"Making and Using a Pole Lathe" by Lowrens Wilyamson.

NOTE: See also the files: p-lathes-msg, p-lathes-bib, mkng-a-p-lathe-art, Tool-Making-art, tools-msg, woodworking-msg, wood-msg, plane-art.

****************************************************************************************************
NOTICE -

This article was submitted to me by the author for inclusion in this set of files, called Stefan's Florilegium.

These files are available on the Internet at: http://www.florilegium.org

Copyright to the contents of this file remains with the author or translator.

While the author will likely give permission for this work to be reprinted in SCA type publications, please check with the author first or check for any permissions granted at the end of this file.

Thank you,
Mark S. Harris...AKA:...Stefan li Rous
stefan at florilegium.org
****************************************************************************************************
Making and Using a Pole Lathe
Presented at Canterbury Fair AS XLIV
by Lowrens Wilyamson

Introduction

When you hear the word “lathe”, you probably tend to think of a precision powered machine, moderately large and moderately expensive. For engineering metalwork, this is not too far from reality. For wood turning, the entry level is much lower.

The essential requirements of a wood lathe are: something to hold the wood, something to spin it around rapidly, and a firm rest for the cutting tool.

Everything else is elaboration.

Construction

Essential Elements

• pair of rails and a support at a convenient working height.

• pair of poppets and centres to support the workpiece. Wood allows a simple hard point to be used as a support and a bearing – very convenient.

• drive mechanism – a drive cord wrapped around the workpiece - avoids complicated bearings and the foot alignment

• motor -a treadle to pull the drive cord and a spring to return it between power strokes

The key thing is rigidity in the frame, which makes it much nicer to use.

Materials

Any basic wood is OK: pine, rimu, etc. The rails are the only really critical part, for straightness. Locking wedges are better in a harder wood, but this is not a big deal.

A simple hybrid pole lathe made at a class in AS XLIII

The drive cord is best as nylon cord, like 4mm sash cord. Anything else wears and frays really fast.

Alternatively, a leather belt could be used, since this can be much more robust than a woven cord.

The fixed centres are typically M12 or 1/2” steel bolts. Grind the point to a 90 degree angle, and then polish it with a file and emery paper.
**Treadle**

In the shape of an inverted “Y”, with the ends of the “Y” approximately forming an isosceles triangle as shown in the drawing. Nail these parts together.

Nail on the cross pieces in the approximate positions shown.

Treadles are often shown as open Ys, but my experience is that a base makes it much easier to control, by placing your other foot on the base.

Cut two leather hinges and pin these to the undersides of the treadle. Pin the free ends of the hinges to the treadle base as shown in the drawing. The ends of the treadle should be resting on the treadle base, not in mid-air.
**Preparation of work**

The workpiece needs to be cut roughly to shape and size before putting on the lathe (see the next section).

- Do a trial centring on points to check for balance
- enlarge the centre indents, lubricate with some wax or lard, wrap the cord around and lock into place in the centres.
- work the drive cord to a convenient place away from where the cutting will happen!
- adjust the position of the cord on the treadle to match the size of the work – a fat workpiece means closer to the foot of the treadle for more torque.

**Working**

Working seasoned wood is hard and rather slow, since the available cutting power is limited. Unseasoned wood is softer and much easier to cut. Pole lathe working pushes you towards green wood working.

The other big consequence of low available power is that the lathe is mostly used just for finishing and detail work. Rough shaping is done off the lathe by other means.

Hence, using a pole lathe generally also means using splitting and shaving techniques for preparation.

Splitting is done with a froe or wedges. A small hatchet is also usable for this.

Rough to medium shaping is best done with an axe. Again, a hatchet can be used, but best results come from a side axe. This looks like an axe but is used more like a large heavy chisel, using its weight and sharpness to cut precisely.
Fine shaping is the work for a draw knife, and the ideal place to use this is on a shaving bench or horse. There are plenty of plans of benches on the Web, but I like the one in by John Alexander (see below).

**Obtaining Tools**

This will be the hardest part.

**Froe** – you can make one or get your friendly local metalworker to do it. Mild steel is fine, say 5mm x 30mm strip.

**Draw knife** – can still be bought new, or found at Sunday markets.

**Shaving bench** – can be made from a 12” plank. Old wood or even new wood is suitable. See the attached plan.

**Side axe** – this will be the hard one to get. They turn up at markets very rarely. You may have to make do with a small sharp hatchet. If you find one at a market, don't bother buying if it is not very heavy. Weight is what makes these axes work.

**Reference material**

These are books I found useful:


- **Make a chair from a tree** : an introduction to working green wood, by John D. Alexander, Jr., Taunton Press, ISBN 978-0918804013

- these two have good information on lathe construction, shaving bench construction, wood preparation.


- **Craft, Industry and Everyday Life**: Wood and Woodworking in Anglo-Scandinavian and Medieval York, Carole Morris, York Archaeological Trust, ISBN: 1902771109 - haven't read this myself yet but have it on order; it is highly recommended for practical details from excavations. Also see the Trust's site at www.yorkarchaeology.co.uk

- I also have a blog where I post photos and words about what I am making on my lathe(s), at http://scottsmakingdo.blogspot.com/, or contact me at lsCampbell@xtra.co.nz

---

Making and Using a Pole Lathe – Lowrens Wilyamson
Plan taken from “Make a Chair from a Tree”, by John Alexander
Copyright 2010 by Lowren's Wilyamson. <lscampbell at xtra.co.nz>. Permission is granted for republication in SCA-related publications, provided the author is credited. Addresses change, but a reasonable attempt should be made to ensure that the author is notified of the publication and if possible receives a copy.

If this article is reprinted in a publication, I would appreciate a notice in the publication that you found this article in the Florilegium. I would also appreciate an email to myself, so that I can track which articles are being reprinted. Thanks. -Stefan.

<the end>