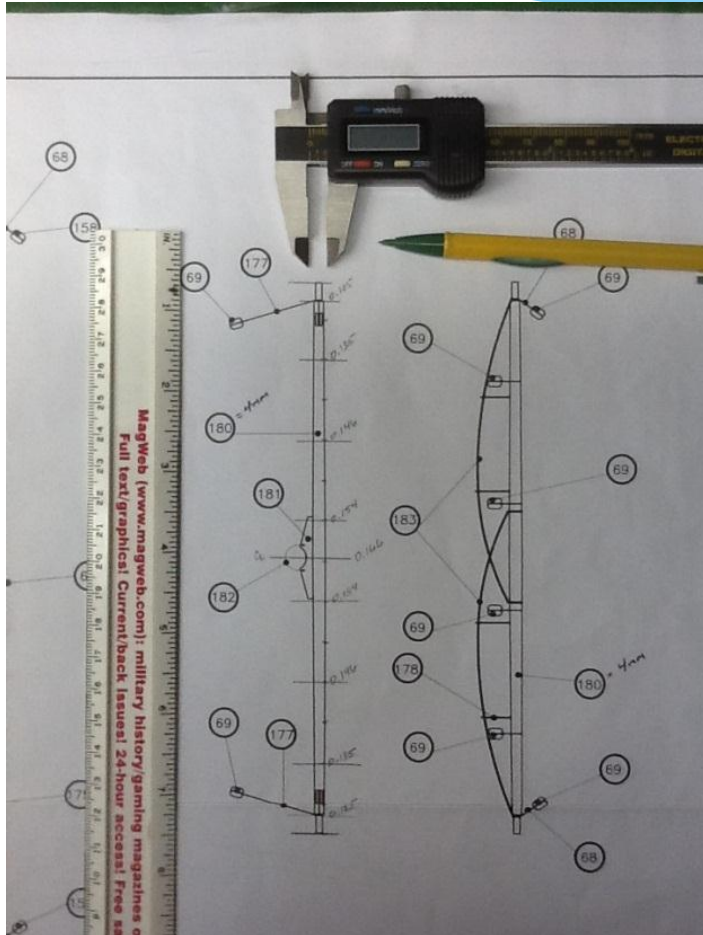


# Masts and Spars

Dan Cicero

September 8, 2012

# Preparation



- \* Start with the plans, scaled 1:1.
- \* At intervals (0.5" works for me) use a digital caliper to determine the diameter of the yard.
- \* Record those measurements on the plan

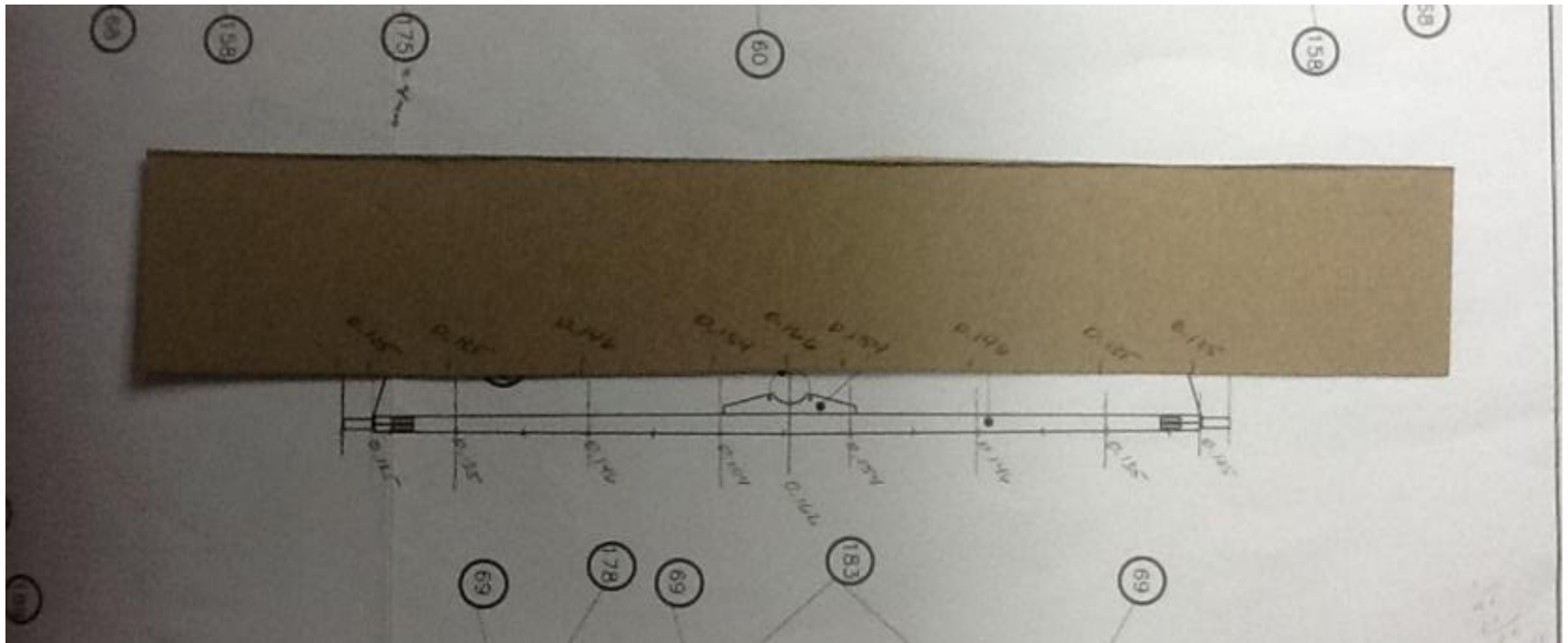
# Secret Weapon



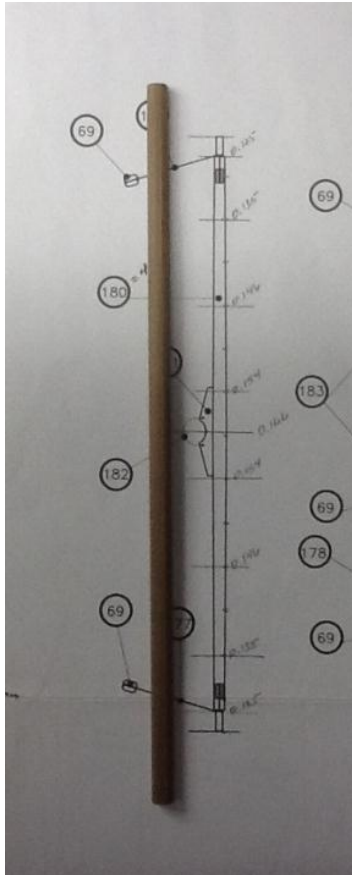
- \* To get the measurements from the plans to the spar, use my secret weapon: a spaghetti box!

# Make a Template

- \* Transfer the measurements from the plan to a strip of cardboard cut from the spaghetti box.



# The Stock



- \* Cut a piece of round stock of a larger diameter and about an inch longer than the drawing on the plan.

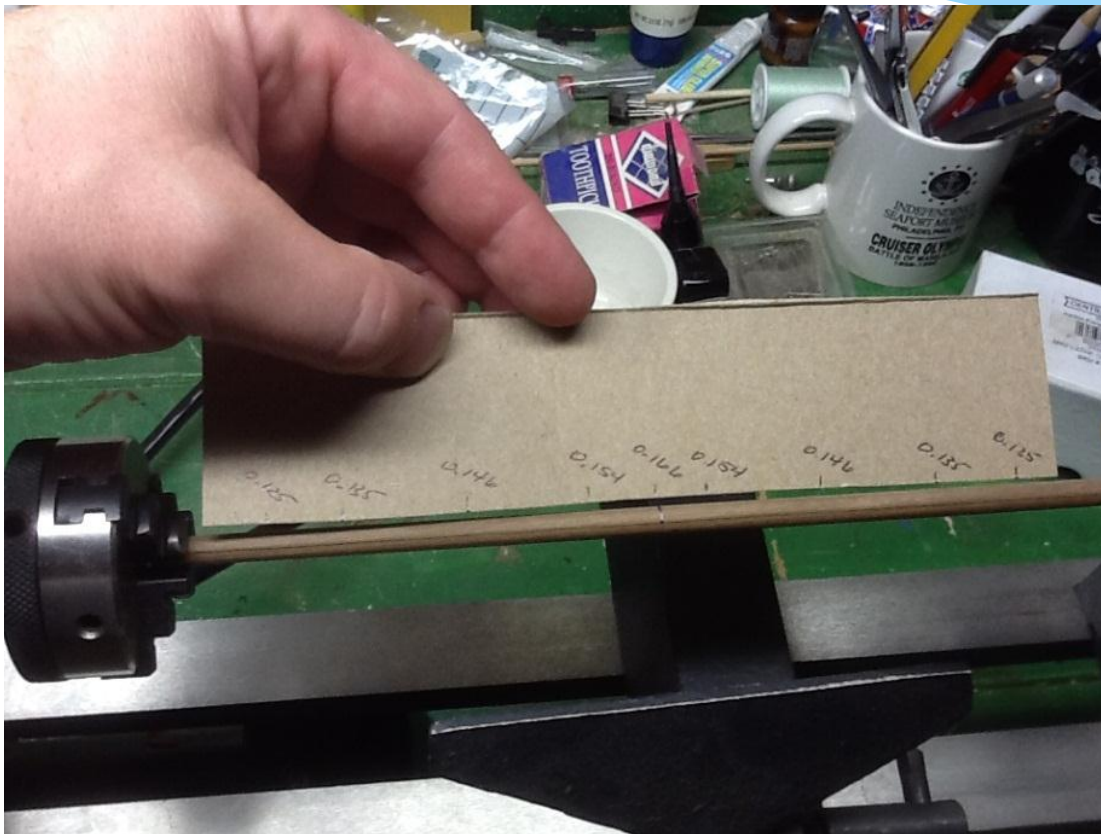
# The Lathe



- \* I use an 8" x 12" mini lathe from Harbor Freight Tools (part #95607, \$124.99)
- \* The lathe does not come with a chuck. I use a 2" mini lathe chuck with an MT1 shank (part #65132), \$29.99)



# Lathe Set-Up



- \* Align the template with the part.
- \* I mark the center of work with a pencil line, which ensures perfect alignment as I work.

# Turn the Spar



- \* Using a flat file, gradually turn the spar down to the final dimensions.
- \* Start from the outboard end and work to the middle.



# Finishing



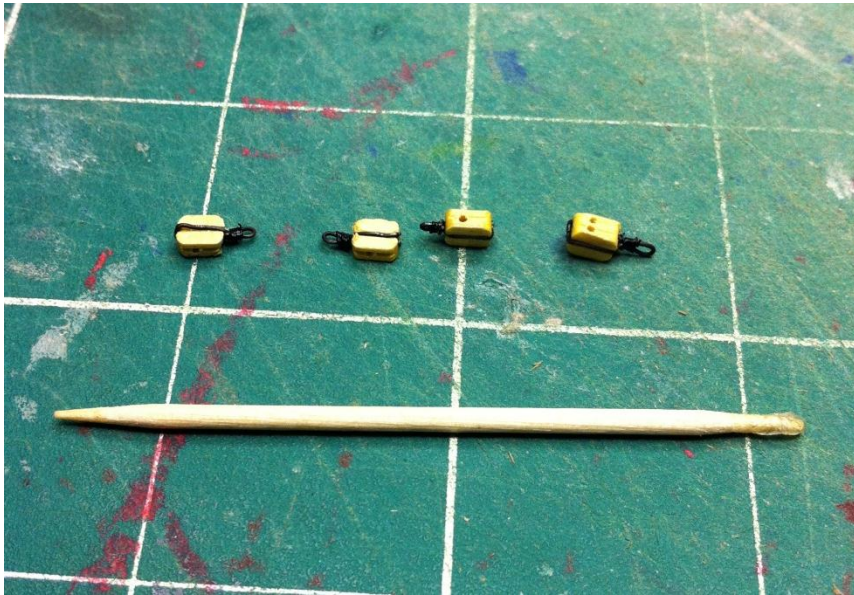
- \* Work the piece down to the final dimensions, checking frequently with the caliper.
- \* Use the template to check the measured dimensions against the plan dimensions.
- \* Sand to a smooth finish.

# Rigging



- \* Once turned the piece needs to be rigged with blocks.
- \* Gaffs need boom jaws.
- \* Spars need footropes.

# Strop the Blocks



- \* I use florist wire to strop the blocks.
- \* Wrap the wire around the block and seize with fly tying wire.

# Seize Blocks to the Spar

- \* Use fly tying wire to seize the blocks onto the spar.





# Footropes

- \* Secure the yard to a piece of wood. (Balsa works fine.)
- \* Draw a line parallel to the yard at the distance of the footropes.



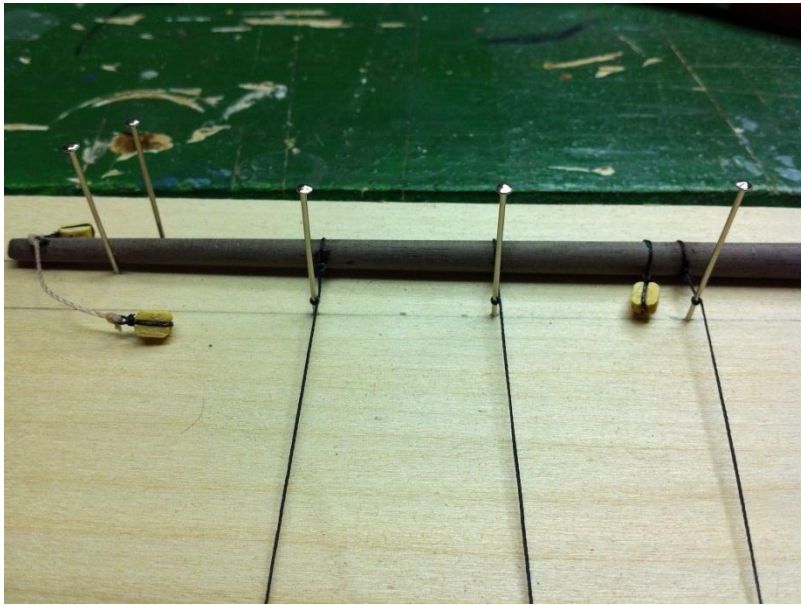
# Footropes



- \* Seize the stirrup (thread) to the spar, spacing per the plans.
- \* Use a weight – like a clamp – to keep the stirrup lines taut.

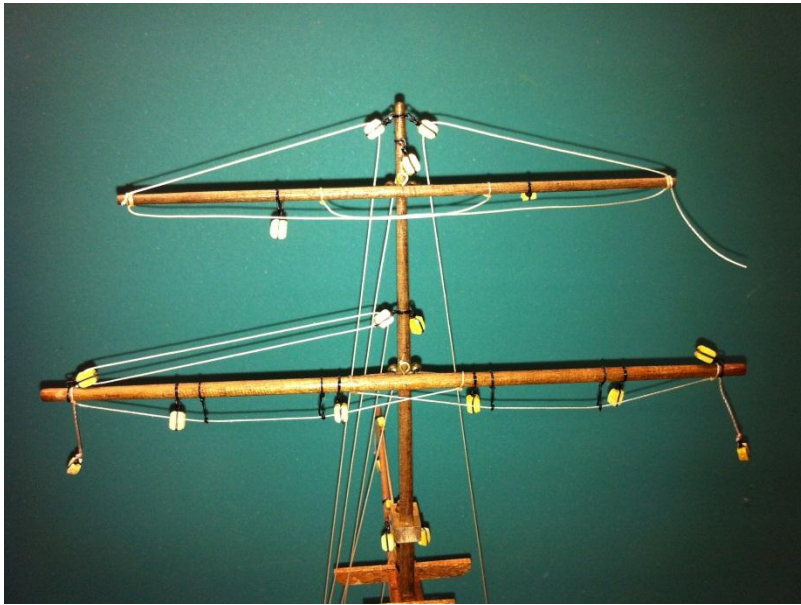


# Footropes



- \* Drive a pin into the balsa where the stirrup intersects the line.
- \* Tie the stirrup line to the pin and secure with CA glue.

# Footropes



- \* When the glue dries, remove the pin.
  - \* The glue won't stick to the pin.
- \* The result: a loop at the end of the footrope at the correct distance from the yard.
- \* Run the footrope through the stirrups and secure to the ends of the yardarm.