



# Introduction To Pen Making

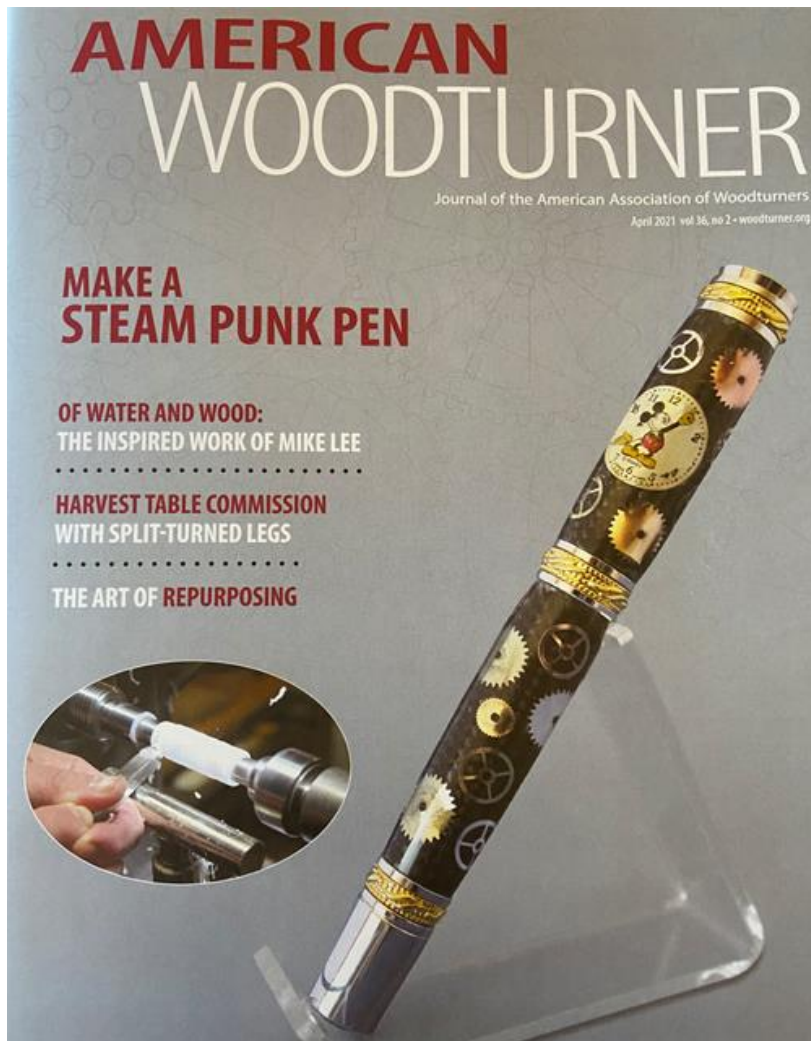
## A Masters Degree in 90 Minutes

Mark Dreyer  
AAW – 2022 Chattanooga  
June 2022

# Background – Mark Dreyer

- Pen Making For Over 25 Years
- Demonstrator
  - AAW (Atlanta / Portland / Virtual/Feb IRD)
  - Woodturners Worldwide
- Penmakers International
  - Midwest Penturners Gathering
- Regional Symposiums
- Local and Virtual
- “10 Minutes To Better Penmaking” - YouTube

# Background



# Personal Disclaimer

- These Are Just My Techniques
- Enjoy The Journey
  - Figure Out The Best Way For You
- Take A Hands On Class
- Teaching Kids Vs. Mentoring Adults
  - Watching Over
  - What Am I Doing Wrong
- Love Of The Game



# Differences With Being Live





# Differences With Being Live



# Agenda

- Basic Pen Making
  - Paying Attention To The Details
  - Form and Detail Over Enhancements
  - Wood and Acrylic
- Every Step In Detail
- Turning Demo
- Wood Finishing Demo
- Interactive
  - Questions Are Encouraged



# Inspiration





# Types Of Materials



# Inspiration



# Inspiration





# Let's Get Started





# Safety



# Getting Started

- Component Set
- Pen Blank
- Mandrel / Setup
- Turning Tools
- Lathe
- Finishing



# Component Set Selection

- New To Pen Turning – Ball Point
  - 27/64" – Single Barrel
    - Diamond Knurl
    - Sierra / Wall Street / Sierra Vista
- Two Piece – Ball Point
  - Cigar
- Roller Ball
  - Vertex Supreme
- High End

# Vertex Supreme

- Magnetic Top
- Eliminates Some Assembly Issues





# Pre-Turning – Preparing a Blank

- Blank Selection
- Instructions
- Number Of Tubes
- Drill Bits
- Bushings
- Marking Your Blank



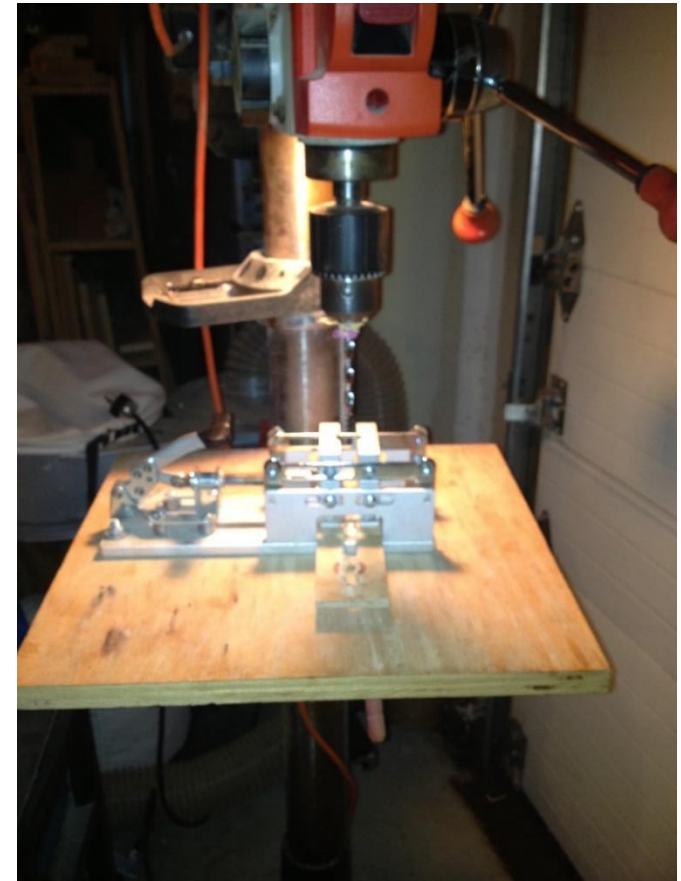
# Acrylic

- Not All Plastic / Resin is Acrylic
- Types Of “Acrylic”
  - Acrylic Acetate
  - Inlace Acrylester
  - Polyresin (PR)
  - Alumilite



# Wood Pen Pre-Turning

- Do Not Drill Through
- Staying Cool
- Use A Jig
- Gluing – 5 Minute Epoxy
- Finishing The Ends
  - Sanding



# Drill Bits

- Jobber Vs. Brad Point





# Common Drilling Issues

- Understanding And Setting The Stroke
- Heat
- Drift
  - Brad Point on a Segmented Blank
- Stuck Bit
- Drilling Long Blanks
  - Drill To The Middle
  - Gaps At The Ends

# Gluing

- 5 Minute Epoxy vs. CA
- Personal Myths – JUST MINE
  - Scratching tubes
  - Plugging Ends
- Testing The Fit
  - Needs To Be Done and Re-Done
  - Heat Build Up



# Understanding Mandrels

- Fixed vs. Professional
- Mandrel Saver
- Turning Between Centers
  - 60 Degree Live Center
  - Purpose Built Mandrels



# Personal Preference

- Single Barrel At A Time
- Modified Turn Between Centers
  - $\frac{1}{4}$ " Nylon Spacers





# Preparing The Ends

Post Cut The Blank

## PEN MILLS

- Solid Materials
  - Wood
  - Acrylic



Keep Shaft Clean

## SANDING BLOCK (V-BLOCK)

- Hand Cast Blanks



# Issues With Preparing The Ends

- Burning the Ends
  - Pre-Turn
  - Only “kiss” the sanding center
- Not Having The Correct Shaft For Mill
  - 7 MM Tube and Maple



# Pen Turning - Turning

- Sharp Tools Are A Must
  - As Fast As I Can Go
  - Skew Chisel Vs. Gouge Vs. New Turning Tools
- Cutting Sequence
  - “Pressure” side to side NOT inward
  - Rough Cuts
  - Round Down
  - Work The Ends
  - Sand
    - Different Micro Mesh For Light Vs. Dark Woods

# Turning Tools

## HIGH SPEED STEEL

- Adjustable Angle



## CARBIDE

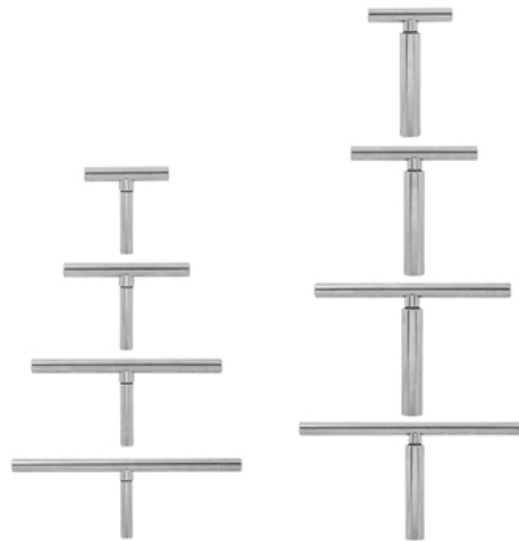
- No Sharpening



Understanding  
Negative Rake  
Cutting

# Lathe Setup And Safety

- Tool Rest
  - Pen Turning Tool Rest
- Dust Collection
  - Endless Quest



This modular tool rest set allows you to quickly change your tool bar length in a matter of seconds with ease. The chrome plated steel tool bars are designed so your tools glide smoothly when moving side to side. The set includes 4 different length tool bars and 2 different size post to give you 8 different sized tool rests. Whether your working on a large or small project, you will have the right size tool rest at hand.

**Includes:**

- 1 ea. 5/8" dia. x 3" Long Post
- 1 ea. 1" dia. x 4-15/16" Long Post
- 1 ea. 4" Long Tool Bar
- 1 ea. 6" Long Tool Bar
- 1 ea. 9" Long Tool Bar
- 1 ea. 11-1/2" Long Tool Bar
- 1 ea Cupped Collet
- 1 ea. Hex Key Locking Wrench



# Wood Cutting Sequence

- Cutting Sequence
  - Drop Cut
  - Scoop Cut
  - Peel Cut
  - Finish Cut
- **Stop Once Round**
- Work The Ends



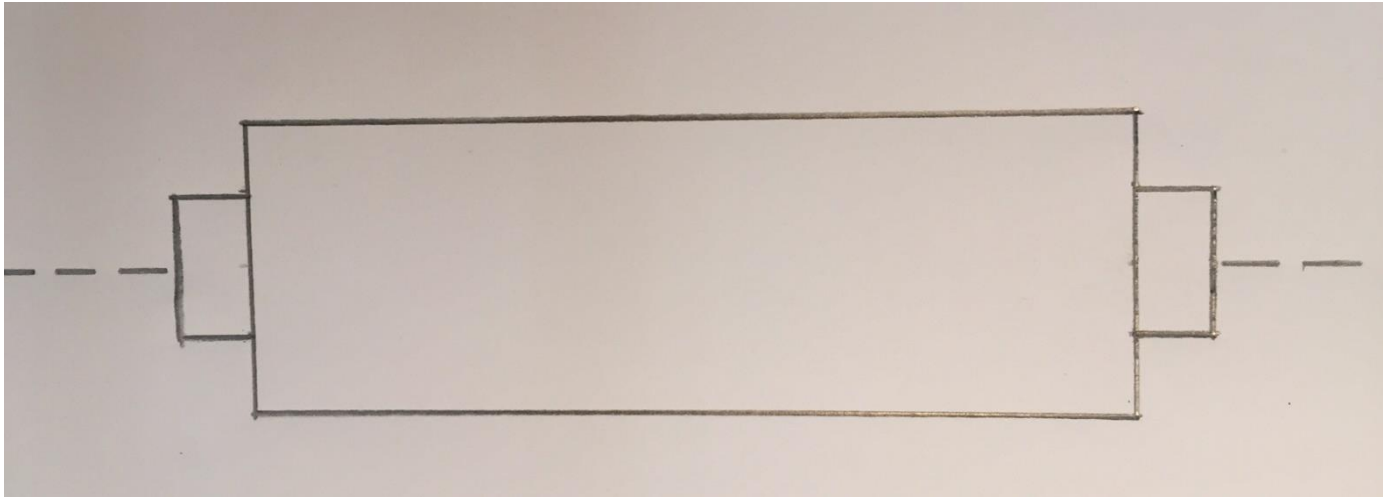
# My Tool Preferences

- Acrylic (90% Of My Turning)
  - Round C13 Carbide Tool – Easy Wood
- Wood
  - Square C13 Carbide Tool – Easy Wood
  - Round C13 Carbide Tool – Easy Wood
- **Cutting**
  - **Holding The Tool**
  - **Tool Movement**
  - **Move The Body Not The Tool**

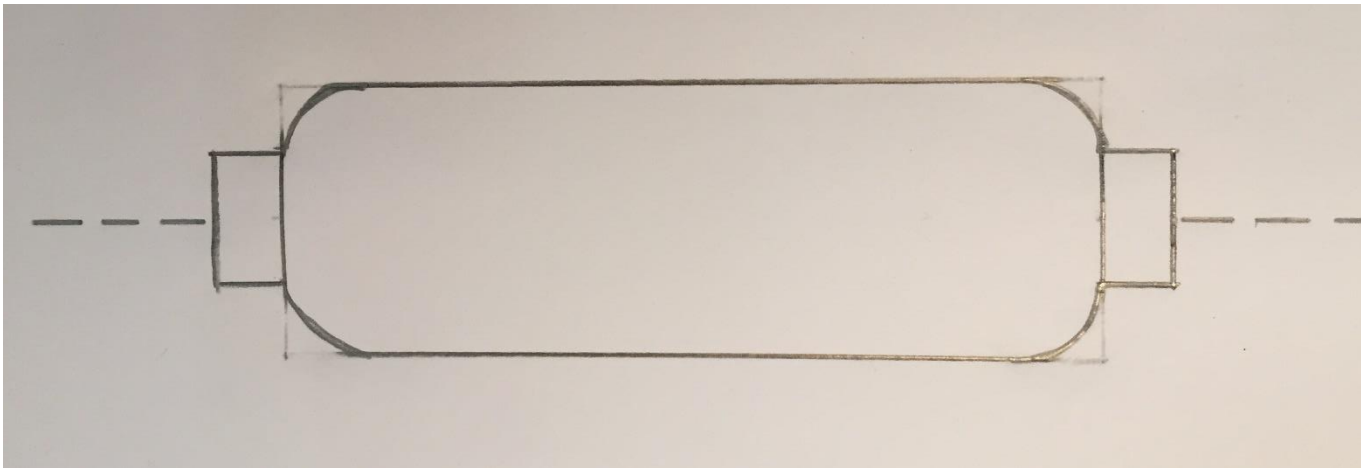


**IMPORTANT**

# Round The Ends



Cut from the outside in for support.



# Demo

THE FOLLOWING **PREVIEW** HAS BEEN APPROVED FOR  
**ALL AUDIENCES**  
BY THE MOTION PICTURE ASSOCIATION OF AMERICA, INC.

# Finishing Math

- 10 Minutes to pick out a blank
- 5 Minutes to pick out the kit
- 5 Minutes to drill the blank
- 4 Minutes to glue the blank
- 4 Minutes to put something on the TV (optional)
- 25 Minutes to turn the blank
- 10 Minutes to sand the blank
- **59 Minutes** to get the blanks ready for finish



# Finishing Math

- Want the best finish I can get in 1 minute
- 1.6% of your time for finishing?



# More Finishing Math

- Lathe - \$2000
- Turning Tools - \$1000
- Mandrel - \$20
- Chucks and centers - \$100
- Blanks - \$8
- Kit - \$20
- Drill bits - \$10
  
- ~\$3500 Invested In Your Hobby



# More Finishing Math – Abrasive

- 100 Grit
  - 120 Grit
  - 180 Grit
  - 220 Grit
  - 320 Grit
  - 400 Grit
  - Micro Mesh
- 
- 25 Cents Worth Of Sand Paper

# Demo – Time Permitting

- GluBoost



**Fill n' Finish | Pore Filler +  
Finisher – Flexible Non Creeping  
Water Clear Wood Finish Formula  
With Zero to Minimal Witness  
Lines**



**Fill n' Finish Thin | Filler,  
Finisher, Top Coat – Flexible Non  
Creeping Water Clear Wood  
Finish Formula With Zero to  
Minimal Witness Lines**



# Post Lathe Finish

- Novis 2 Polish
  - Soap Dispenser
- Cotton Vs. Paper Towel
- Buffing
  - Holding Your Blanks - Safety





# Steps To Improve Finishing

- Practice
  - Finish Blanks 10 Times
    - 3 Times Then 3 Times Then 3 Times Then Once
- Practice On Real Blanks
- 2 Techniques To Really Improve Finishing



# Assembly

- Invest In A Press
- Reuse The Bushings
- My Special White Boxes
  - Losing The Spring
- Setting A Transmission
- Protecting The Threads
- Lining Up The "Grain"



# Special Care Pre-Assembly

- Man Made Blank Assembly
  - Tubes Clean
  - Ends Clean
    - Round File
- Known Issues With Component Sets
  - 27/64" – Tube Jams
  - Cigar Pens – Over Trim / Tubes Per Manufacturer
  - Screw Threads
  - Loose Threads

# Acrylic

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# Standing Apart In Acrylic

- Painting The Hole (Demo)
- Tubes Vs. The Hole
  - Effectiveness of Light Passing Layers
- **Understanding Light**

## ■ **Style**



# Standing Apart In Acrylic



# Non “Man-Made” Materials

- Antler
  - Deer / Elk / Moose / Caribou



# Question and Comments

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- 10 Minutes To Better Pen Making
- IAP: mg\_dreyer

