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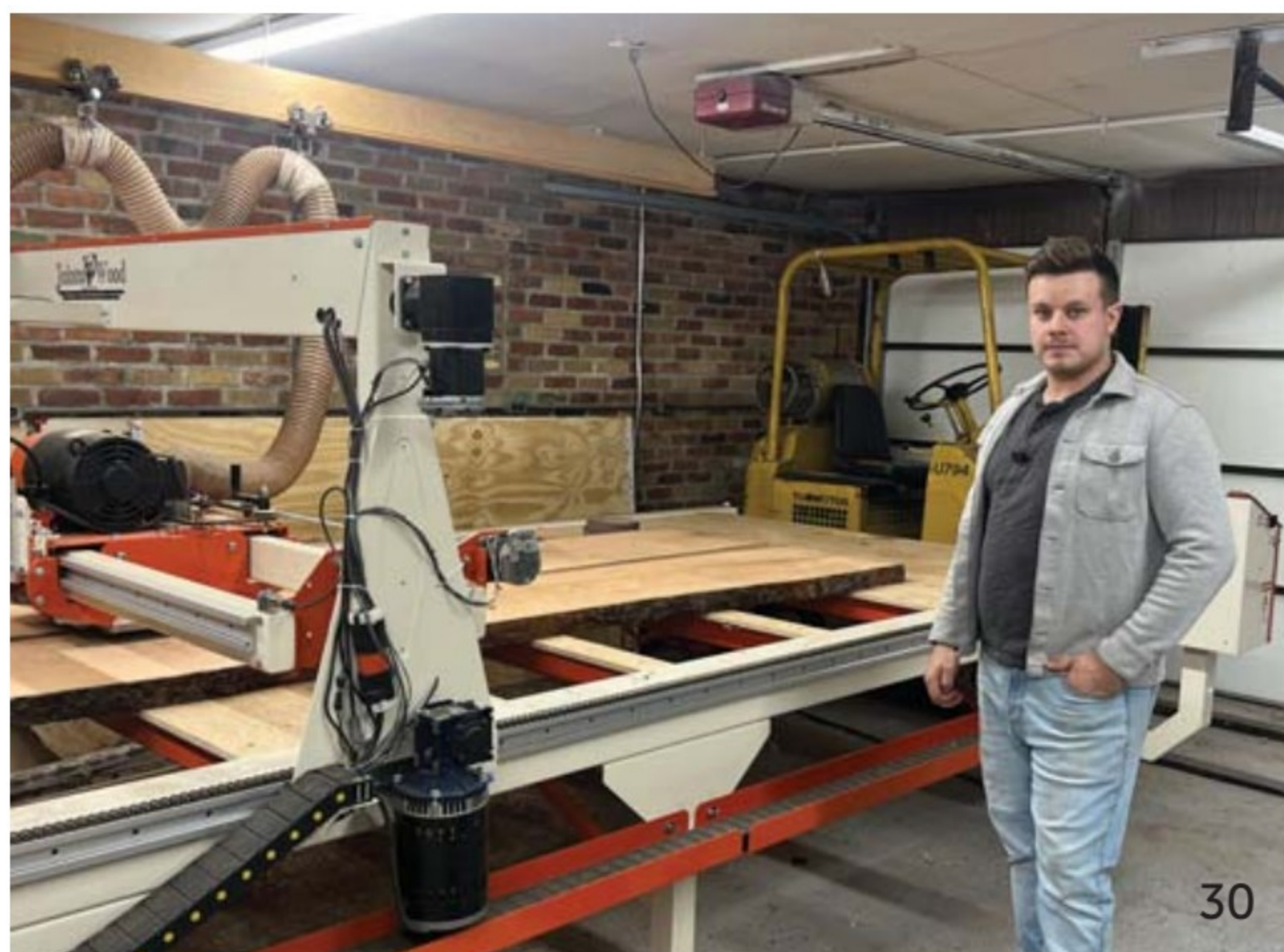
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Jennifer Hicks (top, cover)

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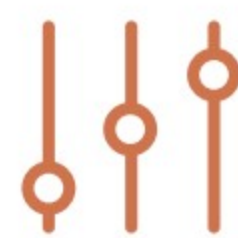


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Over the Workbench

Talkin' shop with former editor A.J. Hamler

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WCA surpasses 10,000 credentials

By Tod Riggio

The Woodwork Career Alliance of North America (WCA) has issued its 10,000th credential certificate since the program began in 2011.

The milestone certificate, known as a Passport in the WCA system, was awarded to a student at Enka High School in Chandler, North Carolina. Enka is one of six schools in Buncombe County credentialing students based on WCA Skill Standards.

The number of Passport holders in the WCA's online registry has more than doubled since 2022. The organization awarded 1,591 credentials in 2025, up from 734 in 2022. Core credentials — the second of seven levels in the WCA system — increased to 462 in 2025 from 18 in 2022.

The Core credential bridges the entry-level Sawblade certificate and the beginning professional Green credential.

"Issuing our 10,000th Passport is more than just a number; it's a testament to the growing momentum behind professional woodworking education," said Scott Nelson, WCA president. "Our mission has always been to provide a clear, standardized path for the next generation. Seeing the surge in Core credentials proves that students aren't just starting the journey — they are committing to the craft at a higher level."

The expansion follows the WCA's 2020 launch of its Assessed Skill Evaluator online training platform. The platform, launched during the COVID-19 pandemic, allows high school and postsecondary instructors to become certified evaluators and administer the credentialing program in their classrooms.

SCM's recent open house in Ri-

mini, Italy, drew more than 3,000 visitors from 60 countries. The March 12-14 event at SCM's headquarters showcased automated production systems, robotics and artificial intelligence applications for the woodworking industry.

SCM presented its vision for woodworking production centered on integrated technology ecosystems rather than standalone machines. The company emphasized connected, flexible, and sustainable production processes supported by software solutions and after-sales services.

The company demonstrated AI-powered systems that collect data from what it says are 5,000 machines worldwide to predict performance and optimize production. SCM's predictive maintenance tools use this data to anticipate service needs before breakdowns occur.

"The open house was a great success, confirming that the industry is eager to embrace innovation and automation," said Gabriele Patti, SCM commercial director, who noted the company has increased its international market share despite economic challenges, particularly in European markets.

RazorGage, a manufacturer of precision cutting and material optimization systems based in Ames, Iowa, is marking its 25th anniversary this year.

The company produces automated cutting systems including RazorOptimal saws, AngleMasters and positioning systems for cabinet makers and door manufacturers.

"When we started, our goal was simple: to make accurate, reliable automated cutting accessible to shops of all sizes," the company said in a statement. **W**

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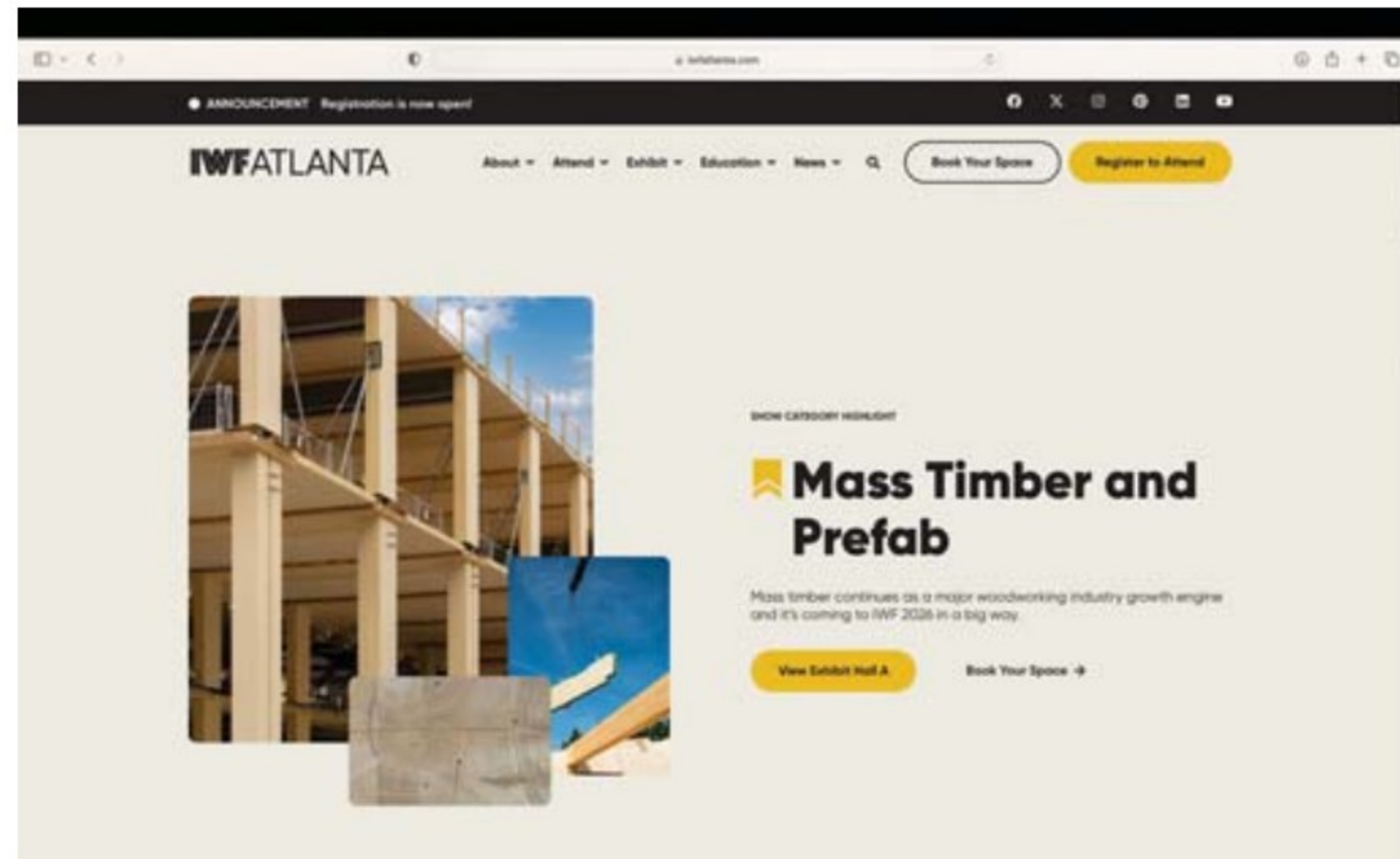
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Mass timber will be a hot topic at IWF Atlanta

By Jennifer Hicks

Mass timber is generating significant interest in construction circles, with that momentum now extending to the woodworking industry. Organizers of the International Woodworking Fair (IWF), scheduled for Aug. 25-28 in Atlanta, have identified mass timber as a major growth driver that will feature prominently at the event. Woodshop News explored what this trend means for the industry.



Ethan Abramson, a New York-based furniture company owner and woodworking personality, has posted social media overviews explaining mass timber's potential impact on woodworking.

"I'm by no means an expert on the mass timber industry, but from my perspective, mass timber is basically the umbrella name for lumber used in buildings that's been laminated to provide greater structural strength," Abramson said.

"In a lot of applications, it can be used to replace metal or concrete options. There's a lot of focus lately on prefabricated buildings to save time and money on a jobsite, and also a lot of focus on sustainability for projects overall. Mass timber is a great option and can meet both of those needs while also being aesthetically pleasing. That's one of the main reasons I think it's in public focus today."

Abramson cited statistics from a February article in IWF Network News by editor Warren Shoulberg, which reported approximately 20 percent growth in buildings using mass timber technology over the past year.

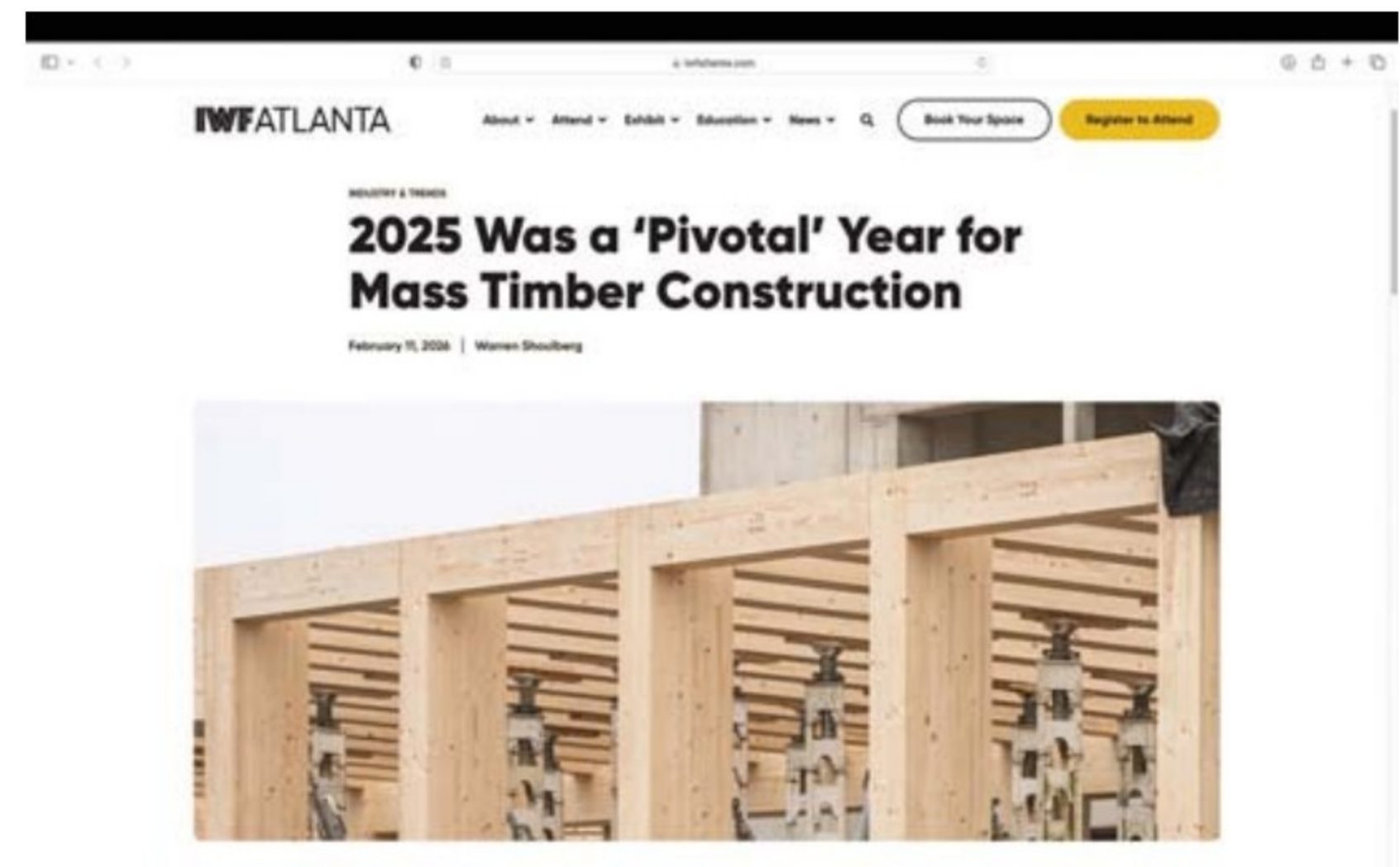
The article referenced an analysis by Ricardo Brites, di-

rector of engineering and virtual design and construction at Mercer Mass Timber. Brites found more than 2,500 mass timber projects had been built or were in progress nationwide, continuing the annual 20 percent growth rate seen since the technology emerged in 2015.

For woodworking professionals wondering about the relevance to their work, Abramson said that while the average shop might not build with mass timber directly, understanding the technology will benefit production facilities of all sizes as it becomes integral to construction.

"I think anything that brings part of the woodworking industry to the forefront of public conversation is always a good thing for the whole industry," he said.

"Even though mass timber is for the structure of a building, changing the way a building is fundamentally made



will also change how it looks and feels and how people interact with it. So, it will have a trickle-down influence on many parts of woodworking, including the types of finishes used in a building, the hardware, and even furniture used in the space."

The 2026 IWF will feature a mass timber and prefab showcase highlighting the latest technologies and products. Educational sessions on mass timber and prefab construction will target architects, designers, investors, developers and others interested in the sustainability and innovation these methods offer.

Learn more at iwfatlanta.com. **W**

SHOPSMITH ANNOUNCES NEW REPAIR PROGRAM

ShopSmith USA has launched a repair program for its woodworking equipment that replaces all mechanical components at once rather than fixing individual parts.

The Total Machine Renewal Program aims to reduce repeat service calls by restoring equipment to factory standards in a single process, according to the company. The program cov-

ers headstocks, belt sanders, band saws, strip sanders, jointers, dust collectors, scroll saws and planers.

Under the program, ShopSmith replaces all internal components including bearings, belts and wear parts. Motor replacement is included in full renewal packages. The company provides a one-year warranty on all renewed equipment.

Learn more at shopsmith.com.



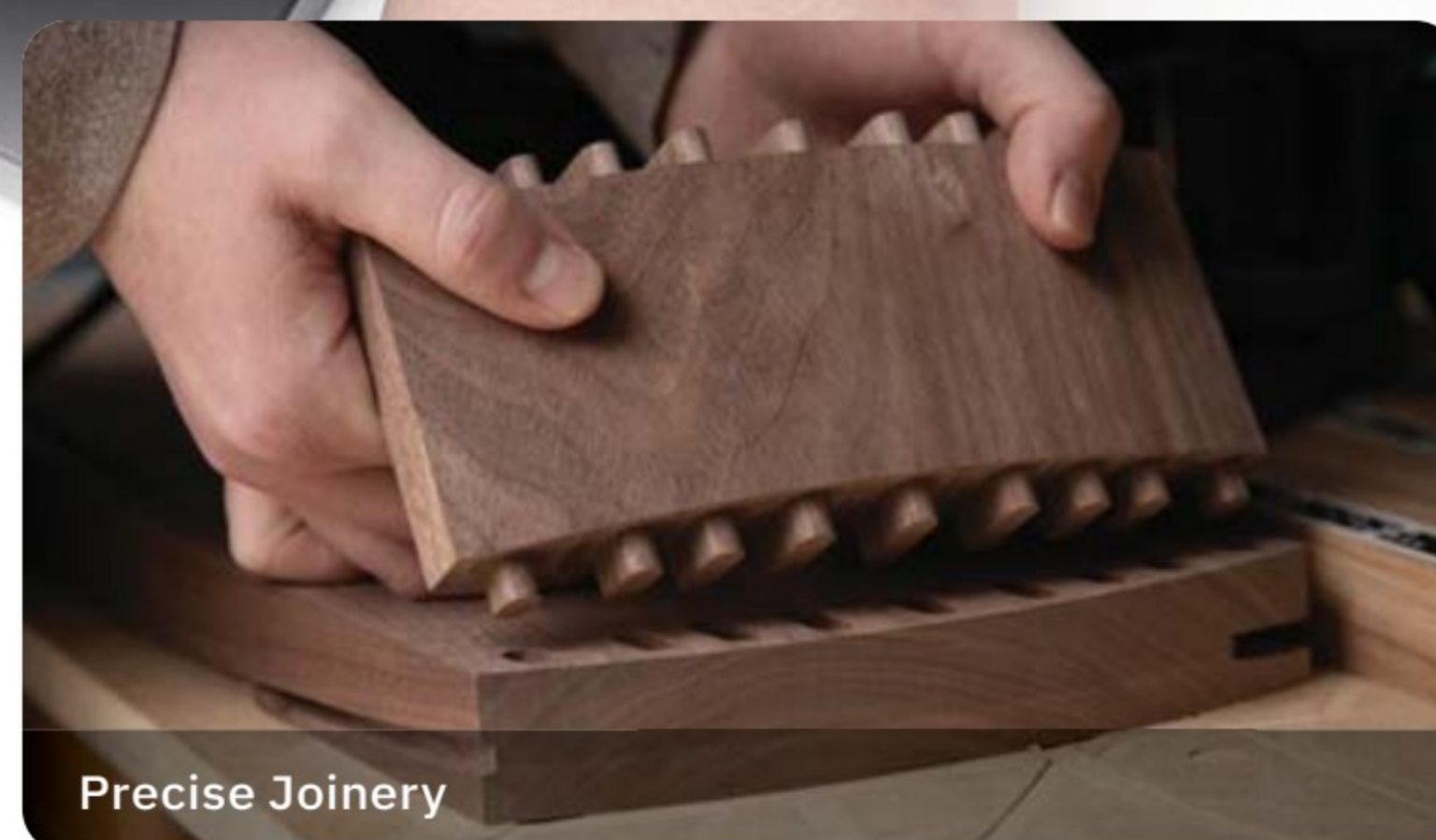
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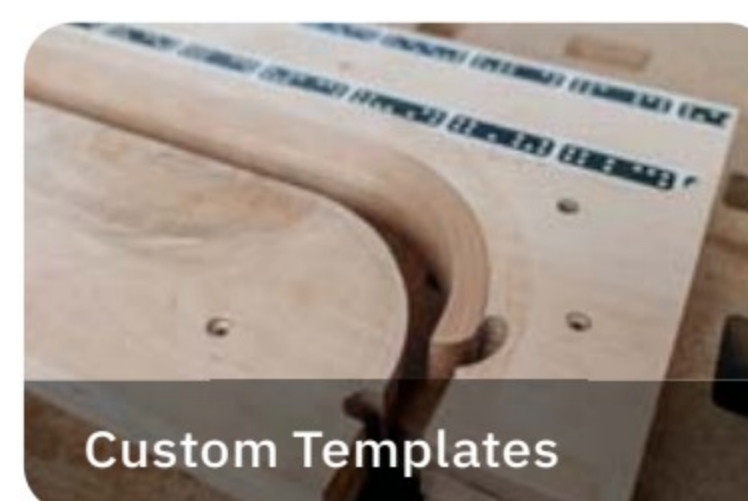
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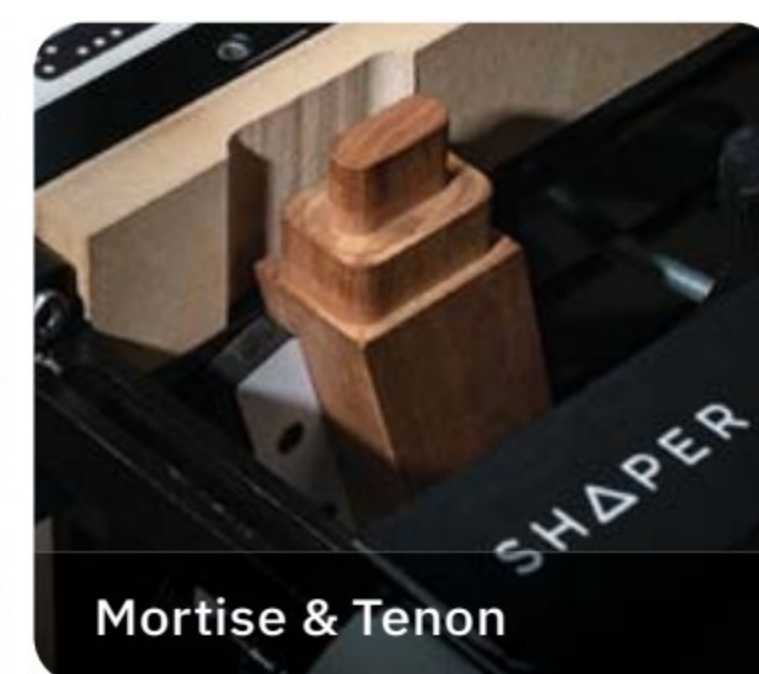
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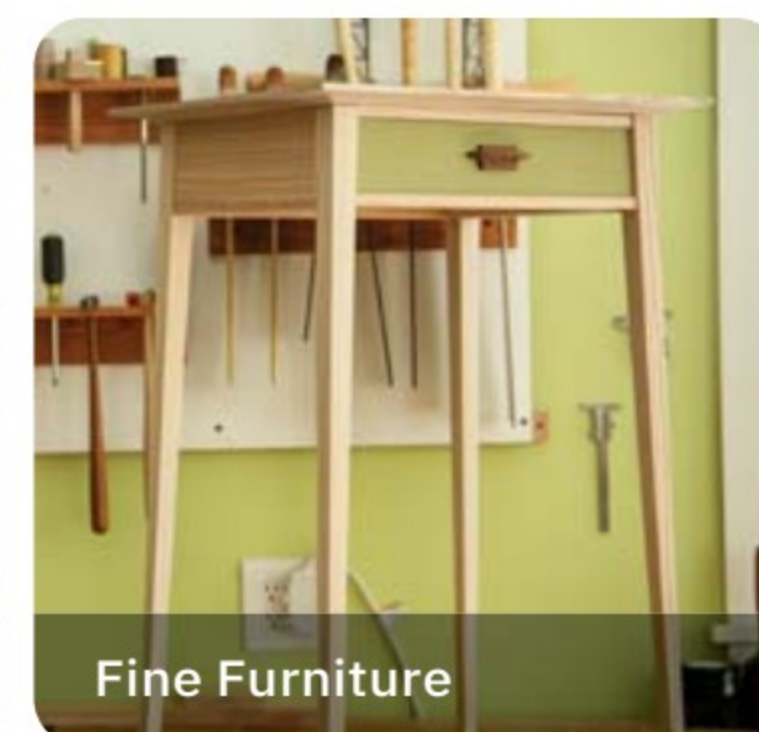
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Mortise & Tenon



Hardware Installation



Fine Furniture

Powermatic launches three-year innovation plan

By Jennifer Hicks

POWERMATIC

Powermatic, a woodworking machinery brand of JPW Industries, announced a brand revitalization initiative, "The Powermatic Difference", focused on product innovation, user education and service improvements.

The initiative includes new machines, product upgrades, a redesigned website, and expanded customer service options, according to the company.

"Powermatic has earned its reputation as The Gold Standard since 1921 through uncompromising build quality, precision and durability," said Jimmy Uttley, Powermatic's director of product management, in a statement. "With this revitalization, we're extending that same standard beyond the machine itself into how woodworkers discover, purchase and support their equipment."

The company plans to execute a three-year product roadmap based on user feedback, Uttley said. The roadmap includes "meaningful innovation, modernized features and expanded solutions to the categories that matter most."

Powermatic will launch new machines and design upgrades beginning in June, including enhanced ergonomics, improved controls, digital readouts and dust collection improvements.

The company's redesigned website now includes educational resources such as product images, videos, application examples, and buying guides.

The revitalization also includes expanded technical support services, with U.S.-based support staff, access to more than 225 authorized service centers nationwide, parts support, and extended warranty options.

Learn more at powermatic.com. **W**

MAY 2026

AWI adds drafting concepts course

By Jennifer Hicks

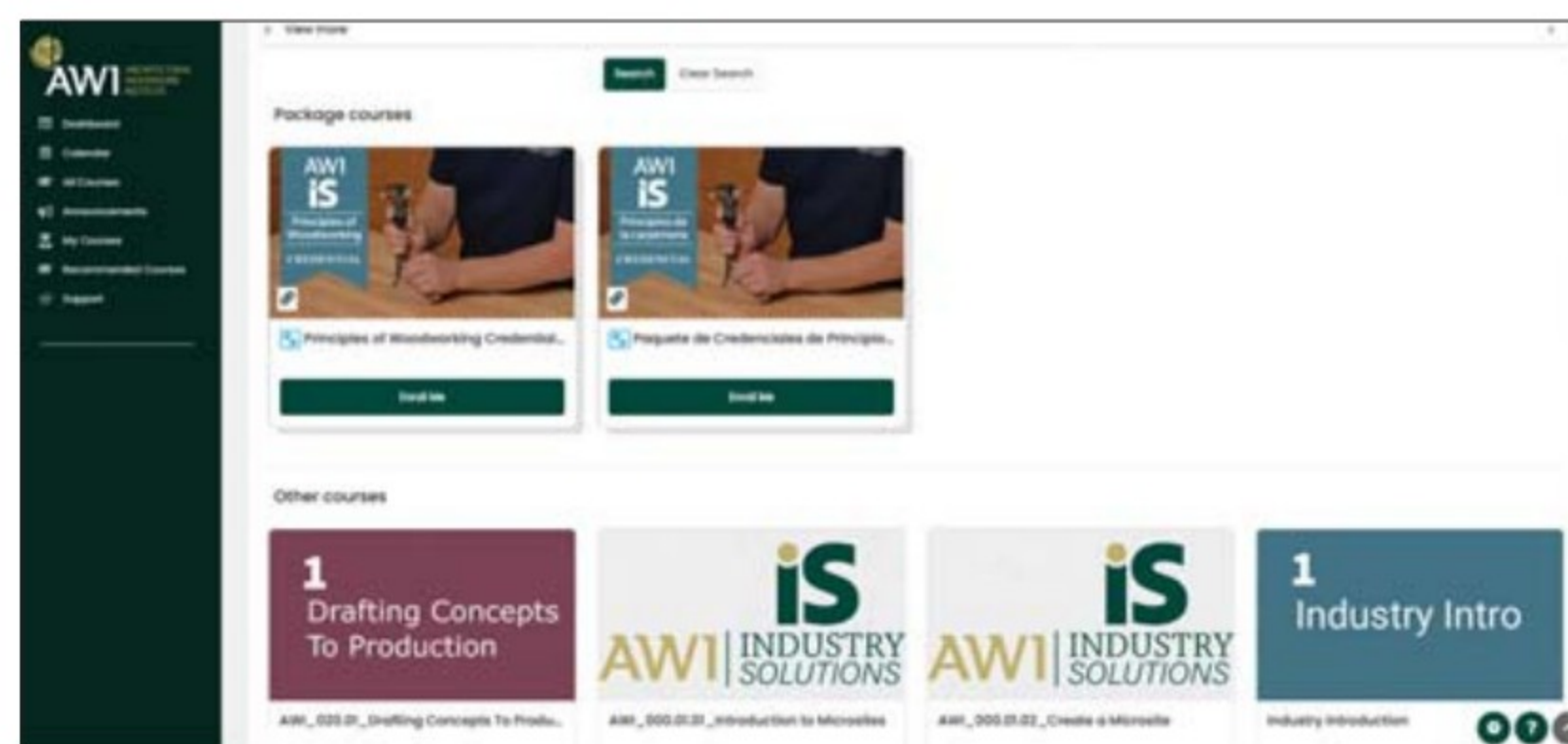


The Architectural Woodwork Institute has introduced a drafting course to expand its workforce training program, AWI Industry Solutions (iS). The course, Drafting Concepts to Production, is a free introductory lesson that teaches basic drafting concepts and how to create a cut list by hand for producing parts.

"Drafting Concepts to Production serves as a quick engineering crash course for students and industry professionals. This course is available for free to all AWI iS users and will continue to evolve from basic to more complex details going forward," AWI CEO Doug Hague said in a statement.

The course covers Introduction to Drafting Concepts, Exploring Architectural Drawings, Common Drafting Symbols, Exploring Submittal Drawings, Thinking Like an Engineer, Drawings to Material, and Why It Matters.

AWI launched the training platform in September 2023 to serve existing and novice woodworkers, students and others seeking careers in the industry. The foundational Principles of Woodworking curriculum includes 17 units with 61 videos, interactive quizzes, a final exam and awards an industry credential upon completion. The



platform has 2,023 users and has awarded 437 credentials for completing the Principles of Woodwork course, which is available in English and Spanish.

The AWI aims to change how woodworking skills are learned and credentials are earned, providing a solution to address workforce challenges in the architectural woodwork industry. According to AWI, the platform can boost employee skill levels and reduce training costs while creating tailored learning experiences.

Both Drafting Concepts to Production and Principles of Woodworking are available to the public. Users must create a login but do not need AWI membership to take courses and receive credentials.

Learn more at awinet.org. **W**

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Poplar rivals pine as costs, availability reshape market

By Jennifer Hicks

Poplar is gaining ground over eastern white pine as builders and woodworkers seek cost-effective alternatives amid a shortage of clear-grade pine lumber.

While both species remain valued for their affordability and versatility, lumber suppliers say the scarcity of upper-grade clear white pine is driving demand toward poplar. The pricing advantage often cited for pine applies primarily to lower-grade, knotty material rather than clear lumber.

"Pine is still prominent. We're still moving plenty of it because it's cheap," said Dave Norman of Parkerville Wood Products in Manchester, Connecticut. "I'm seeing a lot of people wanting pine because it's less expensive, but that's knotty pine. Clear pine — I just had a customer who needed four trim boards for his house he's flipping — was going to be a lot more expensive. Overall, pine is a lot more expensive than it used to be."

Norman said poplar has increasingly displaced pine for interior applications where cost is paramount.

"There's not much softwood used for indoor wood projects nowadays because poplar has taken over the pine market," he said. "Poplar is way cheaper than clear pine. It's also more expensive than furniture-grade pine, but most people, unless they're doing a highly rustic project like tongue-and-groove wall wrapping, that rustic look is not big everywhere."

For paint-grade applications, particularly in architectural millwork, customers are choosing poplar or soft maple over pine based largely on cost, Norman added. Price sensitivity continues to influence material selection amid economic uncertainty, even when alternatives might better suit specific applications.

"There's a difference between what it's being sold for and what it's used for," Norman said. "For outdoor work, people want clear pine but it's not cheap, and they ask about poplar instead. I don't think poplar is a great wood to stain or



clear coat, but that doesn't mean people don't do it."

Cedar remains the top choice for outdoor applications due to its natural durability and weather resistance but faces similar cost and availability challenges.

"If you're going to own the house for a while, you'd want to switch to cedar, but the cedar is pricey," Norman said, citing trade issues between the U.S. and Canada along with weather-related supply disruptions. "There's still high demand for cedar, but prices have climbed steadily and availability has been rough."

Tom Breen of Keiver-Willard Lumber in Newburyport, Massachusetts, reported similar challenges sourcing higher grades of eastern white pine.

"Most of what we sell in pine is upper grade," Breen said. "A very small percentage of a log goes to upper-grade pine, so it's hard to get because the mills produce so much lower material that nobody wants. They're forced to wait and sell all the low-grade stuff because they can't have warehouses full of lower-grade pine."

According to Breen, only 6 to 8 percent of pine logs yield upper-grade lumber, creating a supply-demand imbalance.

Poplar continues to serve paint-grade applications, though usage patterns have shifted, Breen said.

"A few jobs use it for cabinets, but most shops prefer soft maple because it takes paint better," he said. "Ten years ago, I used to get packages and packages for big molding runs for large houses. You don't see that anymore. Poplar is primarily used for paint-grade moldings, and stair builders use it for painted stairs."

FAS poplar starts at about \$3.50/bf depending on location. **W**

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C.R. ONSRUD HOSTS DEMO DAY

C.R. Onsrud Inc., a Troutman, North Carolina-based manufacturer of CNC machinery, hosted more than 200 attendees at its recent demo day, including CNC vendors, experienced CNC users and novices.

The company featured more than a dozen live demonstrations, enabling attendees to experience CNC technology firsthand. "We tried to have something for everyone, so we used a wide range of materials, processing techniques and machine types," said Jeff Onsrud, director of sales and business development.

On the A-Series machine — the newest in C.R. Onsrud's lineup — demonstrations showed how to make MDF 3D wall panels, aluminum gears and PVC sign letters. The company also demonstrated linear profile extrusion components and a phenolic tool bench organizer on the M-Series, a melamine cabinet nest

on the T-Series, and plywood furniture frames on the RH-Series. Additional demonstrations included steel cutting and friction stir welding on the CH-Series.

After adding an 83,000-square-foot building to its campus last year, the company was able to accommodate more visitors and hopes to grow attendance next year. "We're glad we have the space to invite more visitors and vendors. It's important to offer events that keep manufacturers connected and sharing ideas," said Thomas Tuck, senior manager of regional sales and marketing initiatives.

The event included a factory tour and a demonstration of the Inverted Router, the invention by Charlie Onsrud that launched the company 50 years ago. Tom Onsrud spoke about the company's 50-year journey from small pin routers to CNC machines.

Learn more at cronsrud.com.

KEYSTONE ANNOUNCES NEW FINISHING PRICING STRUCTURE

Keystone Wood Specialties has revamped its finishing pricing structure, aiming to simplify cost estimates for remodeling professionals and custom cabinetmakers, and added new stain and paint colors for 2026.

The company's new pricing model organizes finishing costs by measurement type: square foot for doors, drawer fronts, plywood and veneer; linear foot for molding; and per opening for face frames.

The updated structure eliminates upcharges for darker finish colors and reduces costs for several product categories. Face

frames and wainscot panels with seal-only backs will cost less to finish, as will frame-only doors without mullions. The company also lowered prices for solid white paint.

Keystone expanded its white oak stain line with three options: 5 Sheen Natural, Pickled White and Almond Shell. The additions respond to continued demand for white oak in cabinetry projects.

The company also introduced three paint colors — Liberty Blue, Pistachio and Manna — reflecting industry preferences for warmer neutrals and nature-inspired tones, the company said.

Learn more at keystonewood.com.

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The overlooked document that prevents coating failures

By Diane Shattuck

Wish you had all the answers?

Finishing is challenging, mysterious and frustrating and yet I have loved every day of the last 46 years crying, learning and growing as the coatings keep changing. For me, the game never ends as technology keeps moving the goalpost.

There are adventurous people and then there are some not so adventurous. If you are a finisher, then you are adventurous! We never can be 100 percent sure where or how things are going to happen with so many variables but if we want a good foot hold on the tried and tested truth of the coating we are about to embrace, then you need to use the Technical Data Sheet (TDS) that the manufacturer produced for that particular coating.

Many experienced finishers dismiss these sheets. "I don't need a TDS to tell me how to use a coating," they say. "I like to challenge it and push the envelope and test it for myself." This attitude often leads to preventable failures. Coatings are formulated to meet specific performance criteria — nothing more, nothing less.

Different coatings require different application methods such as wipe-on, brush, spray, roll coat, dip, flow coating, spin coating, and electrostatic. A coating designed for brushing may not spray properly, lacking the components needed for proper flow, leveling, curing, adhesion and sheen.

The TDS provides answers to basic application questions through several key sections:

Product Description: Found at the top, this section outlines intended uses, features and available sheens.

Chemical and Physical Properties: This section lists critical specifications including viscosity. A simple viscosity check before application determines whether the product needs reducing, heating or can be used as-is. Weight and volume solids help calculate coverage, required coats, and costs.

Coverage formulas, necessary to calculate square foot coverage and dry film thickness:

- $1604 \times \text{volume solids} \times \text{transfer efficiency} = \text{square foot coverage at 1 dry mil}$

- $\text{Volume solids} \times \text{wet mils} = \text{dry mils}$

Film thickness: Recommended wet mil application rates and maximum dry film thickness prevent coating failures such as peeling, cracking or chipping.

Dry times: Listed for touch, sanding, recoating and stacking. Standard conditions are typically 77 degrees Fahrenheit and 50 percent humidity. For every 11-12 degrees variance from listed temperature, multiply dry time by a factor of two.

Catalyzation requirements: Specifies catalyst type, ratio and pot life. Following these prevents cracking, hazing, blooming, color changes, printing issues and adhesion problems. Never estimate ratios.

Reduction recommendations: Details reducer type, ratio and mixing procedures.

Cleanup and disposal: Lists appropriate solvents for equipment, brushes and rags, plus disposal guidelines.

Surface preparation: Critical for preventing fisheye, adhesion and sheen problems. Often includes specifications for new versus existing surfaces, interior versus exterior applications, and moisture content limits.

Sanding and cleaning: Provides grit recommendations and cleaning procedures.

Tinting information: Lists compatible colorants, maximum tint loads and equipment restrictions to prevent color float, adhesion issues, fisheye, bleeding, streaking and application problems.

Equipment settings: Recommends air pressure and tip sizes for optimal application.

Storage and shelf life: Proper storage maintains coating quality. Improper storage causes adhesion problems, uneven application, gelling, skinning, gassing, separation, and viscosity changes. Repackaging into incompatible containers can trigger chemical reactions. Calculate shelf life from the manufacturer's date, not purchase date.

Testing data: Often includes performance results to guide troubleshooting.

Companion products: Lists tested, compatible products. Mixing untested coatings risks product failure and safety hazards.

Technical data sheets serve as reliable guides for finishing projects. Following their specifications helps ensure predictable, professional results. **W**

Diane Shattuck is a finisher, consultant, guest speaker, writer and teacher. She can be contacted at dianeshattuck@msn.com. Questions, suggestions and comments are always welcome.

Festool expands Domino line with corded, cordless models

By Jennifer Hicks

Festool recently expanded its Domino Joiner line with two new models: the DCF 500, the first cordless Domino, and the DF 500 R, a redesign of the original corded version.

The Domino is known for its unique cutting motion that creates twist-proof mortises that fit Domino tenons, producing strong, long-lasting wood joints. Domino tenons feature expanding glue pockets and side grooves that lock in tight.

"The Domino Joiner DF 500 R is designed to elevate precision, stability and efficiency on any project," says Philip



Festool's new DF 500 R and DCF 500.

Strnad, director of brand and product marketing at Festool.

"Key enhancements include a fast and repeatable setup with locking indexing pins, improved column stability and tool-free lever adjustment. Professionals will benefit from customizable mortise depths, system-matched accessories for consistent joints, dust-free operation, and support for both indoor and outdoor projects."

The DCF 500 will be available this summer, along with a new Systainer SYS3 MFT and KSC 60 cordless compound miter saw combo kit, as part of the company's goal to better support mobility and on-site workflows.

The DCF 500 features Festool App capability, so users can track the tool's location, find accessories, get tips, receive software updates or request service through their phone.

"At Festool, we're dedicated to continually improving the tools professionals already know, trust and rely on every day. That's why we enhanced the fan-favorite Domino and expanded the lineup with a new cordless version," Strnad said.

"Each product is designed to support efficient work through easy setups and faster, more streamlined workflows."

The Domino Joiner DF 500 RQ-Set (578544) sells for \$1,359. Starting in June, the Cordless Domino Joiner DCF 500 E-Basic (578121) will sell for \$1,279, with battery and charger options sold separately.

Learn more at festoolusa.com. **W**

PaintLine expands drying rack line

By Jennifer Hicks

PaintLine has introduced two products: the ProDryingRack Adjustable Depth, a double-sided, high-capacity rack with adjustable shelving, and a platform cart for the company's ProDryingRack Transport Rack.

The ProDryingRack Adjustable Depth (PDRAD) can be configured with up to 80 arms to create 20 levels per double-sided tower. It holds up to 80 cabinet doors or panels, 20 face frames, or 160 drawer fronts with an optional adapter. The rack features adjustable-depth shelving that accommodates various cabinet parts.

"When moved to an offset position, the PDRAD's depth-adjustable shelves can accommodate larger items like cabinet face frame panels," says PaintLine CEO Kyle Robinson.



The ProDryingRack Adjustable Depth and platform cart.

The PDRAD includes 40 shelves and sells for \$1,501. Accessories sold separately include a small parts adapter for drying smaller components, felt pads for delicate panels, and extra shelf arms for expanded capacity.

The platform cart is designed for use with the company's existing ProDryingRack Transport Rack. The cart mobilizes the rack for moving finished cabinet doors to installation sites or around shops.

The cart, sold separately from the rack, costs \$603.

Learn more at paintline.com. **W**

New BladeClean system from MicroJig

By Jennifer Hicks

MicroJig has introduced the BladeClean blade and bit cleaning system, which the company says offers a way to restore saw blade and router bit performance without sharpening.

Henry Wang, MicroJig founder and inventor, says cleaner blades result in smoother feed, fewer burn marks, less strain on your saw and a longer blade life. He explains how the system works.

"The BladeClean system is for cleaning saw blades, and a second function is you can also clean router bits. There are two wells. The bigger well is for cleaning a saw blade up to 12", and it has a cleaning pad underneath."

After filling the base with a cleaner solution, "take your saw blade with dirt and resin build-up and put it in the BladeClean and let it soak, depending on how dirty your blade is, maybe 30 seconds. Then use the magnetic handle on the saw blade and rotate it in opposite directions of where the carbide tip is facing, putting slight pressure on the pad. Then you flip the blade over with that handle and clean the other side."

The BladeClean accepts blades up to 12 inches in diameter and cleans router bits with 1/4-inch, 1/2-inch, 6mm, 8mm or 12mm shank sizes. The top features a smaller reservoir for router bits that, when the lid closes, submerges



The BladeClean Blade from MicroJig is an all-in-one kit for cleaning circular saw blades and router bits.

the bits in cleaning solution.

The BladeClean sells for \$119 and includes the cleaning well, magnetic handle, wire brush, cleaning discs and rotary tool mandrel.

Learn more at microjig.com. **W**

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Richelieu Hardware wins gold, silver at KBIS

By Jennifer Hicks

Richelieu Hardware won two awards at the Kitchen & Bath Industry Show in Orlando for innovative products in the Best of KBIS award program. The Verti 840 motorized lift won gold in the Wellness Trailblazer category, and the Atipica decorative hardware won silver in the Style-Statement Kitchen category.

"Winning in both style and wellness underscores Richelieu's ability to seamlessly merge aesthetics with meaningful functionality, reinforcing its commitment to innovation, thoughtful design and solutions that enhance everyday living," the company said in a statement.



The Verti 840 motorized lift system for upper cabinets.

The Verti 840 motorized lift is an electric height-adjustable system that brings cabinet shelves down to countertop level. The lift operates smoothly, silently, and safely, helping users avoid stretching and



The Atipica decorative hardware collection.

straining. It is developed by Granberg, a European manufacturer of accessible kitchen and living solutions.

Atipica, derived from the Italian word for atypical, is a decorative hardware collection that emphasizes texture, geometry and

color. It was designed by Gianmarco Codato and Luciano Trevisiol, who are known for transforming everyday objects into design statements. The collection offers finishes in orange and metallic sheens including blue, gray, green, satin gold and black.

The Best of KBIS awards are presented annually at the show. A panel of designers, architects and product experts judges entries across seven categories focusing on style, innovation, functionality, sustainability and wellness.

Learn more at richelieu.com. **W**

PRECISION DRIVE SYSTEMS HIRES DAVID MOTLEY AS SALES ENGINEER

Precision Drive Systems (PDS), a global provider of motor spindles, engineering support, and repair and full rebuild services near Charlotte, N.C., has announced the hiring of David Motley as a sales engineer for new engineered products and services.

"David's 14-plus years of experience across industrial automation, OEM sales, product management, and territory development make him an outstanding addition to the PDS team," said Robert Turk, President of PDS. "His strong foundation in mechanical engineering and analytics, along with his background working closely with engineering, manufacturing, marketing, and sales to drive innovation and customer expansion at Parker Hannifin, align with our commitment to delivering high-value solutions and exceptional customer experience."

Before joining PDS, Motley served as Southeast U.S. OEM regional sales manager at Iwaki America, where he managed multi-state OEM accounts. Previously, he held roles as regional manager at Niantic Seal and territory manager at United Seal & Rubber Co. Earlier in his career, he spent nearly a decade at Parker Hannifin Pump & Motor Division, progressing from application engineer to product sales manager.

SCARLETT INC. REACHES 60-YEAR MILESTONE

In 1965, Scarlett Inc. started as a local woodworking equipment supplier. Sixty years later, the Grand Rapids-based company has become a manufacturing equipment distributor, marking six decades of serving West Michigan manufacturers.

While the industry has shifted from traditional saws to CNC solutions, the company's business model remains focused on customer partnerships, according to company executives.

Much of Scarlett's growth came under the late James Evan Scarlett, an engineer who led the company's expansion from hardware sales into equipment servicing, tooling and parts distribution. His personal motto, "Get busy living," guided the company's diversification strategy, executives said.

"James was the one who really defined what Scarlett is today," said Chris Timmer, president of Scarlett Inc. "He was an engineer who cared deeply about people. We've kept that grit and his focus on mentorship at the center of everything we do."

As Scarlett enters its seventh decade, the company continues expanding while maintaining its four core divisions: sales, tooling, service and parts.

"Reaching 60 years really comes down

to the shops and plants that have let us through their doors since 1965," Timmer said. "Our job has always been to keep our customers' spindles turning and their projects moving. We're proud of the history we've built here in Grand Rapids, and we're more focused than ever on what's coming next."

To celebrate the milestone, Scarlett Inc. will host an open house at its headquarters on April 29-30 featuring equipment demonstrations and discussions about manufacturing technology.

"The next decade is about honoring the spirit James Scarlett instilled in the team," Timmer said. "As manufacturing continues to change, Scarlett Inc. is ready to change with it."

Learn more at scarlettinc.com.



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Choosing and using abrasives

How mineral type, backing, and technique affect sanding efficiency, surface quality, and cost

By Yoav Samuel Liberman

The wide belt sander slows slightly as a freshly glued maple workbench top passes under the platen. The motor does not stall, but the sound changes — subtly at first. The abrasive belt, loaded with resin and dust, has stopped cutting efficiently. Heat rises, dust begins to burnish instead of cut, and what should have been a quick pass now risks surface defects and wasted time.

Situations like this occur daily in woodworking shops. Sanding is often viewed as a routine step rather than a machining process, yet abrasives function as precision cutting tools. Each abrasive grain acts as a microscopic cutter, removing material and refining the surface. Abrasive selection, backing design, and sanding technique directly affect productivity, finish quality, and abrasive cost.

Modern abrasives differ significantly in mineral composition, grain structure, backing materials, and dust extraction performance. Understanding these differences allows shops to reduce sanding time, improve consistency, and extend abrasive life.

The mineral itself determines how fast an abrasive cuts, how long it lasts, and how it wears during use.

Aluminum oxide remains the most widely used abrasive in woodworking. It provides a reliable balance of cutting speed, durability, and cost. As aluminum oxide grains wear, they fracture and expose new cutting edges, allowing continued material removal.

At the Amana Furniture and Clock Shop (above) in Iowa, manufacturer of maple workbenches built for Benchcrafted,



Ceramic discs are a good match with random orbital sanders.

woodworkers rely primarily on aluminum oxide abrasives for sanding maple workbench components and furniture. The material performs consistently across hardwood species while remaining cost-effective for high-volume production.

In teaching environments and furniture shops alike, aluminum oxide sheet abrasives remain the most practical choice for hand sanding. Norton's ProSand sheets, for example, offer durable backing and consistent cutting action, even under demanding use.

Despite the availability of newer abrasive technologies, aluminum oxide continues to serve as the foundation for most woodworking sanding operations.

Ceramic abrasives represent a major advancement in abrasive technology. Unlike conventional aluminum oxide, ceramic grains are manufactured using controlled sintering processes that produce extremely hard, microcrystalline structures.

3M's Cubitron abrasives, widely used in both metalworking and woodworking, utilize precision-shaped ceramic grain technology. Rather than relying on irregular fractured particles, Cubitron abrasives are engineered into uniform triangular shapes. These grains cut more efficiently by slicing through material rather than plowing or rubbing.

As the tips wear, the grain fractures in a controlled manner, exposing fresh, sharp edges. This self-sharpening behavior allows ceramic abrasives to maintain cutting efficiency longer than conventional abrasives.

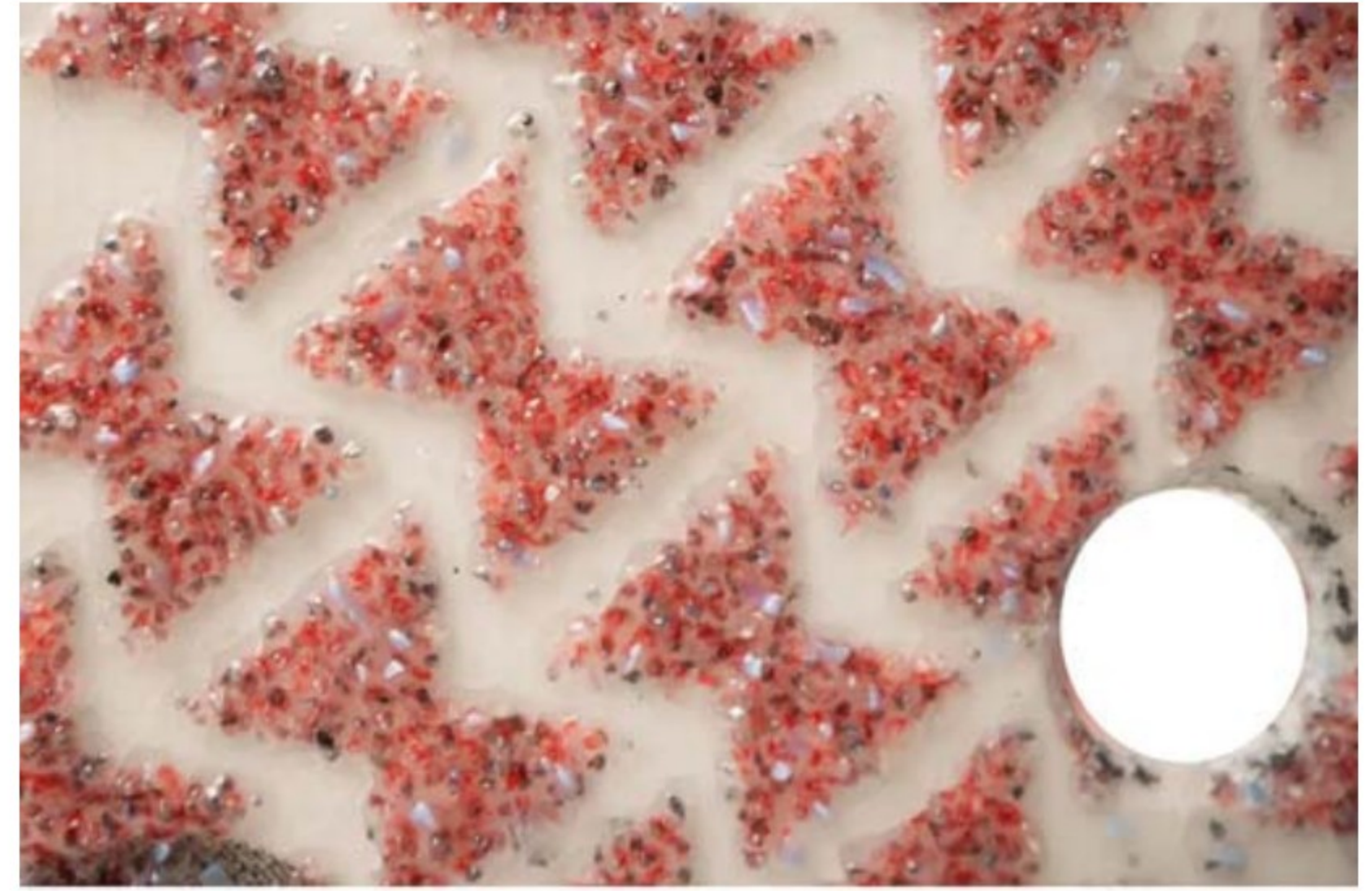
Aaron Black, owner of ABD Custom LLC in New Hampshire, uses Cubitron ceramic discs extensively for random orbital sanding.

"The ceramic discs cut faster and stay sharp longer," Black said. "With proper dust extraction, they remove material quickly without loading up."

This increased efficiency is especially valuable in production environments, where reducing sanding time directly improves throughput.

Zirconia alumina abrasives occupy a middle ground between aluminum oxide and ceramic abrasives. These grains combine aluminum oxide with zirconium oxide, producing a tougher abrasive that resists fracture under heavy pressure.

Zirconia abrasives are commonly used in belts for



Mirka's new Ultimax Ligno (top) has a very distinctive grain pattern that looks like tiny bow ties; Klingspor's new Fusion Foam abrasives, available in discs and other formats.

heavy stock removal, especially in applications involving hardwoods, composites, or metal.

They tend to last longer than aluminum oxide under aggressive sanding conditions but typically cost less than premium ceramic abrasives.

Silicon carbide abrasives are sharper than aluminum oxide but more brittle. They fracture easily and wear faster when sanding wood.

As a result, silicon carbide is more commonly used for sanding finishes, plastics, and composites, or for very fine sanding applications where sharp cutting action is required.

It is also frequently used in wet sanding applications.

Color-coded abrasives from 3M and Norton.



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New SurfPrep ProFoam pads are ideal for knocking down sealer on profiled surfaces.



COLOR CODING AND ABRASIVE IDENTIFICATION

Abrasives are often identified by color, but color alone does not define performance. Manufacturers use dyes to distinguish mineral types or product lines, but there is no universal color standard.

Common examples include:

Brown abrasives: Typically aluminum oxide. These represent the most economical and widely used abrasive products.

Blue abrasives: Often premium aluminum oxide or ceramic blends. These may include grinding aids or improved bonding systems that improve cutting efficiency and reduce loading.

Purple abrasives: Frequently associated with ceramic abrasives, including precision-shaped grain products such as Cubitron.

Red abrasives: Sometimes they represent aluminum oxide with additives designed to reduce loading.

While color can provide a general indication of abrasive type, performance depends on grain composition, bonding method, and backing material — not color alone.

In practice, premium abrasives often use dis-



A new series of foam sanding pads from Rockler uses PSA paper and let a woodworker get into corners and curves.

tinctive colors to differentiate themselves from lower-cost products.

BACKING MATERIALS: STRENGTH AND FLEXIBILITY

Backing material affects durability, flexibility, and suitability for specific sanding operations.

Paper-backed abrasives are widely used for sheet sanding and random orbital sanding discs. They offer flexibility and low cost, making them suitable for general sanding tasks. However, paper backing can tear under heavy use.

Cloth-backed abrasives provide greater strength and tear resistance. They are commonly used in belt sanders, where abrasives are subjected to higher tension and stress. Cloth backing is essential for aggressive stock removal applications.

Foam-backed abrasives conform to surface contours and distribute pressure evenly. At Amana Furniture, employees use foam-backed abrasive pads between finish coats to refine surfaces without damaging the finish.

Mesh abrasives use an open net structure rather than a solid backing. This design allows dust extraction across the entire abrasive surface.

Unlike traditional discs, which rely on fixed hole patterns, mesh abrasives allow continuous airflow, reducing dust buildup and loading.

Improved dust extraction extends abrasive life and improves sanding efficiency, especially in fine sanding operations.



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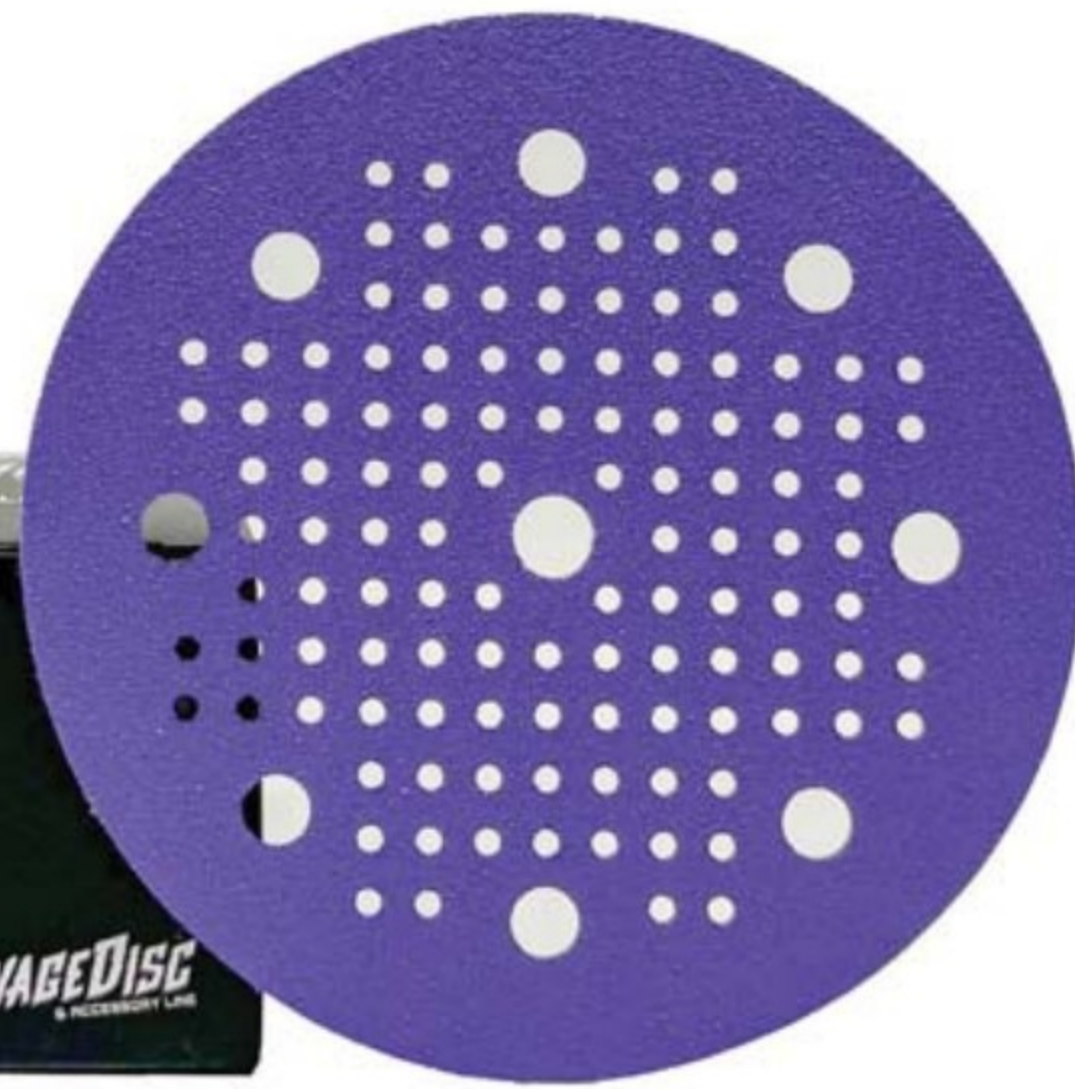
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The new Granat Net line from Festool reduces dust and increases lifespan with its open net surface.



The new SavageDisc from Maverick Abrasives combines a ceramic abrasive grain with a Mylar film backing.

Norton's extensive product line includes MeshPower with an open mesh construction, allowing particles to flow freely through thousands of tiny holes.



THE PRODUCTION PERSPECTIVE: VERSATILITY OVER SPECIALIZATION



For Aaron Black, who operates ABD Custom LLC, a custom woodworking business in New Hampshire, the choice of abrasives is a calculated balance between aggressive stock removal and refined finishing.

In his shop, the “workhorse” remains premium aluminum oxide (notably from Maverick Abrasives for his drum sander and 3M Pro Grade for hand-sanding), but he has increasingly integrated 3M’s Cubitron II (ceramic) for his 6-inch random orbital sanders. Aaron notes that the ceramic mineral’s ability to cut fast while clearing dust exceptionally well makes it indispensable, particularly when paired with high-end dust extraction.

His workflow for large-scale tabletops involves a strategic “triathlon” of tools: starting with a handheld belt sander to level glue-ups, transitioning to a Festool Rotex in its aggressive “grinder” mode with 60-grit to knock down belt-sander lines, and finishing with a 5mm-stroke random orbital sander.

Interestingly, Aaron challenges the industry trend of switching to smaller 3mm-stroke sanders for finishing; he finds that simply “bumping up the grit” on a 5mm-stroke machine provides a world-class surface without the need for additional machinery.

Beyond the power tools, Aaron maintains a tradition of “shop-made” solutions, utilizing Baltic birch and cork-backed blocks for hand-sanding and even creating custom “rasps” by applying spray adhesive to hardwood sticks.



One of the most critical aspects of Aaron’s workflow is heat mitigation, especially when working with resinous or oily species like mahogany. He emphasizes that “loading” (the clogging of abrasive grains) is often a result of friction-induced heat. To combat this, he proactively reduces the speed of the sander, which lowers the temperature at the point of contact and prevents the wood’s natural oils from liquefying and trapping dust. This adjustment, combined with light pressure and the frequent use of rubber cleaning blocks to refresh the surface, ensures that even standard abrasives last much longer in a production environment — proving that longevity is as much about technique and heat management as it is about the mineral itself.

ABRASIVES AS MACHINING TOOLS

Sanding is often viewed as a finishing process, but it is fundamentally a machining operation.

Each abrasive grain functions as a cutting edge. Mineral composition, grain shape, backing material, and sanding techniques all influence performance.

Advances in ceramic grain technology, mesh backing structures, and dust extraction compatibility have significantly improved sanding efficiency.

Understanding abrasives as cutting tools—not disposable supplies—allows woodworking shops to improve productivity, reduce abrasive consumption, and achieve more consistent surface quality.

BALANCING PERFORMANCE AND COST

Higher-performance abrasives often cost more initially but can reduce overall sanding time and abrasive consumption.

Ceramic abrasives provide faster cutting and longer service life in demanding applications.

Mesh abrasives improve dust extraction and reduce loading.

However, aluminum oxide remains the most economical choice for general woodworking applications.

Selecting abrasives based on performance rather than price alone improves productivity and reduces overall costs.

Find suppliers and manufacturers of abrasives in our online Resource Guide at resourceguide.woodshopnews.com. **W**

Before the purchase: Real-world insights from a CNC cabinet shop owner

By Weston Peters

Recently, I was reviewing some notes and reflecting on the process of purchasing our first CNC machine. At the time, I remember wishing for more resources for small shops making the switch to CNC. While there are thankfully now more resources and much has been written about it, it can still feel like a major step for a small shop.

Today, a nested-based CNC router is just about as prevalent in the shop as a table saw, but there are still many shops where the owner hasn't chosen to invest in one. Perhaps they don't think they have room. Perhaps they think it's too expensive and the juice isn't worth the squeeze. Maybe they think their shop is too small, either in sales or space, to justify the purchase. Maybe they're just resistant to change. The purpose of this article is not to necessarily change your mind. We just want to share our experience and how it transformed our business.

I vividly remember sitting in a seminar at the International Woodworking

Fair in 2008, where the speaker said, "You're not really a serious cabinet shop if you don't have a CNC machine." Even though we were beginning to research CNC options at the time, this statement felt mildly offensive and took me aback. Years later, I now understand what the speaker was trying to emphasize. While it's not necessarily a definitive statement, if you ask shops that have incorporated a CNC into their workflow, they will almost universally tell you it has had a major positive impact on their business. For us, I can hardly imagine going back to a shop without one.

Back then, my dad owned our four-man shop and we mainly did residential work, with a few commercial jobs scattered in. We were both looking to expand the shop's throughput without significantly expanding our team, in keeping with our shop's smart and lean philosophy. We had been exposed to the benefits of CNC technology by buying pre-cut parts, and it amazed us how much they

improved our assembly speed. Additionally, we found ourselves with work that required us to farm out CNC work to other shops. All of this together set us on a path to purchase our own router.

Once we "took the plunge," we immediately noticed that incredible new opportunities opened up for us. A year after we purchased the machine, we were able to take on a mill-work project for the Atlanta Hawks locker room, something that would not have been possible without CNC. We also found that the machine paid for itself through contract work for other shops. The improvements to our own efficiency and productivity were the frosting on the cake.

This was our experience, but what about your shop? Are you thinking about a CNC machine? If you are, here are some things we learned from our experience for you to consider.

DO YOU HAVE ROOM?

Sometimes you may realistically not have room. Some small shops are truly small. However, don't look at a smaller space as a hindrance. Take the opportunity to look at the layout of your shop. Start with a blank slate and seriously consider your processes. How can you slot a CNC machine into the flow? Could this new machine eliminate another piece of equipment? Did your shop grow organically, with little thought to efficiency? Is there a sticking point in your shop that irritates you every time you work there? The possibility of increased efficiency and revenue from a CNC machine may justify expanding your space, either through remodeling or relocation. Regardless of whether you choose a CNC





machine, every shop can benefit from better layout and workflow.

GET REFERRALS

Do your own research, but I cannot overstate the value of referrals from other shops. Referrals will give you other people’s actual experiences. Go to trade shows, call other shops in your region. In our area, our experience is that other shop owners were more than happy to share with us. Hopefully, you will find it to be true for you as well.

DON’T FOCUS ON STATS ALONE

Equipment manufacturers really like to emphasize their machine’s performance stats. For instance, they may trumpet how fast the machine will move. Realistically, though, there are natural limits to how fast anyone can push a router bit through wood. The more important statistics are the speed when not cutting (rapid move) and the tool-change speeds. However, even these stats may not be as important in a small- to medium-sized shop where the machine may not even run every day.

In our case, we wanted a 5x12 machine but ended up buying one with





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a slightly slower rapid speed because it had a smaller footprint for the safety fences. The trade-off of a smaller footprint for slightly slower rapid speed has proven worth it for us.

BUY FOR SALES AND SUPPORT

When it comes to things like equipment and vehicles, a lot of hay has been made over brand distinctions and brand superiority. If we're really honest, while the brand does matter somewhat, the single most important part of any purchase is your relationship with your salesperson and the support the company can provide. A great machine with poor after-purchase support is worse than a lesser machine with great support. The last thing you need in an emergency is to wait ages for a response or run into part availability issues.

CONSIDER THE TABLE SIZE

Bigger isn't always better. Most cabinet shops will get along just fine with a 4x8 table. That said, if your shop does a lot of laminate, solid surface, or large millwork projects, a 5x12 table is a better choice. Don't just think about what you're doing

now; consider where you want to be in five years. If you buy only for your current needs, you may regret it later as your business expands.

INFEED AND OUTFEED

Another thing to consider is how you'll get material into the machine and parts out of it. In our shop, to save our backs, we chose a vacuum lift to load the machine. This enables a single operator to load heavy sheets of material singlehandedly. Many machines will offer an autoloader infeed table option. For us, sacrificing the floor space wasn't worth it to save a few minutes in the process. An outfeed table or unloading system is more important. We've found that this allows the operator to perform secondary operations, such as labeling, edge banding, or pocket drilling, while the machine is cutting the next sheet.

SOFTWARE

Software is the heart of the CNC machine, and many of the frustrations of implementing CNC are software-related because the learning curve for software is often steeper than that of the machine itself. This is one of

the most important decisions you will make regarding CNC automation. Choose a software platform that you can grow with. Rarely will the software that ships with your machine completely fit your needs. For a cabinet or millwork shop, a more robust software suite is usually necessary. Consider your needs. You may need two different pieces of software to cover all of your shop processes. One that specializes in cabinet production and another for custom pieces like furniture, conference tables, or hardwood processing. In our case, we had already been using a leading software brand to generate drawings and cutlists, and while we tried several other less expensive options, we ultimately chose to stay with what we were familiar with for the cabinet manufacturing and added a different program for the non-cabinet parts.

Secondly, really lean into training on your specific software. As I mentioned before, the learning curve is steep, so training is vital. Sometimes, training lessons come with the software. If they're not included with your purchase, try to negotiate to have them included, or at least get a dis-

count on training. You will likely find that training will be absolutely worth the investment.

PLAN FOR POWER AND AIR

CNC machines require a significant amount of both electrical power and air. Proper planning in both instances can save you money and help you avoid problems down the road.

When it comes to power, guesswork won't cut it; consult with an electrician to ensure it's right. Improper or inadequate power connections can stall out the installation process. In fact, the setup is often included with the machine's purchase, but if the installer finds that the electrical connection isn't right, he'll have to go home without setting up the machine.

In our instance, our shop is in a rural setting, and three-phase power isn't readily available. The electronics in a CNC machine require a super stable power supply, so we had to purchase an electronic phase converter. We received two quotes for the electrical work at our shop, and one quote was \$40k higher than the other. The company with the higher quote recommended that we upgrade our service, get new transformers, and make other major changes. The other company took the time to really try to understand our processes. They asked us how many machines we ran at once and made recommendations to allow us to retain our existing electrical service. Years later, and after several machine upgrades, we are still using the same service.

Regarding air supply, if you already have a robust air system in place, you may be okay. Review the demands

of your particular CNC machine and evaluate what you have. Most piston air compressors have a duty cycle of only 50 percent, which may not be sufficient to run a CNC. We've found a screw-type compressor to be the best option for our shop.

With any air system, moisture is a killer, so a dryer is an absolute must-have. For a high-demand system that requires completely clean, dry air, such as a CNC machine, a regenerative air dryer is the best option. Side note: this type of air supply will be best for your finish room as well.

When it comes to power and air, do your research, get multiple quotes, and ask for recommendations from other shops in your area.

DON'T GET DUSTED

A CNC machine can really make the dust fly, so it is often necessary to upgrade your dust collection system. As with many other things listed here, think ahead to where you want to go and purchase a system that will support your shop in the long run. You may find that spending money now can save you money down the road.

TOOL TIPS

As with so many other aspects of this article, where you get your tooling from is as important as what you get. The size of the tooling company is less important than the knowledge and accessibility of the sales team. A smaller company may not be able to compete on price, but it may have substantially better customer service. Again, do your research and ask around. Be sure to have all of your tooling, tool holders, and your tool changer on hand before the setup

technician arrives. This will enable them to set up and calibrate everything in one go.

Once you're up and running, batching your tool sharpening may save setup time in the long run.

PART LABELING

In CNC production, it is critical that parts be labeled, one way or another. It is simply too hard to keep track of everything otherwise. Some high-end machines have built-in labelling done during or before the cutting process, but this feature may be out of reach for a small or mid-sized shop like yours. In our shop, we've found that printing the labels and having the operator add them on the outfeed table is the most cost-effective process. We're a paperless shop, so the sheet layouts are on an iPad at the outfeed station, making the labeling process really easy. Once labeled, our operator places the parts vertically on a cart, grouped by cabinet number, ready for assembly.

PRODUCTION EFFICIENCIES

One common thread throughout this article is that incorporating a CNC machine into your shop can offer additional benefits that may not be obvious at first glance. In our shop, we found that implementing a CNC helped us rethink some processes and further standardize our construction methods and materials. For example, we chose to make our unfinished ends out of the same material as our adjustable shelves and partitions. This helped with material yield and reduced our material SKUs.

In conclusion, there are as many methods of cabinet construction as there are cabinet shops, so take our experiences with automation for what they are. Your experiences may differ, but as long as you endeavor to enjoy the process, you will find it to be an exciting time. Growth is never easy, nor is it painless, but I've never heard of a shop that has endeavored to grow and regretted purchasing a CNC machine. **W**

Weston Peters (left) is the second-generation owner of Peters Cabinetry in Brookville, Ohio.





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Zimmerman with the shop's custom slab surfacer.



CREATING A SHARED EXPERIENCE

Ole Wood Shack involves clients at every step, from slab selection to videotaped epoxy pours

By Jennifer Hicks

PBradlyn Zimmerman of the Ole Wood Shack in Pleasant Hall, Pennsylvania, just outside Harrisburg, offers custom furniture with live edge and river tables as his signature products.

Zimmerman started the business in 2020 after years working in the woodshops of his father and uncle. Drawing on that background, he built a company centered on craftsmanship and customer experience — an approach that has proven successful in the growing market for bespoke furniture.

“That’s one thing that sets us apart from just going to the store and buying something,” Zimmerman says. “When clients come to us, we keep them updated through every step of the build. Through the slab selection they can pick the exact slab they’ll be using in their table and when we do the epoxy pour, we always video that for them so they can see the epoxy part going in, and all the other steps in making the table come to life.”

Zimmerman has shared his experience with the broader woodworking community. In 2022, he authored “Building Wood and Resin River-Style Tables,” a step-by-step guide published by Fox Chapel Publishing.

Working mostly solo, with occasional help from his father, Zimmerman operates from an 1,800-sq.-ft. four-bay garage on his property. The shop is divided into two sections: one for rough milling and another for assembly and finishing work.

TRIAL AND ERROR

Zimmerman’s journey into river tables began as a side project while working in his father Tim’s woodshop. Tim’s business primarily produces handcrafted solid wood chairs for Zimmerman Chair, a wholesale furniture manufacturer in Lebanon, Pennsylvania, owned by Tim’s brother. Around 2010, the father and son team started making live edge tables alongside their chair production.

Over the following decade, Zimmerman experimented with extra wood in the shop, making floating shelves, coffee tables and other small pieces. He gradually taught himself how to work with epoxy resin, learning to mix, pour and cure epoxy before developing the confidence to turn the craft into a business.

“With the live-edge, I like the custom aspect of it. It’s unique,” he says. “I enjoyed making the chairs, but we



Pouring the epoxy river.

were doing large batches of chairs like 20 or 30 at a time, so there were times you're just working on one part of them. You'd have a box of 200 legs, and you're just working on legs. It could get monotonous. I enjoyed it, but I started doing this on the side."

NATIONWIDE CLIENTELE

Four years after launching the Ole Wood Shack, Zimmerman's work now reaches clients throughout the U.S., with projects shipped from California to Martha's Vineyard. Most clients are in the Northeast, particularly New England states down to Virginia, and are primarily homeowners looking for one-of-a-kind builds.

"The clientele is generally all over the place. Mostly higher income people looking for something like a dining room table they can't just buy anywhere else," Zimmerman says.

He relies heavily on Google advertising and his website for leads, along with referrals and word-of-mouth recommendations.

"They want something you can't find in a store, and something where you can customize every aspect of it," he says. "When the order comes in, they tell me all the things they would like or not like with the slabs, then I take pictures of each slab, and will start with pictures of six or seven slabs, so they are actually picking their piece."

Commercial projects have become an important segment of the business.

"I would say we do around 20 percent commercial. It varies a lot every year," Zimmerman says. "Our main purchases in the commercial world are conference tables, and we also do some for restaurants, casinos, that sort of thing. Law offices are very popular for conference tables."

CHALLENGES OF RIVER TABLES

Although epoxy river tables have surged in popularity in recent years, the process remains technically demanding. One of the biggest challenges is ensuring accuracy, since each slab is unique.

"If you have to go and get another slab, there's no way you're going to recreate what the customer had planned for. You don't get a second chance," Zimmerman says. "You need to be careful with your finishing, and make sure the slab remains flat and nothing warps on you. With the slabs, you only get one shot with each piece."

The process begins with flattening the slabs. Zimmerman uses a custom surfacing machine made by Pennsylvania-based JointaWood.

"The slab surfacing machine is important — this makes your slabs flat, which is the very hard part in slab work," he says. "Some people run their slabs through a wide-belt sander, but if your slab already has a bit of a twist, it will kind of just run through it and still have a bit of a twist."

The machine features a 12-inch helical planer and a 12-inch drum sander. Pieces receive a first pass, and if there are gaps, shims are added before running back through. A jointing router is attached for machining book-matched slabs.

Once slabs are flattened and prepared, attention turns to the epoxy river itself.

MASTERING EPOXY

Working with epoxy resin requires careful preparation and attention to detail. Early in his career, Zimmerman learned this lesson the hard way.

"One of the first river tables I made, it leaked all over the floor. There were gallons and gallons of it," he recalls. "We got it done, but there were not many videos on YouTube yet, now you look on there and there's lots of information on it."

Properly constructed forms are essential for successful pours. Zimmerman builds his own forms, and the key, he says, is to make sure the epoxy doesn't stick once it cures.

Zimmerman uses EcoPoxy Flowcast resin and hardener.

"It's more of a sustainable epoxy and I've worked with it for years," he says. "Epoxy is one of the things you've got to know how it works in different temperatures and kind of get a feel for it."

Preparing the epoxy involves adding pigments to achieve the desired color.

"The hardest part is knowing what shades to mix together to create that look, because the powder that you see looks a little different when it's wet," he says.

Two-stage pours are essential to prevent overheating during the curing process. Half is poured one day and the remainder the following day. The table is left to cure for about a week before the forms are removed.

"After that you pretty much work with it like wood. You plane it, you sand it," Zimmerman says. "Obviously there's a few differences that you have to be careful of but in general you work with it as if it was wood."

River tables typically weigh 400 to 500 pounds, with



some conference tables exceeding 1,000 pounds. Zimmerman says handling pieces requires planning and special equipment like forklifts.

A REFINED DIRECTION

Zimmerman says the company has experienced ups and downs as economic conditions shift. The first two years saw rapid growth, followed by a temporary slowdown.

"I would say we're getting a lot more higher end projects than when we started out; people have seen what we've done," he says. "We've done well over 100 tables now."

Looking ahead, he hopes to expand further into high-end commercial projects and designer collaborations.

"We're looking for interior designers more. Right now, we're doing several conference tables, so we like to work with designers," Zimmerman says. "The goal is to work in the commercial world a bit more with designers on larger projects."

As part of that strategy, he's rebranding the business under a new name.

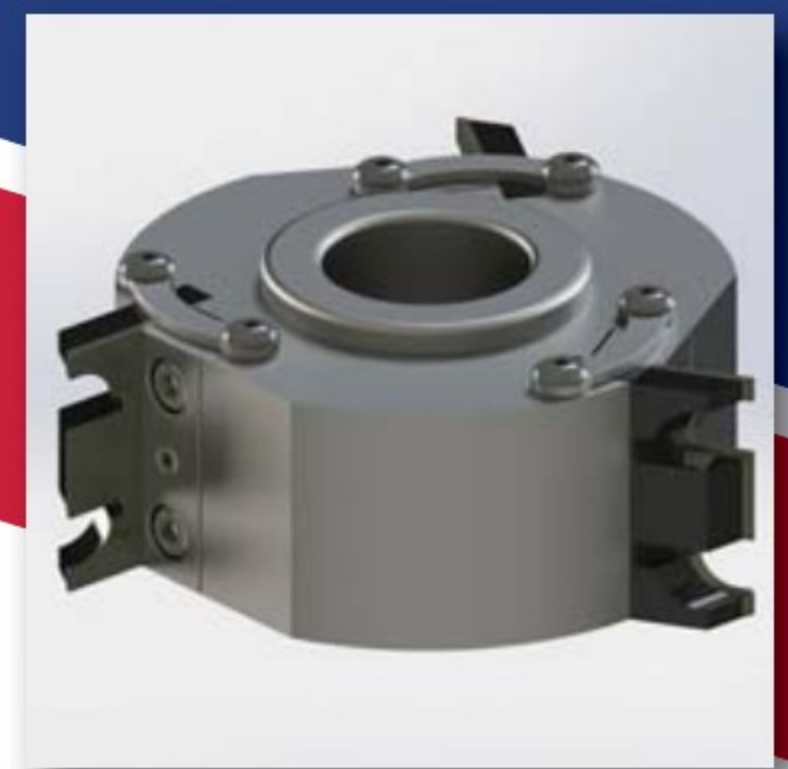
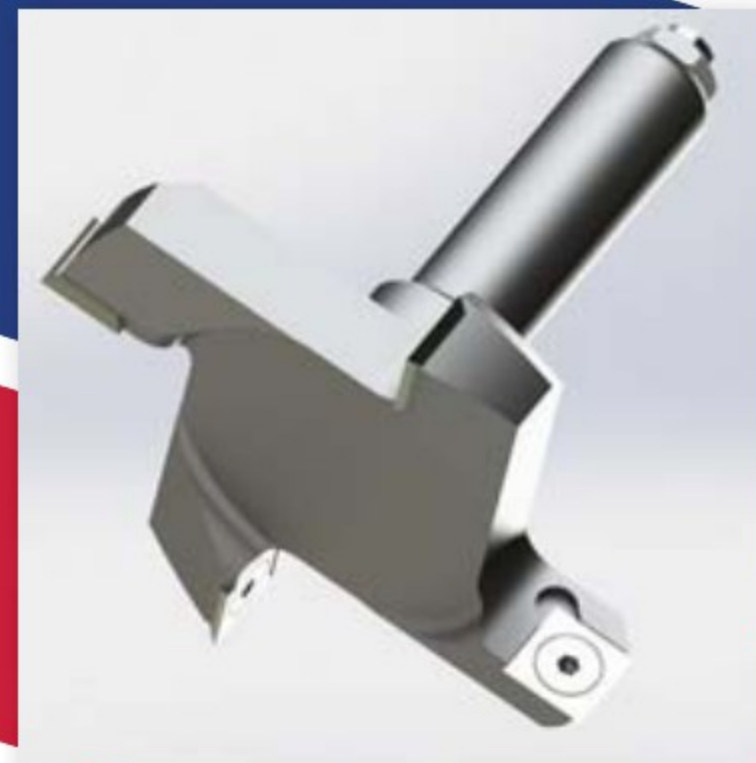
"We're transitioning the name to Vestige Furniture Studio," he explains. "The current name I started off with when I was making shelves, bowls, or trinket pieces like that, and then the business just kind of grew into tables. We want the name to more correctly represent the high-end luxury work we currently do."

Learn more at theolewoodshack.com. **W**



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Pick your package

Today's modular CAD/CAM platforms offer scalable solutions for shops of every size

By Ralph Bagnall

I programmed my first computer numerical control (CNC) machine around 1996. Back then, every X, Y and Z coordinate needed to be known and written into a text file to run the machine. It was a 2.5-axis operation, and even a simple cabinet side could take most of a day to program. Post processors had to be custom-written to match the G-code file to each specific machine.

The story is different today. Computer-aided design and computer-aided manufacturing (CAD/CAM) packages work in 2D and produce 3D models. High-end software can process entire rooms of cabinets and output everything needed in one session. Sophisticated 3D cutting previews allow for experimentation, checking and refining programs before cutting any wood. Time studies and cut lists can be used for calculating project bids.

At the top end of the market, there are fully integrated programs that push the definition of CAD/CAM software.

Companies building retail spaces, office suites or hotels should consider these comprehensive systems. At this level, some of the programs may be familiar to you, but many of them have evolved to be integrated with former rivals offering streamlined sharing and workflow.

Hexagon (hexagon.com), owner of the AlphaCAM and Cabinet Vision brands, features Cabinet Vision Core, which can be used to design and manufacture cabinets and closets as rooms or suites rather than individual box units. The program can be enhanced with add-ons such as Cabinet Vision Design, which produces walk-through 3D renderings and estimates; xCountertops for countertop configuration; xOptimizer for material yield; and xMachining to create G-code for different machines. More than 12 add-ons allow users to customize Cabinet Vision without paying for unnecessary features.

For companies serving high-end residential or retail



customers, AlphaCAM offers similar software options. AlphaCAM Core handles CAD design imports, toolpath creation, simulations and reporting. AlphaCAM xPositional can be added for aggregate use with additional axis positioning, while the xSimultaneous module enables full 5-axis interpolation.

Like Cabinet Vision, AlphaCAM offers modules to improve nesting, fixturing and parametric programming. Modules can be selected individually to build a customized system that evolves with the business.

Modular CAD/CAM systems are becoming the norm. Software now integrates into every manufacturing stage — from sales, estimating and purchasing through optimization, manufacturing and assembly. This modularity benefits users who get to pick, choose, and pay for only needed features.

Mozaik (mozaiksoftware.com) exemplifies this approach

by offering design and manufacturing support without toolpathing output. Mozaik Manufacturing includes cabinet design functions for custom makers not using fully integrated CNC manufacturing. It provides shop drawings, 3D designs, assembly sheets, cut lists, pricing estimates, labels and other manufacturing data. Shops can upgrade to Mozaik CNC as they grow.

Mozaik CNC extends beyond design to provide true-shape nesting and machine-ready G-code. It has user-friendly features — squaring remnants and instantly re-making damaged parts — and is capable of producing MDF doors and dovetail joinery on CNC machines.

Mozaik enables design using selected fasteners including screws, dowels, confirmats and specialty options from OVVO, Lockdowel, Hafële and more. Two-sided machining is simplified with the ability to flip entire sheets or individual components.



Mozaik Enterprise offers multiple user licenses with administrative controls for growing businesses. Administrators can restrict access to minimize distractions and delegate complex jobs. Access to machine controllers and databases can be limited to qualified users. The system includes job management tools and autosaves work every five minutes to protect against power outages or network failures.

For smaller shops focused on built-ins, furniture or musical instruments, other CAD/CAM programs offer appropriate design and pricing. Enroute from **SAi** (thinksai.com) provides design and manufacturing capabilities for shops handling standalone projects such as restaurant seating or signage.

Enroute specializes in 3D design and milling, particularly for creating textures in wall panels and carvings. It includes vectorizing capabilities for converting images into machin-

able vectors. But one of the most interesting features of Enroute is the ability to customize and automate toolpathing based on specific machines, tools, and materials.

Each Enroute toolpath can be saved as a template for future use. Once optimal settings are found for cutting 3/4-inch mahogany plywood, they're saved as a template. Future toolpaths for the same material can be created by selecting that template, eliminating repetitive parameter selection. Over time, this 'templating' process makes programming faster, especially when working with common materials and tooling. Enroute offers multiple functionality levels.

CAD/CAM systems have improved in capability while decreasing in price, making powerful machining functions accessible to small shops integrating their first CNC. Several options serve this entry-level category.

AutoDesk (autodesk.com) offers Fusion CAD/CAM with



multiple functionality levels: Fusion, Fusion for Manufacturing, and Fusion for Design. The base Fusion package provides integrated CAD/CAM for designing, toolpathing and outputting G-code for typical 2.5-axis woodworking projects. It includes real-time team collaboration for growing teams or cooperative work with clients and partners. The 3D modeling environment allows easy sharing with other manufacturing platforms including 3D printers.

Fusion for Manufacturing expands Fusion's capabilities to include fourth- and fifth-axis operations, toolpathing for rotary indexing and turn-mill operations, and the ability to inspect and probe parts during production. And as your needs grow, Fusion for Design offers advanced simulation studies, generative design, advanced surfacing and mesh tools, and tools for plastic and sheet metal.

KCD Software (kcdsoftware.com) defines vertical inte-

gration as "allowing custom shops to move into manufacturing, optimization, laser measuring, and component outsourcing systems at their own discretion and at their own pace." What it's actually doing is letting CNC software programs 'talk' to the shop's machines and coordinate with outsourcing partners. The more automated the communication, the less training the shop's crew needs.

BobCAD (bobcad.com) is an 'early user' program with modules that users can select to fit their specific work requirements. The CAD Design module serves as the foundation, which can be built with toolpathing and G-code modules. Then it's on to waterjet and laser programming, if you prefer. Though positioned as an entry-level option, BobCAD-CAM includes a module for SolidWorks integration — unusual at this price point.

VCarve Pro from **Vetric** (vetric.com) is popular among



first-time CNC users. The software comes bundled with numerous CNC machines and creates drawings natively, imports from other programs, and handles text with word processor-like functionality. It imports and toolpaths 3D models and offers laser and rotary modules. Users can upgrade to Vectric's Aspire, which functions similarly to VCarve while adding the ability to convert images and drawings into 3D relief models for carving.

CAD/CAM packages exist for every capability requirement. All have learning curves, but most manufacturers offer classes and online tutorials to ease the transition. Many programs operate on subscription models, though not all.

Market competition has reduced costs, improved capabilities, and expanded user options. Today's CAD/CAM marketplace differs dramatically from when I began programming in 1996, offering woodworkers unprecedented power and flexibility at every price point.

Find CAD/CAM sources in our online Resource Guide at resourceguide.woodshopnews.com. **W**



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Controlling spray and vapors

Create a safer, cleaner finishing environment without sacrificing productivity

By A.J. Hamler

Modern finishing has never been more efficient. Technologies like HVLP, catalyzed finishes and improved water-based formulas deliver consistent results faster than ever.

Yet, these advances still produce spray and vapors — the least forgiving shop airborne hazards.

Wood dust makes itself known by coating every flat surface, but finishes are considerably sneakier. Vapors, ultrafine overspray and sensitizing chemicals accumulate quietly, impacting worker health, creating fire danger, and compromising finish quality before you realize there's an issue.

As with dust collectors, managing spray and vapors isn't a simple matter of buying a booth and calling it a day. It's a system merging all finishing aspects — airflow

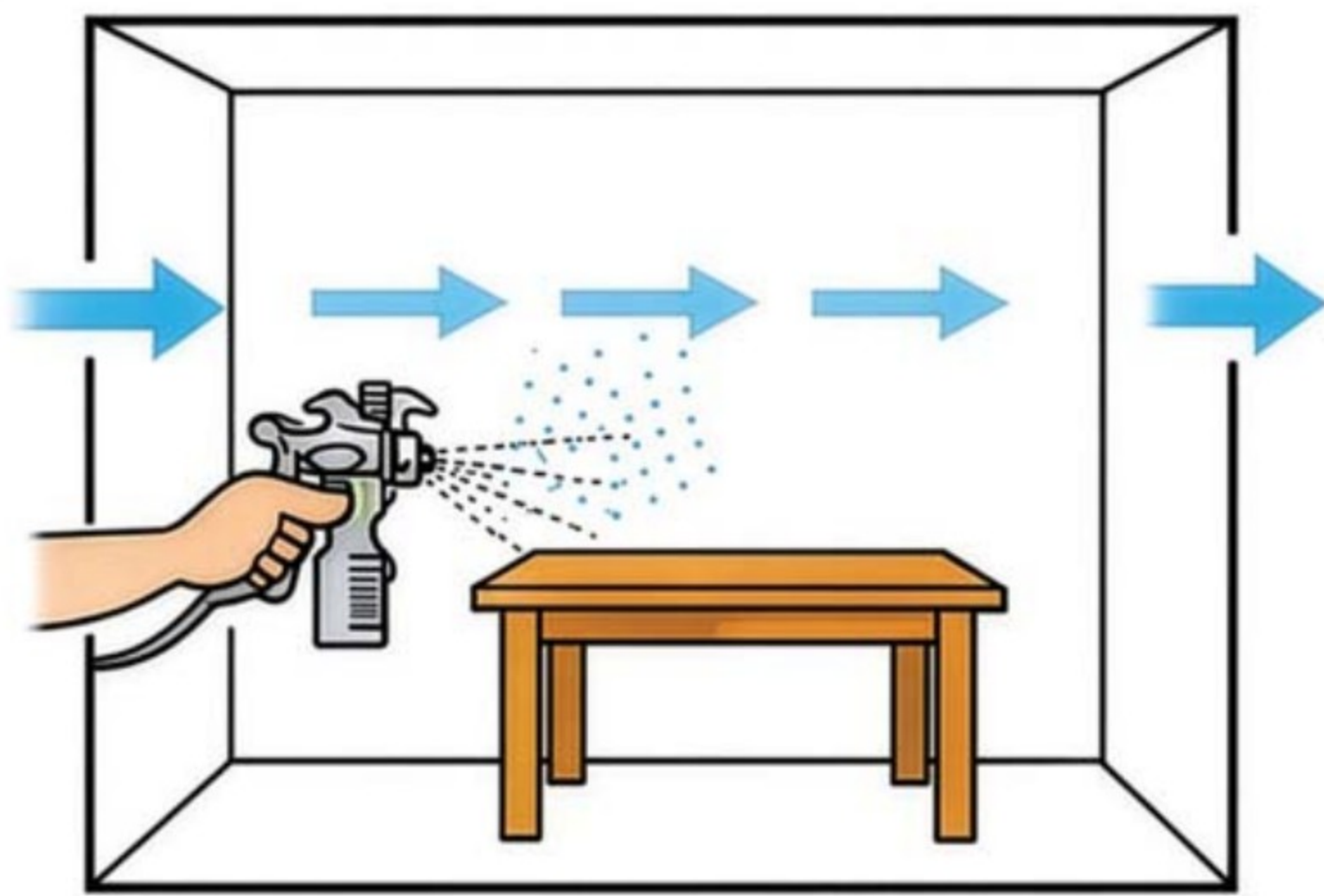
design, filtration, coating choices, work practices and maintenance — into a predictable whole.

WHY SPRAY AND VAPOR CONTROL MATTERS

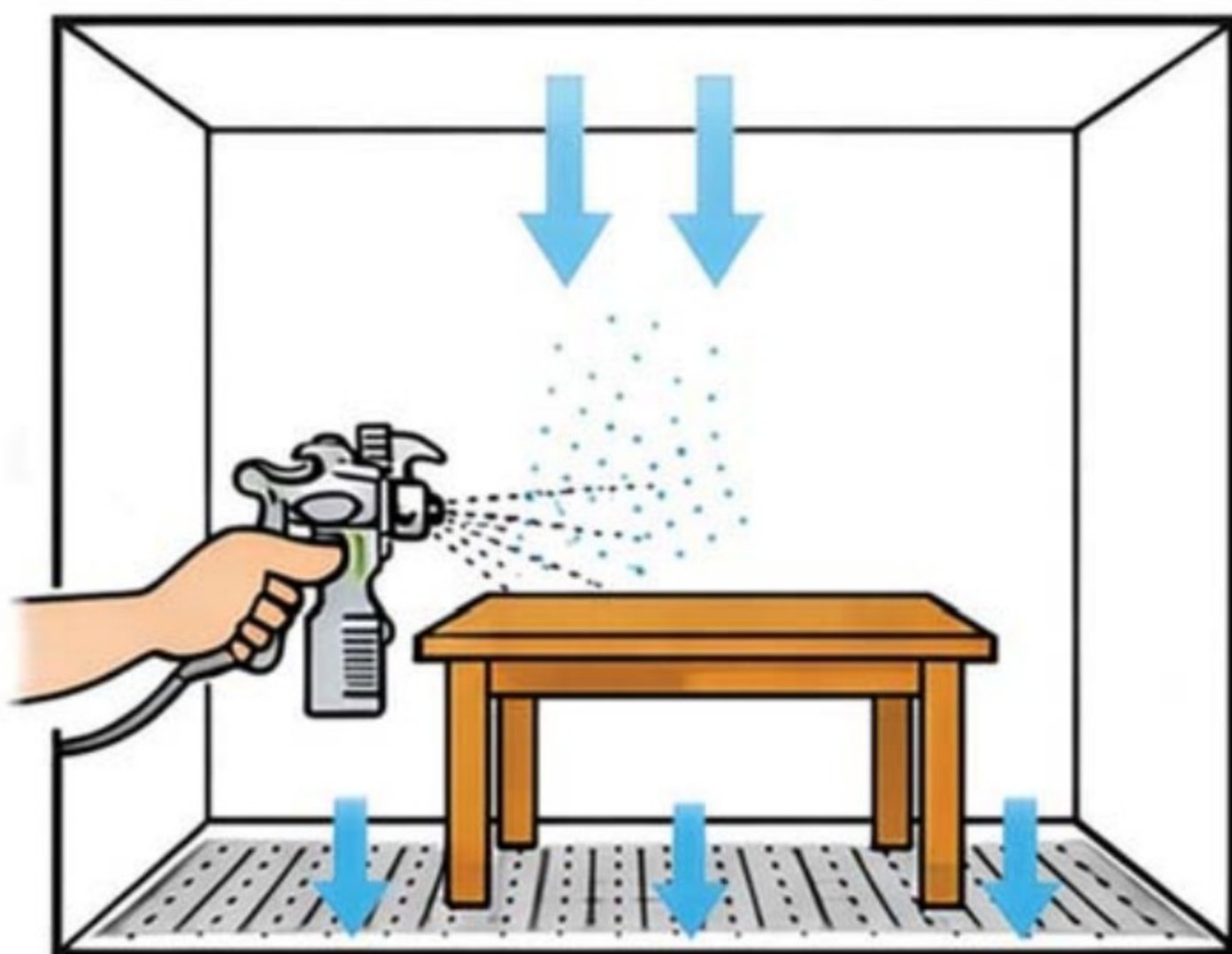
Finishing contaminants affect three issues every shop owner cares about: personnel, property and product.

Prolonged exposure to solvents and coating aerosols causes health concerns ranging from headaches and dizziness to respiratory irritation, neurological symptoms, workplace-related asthma, and organ damage. A single severe reaction to allergic agents in some finishes — particularly two-part catalyzed coatings — can trigger permanent hypersensitivity, limiting future work with these materials.

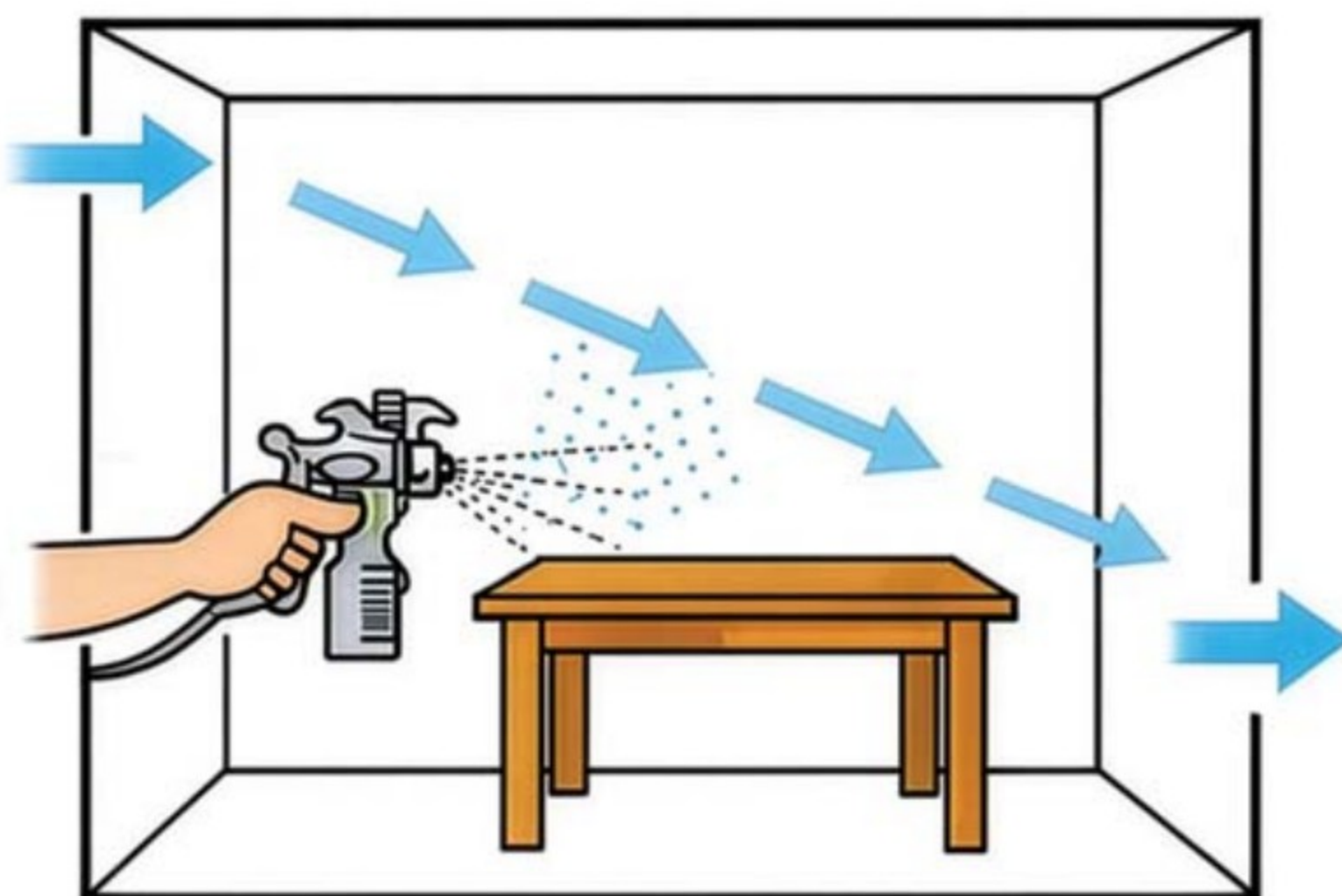
Fire risk is the second concern. Many finishing solvents are flammable or explosive at certain concentrations. In



Cross-Draft Booth



Downdraft Booth



Side-Draft Booth

The three types of airflow patterns to expect from various spray booths.

poorly ventilated spaces, those levels build faster than many shop owners expect, especially when spraying large surfaces or applying multiple coats throughout the day. Dry spray, texture issues, haze and dust nibs are common airflow problems often mistaken for technique problems.

Good spray and vapor controls improve safety, reduce risk and make finishing results more predictable — addressing all three issues simultaneously.

UNDERSTAND WHAT YOU'RE CONTROLLING

First, eliminate "fumes" from your vocabulary. Fumes carry particles; vapors don't. Spray finishing generates two distinct airborne pollutants.

Overspray is the mist of microscopic droplets that fail to land anywhere other than on the workpiece. These particles might be several microns in size or have sub-micron proportions that act more like smoke than spray in the way they remain airborne and in motion.

Vapors come from finish flash-off. Solvents and volatile components may disperse rapidly or take hours to dissipate. Water-based finishes also generate vapors, though typically in smaller amounts.

An effective control system removes vapors and contains overspray before either accumulates to dangerous levels.

SPRAY BOOTHS: THE FOUNDATION OF CONTROL

A spray booth is more than just a people-sized box with an installed fan. It's an airflow device designed to move clean air through a spray area in a steady, defined pattern.

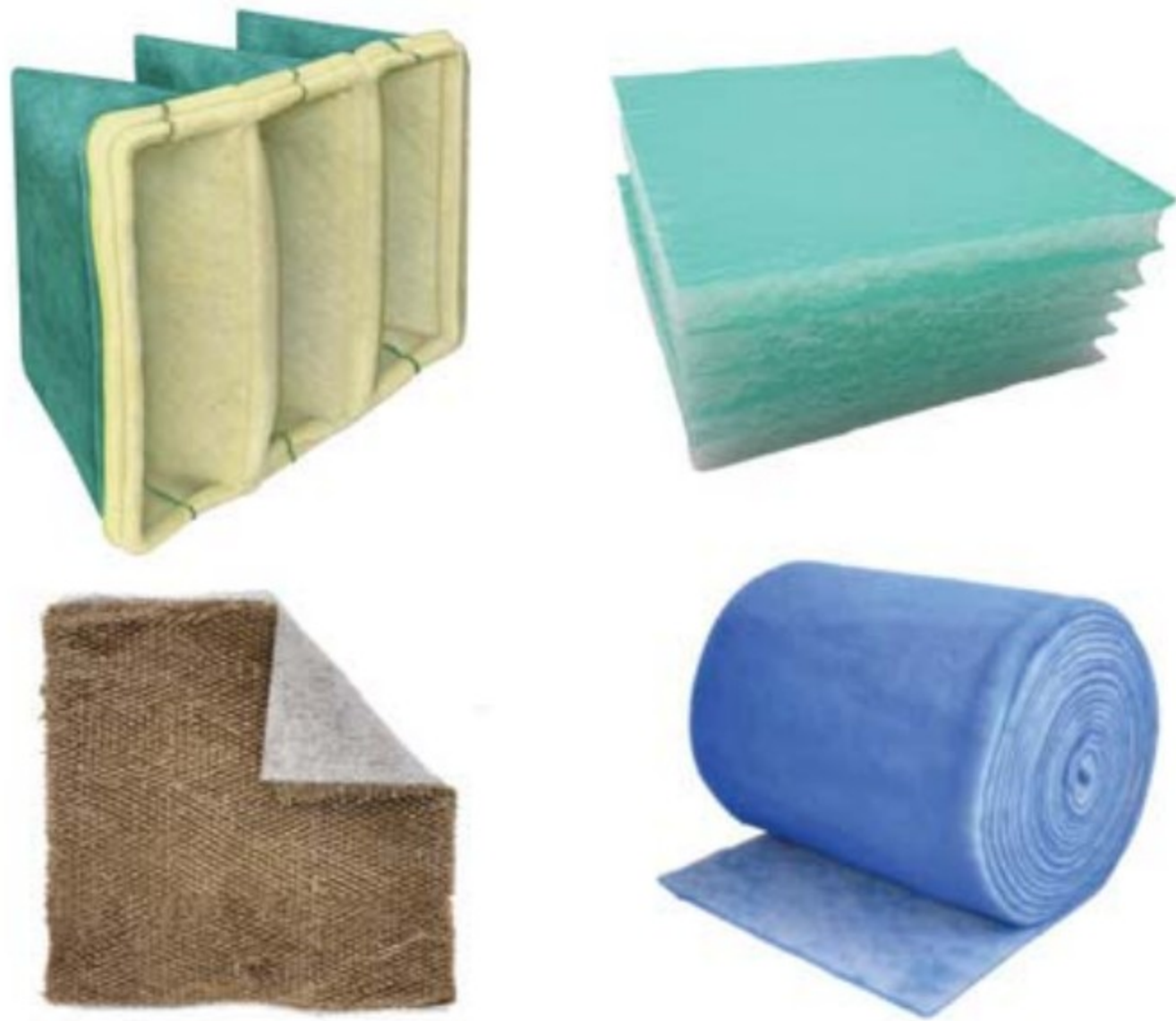
Cross-draft booths (also called cross-flow or open-face booths) draw filtered air from one side and exhaust it from the other. Smaller professional shops favor them for simplicity and lower cost. However, finishing personnel can still find themselves working in a contaminated airflow as overspray moves across the workpiece.

Downdraft booths pull filtered air from the ceiling and exhaust it through a grated floor or lower plenum. This design provides operators cleaner air and the most consistent airflow and overspray capture. They're more costly and complex, requiring a subfloor or exhaust pit that shop structures may not accommodate.

Side-draft (or side-downdraft) booths pull air from the ceiling or high-wall vent in a diagonal flow across the workpiece toward low-wall exhaust filters. This design offers a practical compromise between cost and performance while being easier to retrofit into existing buildings.



A cross-draft booth of this type is often called an "open-face" booth for obvious reasons. A hanging system allows all sides of workpieces to be sprayed at once.



Booth arrester filter materials come in several forms and materials, from ready-formed bag units and panels to cut-them-yourself rolls.



To equalize spray booth pressure, a make-up air unit replaces contaminated air exhausted outdoors. This Fantech unit incorporates internal heating elements, a benefit in colder weather.



Carbon filters are a must for organic vapors. These typical V-block filters slide into square holders in the booth wall.

This side-draft (or, side-downdraft) professional spray booth from Marathon Finishing Systems can handle workpieces of almost any height, or several tall racks with multiple items.



All three designs move air evenly across the workpiece and away from the operator, removing contaminants before they accumulate.

VELOCITY AND MAKEUP AIR

A spray booth is only as good as the air feeding it. A poorly performing booth may not need more fan horsepower. Power matters, but efficient performance depends more on controlled airflow velocity.

Most professional finishing standards target air velocities of 75 to 100 feet per minute along the spray plane, depending on booth configuration. These measurements matter more than cubic feet per minute ratings listed on fans.

Insufficient velocity leaves overspray suspended. Excessive velocity distorts spray patterns, increases dry spray and can draw finish away from surfaces. The goal isn't brute force — it's balance.

Part of that balance is ensuring that just as much of the air being moved is make-up air. Every cubic foot exhausted must be replaced. When replacement air is undersupplied or poorly distributed, booth performance suffers. Exhaust fans bog down, airflow gets choppy, and negative pressure makes booth doors difficult to open. The booth may even backdraft.

Makeup air should be filtered, evenly distributed, and temperature-controlled when necessary. In cooler climates, heating makeup air often represents finishing operations' biggest operating cost. Inadequate makeup air guarantees poor airflow and uneven results.

FILTRATION AND VAPOR CONTROL

Most booths manage overspray and vapors through staged filtration.

Incoming air passes through intake filters, typically rated MERV 7 to 11 (Minimum Efficiency Reporting Value), removing dust before it reaches the workpiece. As the first line of defense, they must be inspected and replaced based on observed pressure drop or reduced airflow, not the service life listed on the filter package.

Arrestor filters catch overspray before it reaches fans or ductwork on the exhaust side. Fiberglass pads, polyester cubes, and pleated paper arrestors are widely used, with well-designed systems capturing 90 to 98 percent of finish particles.

For solvent-related vapors, consider activated carbon filtration designed to effectively absorb vapors rather than airborne particles. These filters eventually saturate, allowing vapors to pass through — a process called breakthrough.

Because breakthrough occurs gradually, solvent odor is an unreliable measure of remaining filter life. Effective systems work best when designed around known airflow rates and predicted vapor levels, with capacity estimates guiding replacement schedules. Carbon filters should supplement outdoor exhaust systems, not replace them.

EXPOSURE LIMITS AND RESPIRATORY PROTECTION

Exhausting booth air outdoors remains the simplest, most reliable ventilation method. Recirculating systems can serve shops with limited outdoor exhaust options due



Even with a state-of-the-art spray booth system, don't be lulled into thinking you can do without a respirator. Options include full- and half-face designs.

to regulations or building constraints. Recirculation is a bit more involved, requiring higher levels of filtration, consistent monitoring, and strict maintenance procedures.

Legal exposure limits vary by jurisdiction and chemical, so reference occupational limits from the Occupational Safety and Health Administration and National Institute for Occupational Safety and Health, plus manufacturers' safety data sheets. Many common solvents have eight-hour exposure limits of 50 to 200 parts per million, while isocyanates are measured in parts per billion.

If you smell solvents, they're present in the air. While odor isn't a measurement tool, it provides initial warning. If there is a strong solvent odor, airborne concentrations are already higher than desirable.

Having fantastic shop ventilation doesn't mean you can toss out your respirator. In fact, the best baseline defense is a properly fitted half- or full-face respirator with organic vapor cartridges and P100 particulate prefilters.

Supplied-air respirators provide optimal protection when working with isocyanate-containing finishes or other highly toxic materials.

FIVE SPRAY BOOTH MISTAKES

Spray booths perform best as controlled airflow systems, not just convenient rooms to spray stuff. These five common issues make even a well-equipped finishing room struggle.

UNDERSUPPLYING MAKE-UP AIR

Problem: Exhaust air not replaced properly, causing turbulent and inconsistent airflow.
Expect: Overspray hanging in the booth, dry spray settling back onto the work.

RUNNING CLOGGED ARRESTOR FILTERS

Problem: Overspray filters increasingly restrict airflow as they load.
Expect: Reduced booth velocity and capture efficiency.

PULLING UNFILTERED AIR INTO BOOTH

Problem: Spray booth drawing air from sanding areas or machine rooms.
Expect: Extreme dust contamination.

OVERSIZED EXHAUST FAN; NO AIRFLOW BALANCE

Problem: Too much fan power causing excessive airflow.
Expect: Distorted spray patterns and increased dry spray.

TREATING BOOTH LIKE STORAGE SPACE

Problem: Spray booth is a pigsty of stashed boxes, carts, and stacked parts.
Expect: Disrupted airflow patterns and lower capture efficiency.

TECHNIQUE, MAINTENANCE AND FIRE SAFETY

Poor spraying technique cannot be offset by ventilation systems, no matter how effective.

Overspray load can be amplified by incorrect tip selection, excessive atomization pressure or inconsistent gun distance — or any combination of these factors. Lower pressures, like those in HVLP systems, generally produce less bounce-back while delivering excellent finish quality.

Regular maintenance also matters a lot. Spray booths become progressively less effective as overspray accumulates, filters clog, and airflow patterns shift. Arrestor filters should be replaced before they clog, intake filters monitored for pressure drop, and booth walls regularly cleaned to prevent overspray buildup from becoming a secondary contamination source.

Fire protection begins with meeting safety codes in all finishing areas. Explosion-proof lighting, proper grounding, non-sparking fans, and code-compliant fire suppression systems are mandatory. Common-sense operational discipline is just as crucial — no open flames, space heaters, grinding or welding near finishing operations.

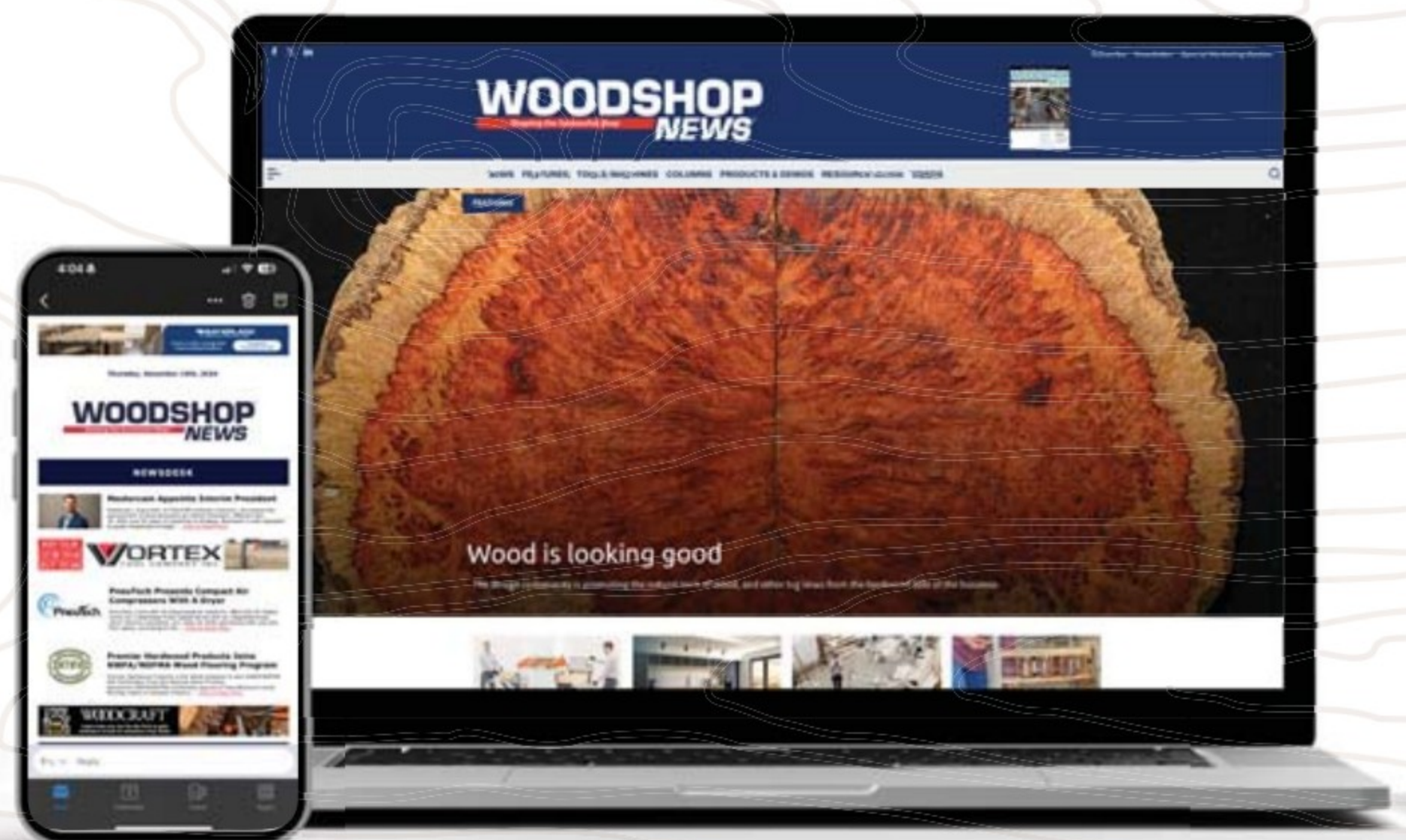
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Keeping track of VOCs anywhere in the woodshop is easy with an air monitoring device. In addition to VOC levels, they provide updated information on nearly all airborne contaminants.

INTEGRATING SPRAY AND DUST CONTROL

Spray control and dust control often appear as separate issues, when in fact, they're inseparable parts of the same air-management system.

Dust collector exhaust anywhere near a spray booth make-up air intake guarantees issues, as will sanding in finishing spaces. Airborne sanding dust drawn into a booth immediately compromises both filtration and finish quality. Solvent vapors wafting toward sanding areas, meanwhile, can contaminate abrasives and freshly prepared surfaces while posing health risks.

The best practice is to always use as much physical separation as possible. Keep sanding and machining in one area and finishing in another, preferably on opposite sides of the shop — each with dedicated airflow paths.

SCALING SOLUTIONS TO SHOP SIZE

Spray control solutions must be realistically scaled to the size and output of your shop. Your budget is probably strained enough as it is, so over-spending on infrastructure is out of the question. By the same token, not spending enough may lead to recurring issues that end up costing more over time.

For most smaller professional shops, an enclosed side-draft booth with outdoor exhaust balances performance and affordability. A properly designed and maintained booth in the 8- to 12-foot range with 3,000 to 6,000 cfm exhaust capacity can support a wide array of finishing work. This range typically achieves the 80 to 100 fpm airflow at the booth opening necessary for safety and overspray capture.

Mid-size production shops benefit from cross-draft or downdraft booths moving 10,000 to 20,000 cfm, especially when paired with tempered makeup air systems. This investment delivers superior finish consistency, faster processing, and reduced seasonal airflow issues.

High-volume facilities logically require multiple downdraft booths, energy-recovery ventilation, continuous volatile organic compound (VOC) monitoring, and scheduled maintenance. At this scale, finishing ventilation becomes engineered infrastructure rather than individual equipment pieces.

THE PAYOFF

Proper spray and vapor control delivers immediate benefits. Finish quality improves. Rework decreases. Workers feel better at day's end. Compliance becomes easier. Insurance risks may decline.

Most significantly, the finishing process becomes predictable rather than problematic.

*Find suppliers and manufacturers of finishing equipment in our online Resource Guide at resource-guide.woodshopnews.com. **W***



An arrester filter monitoring system, like this offering from RTD Engineered Solutions, constantly monitors the health of filter material.



This 3M supplied-air respirator contains filter materials designed for various types of air contaminants, including VOCs.

Two summer exhibitions highlight wood artistry from Hawaii to Philadelphia

By Jennifer Hicks

The Hawaii Forest Industry Association announced its 34th Annual Hawaii's Woodshow will run Aug. 7-29 at the Downtown Art Center gallery in Honolulu. The exhibition showcases furniture and woodworking crafted from Hawaiian-grown woods.



Opening reception: 2025 Hawaii's Woodshow

A key component is the Innovation + Imagination Student Challenge, launched in 2017 to introduce students to Hawaii's native woods. Students are challenged to construct artwork using a mixture of donated Hawaii-grown wood and other materials of their choice.

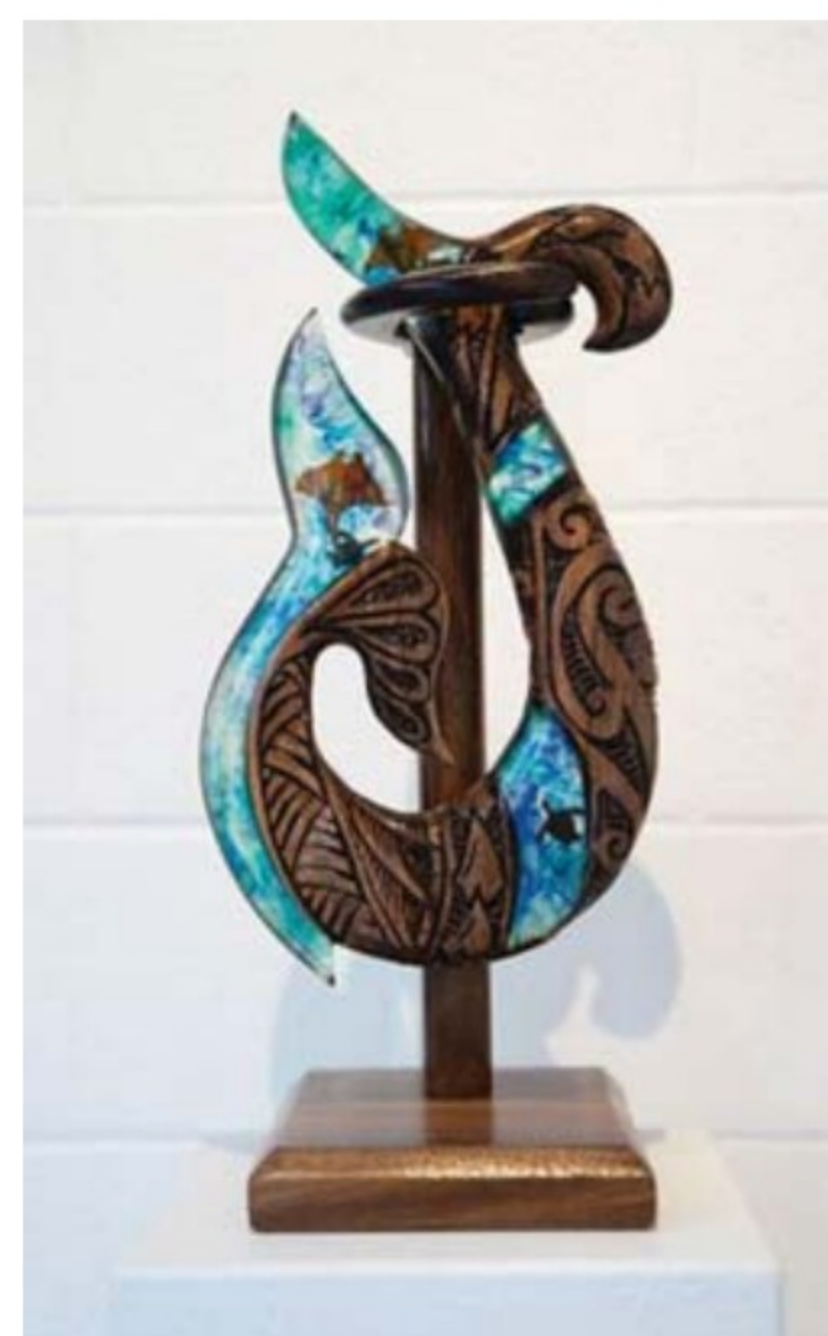
Steven Hill, 3DLab director at the University of Hawaii at Manoa School of Architecture, coordinates the challenge. The program provides hands-on design and production experience while emphasizing locally sourced materials. Participating schools include UH Manoa's architecture school, Brigham Young University-Hawaii, Mid-Pacific Institute, Kalani and Waiakea high schools, and Punahou School.



Steve Hill presenting the 2025 I+I Awards.



Fancy Coffee Table by Mats Fogelvik.



Makau Hook by John Victoria.

Competition divisions include novice and main categories for furniture, sculpture and carving, accessories, and turning.

This year's awards include Best in Show, Best Novice, category winners, the La'au Pono Award (recognizing sustainable forestry practices), student excellence awards, and honorable mentions.

Learn more at hawaiiforest.org.

RADICAL AMERICANA EXHIBITIONS

The Museum for Art in Wood in Philadelphia is presenting two "Radical Americana" exhibitions through July 26. The Clay Studio organized the shows as part of the nation's Semiquincentennial commemoration.

"Muliebrity" features multi-disciplinary artist Viola Bordon's work, while "Suite Americaine" showcases woodworking artist BA Harrington. Both exhibitions examine American history through craft and women's labor. Bordon reimagines Lady Liberty in textile work, while Harrington transforms historic furniture forms to highlight women's contributions.

Learn more at museumforartinwood.org. **W**



SNX has launched the CoilHub-S, a single-coil edge banding heater designed to complement its CoilHub-M multi-coil unit. Both products heat and store edge banding material for straight-line and contour edge banding machines used in woodworking and furniture manufacturing. The CoilHub systems maintain consistent edge banding temperature, which softens the material and makes it more pliable during application, according to SNX. This temperature control helps prevent contamination, increases adhesion between the banding and substrate, and reduces delamination issues. Learn more at snxtechnologies.com.

MAKITA has introduced an 18-volt LXT angled finish nailer, model XNB08, that drives 15-gauge nails up to 2.5 inches long. The nailer features a slim nose design for easy access in confined areas and accurate nail placement, according to the company. The tool weighs 7.3 pounds with battery installed and includes an anti-dry fire mechanism and two-mode selector switch for sequential nailing or bump fire operation. Learn more at makitatools.com.



WOODPECKERS has added polycarbonate mallets to its line of woodworking tools and accessories. The mallets use thermoplastic material that the company says has protected fighter jet pilots since the 1960s. Polycarbonate deforms slightly on impact without shattering, making it less likely to damage workpieces than metal hammers while providing more control than urethane or rubber mallets, according to Woodpeckers. The heads come in clear or black polycarbonate. Learn more at woodpeck.com.

KEEN, a Portland, Oregon-based footwear and accessories company, has introduced the KS86 work sneaker as a throwback to the trail runner design. It features a carbon toe, KEEN.ReGEN midsole cushioning and an oil- and slip-resistant rubber outsole with lugged tread, according to the company. Learn more at keenfootwear.com.



ALTENDORF has introduced the F 30, a sliding table saw designed for craftsman businesses, expanding its product line between the F 25 and F 35 models. The saw builds on the company's WA-8/80 series technology. The new F 30 is available in several variants – from solid basic equipment to advanced digital functions. Depending on the model, analog or digital displays, motorized adjustments, and CNC-supported stop systems are available. Learn more at altendorf.com.

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Organizations sponsoring meetings, classes or shows of interest to professional or hobbyist woodworkers are invited to submit items to editorial@woodshopnews.com.

Include name, dates, location, description of event and a contact address or telephone number. Calendar items, which should be typed or printed clearly, must be received at least 60 days before the event.

Please note that fees, as listed, might not include materials or shop fees. Check with a specific class for further details.
— Compiled by Jennifer Hicks

CALIFORNIA

Monthly — San Fernando Valley Woodworkers meetings are held on the third Thursday of each month at 7 p.m. at the Balboa Sports Center in Encino. sfvw.org

Monthly — Society of Wood Manufacturing, a chapter of AWFS consisting of educators, manufacturers, hardware and industrial suppliers, and machinery dealers, meets during the second week of each month. For location and dates, visit awfs.org.

Monthly — San Joaquin Fine Woodworkers Association meetings are open to all experience levels at members' shops. For locations and dates, visit sjfwa.com.

FLORIDA

Ongoing — The Dunedin Fine Art Center is offering six-week woodturning classes at its Cottage Campus taught by AAW professional member Tony Marsh for beginners

and intermediate-level participants. Full-day classes are held on Thursdays. Call 727-298-3322 or e-mail education@dfac.org.

Monthly — Woodcrafters Club of Tampa meets every third Thursday evening at 3809 W. Broad St. in Tampa. tampa-woodcrafters.org

GEORGIA

Aug. 25-28 — International Woodworking Fair, North America's largest woodworking technology and design trade show. Location: Georgia World Congress Center in Atlanta. iwfatlanta.com

MAINE

Ongoing — The Center for Furniture Craftsmanship offers year-round classes in woodworking to the highest degree

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MARYLAND

Monthly — The Howard County Woodworkers Guild meets the first Saturdays of the month at the Bain Senior Center at 5470 Ruth Keeton Way in Columbia from 9 a.m. to 12 p.m. Contact: Manny Flecker at aaron0641@hotmail.com.

MICHIGAN

June 6-7 — Learn Dovetail Joinery with Jamie Marvin. Fee: \$325. Location: Sam Beauford Woodworking Institute in Adrian. sbwi.edu

June 13 — Woodworking for Teens with Carolyn Racine. Fee: \$225. Location: Sam Beauford Woodworking Institute in Adrian. sbwi.edu

July 6-11 — Mid Century Modern Table - Design & Build. Fee: \$1,400. Location: Sam Beauford Woodworking Institute in Adrian. sbwi.edu

July 6-10 — Contemporary Windsor chair with Michael Jury. Fee: \$1,200. Location: Sam Beauford Woodworking Institute in Adrian. sbwi.edu

MINNESOTA

Monthly — The Minnesota Woodworkers Guild meets on the second Tuesday of each month at various locations. mnwwg.org

Monthly — The Minnesota Woodturners Association meets on the first Saturday of each month (except July) in Plymouth. They also offer a wide range of classes for beginners and advanced turners. mnwoodturners.com

June 13-14 — American Craft Council - American Craft Fest St. Paul, featuring regional crafts including furniture and woodworking. Location: Union Depot, St. Paul. craft-council.org

MONTANA

Aug. 7-9 — Western Design Conference Exhibit & Sale featuring unique creations in furniture, fashion, jewelry, home and lifestyle accessories. Location: Brick Breeden Fieldhouse in Bozeman. westerndesignconference.com

NEW JERSEY

Monthly — The North Jersey Woodworkers Association meets the third Monday of every month. njwawoodworkers.org

Monthly — The Professional Woodworkers Guild of Upper New Jersey meets the third Wednesday of every month. njwoodguild.com

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NEW MEXICO

June 27 — Second annual Albuquerque Woodworking Show, sponsored by the Albuquerque Woodworkers Association. Fine furniture making, woodcarving, woodturning, wood sculpture, and other woodworking disciplines will be represented. Location: St. John's United Methodist Church. abqawa.org

NEW YORK

Monthly — The Woodworkers of Central New York holds meetings on the first Thursday of each month at 6:30 p.m. at the Belgium Cold Springs Fire Department in Baldwinsville. woodcny.org

Monthly — Northeast Woodworkers Association holds meetings on the second Thursday of the month at various locations in the Albany area. woodworker.org

Monthly — The Long Island Woodworkers meet on the first Wednesday of each month at 7 p.m. at the Frank Brush Barn of the Smithtown Historical Society in Smithtown. liwoodworkers.org

NORTH CAROLINA

Monthly — Triangle Woodworkers Association meetings are held on the third Tuesday of each month at 7 p.m. at

Klingspor's Woodworking Shop. Location: MacGregor Village in Cary. trianglewoodworkers.com

Monthly — Charlotte Woodworkers Association meets the third Tuesday of each month, except December, at 6:15 p.m. Location: 8801 Park Road in Charlotte. charlottewoodworkers.org

OHIO

Ongoing — Cincinnati Woodworking Club meets the second Saturday in the months of Jan., March, May, Sept. and Nov. from 8:30 a.m. to 12:30 p.m. at the E.B. Mueller in Reading. cincinnatiwoodworkingclub.org

PENNSYLVANIA

Monthly — Lehigh Valley Woodworkers Guild meets at 6:30 p.m. every third Tuesday of the month at the Woodcraft in Allentown. Various craftspeople provide presentations on their woodworking techniques. lvwwwg.com

SOUTH DAKOTA

Monthly — The South Dakota Woodworkers Guild meets the last Thursday of every month, except August, at various members' shops. The club has hand tool and woodturning groups. Learn more at sdwoodworker.org. **W**

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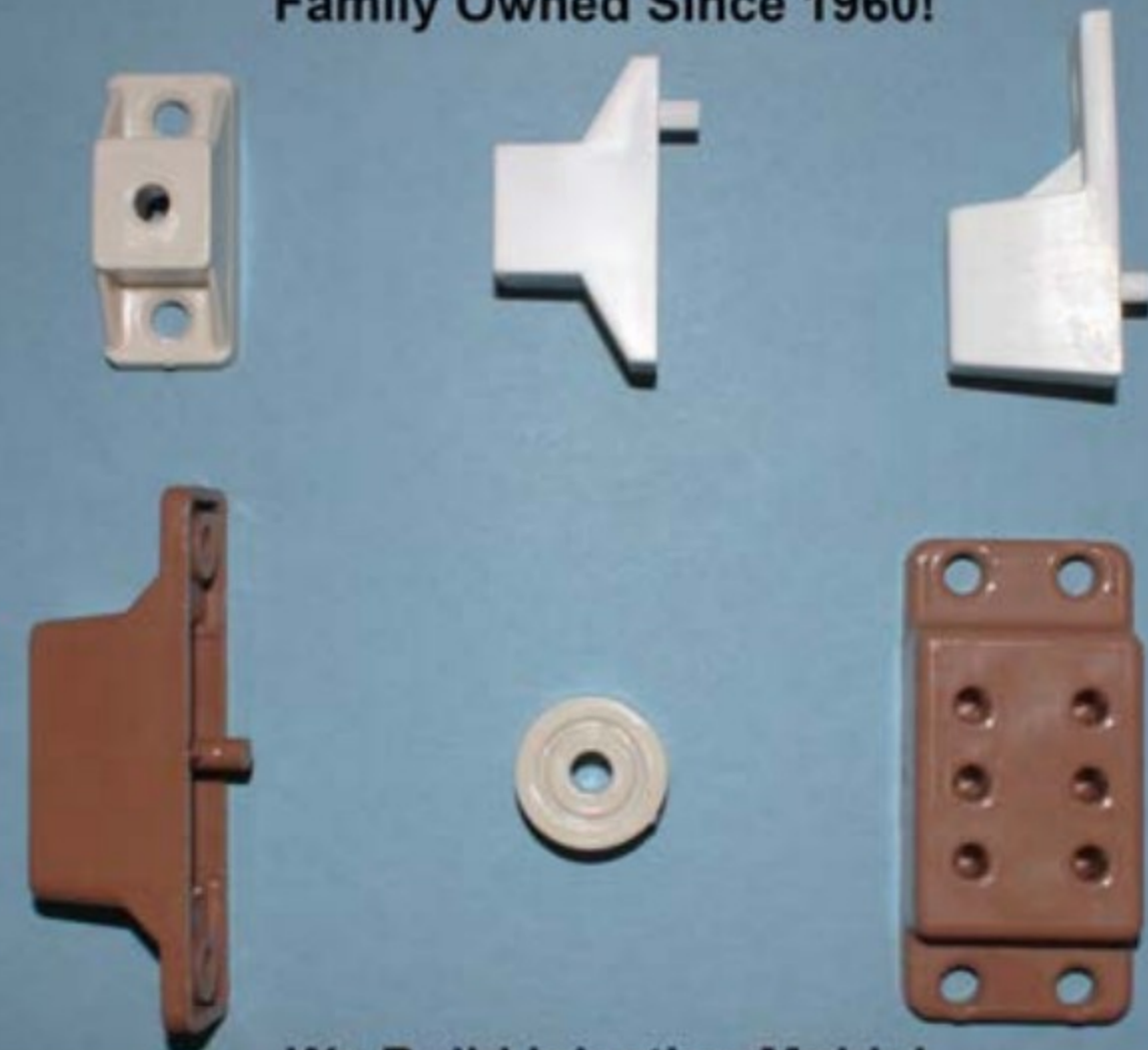
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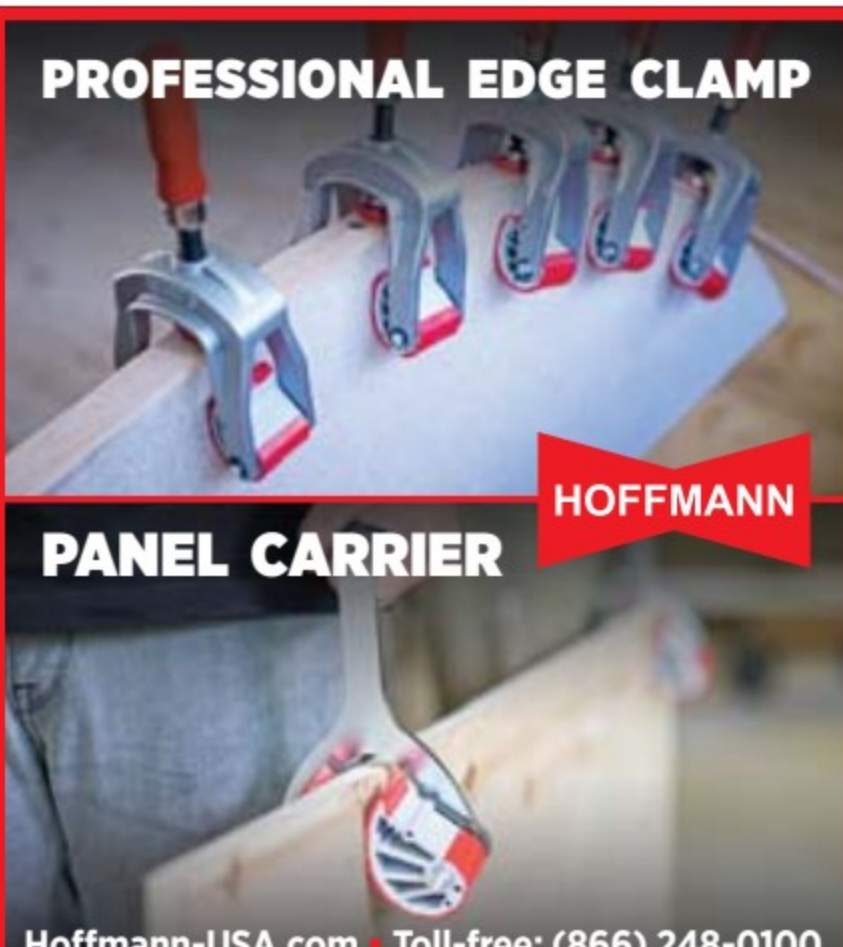


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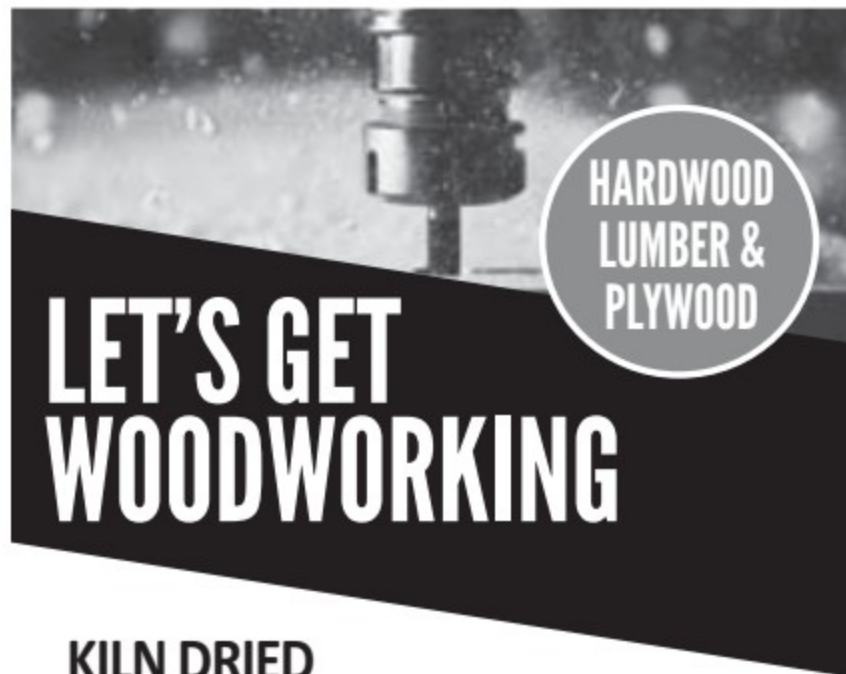
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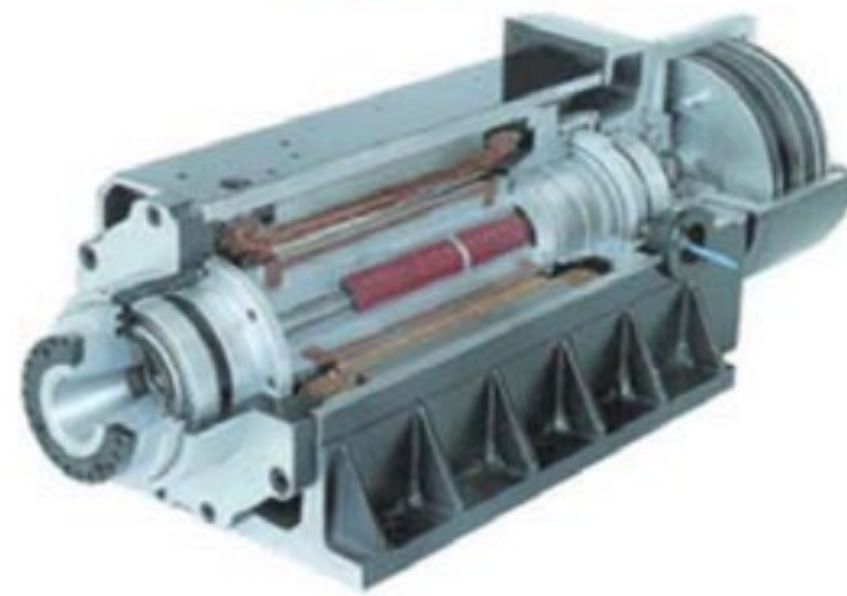
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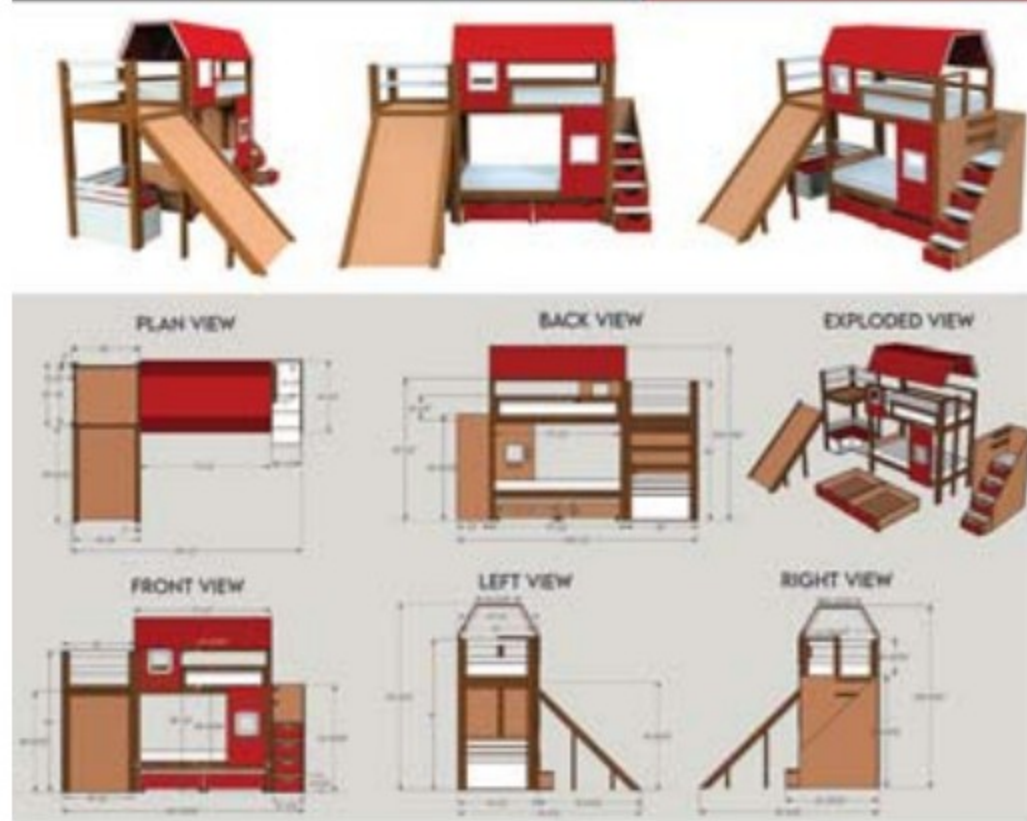
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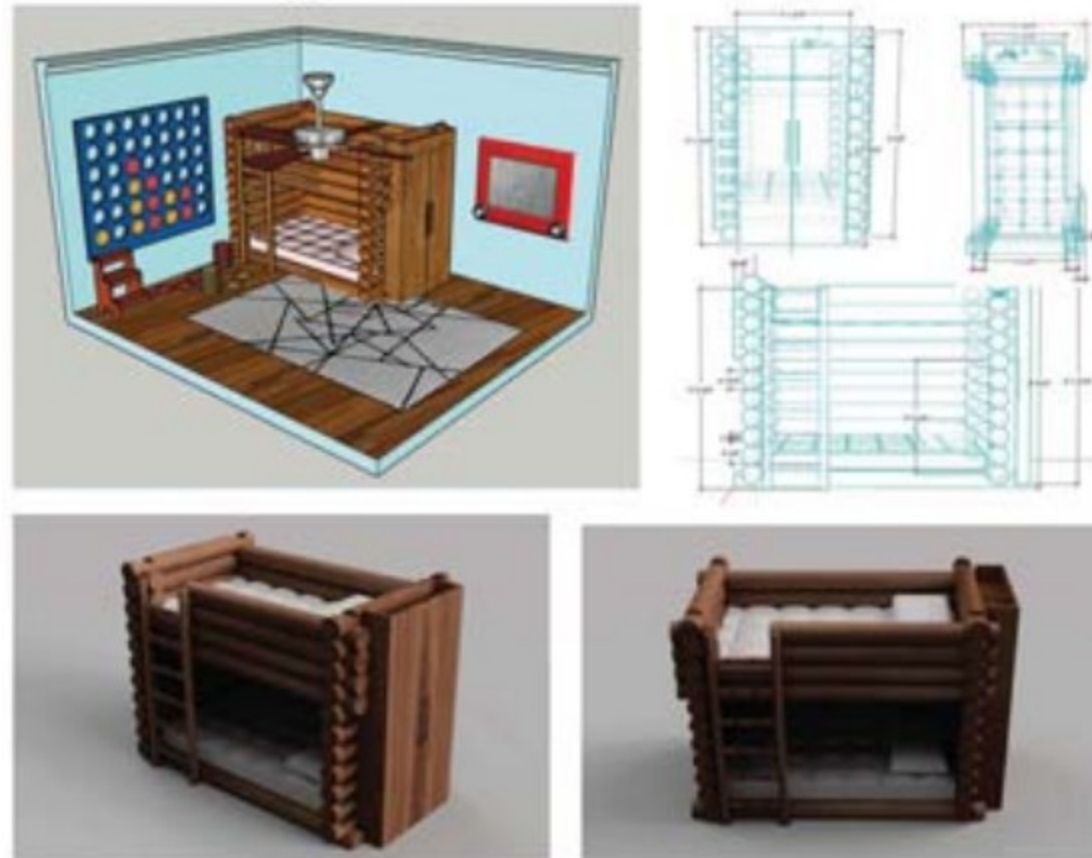
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First place, high school, 2020:
Barn bunk bed by Theodore Tran

Lincoln Logs Bunk Bed

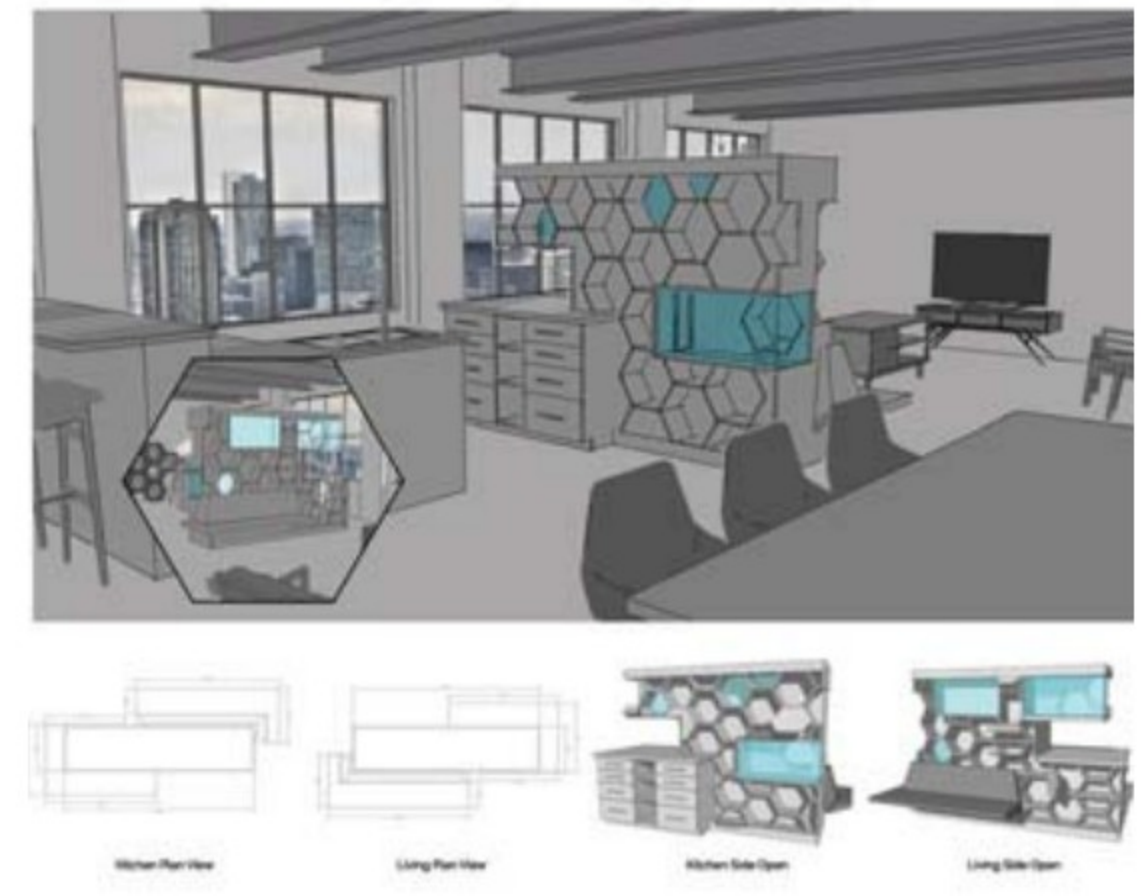
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Second place, high school, 2020:
Lincoln Logs Bed by Caden Bialow

FISH HIVE

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First place, post secondary, 2020:
Fish Hive by Patrick Duckett.

AWFS revives student CAD competition

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AWFS Design-it-Digital logo

The Association of Woodworking & Furnishings Suppliers (AWFS) has launched the 2026 Design-it-Digital Student CAD Competition, an online computer-aided design challenge for middle school, high school and post-secondary students across the United States and Canada.

This marks the return of the contest, which ran in 2018 and 2020 before pausing during COVID-19, according to the organization.

"We are making changes to the format for this year, including opening up the competition to middle school students. Previously it was only high school and post-secondary. We are also limiting the age to 35 years old to encourage younger people to pursue digital design in the wood industry as a career," said Tovi Spero, AWFS education director.

AWFS owns and operates Design-it-Digital to introduce students to the real-world constraints that designers and manufacturers face in the woodworking industry.

Participants respond to a hypothetical client brief by designing a wood product solution using industry-standard 2D or 3D CAD and rendering software. A panel of industry professionals evaluates entries entirely online.

The 2026 theme is tables, with three design challenge divisions:

- Design Challenge A (middle school only): Coffee table with integrated board game storage
- Design Challenge B (high school; middle school optional): Dining table with seating six adults
- Design Challenge C (post-secondary; high school optional): Expandable dining table with seating for six to 10 adults

Each design must incorporate 67 percent wood products; be manufacturable in a standard professional wood-

working shop; include a bill of materials, labor time estimate and pricing structure; and be presented on a 24-inch by 36-inch print-ready digital presentation board.

Entries will be scored on a 32-point rubric assessing technical CAD drawings, 2D/3D renderings, manufacturability, client definition, functionality, and cost realism and documentation. Cash prizes will be awarded for first-, second- and third-place winners in each division, plus a \$100 AI innovation bonus for the submission demonstrating the most effective and innovative use of AI within the design process.

The submission deadline is Nov. 1, 2026. Winners will be announced Dec. 31, 2026, and winning entries will be displayed in the Fresh Wood booth at the 2027 AWFS Fair (July 13-15) in Las Vegas.

For complete rules and entry information, visit awfs.org. **W**
—Jennifer Hicks

60 Grit

Rough humor by Steve Spiro



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