MICHIGAN WOODWORKER

michiganwoodworkersguild.com

Michigan Woodworkers' Guild (est. 1981) March 2025 Vol. 46 No. 3

When / Where:

SUNDAY, MARCH 9, 2025

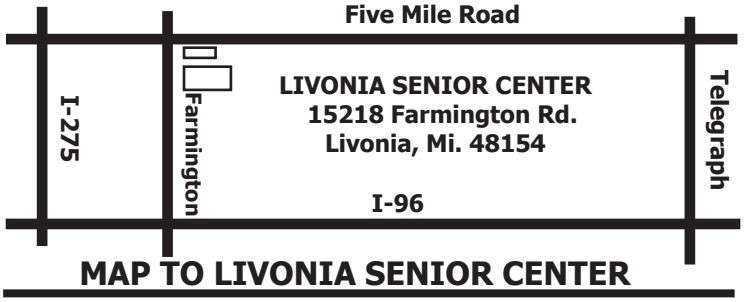
(Socializing Starts at **1:00 PM** and Business meeting at **2:00 PM**)

In-Person Meeting:

The Furniture Design Process
by Joe Beam

Meeting Coordinated by: Jerry Romito

IN-PERSON MEETING AT:
Livonia Senior Center



MAP TO LIVONIA SENIOR CENTER

PAY YOUR 2025 MWG DUES TODAY! (SEE PG 2)

March 2025:

Practical product design is often as important as the actual construction. Join us at 1:00PM **March 9th** at the **Livonia Senior Center** as **Joe Beam** teaches us how to properly design our furniture products. Coordinator **Jerry Romito**.

April 2025:

In an area used in classic 1800's furniture, **Steve Stram** will show the steps it takes to veneer a project. Coordinated by **Larry Last**, our **Mar. 9th** meeting starts at **1:00 PM** at the **Livonia Senior Center**.

May 2025:

Due to a last minute cancellation, our May 2025 speaker is unknown, yet we can anticipate a wonderful presentation from an outstanding speaker coordinated by the unknown. Everything starts at **1:00 PM**, **May 18th 2025** at Livonia Senior Center.

The Furniture Design Process

March 9th

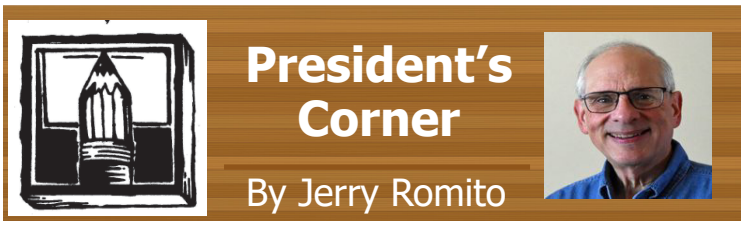
Have you ever wondered why some items are used and some are not.

The practical design of products is often as important as the actual construction. Join us as Professional Woodworker **Joe Beam** teaches us how to properly design our furniture products.

As of January 2025 your Michigan Woodworkers' Guild yearly dues are now payable.

Feel free to right away complete the renewal process by paying your $25 dues **Early** and **Often**.

A membership renewal form can be found on the website dropdown menu under "**Membership - Payment/Renewals**" or by selecting the link below.



March 2025

We had 43 members attend our February meeting for member **Larry Last**'s presentation on building traditional wood windows. This was a good turnout considering that it was Super Bowl day and we shortened the meeting. You can read **Dale Ausherman**'s detailed review in this newsletter, and you can also watch the entire meeting on our YouTube channel by clicking on this link: https://www.youtube.com/watch?v=OlzeQ_dlKfY.

Once you get there if you click on the "Subscribe" button you will be able to easily see all of our meeting videos later at any time. I send a huge thank you out to our Camera Committee chairman **Kevin Goulet** for setting up the entire process and editing the videos, and for cameraman **Dave McCagg** for handling the video camera chores.

Some of you already know that our guild is a long-time supporter of MITES – the Michigan Industrial & Technology Education Society. But we have many new members that may not know about MITES. This is a largely volunteer organization for Michigan students and educators to focus on industrial arts and technology in the classroom and the workforce. MWG has donated to MITES in the past, and will again be donating $500 this year. As a regular part of their program, MITES hosts an annual student project competition, which features thousands of projects built by students in grades 7-12. Volunteer judges for these competitions are gathered from around the state, and MWG members have frequently helped judge the woodworking portion. MITES has again put out the call for volunteers this year, and those of us who have done it can tell you that it is a worthwhile experience. Even though the skill level demonstrated by the students is outstanding, you do not need to be intimidated by the idea of judging. Any MWG member can handle it. MITES uses a team-judging process that involves consensus voting. To give you an idea of the event, take a look at this video from the 2024 competition. https://www.youtube.com/watch?v=yBOq0Pn9P8o It shows more info than you'll probably want to know, but the woodworking portion starts at the 24:30 mark.

This year's competition takes place on **Thursday May 8** in Gaylord, MI at The Ellison Place, located at 150 Dale Drive, Gaylord, MI 49735. The judges are served lunch from noon – 1:00 pm, and the judging takes place from 1:00 – 5:00. I realize that this is a long drive for our group, MITES needs to spread the events around the state. If you are interested in judging, you can contact the MITES president Chuck Luchies directly at: cluchies@ccs.coloma.org.
If you just want to talk about it you can contact me at GJRomito@aol.com.

Jerry

Find the latest MWG Membership Form with the following link:
https://michiganwoodworkersguild.com/wp-content/uploads/membership/2025_MWG_Membership_Application_FORM_12-26-24.pdf

MEETING REVIEW

By Dale Ausherman

MWG Meeting Review
Ed Stuckey Tools & Larry Last Wood Windows
Livonia MI, 9 February 2025

Our February 2025 meeting hosted members **Ed Stuckey** and **Larry Last** sharing their expertise. As follow up to discussion at our January **Cliff Durand** tools meeting Ed briefly discussed examples of custom-made tools used during his career as an automotive pattern maker. Then **Larry Last** provided the main course of the meeting to further educate us in the craft of making traditional double-hung windows.

Ed Stuckey Showing His Pattern Making Tools

Ed spent a 37-year career as a Journeyman pattern maker for General Motors, including a 4-year apprenticeship. Most people who have spent time in the Detroit auto manufacturing region know that a pattern maker creates wood shapes like manifolds or engine blocks for casting of metal or other materials. They read blueprints and follow specifications to create correct patterns, then use machines like lathes, milling machines and grinders to adjust the patterns. They must account for how metal shrinks as it cools and also ensure that the patterns are shaped such that they can be removed from the casting die without destroying the shape. Ed showed us several specialized tools he used in these processes, some of them custom made by him or other pattern makers.

Ed Stuckey with Sine Plate

He showed us a *sine plate*, used for marking precise angles on blocks of wood making up a pattern. It had precision laminated wood plates joined at a large cylindrical hinge with another identical pin set exactly 10 inches apart. One could then look up the trigonometric *sine* value of the intended surface angle, and multiply it by 10 to size a gauging block placed at the far pin. The resulting angle between the plates is then the intended surface angle. Once set with the intended angle, one could secure parts of a model on the plate and then use a height gauge scribe to mark the correct surface angle on the part to be shaped.

Ed Stuckeys Pattern Maker Chisels

Ed then showed how they made patterns for "sand" casting spoke shaves, and used *degree cutters* with tapers to shape the vertical sides of patterns to make them easy to remove from the casting sand. He showed how they made long chisels from shaper steel stock to pare the inside of crankcase passages and other parts with internal components. He also had a *shrink rule*, a 12 1/8 inch rule for laying out patterns to account for the shrink factor for cast iron. One learns not to have sharp corners inside of castings to avoid casting stress points. Thus Ed had sets of various size *fillet balls* on shafts used with wax to round the inside corners in casting patterns. Finally he showed various pattern making instructional books from early in the 20th century, used in the vocational classes in Detroit's Chadsey combination vocational-trade and academic high school.

*[**Editor's** (who worked in the casting industry and was a member of the American Foundry Society) **Note:***

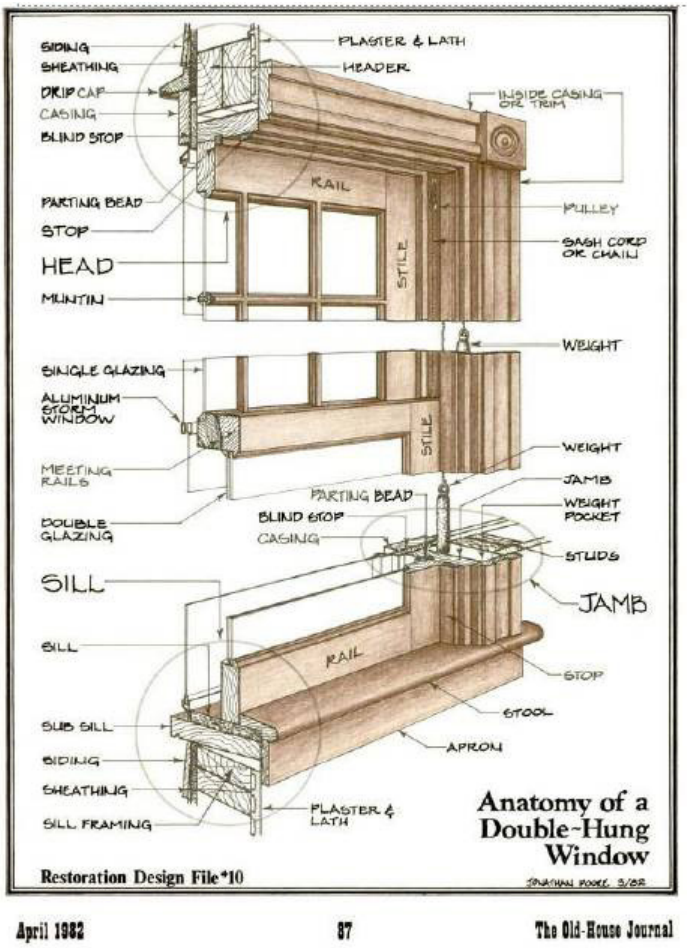
Like templates that we use for woodworking, patterns are a method to achieve accurate, repeatable, and stable duplicates of a given shape. Unlike templates which tend to be flat and are well suited for routing work, patterns are a 3 dimensional model of the desired final product. Whether used in a permanent or a sand molds, a pattern must allow for various manufacturing or casting requirements such as draft angle (which allows the formed part to be released from the mold), shrink (which adjusts the scale of the geometry for the casting material's shrinkage as the part cools in the mold) and machining stock (additional material added to the raw casting which will subsequently be machined off.)

Historically patterns were made of mahogany owing to the woods stability. Due to availability, mahogany was replaced by man-made composite wood (Renwood) many years ago.

Unlike many of our woodworking templates, patterns can be created to form internal passages. For example: a cylinder head's intake and exhaust ports as well as water jackets (for cooling) and water jackets and oil passages in an engine block.

Until the advent of that stupid computer, patterns were constructed by hand using a variety of woodshop tools. These patterns needed to be built to exceptionally tight tolerances by people who could read a blueprint and envision the final part as a 3D solid. Pattern Makers must be skilled in the use of all woodworking tools to generate an extremely complicated 3 dimensional model which would then be used to production cast a part. In this Editor's opinion, Pattern Makers are some of the most elite woodworkers one can imagine. We are honored to count many Pattern Makers as members of the Michigan Woodworkers' Guild.]

Larry Last Demonstrating Double Hung Window

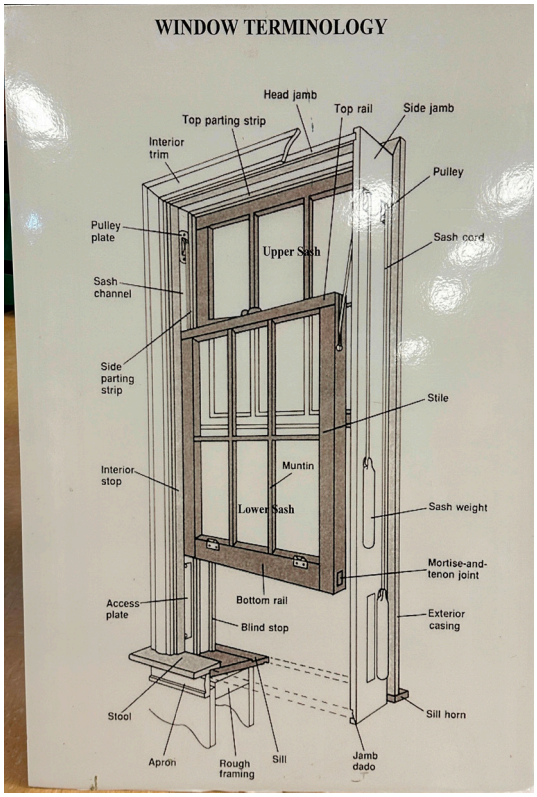


Window Anatomy

Following Ed, Larry reviewed the process for making double-hung wooden windows. He had diagrams showing the names and functions of various wood parts making up such a window. The two assemblies of glass panes define the upper and lower *sashes*, which then encompass the vertical sides of sashes called the *stiles*, connected to form a rectangular window by the horizontal *rails*. (Memory aid: The styles of women's fashions, pronounced the same as window *stiles* go up and down through the years.) The grid of small glass panes (also called "*lights*") is formed by the thin *muntins*. The lower rail of the upper sash and the upper rail of the lower sash "meet" and overlap in the middle and so are called the *meeting rails*. These have interior surfaces cut at angles such that they seal the gap when both are fully closed.

The sill rail is wider in height that other rails, because its view from the inside is partially blocked by the sill. To make the frame appear equal on all sides the sill rail must have additional height. Also the *meeting rails* are narrower in height so that they minimally block one's view. Historic windows typically had cope and stick joints with through tenons to join the rails and *stiles*. Now Larry uses floating tenons for ease of production. The tenons are haunched to provide better tensional strength.

Larry's slides, which can be found at the site shown below, started by showing many different kinds of windows, single hung, double hung, picture, casement, bay, sliding, awning and skylight windows. But the basic parts of all are made the same, using stick and cope joints. In researching how to make wooden window Larry came upon an explanation for the term "window," Old castles had openings in the walls to let in fresh air into the smelly old castles. People naturally called these "wind" "openings". This term then be-



Window Nomenclature

You can find Larry's Double Hung window slides on the MWG website with the following link:
https://michiganwoodworkersguild.com/wp-content/uploads/meetings/Windows_by_LarryLast_2-10-25.pdf

came “wind O’s,” whose spelling eventually evolved to become *windows!* He further related that one can tell the age of a historic window by the size of the panes. Early glass was harder and more expensive to make in larger panes, so early windows in older structures had smaller panes.

Next he described the basic construction of windows with *cope and stick* joints to join the *stiles* to rails, and the *muntins* to both *rails* and *stiles*. These joints historically included mortise and through tenons for all joints. Unless restricted by applicable historical restoration rules Larry often uses floating tenons to speed construction.

Larry then exhibited historic windows he has made, starting with his leading a group of about a dozen woodworkers in restoring the 355 windows in the Ford Piquette plant. This plant for the first Model T was built in 1903 as the first building that Henry Ford actually owned. (https://www.fordpiquetteplant.org/) Larry has also made most of the restored windows for the Northville Mill Race Village. His most recent work was to replace the windows in what is now portrayed as the J. M. Mead General Store. The original 1860 building was moved to the Village in 2005. A pair of 4 ft. by 5 ft. front windows is the largest windows Larry has made. They use modern glass because the old glass is more brittle and prone to breakage. Also the ground level buildings in public spaces must use tempered glass.

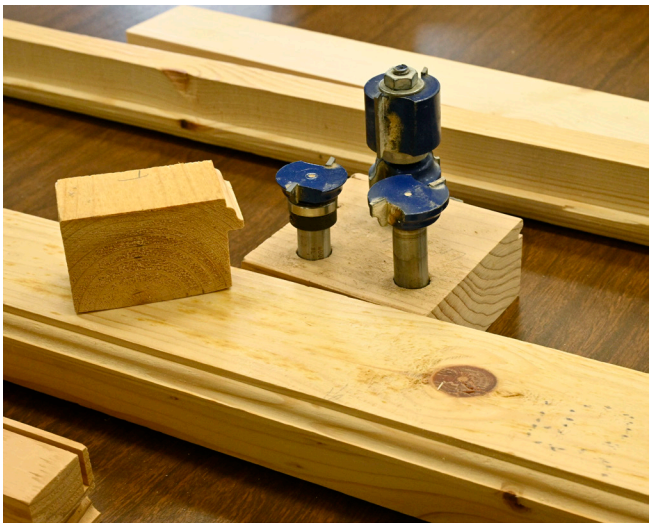
Historic Building in Mill Race Village

Larry Last Showing Close Rail To Mutten Fit

He showed a typical window repair of a historic window with rot so severe that a significant part of a lower rail was completely gone, with the adjoining stile very rotted. He made a completely new lower rail and added replacement wood to the stile, joined to the original with a bridal joint.

Each new window starts with a detailed, dimensioned drawing to insure cutting all component blanks to the correct length and width. This is straight forward for the *stiles* (cut to the height of the eventual window), but the length of the rails and *muntins* have to include length to accommodate the cope profile and length to accommodate a tenon (in the case of real tenons), both on both ends of the blank.

Larry showed the set of cope and stick router bits required to complete the joints. The “stick” ogee shape is routed onto the inner edges of the *stiles* and rails, and both edges of the *muntins*, while at the same time cutting the accompanying rabbets which eventually hold the glass. He does this in two passes, the second pass done to get a perfect shape free of any unintentional wobbles. He eases the amount of wood



Larrys Window Router Bits

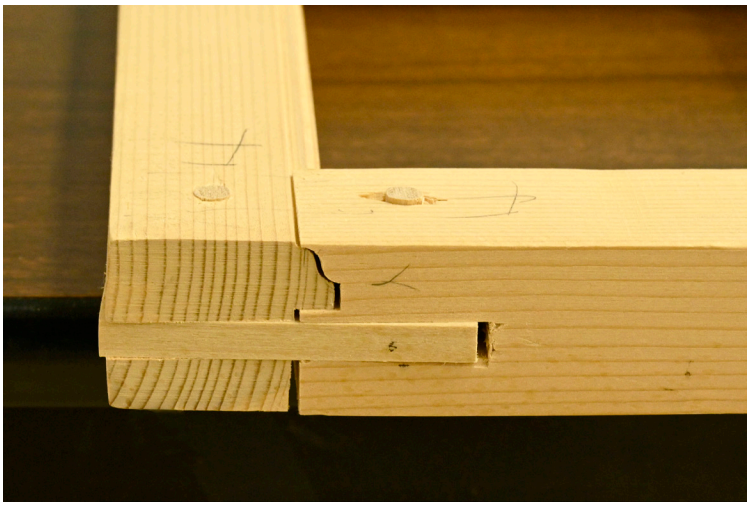
which has to be routed away for the rabbets by taking a pass on a table saw which removes a kerf-width of material.

Larry showed the need for a specially-cut two-sided jig to hold the thinner *muntins* for safe routing. There are two sides to the jig. Side one is to put the profile on one side of each machined blank. Side two is shaped in the inverse profile. In operation both the "stick" bit, and the "cope" bit, are partially embedded in a sacrificial router table fence. The cope bit has the negative shape of the stick bit. Larry strongly encourages us to make this safety jig if we are to build windows. Then the ends of the rails and *muntins* are routed with the cope bit, using the router table fence in a crosscut like fashion, being careful that they are at 90 deg. to their axis.

Larry Last Demonstrating ShopMade Jig

(*Infinity Tools* has a really good video to accompany their sash bit sets, describing the parts of a sash window, the use of their cope and stick router bits, and detailed cutting instructions including making all blanks, routing the sticks, and routing the copes while also cutting the tenons. Then they demonstrate cutting the mortises, as well as the joints between crossed *muntins*.

https://infinitytools.com/blogs/blog/how-to-make-a-window-sash-part-1



Larrys Window Joint

For efficiency and accuracy Larry sets up two separate router tables, one for the stick bit and one for the cope bit, with both carefully adjusted in bit height so the cope and stick joints fit very well. Larry typically uses pine 2 X 6's as the stock. He has found that the six inch width "two-bys" seem to have the optimum lowest number and size of knots which have to be cut out of the final blanks. The Piquette windows are replaced or repaired using native white pine specially milled. He also discussed the need for increased rabbet depth in *stiles* and rails should one want to install modern two-pane insulated glass, impacting the selection of the bit set.

Larry also described the assembly process, including that he uses finish nails (with the heads cut off) and glues the small *muntins* to the frame, omitting the tenons used in the historic originals. It is important to start assembly with one stile and one rail making a perfect "L" and then building out from there. He makes the *stiles* a bit long in case of a machining or assembly error. As a last step he cuts the stile flush with the lower rail.

In conclusion Larry admonishes us to go out and put a homemade window in the shed in our backyard!

We thank Ed and Larry for preparing these presentations and for sharing their unique expertise. Thanks to **Jerry Romito** for last minute re-organizing of the meeting following the withdrawal of Woodcraft. We also thank **Kevin Goulet** and **Dave McCagg** for the video work, and to **Dan Holowicki** for the photos. Special thanks to Kevin for setting up the YouTube recording of the meeting and posting in our website.

- Dale Ausherman

Go to youtube.com
And subscribe to the channel
Michigan Woodworkers Guild – meeting video

- **I'm a professional toothpick maker.**
- **Women love me, trees fear me.**
- **Some of the finest furniture ever made was veneered.**

These phrases are provided purely for your humorous enjoyment. Feel free to send your favorite woodworking pun to the MWG Newsletter Editor for possible future publication.

CHILDREN'S HOSPITAL MWG PROGRAM UPDATE

From Ron and Dan

News from the Toy and Box Committee

The Best Finish for Wood

According to **Dr. Seri Robinson**; Associate Professor of Anatomy and Renewable Materials, Wood and Science Engineering, Oregon State University, the best finish for wood toys, kitchen utensils, spoons, spatulas and bowls will probably surprise you. And that finish is - nothing. Let me explain.

Ron Ross's Pull Toys

The December 2024 issue of *Fine Woodworking* (no. 313) contains another wonderful article by Dr. Robinson. Within that article she goes on to explain that studies and research has shown that bare, dry wood is one of the best structures to stop the spread of bacteria such as E. coli, wisteria and salmonella. Dry wood has the inherent ability to self clean by virtue of its open pore structure. This allows wood to draw surface microbes into the structure away from the surface where they will die. By keeping bacteria away from the surface, it lessens bacteria's ability to multiply and be transferred to another surface or ingested by humans. Unfortunately, when we finish wood, we seal the surface, which essentially closes the pores, thereby stopping this ability to draw harmful microbes in. But there is more to this story.

To properly air dry an unfinished wood item such as a cutting board or spatula or toy that has just been washed may take 24 to 48 hours. Air drying is best as even a thorough drying with a towel will not remove all the surface moisture. Removing all the surface moisture is key in wood's ability to stopping surface growth of bacteria. The best way to wash such an item is just a thorough rinse with warm water. While a mild detergent soap can be used it is really not necessary. Cleaning with hot water or running such an item through the dishwasher may do more harm than good. The elevated temperatures and prolonged high moisture contact can loosen glue joints or cause warpage.

Now you may be asking just what does all this have to do with toy making since we are required by Children's Hospital to have a topcoat on the toys and boxes. A sealed, relatively smooth surface makes it easier to disinfect that surface and put the item back into service quickly. Top coated toys can be cleaned and dried in a matter of minutes as opposed to having unfinished items being allowed to air-dry for up to 2 days. Since many of our toys end up sitting in the waiting rooms of clinics within the Hospital system, they get handled by a lot of different hands. Being able to clean, disinfect and dry these items quickly is of utmost importance in such a setting. Hence the requirement of top coating items we make and donate. We do have an approved list of topcoats to use which is based on the Hospital's requirement that the finished by CPSIA compliant. The current list is available on our website.

Dr. Robinson suggests that the best food safe finish is none other than soft furniture wax. Finishes that are formu-

Lou Minna's Helicopter

lated for outdoor use are an absolute no-no. These finishes may contain elevated levels of UV absorbers, metallic driers and other additives that can be toxic or cause other effects such as allergic reactions.

Rick Stewart's Boxes

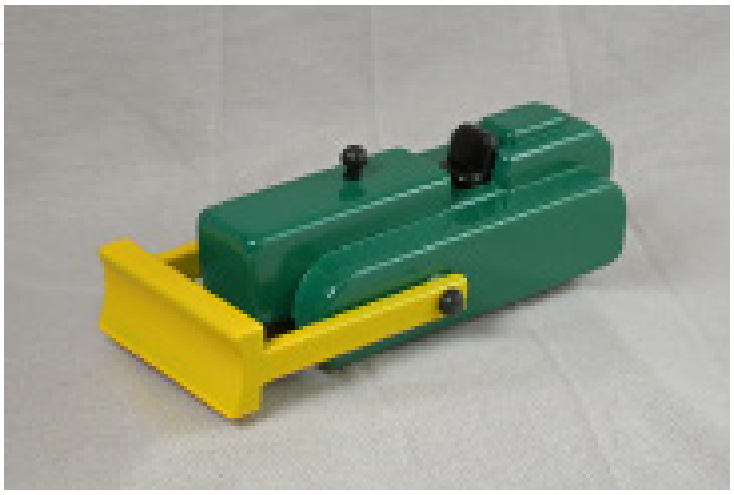
We also want to be mindful of the types of wood we use. Some of the best woods to use are ash, aspen, beech, birch, maple, poplar, red or white oak and sycamore. Should a toy's finish be compromised, these woods have the lowest amount of extractables and pose very little issues to handling. Some of us use cherry, mahogany and walnut in our toy making. While these are not considered the best to use when evaluating extractables, these are still safe to use in toy and box making as long as a suitable topcoat is used. I would refrain from using some of the other exotics that have higher extractables. Woods such as canary wood, ebony, olive wood, purpleheart, teak and tiger wood should be avoided, especially if there is a possibility of a young child teething with the item.

Dr. Robinson also authored an article in issue #304 of *Fine Woodworking "Dangerous Chemistry, Woods to be Wary Of"*. My article in the MWG July 2023 newsletter referenced it. She also wrote the book *"Living With Wood"*, Schiffer Publishing. ISBN; 978-0-7643-5935-4. This book is an easy to read guide about wood chemistry and the best ways to use wood in the kitchen, toy making and furniture. I highly recommend reading this book. It is available through Amazon and other sources.

A few words about the approved finishes for use in our Children's Hospital Toy Program. Among other things, Children's Hospital requires us to make sure that the finishes we use on toys have a CPSIA certification. The Consumer Product Safety Information Act (CPSIA) requires that all finishes for children's' items, and some furniture for adults and children, must not contain a concentration of lead greater than 0.009 percent (90 parts per million) in paint or any similar surface coatings. Quite a number of years ago, Ken Wolf did a remarkable job in contacting many finish manufacturers to find out if their products are CPSIA certified and to get copies of those certificates. As can be found on our website these finishes include Zinsser shellacs, Minwax polyurethanes, Watco spray lacquers, General Finish's products and Rust-O-Leum 2x spray paints. I personally contacted a couple brand name paints (Krylon, Testor's - which have the same parent companies as some of our approved finishes) and was told they do not have a CPSIA certificate and do not recommend their product for use in items that will come in contact with children. It is also interesting to note that during the late 70's and through the early 90's lead compounds in coatings were effectively banned at higher detection levels. Shellac is a very safe finish to use. It is routinely used as a coating in many medicinal pills, food items and as part of the hard coating on one of my favorite candies, M&M's.

Once again, when making toys and boxes for the Hospital program, please make sure that you use an approved finish.

Jared Fink's Boxes



Dan's Bulldozer

Continuing the longstanding policy, the Guild will provide standard and treaded wheels in 1", 1 ¼" or 1 ½" dia., ½" OD nylon washers and ¼" dia. wheel pegs free of charge to any member who wishes to make toys for this program. The Guild still has an inventory of non-standard wheels and other toy parts that have been recently categorized. While there has been a good response to these non-standard items remember that once they are gone, they will not be replaced.

Berg's Excavator

We do bring a small amount of select items from this stockpile to Guild meetings on a regular basis. However, if you have a specific need, please contact Ron or Dan for the amount and to arrange delivery.

We will continue to set a goal of delivering 400 toys to Children's Hospital for the Christmas Snowpile program. This program is only a part of the toy distribution. Throughout the year a fair amount of simpler toys are distributed to all the clinics within the Children's Hospital Complex. These toys are used by the children in the waiting rooms as they wait to see a specialist or treatment. Some toys are passed out to siblings of child patients when they come to visit. Other toys stay with the children when they are released from the hospital. The hospital also has a need for boxes, both plain ones, which the children can use for activities during their hospital stay and somewhat fancier boxes, usually made with hardwoods and more intricate joinery, which are presented to family members of children who did not survive their afflictions. The hospital does like boxes that are about the size of a shoebox. Also the picture frames on top of the memory boxes are well liked by the hospital staff but not necessary.

Once again, thanking all of you toy and box makers for your support along with the Guild's board for allowing funding to purchase wheels to distribute free of charge to all the makers.

For further information on our toy/box program, request wheels and axles or to arrange to drop off toys or boxes, please contact

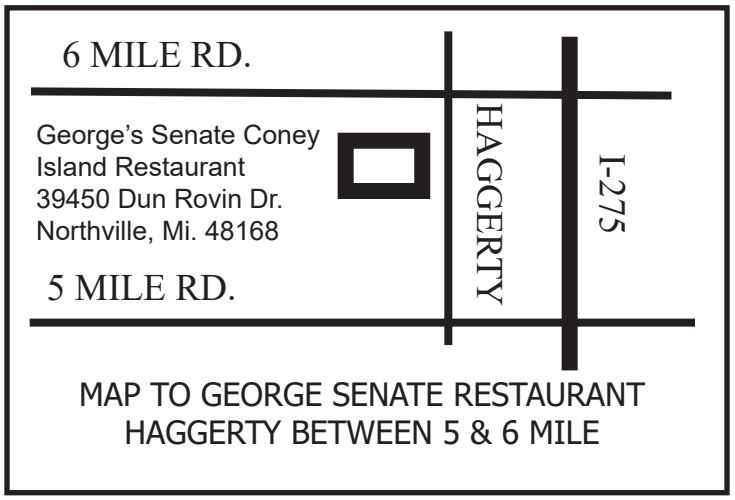
Ron - (734) 812-5531 - rross1508@gmail.com
Dan - (313) 702-5836 - dan56laura@att.net

You can find the MWG **Dan's Bulldozer** plans on the MWG website with the following link:
https://michiganwoodworkersguild.com/wp-content/uploads/toys/Dans_Bulldozer_12-1-24.pdf

For membership information contact

Dave McCagg at: d2mccagg@provide.net

For name tags, sign up with Ed Stuckey at a regular meeting.



MAP TO GEORGE SENATE RESTAURANT
HAGGERTY BETWEEN 5 & 6 MILE

Next MWG Luncheon: (Coordinated by TBD)
Thursday, 27 MARCH 2025 at 10:16 AM

Executive Board Members / Committee Chairs

Jerry Romito..... President..... 248-475-5976
Dan Holowicki..... Secretary..... 734-283-9898
Ed Stuckey..... Treasurer..... 313-345-3671
Open..... Vice President.....
Dan Holowicki..... Officer at Large..... 734-283-9898
Tony Gigliotti ..... Officer at Large 248-853-8349
Bill Gayde ..... Officer at Large 248-859-3949
Ron Ross..... Officer at Large..... 734-812-5531
Rich Herbert..... Officer at Large..... 248-628-0644
Ragnar Bergethon... Officer at Large..... 248-608-8436
Ken Wolf..... Officer at Large..... 734-981-3423
Dave McCagg.....Officer at Large..... 734-482-6764
Ragnar Bergethon.. Website 248-608-8436
Dave McCagg..... Newsletter Editor..... 734-482-6764
Dave McCagg..... Membership..... 734-482-6764
Larry Last..Programs/Website Calendar.....248-207-9386
Bob Mills..... Mentoring..... 248-535-6718
Kevin Goulet ..... Camera Chair 248-672-5341
Fred Ball....Web Site Calendar (Backup)..... 248-681-3108
Ron Ross.....Toy Program..... 734-812-5531
Kevin Goulet.....Officer at Large..... 248-672-5341
Ron Ross.....Food Coordinator..... 734-812-5531