THE Woodrack

March 2018

Mike Daum: Fun with Vacuum

Vol. 28 No.3 The Official Newsletter of the Long Island Woodworkers www.liwoodworkers.org

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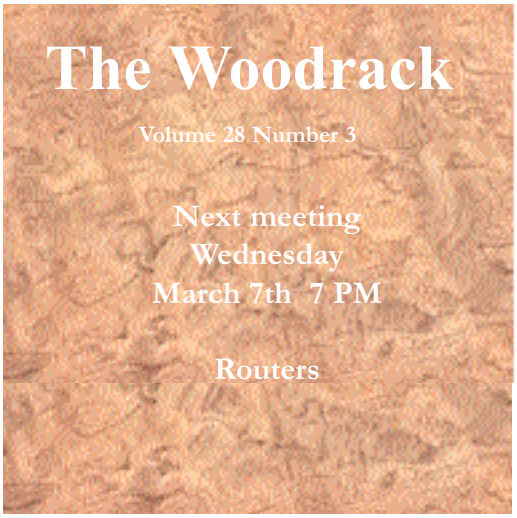
This Month:



Secretary's Notes

Jim Heick

Our meeting began around 7:10. Mike Daum, our president greeted the members and thanked them for coming out on this cold, rainy night.

Ed Piotrowski asked for a volunteer to take over putting the sign out in front of the Barn on Meeting night. If interested please let Ed know. Email eddiepio@aol.com Thank you Ed, for taking care of this for so long.

The membership welcomed Bob Hutchinson, from Valley Stream. Bob is retired from the Port Authority and looking forward to getting involved in woodworking.

Urban Specialty Woods will be hosting a Hand Tool Event featuring Lie-Nielsen Toolworks Inc. The event will be Friday March 9th (10am-6pm) and Saturday March 10th (10am-5pm). Urban Specialty Woods is located at 257 Broadway Huntington Station, NY 11746. Check our website under Cabinet Makers SIG for map. Admission to the event is free.

The Long Island Woodworkers will be hosting Gary Rogowski, director of The Northwest Woodworking Studio. Gary is also a renowned author and contributor to Fine Woodworking and International Instructor. Gary will be discussing general woodworking techniques and his new book "Handmade – Creative Focus in the Age of Distraction." The presentation will be Tuesday, March 27th at the Brush Barn in Smithtown. It will start at 7:00pm. Cost is $20.00.

Thanks goes out to Mike Daum, Corey Tighe and Mike Mittleman for setting up the Television and AV equipment for the evening. We will be purchasing a new Camcorder/Camera. This should be available at the next general meeting. The television and cameras are available to the SIGS at the Barn. We need volunteers from each SIG to learn the operation of the equipment. Please see Mike Mittleman or Corey Tighe.

A special thank you goes out to Harry Slutter from Urban Specialty Woods. Harry has donated the wood necessary for our new Workbench. Corey and other members will be building a quality bench to be used at demos, seminars etc.

All donations of hand crafted wood projects for the Morgan Center should be brought to the general meeting on Wednesday March 7th. If you cannot make it, but have a donation, contact Mike Luciano. Email mikeluciano18@gmail.com. All donations will go to auction at the Morgan Center Event. Proceeds go the Children's Hospital.

Thank you goes out to Larry Wagner for taking charge in the Toys for Tots campaign. Larry has been actively involved in creating toys. He has generated many toy plans, which we have posted on the Website under Resources - Patterns, Plans & Techniques. When clicked on, the plans will

download to your PC. Please copy these patterns and start making toys now. If every member can make toys, we can make many children happy at Christmas. Larry also displayed how he packages many of the toys in Zip lock bags. This keeps the pieces together and easier to handle. Great job!!!

Mike Luciano mentioned a TV show called, "Craftsman's Legacy." Check your local listings for air time. Bob Wood discussed and displayed an inlay plaque he created. Nice job!

Raffle Winners for February:
Joe Bottigliere
Ed Altmann
Eddie Piotrowski
Please support our monthly raffles as well as SIG Raffles. The monies raised help to defer costs for additional programs.

Our club membership drive is in progress. Annual dues are $60.00. If you haven't paid, please see Joe Bottigliere, our Membership Chairman. Registration forms are available online on our website and also in the newsletter, "Woodrack."

Our presenter for the evening was Mike Daum. Mike demonstrated vacuum pressing for veneering. Mike's presentation was focused on the setup required. He demonstrated setting up the vacuum and bag. He stressed the importance of running through the steps, without the final glue up. Mike mentioned that it is important to verify that the bag conforms to the workpiece. This allows making any necessary adjustments before attempting the final veneering. Mike highlighted the importance of rounding all edges on the piece to assure puncturing of the bag does not occur. Mike answered questions from the members throughout his presentation. Thank you, Mike, for a great presentation.

The Northeast Woodworkers are holding their annual Show and Exhibit, Saturday March 24th and Sunday March 25th. Unfortunately, we did not get enough members to sign up for the Bus Trip. We will not be holding the bus trip this year. If anyone is interested in attending, I suggest you post to the Website forum and try to arrange transportation with other members.

There will be a Long Island Woodworkers Executive Board Meeting on Monday, March 12th, at the New Village Rec Center, 11 Wireless Road, Centereach NY 11720. The meeting is 6:30pm - 9:00pm.

ACtTIVE MILITARY PERSONNEL _____

2018 MEMBERSHIP RENEWAL

Complete this application by **clearly** printing the information requested in the spaces below, and returning this form, along with your check **by Feb. 1st** in the amount of **$60.00** to:

Joe Bottigliere
1238 Church Street
Bohemia, NY 11716

Checks should be made out to the *Long Island Woodworkers*

NAME:_____

Address:_____

City:_____ ***State:***_____ ***Zip Code***:_____

Telephone:_____

E- Mail Address:_____

EMERGENCY Contact Telephone #:_____

Primary woodworking interest:_____

What have been your expectations of the club?_____

_____

Have these expectations been met? (How?):_____

_____

Do you feel your skill level has Improved?: _____

OTHER COMMENTS / SUGESTIONS:

_____

_____

_____

Your membership includes full access to all official SIGs!
CABINETMAKERS; CARVERS; SCROLLERS; TURNERS

Geometry & trigonometry

Michael R. Mittleman

How to Use Parallelograms and Right Triangles in Woodworking

Michael R. Mittleman

This article is a follow-up to a fun and informative thread innocently started on the LIW website by Roger Schroeder with his posting of, "Help! I have a math problem." At last count there were 26 replies, most are serious and others not so much. I think Roger got the requested assistance, but I know he got a surprise with the outpouring of advice, humor and bad puns seen in the responses. He learned there is truth in the adage, "Be careful of what you ask for."

Fellow LIW members – check out the thread. Use the website resource when input is needed or to post pictures of completed projects.

Back to Roger's problem in his own words:

> "I've nearly completed a slant-top desk and plan to do another one. But when it came to joining the slanted writing surface to a flat surface of the desk (the hinges are at the top, not the bottom of the writing surface), I could not remember the math that gave me the mating angles. Yes, I did a slant-top desk once before, but five years and many bottles of wine have dimmed the circuits."
>
> "So what I ended up doing a few practice cuts on scrap wood and mated the boards pretty precisely. Incidentally, the slant of my writing surface is 7 degrees. I ended up cutting the mating edges at 3 degrees; but I'd rather work with a formula."

Responses ranged from rough-cut + final fitting is the way to go, to the straightforward use of miter cuts and complementary angles, to the use of trigonometry and geometry to compute the required angles. What did Roger find most helpful? He went with, "Guys, Thanks for all your input, much of which is way over my head. However, to Ben [Nawrath], I can divide an angle in half, so solution found!" This is the sought after happy ending to the story. Thanks to all for a very interesting dialog.

The principal factor dividing the various recommendations seems to revolve around single item projects and those in a production environment. Thread participants thought the calculated mathematical solution was not especially useful in a single item situation since the computations are complicated; they are over the head of many woodworkers; natural wood movements change angles; and final fitting for excellent joinery is required anyway.

It is the position of this author that computations providing "ideal" joinery angles, board lengths and widths offer valuable information that is practical and useful to woodworkers and designers for single piece projects and they are essential in multiple copy production circumstances. Mathematics provides the answers and technology makes the computations nearly painless.

For the single item project, the chief idea behind obtaining computed values is to gain a starting place, or stated differently, they provide a set of criteria to aim for. Will the final project be spot on? The answer is probably not because of imprecise milling, varying skill sets and environmental factors such as ambient temperature and relative humidity and their impact on wood. However, this author submits that the final, hand-fitted pieces resulting in great joinery and design fidelity will be very close to the dimensions and angles provided by the mathematical calculations.

For the production environment employing CNC equipment or with computer-based design work (e.g. AutoCAD or SketchUp), the math is a requirement before the first piece rolls off the production line. As can be imagined, many complicated computations are used by the applications that direct the CNC equipment and design programs. Yet, usually the calculations are performed automatically by the software; there is no fuss or muss required of the user.

Taking this discussion out of the ether and back to reality, consider the two pictures of a desk profile below. What do you see? We can look at the totality of the desk as a single object represented by the picture on the left or as a collection of geometric figures as shown by the picture on the right.

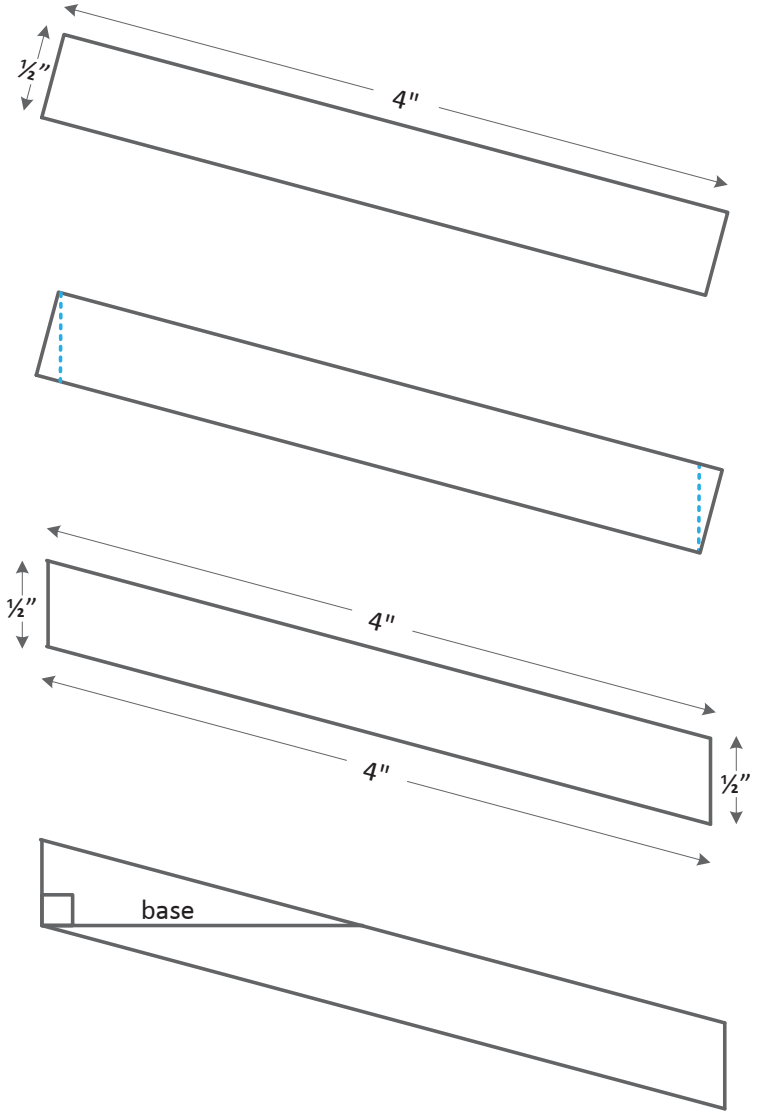
When transforming the picture or idea into work plans, it is helpful to deconstruct the object into geometric subassemblies of rectangles, circles and triangles. These geometric renditions can provide required angles, board lengths, and suggest construction methods and tools. After defining approximate dimensions, the values of angles can be calculated and measurements refined. These calculations can be tedious using pencil and paper, but they are trivial with the aid of computing resources.

A step-by-step approach for employing getting the computer to assist the layout process follows:

Step 1. Draw a rectangle sloping to the target angle, 15° in this example. Two edges of the rectangle should equal the thickness of the workpiece.

Step 2. Draw two lines that are perpendicular to the bottom edge of the drawing paper. They connect the two long edges of the rectangle. Voila! A parallelogram appears.

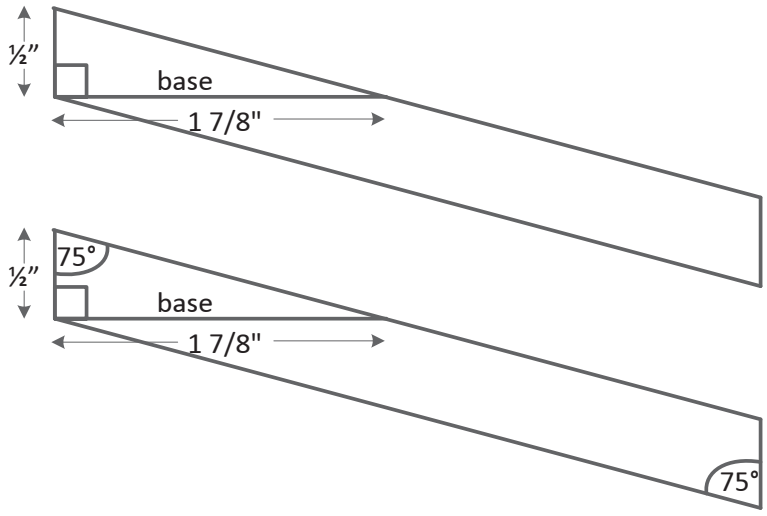
Step 3. Pick some point on a short edge and draw a horizontal line that is 90° from the bottom edge of the paper. A right triangle is formed.



Parallelogram defined: *a simple four-sided figure with two pairs of parallel sides. The opposite or facing sides of a parallelogram are of equal length and the opposite angles of a parallelogram are of equal measure.*

Right Triangle defined: *A three-sided polygon in which one of the internal angles is 90°.*

Step 4. Measure the length of the triangle's base. It is about 1 7/8" in the example.

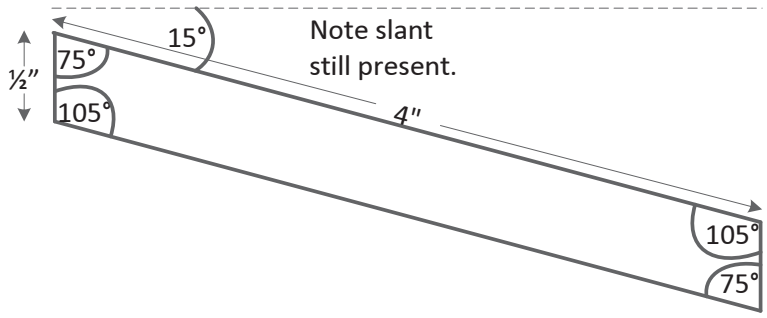


Step 5. At this point, the lengths of two sides and one angle are known for the right triangle. A side-angle-side (SAS) triangle calculator can be used to determine the other angles of the triangle.

The adjacent angle is about 75°. This must be the value of the opposite angle in the parallelogram.

Step 6. The other parallelogram angles can be figured as well since the four angles must total 360°. 360° - (75° + 75°) = 210°. Divide this result by 2 for the remaining angles. 210° / 2 = 105°.

Done.



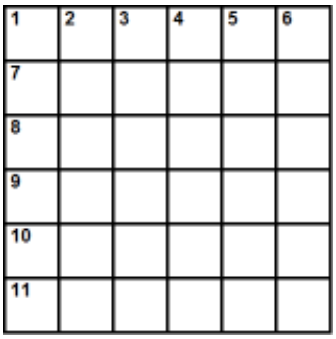
To summarize, figuring angles using the Law of Sines and the Law of Cosines was left to the machines. The user needed only to impose a parallelogram and a right triangle on a photograph; to measure the desktop's slant and know the thickness of the desktop material that will be used in construction. These values were entered into any of several free, online calculators to get the correct angles. We all are math wizards simply by using the right computer apps. This author is feeling smarter already!

Some Online Geometry and Trigonometry Calculators

http://onlinemschool.com/math/assistance/figures_area/parallelogram/
http://www.1728.org/quadpar.htm
http://www.csgnetwork.com/trianglesascalc.html
http://www.mathwarehouse.com/triangle-calculator/online.php
https://rechneronline.de/pi/parallelogram.php
https://www.calculatorsoup.com/calculators/geometry-plane/triangle-theorems.php
https://www.easycalculation.com/trigonometry/triangle-sas-theorem.php
https://www.free-online-calculator-use.com/triangle-calculator.html
https://www.symbolab.com/solver/parallelogram-calculator
https://www.triangle-calculator.com

These photos are from Roger Schroeder, which is the piece that started all the brouhaha over angles, geometry, trig and such. Yes the piece is, as usual with Roger, terrific. But hold off on your opinion until AFTER you get your grades back from the mid term exam Michael has prepared for all to take. Study hard, no cheating, and no using your computer or phones. You have one hour. Now start!

An Easy One …



Clues

Across	Down
1. Wolf	**1.** Geological formation
7. Secrets	**2.** Esoteric
8. Blisters	**3.** Excoriate
9. Didn't play	**4.** Glorified
10. Belong	**5.** Stick out
11. Tributary	**6.** CRT beam

Solution

1	8	4	7	6	5	2	9	3
9	2	5	8	1	3	6	7	4
6	3	7	2	9	4	8	1	5
7	4	9	1	5	2	3	8	6
2	5	8	6	3	7	9	4	1
3	1	6	4	8	9	5	2	7
5	7	1	9	2	6	4	3	8
8	9	3	5	4	1	7	6	2
4	6	2	3	7	8	1	5	9

Solution toFebruary's Puzzle

Mike Daum & Steve Fulgoni Presentation: Here are some follow up statistics

Michael R. Mittleman

Two terrific demonstrations were given to LIW members during the week of February 4 – 10, 2018. Mike Daum's topic for the general meeting was vacuum pressing and curved shapes. Steve Fulgoni discussed lathe tools, the reasons for their specialized shapes and some sharpening requirements during the monthly Woodturners SIG session. Each presentation was heavily attended and appreciated by all.

One of the points of interest made during Mike's talk was the effectiveness of a vacuum press generating "only" 1 atmosphere (14.7 psi) or less. The table on the left depicts several measures of pressure. Note the pounds of force per square foot (right-most) column. At 1 atmosphere of vacuum, more than 1 TON of force is generated per square foot!

inches Hg[a]	millibars Hg[b]	atm[c]	Pa[d]	psi[e]	lbf[f]
1	33.86	0.03	3,386	0.49	70.73
2	67.73	0.07	6,773	0.98	141.45
3	101.59	0.10	10,159	1.47	212.18
4	135.46	0.13	13,546	1.96	282.90
5	169.32	0.17	16,932	2.46	353.63
6	203.18	0.20	20,318	2.95	424.36
7	237.05	0.23	23,705	3.44	495.08
8	270.91	0.27	27,091	3.93	565.81
9	304.78	0.30	30,478	4.42	636.54
10	338.64	0.33	33,864	4.91	707.26
11	372.50	0.37	37,250	5.40	777.99
12	406.37	0.40	40,637	5.89	848.71
13	440.23	0.43	44,023	6.39	919.44
14	474.09	0.47	47,409	6.88	990.17
15	507.96	0.50	50,796	7.37	1,060.89
16	541.82	0.53	54,182	7.86	1,131.62
17	575.69	0.57	57,569	8.35	1,202.34
18	609.55	0.60	60,955	8.84	1,273.07
19	643.41	0.64	64,341	9.33	1,343.80
20	677.28	0.67	67,728	9.82	1,414.52
21	711.14	0.70	71,114	10.31	1,485.25
22	745.01	0.74	74,501	10.81	1,555.98
23	778.87	0.77	77,887	11.30	1,626.70
24	812.73	0.80	81,273	11.79	1,697.43
25	846.60	0.84	84,660	12.28	1,768.15
26	880.46	0.87	88,046	12.77	1,838.88
27	914.33	0.90	91,433	13.26	1,909.61
28	948.19	0.94	94,819	13.75	1,980.33
29	982.05	0.97	98,205	14.24	2,051.06
29.92	**1,013.21**	**1.00**	**101,321**	**14.70**	**2,116.13**
30	1,015.92	1.00	101,592	14.73	2,121.79

[a] atm = Atmosphere
[b] millibars Hg = Millibars of Mercury
[c] atm = Atmosphere
[d] Pa = Pascal
[e] psi = Pressure Per Square Inch
[f] lbf = Pounds of Force Per Square Foot

	Router	Lathe	Table Saw	Drill Press
Tool	1/2" end mill	3" spindle	10" blade	1/8" bit
Perimeter	1.57	9.42	31.42	0.39
RPM[a]	20,000	2,000	4,300	3,600
Inches in 1 min	31,416	18,850	135,088	1,414
Feet in 1 min	2,618	1,571	11,257	118
Miles in 1 min	0.50	0.30	2.13	0.02
Miles in 1 hr	29.75	17.85	127.92	1.34

[a] At surface point of tool or work piece

	Hand Plane	Rip Saw
Work Piece	1" x 6" x 12"	1" x 6" x 12"
Strokes/min	50	60
Feet/min	50	60
Feet/hr	3000	3600
miles in 1 hr	0.57	0.68

During the lathe tool lecture, Steve Fulgoni used the comparison of "miles of wood to feet of wood" when discussing steel types and sharpening techniques. The two tables on the right compare tool types, RPM, as well as some power and hand tools. The contrasts are startling: 127MPH for a 10" table saw blade operating at 4,300 RPM versus less than 1 mile in 1 hour for a handsaw maintaining 60 strokes per minute!

The new dues structure allows LIW members to attend any/all general and SIG meetings. Great camaraderie and learning opportunities abound – be there or be square.

Turner's Guild

Barry Saltsberg

Mike opened the February 8th meeting by welcoming everyone.

Upcoming events:

Totally Turning and Northeast Woodworking Show, March 24 - 25, Saratoga, NY. There will be a LIW bus on March 24 if 30 or more members sign up for it. Cost is expected to be $55/person.
There is also a woodworking show at the Meadowlands, March 24 – 25.
AAW Symposium, June 14th - 17th, Portland, OR

There was one new member: Glen Boasi from Nesconset. We had one member, Deb Novomestky, for whom last meeting was her first. She is being mentored by Jean Piotrowski. Anyone desiring mentoring, whether new turners or members seeking help for a particular aspect of turning, should see Barry Saltsberg.

Show and Tell:

Ed [Piotrowski] and two of his granddaughters showed pens that each of the girls made.
Beads of Courage boxes were made by several of our members. There was one made by a cooperative effort by the Art League crew, two boxes by Mike Josiah, two by Jim Moloney, one by Tony Fuoco and two by Barry Saltsberg.

Raffles were won by Jim Cleary and Jack Curio.

Presentation:

The program for the evening was presented by past-president Steve Fulgoni, who talked about turning tool selection, grinding and sharpening.

Steve noted that turners cut miles of wood before they need to resharpen their tools, as opposed to carvers, who cut only feet of wood before they need to hone their gouges. He also noted that it is imperative to keep your tools sharp.

New tools usually come from the factory with a grind that needs to be reshaped, customized to the individual turner's needs.

Steve talked about the various types of turning tools: cutting (spindle gouges, roughing gouges, bowl gouges and skew chisels), scrapers; hollowing and specialty tools (captive ring tools, dovetail scrapers, etc.).

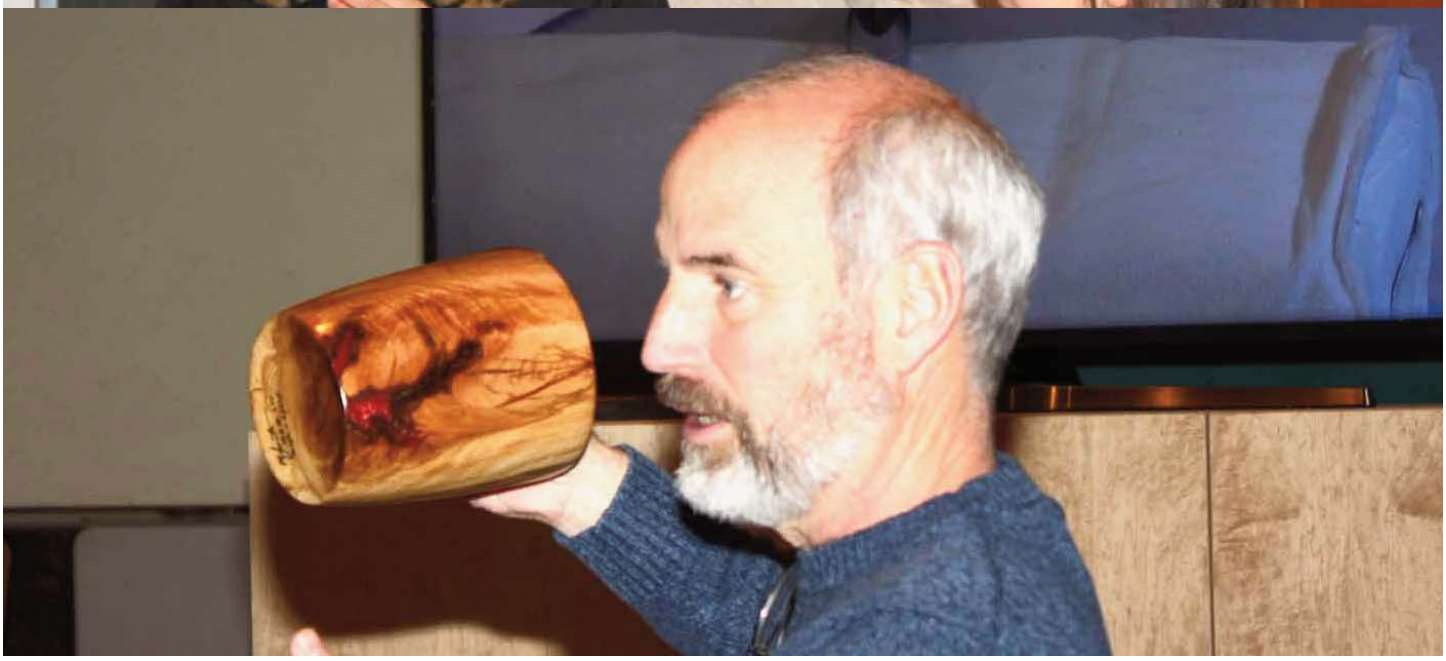
He also addressed the several types of steels. Most of the tools we use will be high speed steel. Do not use carbon steel tools. High speed tools will hold an edge longer than carbon steel. If you use CBN wheels on your grinder, carbon steel will clog the wheels, ruining them. Steve talked about the various types of grinders, and noted that turners are best served by a 6" to 8" dry grinder, preferably slow speed, with a sharpening jig, such as a Wolverine by

One Way. He also noted that stone wheels tend to vibrate, whereas CBN wheels run smoothly.

Steve talked about the various types of turning tools and the characteristics of each type.

He provided a handout which was packed with information, including the tools that constitute a starter kit and an advanced set of tools.

Thank you, Steve, for an extremely informative program.



LICFM

Ben Nawrath

This month we had 4 new members! Please be sure to get Gary (or Ben) your email address to get on the SIG mailing list.

We would really like the SIG to be more involved in the Beads of Courage Program. See Barry for details, and/or visit the website. It's a wonderful program to help kids through intense and ongoing medical treatments, and its good practice for box making. Let's beat the turners!

For show and tell, Don made a small bench that he intends to use mainly for carving. It's less than 3' square and about the height of a traditional work bench. He doesn't have much room, so it's the perfect size for his needs.

Tip of the month! Don made some wooden blocks with magnets embedded in them for under table saw, band saw or drill press table to use when clamping. They fill those voids in the castings.

The main presentation was from Mike Daum. His interest in cabinets started in 1985 when he began working for a cabinet maker who made very precise and intricate cabinets for the Soka Gakkai of the Nichiren Shoshu Buddhist sect. He eventually took over business. That evolved into a love for doing installations, because each one is different from the last, and it's a different "office" every day.

His first quick demo was of the Bridge City Tools joint maker pro. It's basically a Japanese saw mounted teeth-up in a frame, at an adjustable angle, with a sliding sled. You slide wood over it to make cuts, and makes quick work of "hand cut" small pin dovetails, which would be impossible with a router. Google it, you'll want one and then you'll see the price.

The bulk of the presentation was about installing built-ins. He observed that a story stick is much more reliable than a tape for measurements. Mike also does full-size drawings on 1/4" MDF. For a filler strip or side of face frame to be scribed to a wall, Mike cuts a 1" rabbet on the back of the strip leaving only 1/4" of material to have to cut to shape. He uses a hand held disc sander with rough paper to fine tune and back bevel the scribe. Try not to put yourself in a position where one whole cabinet takes up a wall and you have to scribe both sides. You'd have to leave the side scribe strip off and measure what to take off and scribe separately. He uses a laser level to level a cabinet with consistent thickness blocks on all 4 corners. Cutting crown molding: he makes a registration mark on his chop saw by putting masking tape across the fence, laying crown on there, and knife-cutting the tape along the crown to create a virtual stop. To cope the corners, Mike uses his table saw to nip away the wood and then fine tunes it with the disc sander. Don't try this at home. With rough paper, you could literally use just the disc sander.

As usual, this was a great presentation with lots of crowd involvement. See you in March for some fun with Daryl!

This is the Bridge City Jointmaker Pro, currently selling for $1,585. Bridge City is famous for beautiful (and expensive tools). Here is the link:

http://www.bridgecitytools.com/default/tools/jointmaker/jointmakers.html

The Marketplace

These tools are mint the band saw never used $500.00

The jointer hardly used $500.00

The table saw with Biesmeyer fence and accessories hardly used $750.00

call Garson 516 991 5859

Free Wood

LIW member John Soltysik has quite a bit of wood he would like to give away. The lumber is cut-offs ranging in length from 1 ft. – 5 ft. , widths vary between 4" – 7" and thicknesses range from 4/4 to 10/4. All lumber is hardwood of various undetermined species.

Interested members can reach John at 631-744-8919.

Scroll Saw

LIW member Mike Mittleman is offering an ancient, heavily used Dremel Scroll Saw, Model 1671 Type 2 to a good home. It ain't pretty, but is fully functional. User manual and spare blades are included.

Email Mike at mrmittleman1@gmail.com or call 631-656-0425 if interested.