728 South Blvd.
 Charlotte, NC 28217
 704.521.8886 (contributing/sponsor – except power tools
 and wood)

Woodcraft

Mr. David Boyuka
 1725 Windsor Square Drive
 Matthews, NC 28105
 704.847.8300 (contributing)

Show your CWA membership card at any of the listed
 places and receive benefits (except for Woodcraft and
 Harbor Freight USA, which are not able to provide
 sponsorship in the form of discounts).

2006 CWA Officers

President	Wayne L. Manahan pres@charlottewoodworkers.org	(704) 786-0768
Vice President	Bruce Bogust vp@charlottewoodworkers.org	(704) 321-0979
Treasurer	Jaye Peterman treasurer@charlottewoodworkers.org	(704) 527-8768
Secretary	Michael L. Dyer secretary@charlottewoodworkers.org	(704) 379-1919

The Charlotte Woodworking Association

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Next Meeting:
 November 21, 2006
 At the Well of Hope Lutheran Church
