Founded by Dave and Beth Carr in 1995

May 2006

http://www.portlandmodelengineers.org

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Update From April Meeting

Last month's meeting was held at Grant Carson's shop. In addition to the regular meeting, about 20 people came early to see Wes Ramsey (below right) demo his rust removal apparatus (shown below). A discussion of pros and cons followed. No tutorial is planned for next month.

Next month we will meet at Shindaiwa Inc. headquarters, hosted by Jim Pfaltzgraff. The meeting is scheduled for Saturday, May 13th, at 1:00pm. Directions and a map are provided on the next page. Bring your latest project to show -- work-in-progress or complete.

Now for some more pictures of last month...

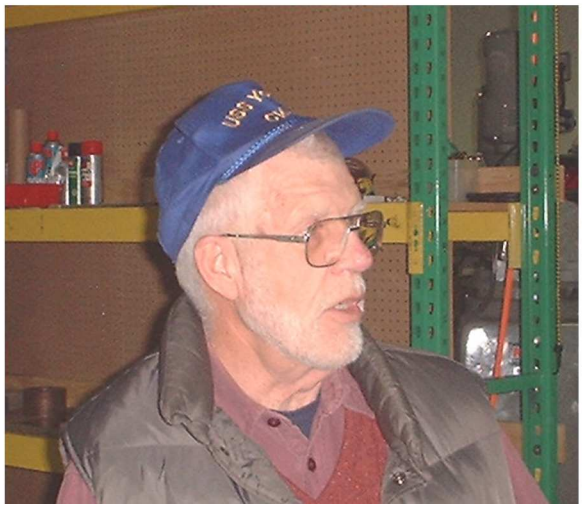
Tailgate Swap Meet Announcement

This is an early reminder to start sorting through all the junk,er...treasures that have been taking up space in your shop. Bring them to the June 10th meeting and take home some new stuff.

FOR THE BEGINNER # 28 by Wes Ramsey

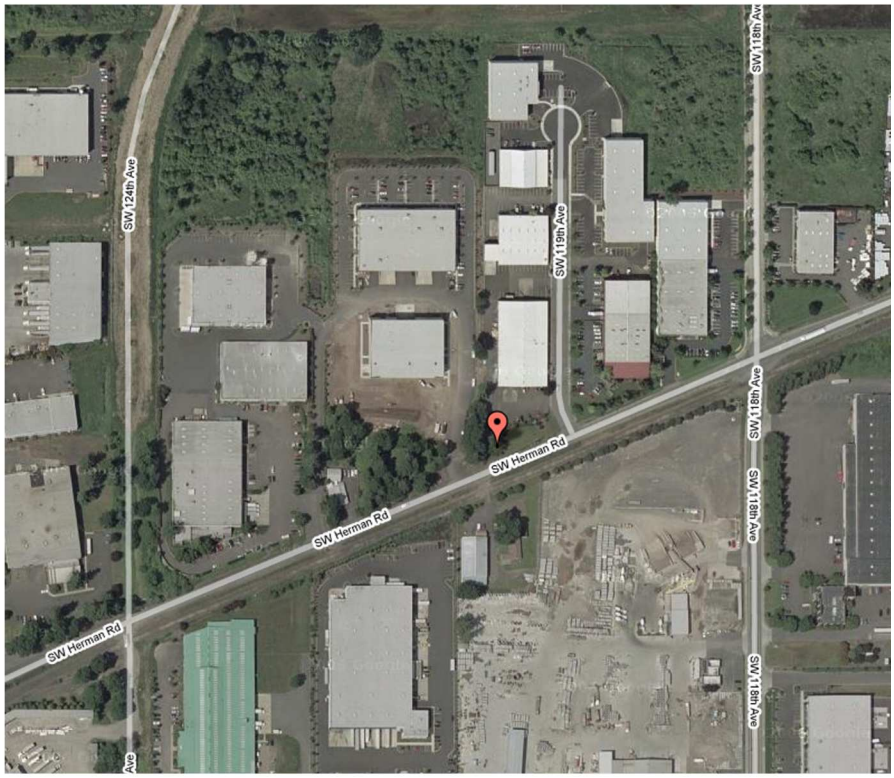
Selecting Insert Shapes

Indexable inserts, also called throwaway inserts, are clamped in toolholders of various designs. These inserts provide a cutting tool with several cutting edges. After all edges have been used, the insert is discarded. The round inserts have the greatest strength and, as with larger radius inserts, make possible higher feed rates with equal finishes. Round inserts also have the greatest number of cutting edges possible, but are limited to workpiece configurations and operations that are not affected by a large radius. Round inserts would be ideal for straight turning operations. Square inserts have lower strength and fewer possible cutting edges than the round tools, but are much stronger than triangular inserts. The included angle between cutting edges (90 degrees) is greater than that of the triangular insert (60 degrees), and there are eight cutting edges possible, compared to the six for the triangular insert. Triangular inserts have the greatest versatility. They can be used for combination turning and facing operations, while round or square inserts are often not adaptable to such combinations. Because the included angle between cutting edges is less than 90 degrees, the triangular inserts are also capable of tracing operations. The disadvantages include their reduced strength and fewer cutting edges per insert. For tracing operations where triangular inserts cannot be applied, diamond-shaped inserts with smaller included angles between edges are available. The included angles on these diamond-shaped inserts range from 35 to 80 degrees. The smaller angle inserts in particular may be plunged into the workpiece as required for tracing.



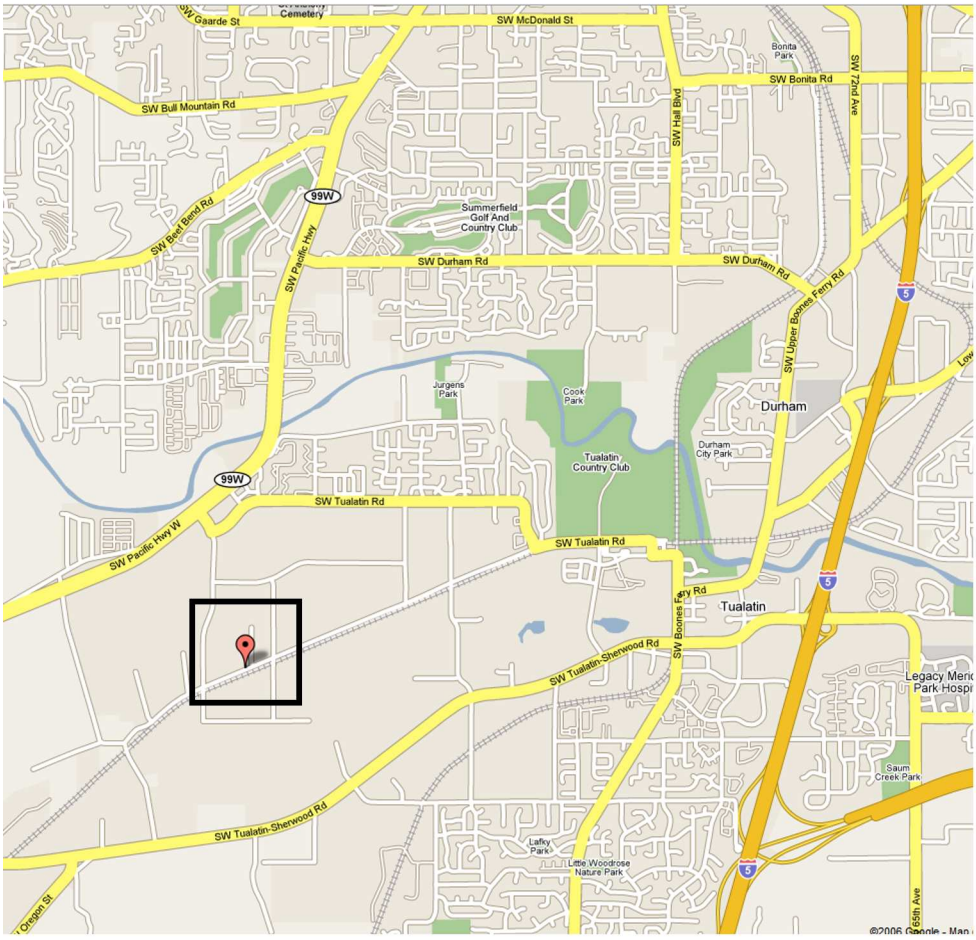
Saturday, May 13th, 2006
Meeting, 1:00pm

Shindaiwa, Inc.
11975 SW Herman Road
Tualatin, OR 97062

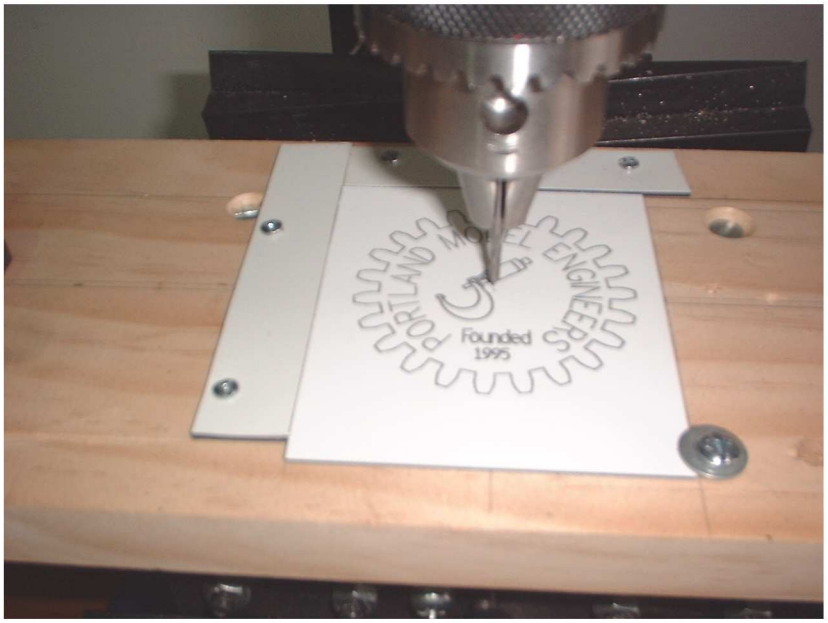


Directions to Shindaiwa

From Hwy 217 southbound:
- Take the OR-99W exit 6 to Tigard/McMinnville - go 0.3 mi
- Turn right at SW Pacific Hwy - go 3.5 mi
- Continue on SW Pacific Hwy W - go 0.5 mi
- Turn left at SW 124th Ave - go 0.3 mi
- Turn left at SW Leveton Dr - go 0.2 mi
- Turn right at SW 118th Ave - go 0.3 mi
- Turn right at SW Herman Rd - go 0.1 mi

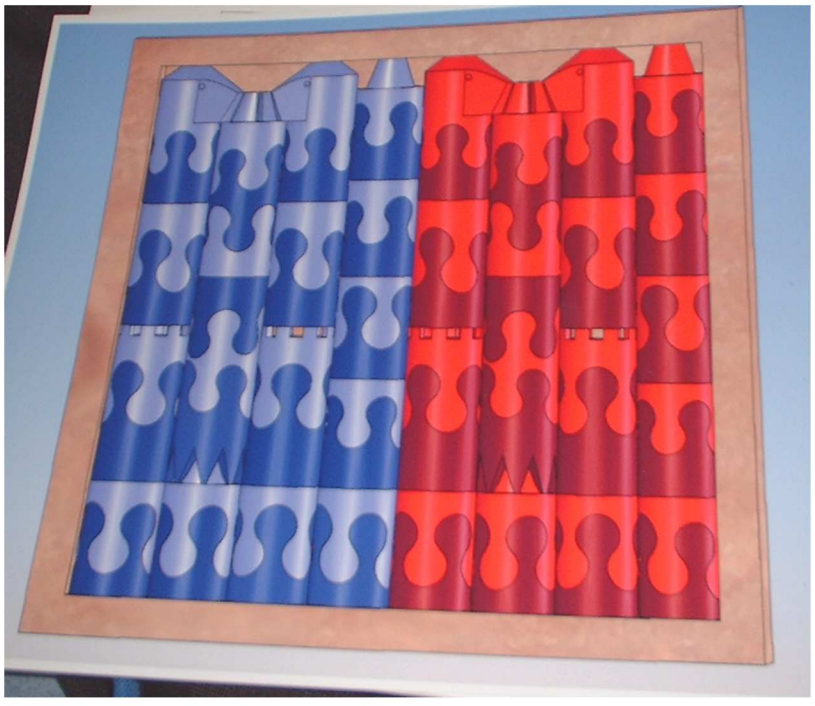


From I-5 northbound:
- Take exit 289 to Tualatin/Sherwood - go 0.3 mi
- Turn left at SW Nyberg Rd - go 0.3 mi
- Continue on SW Tualatin-Sherwood Rd - go 0.4 mi
- Turn right at SW Boones Ferry Rd - go 0.2 mi
- Continue on SW Tualatin Rd - go 0.2 mi
- Bear right and head toward SW Tualatin Rd - go 135 ft
- Bear right at SW Tualatin Rd - go 0.5 mi
- Continue on SW Herman Rd - go 1.3 mi

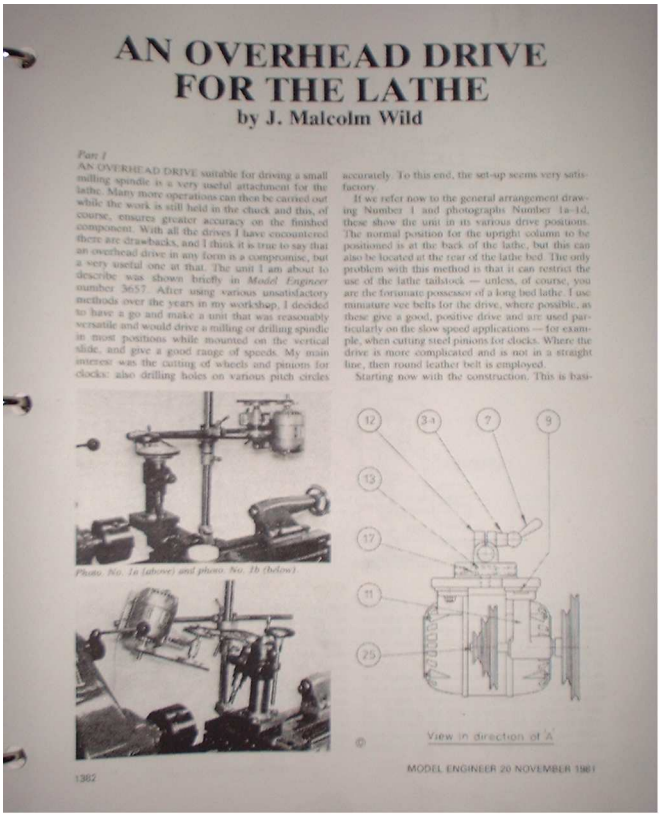


Bill Miller and Pat Wickers showed off their CNC mill conversion by creating new PME badges. The whole assembly is driven by a surplus '486 which was otherwise gathering dust; making the setup quite portable. Some ingenious work was done to create a zero-backlash nut for the leadscrew out of Delrin.

Henry Casson gave a progress report on his chess set. Several approaches were tried using wax to test out the tool patterns. He also explained how he was able to find odd sized mill bits.



This lovely precision drill press was displayed by Steve Ford.



AN OVERHEAD DRIVE FOR THE LATHE

by J. Malcolm Wild

Part 1

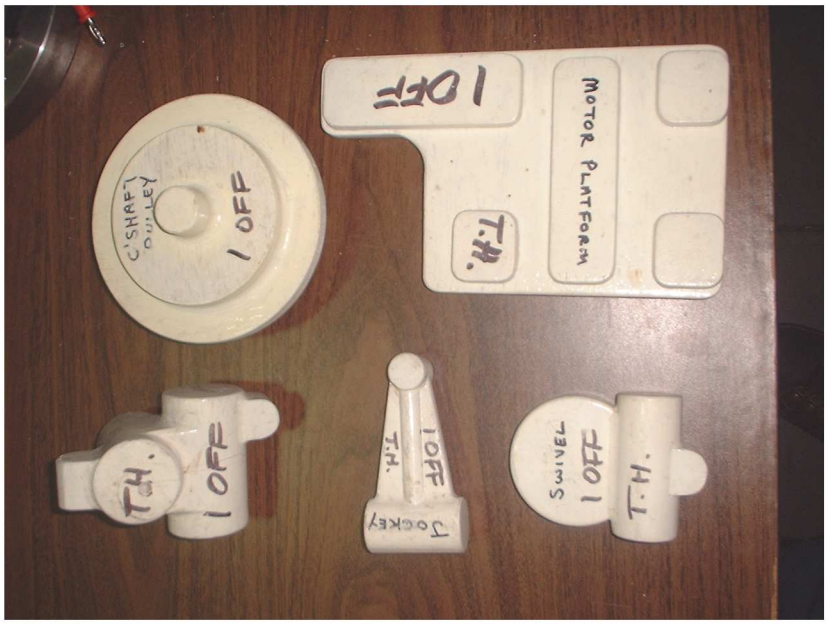
AN OVERHEAD DRIVE suitable for driving a small milling spindle is a very useful attachment for the lathe. Many more operations can then be carried out while the work is still held in the chuck and this, of course, ensures greater accuracy on the finished component. With all the drives I have encountered there are drawbacks, and I think it is true to say that an overhead drive in any form is a compromise, but a very useful one at that. The unit I am about to describe was shown briefly in *Model Engineer* number 3657. After using various unsatisfactory methods over the years in my workshop, I decided to have a go and make a unit that was reasonably versatile and would drive a milling or drilling spindle in most positions while mounted on the vertical slide, and give a good range of speeds. My main interest was the cutting of wheels and pinions for clocks: also drilling holes on various pitch circles accurately. To this end, the set-up seems very satisfactory.

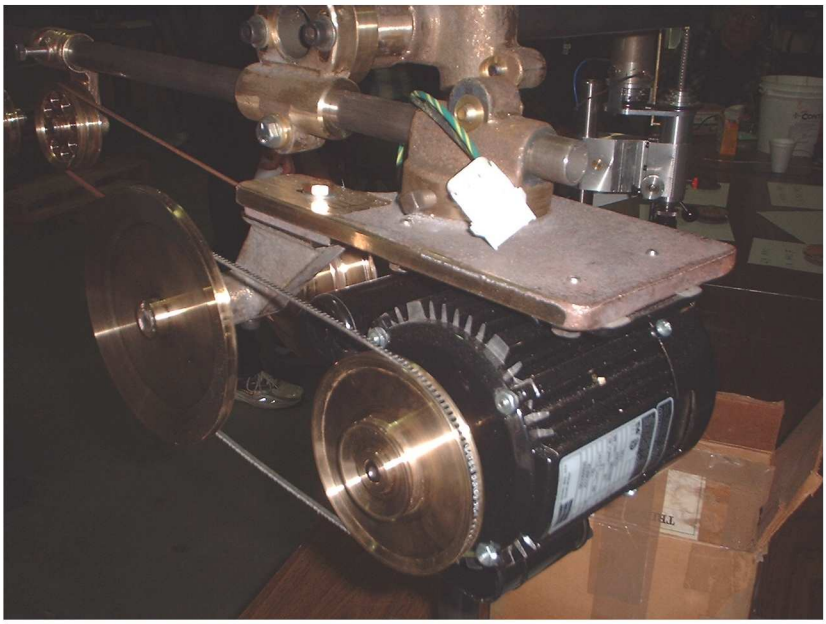
If we refer now to the general arrangement drawing Number 1 and photographs Number 1a–1d, these show the unit in its various drive positions. The normal position for the upright column to be positioned is at the back of the lathe, but this can also be located at the rear of the lathe bed. The only problem with this method is that it can restrict the use of the lathe tailstock — unless, of course, you are the fortunate possessor of a long bed lathe. I use miniature vee belts for the drive, where possible, as these give a good, positive drive and are used particularly on the slow speed applications — for example, when cutting steel pinions for clocks. Where the drive is more complicated and is not in a straight line, then round leather belt is employed.

Starting now with the construction. This is basi-

Photo. No. 1a (above) and photo. No. 1b (below)

View in direction of 'A'



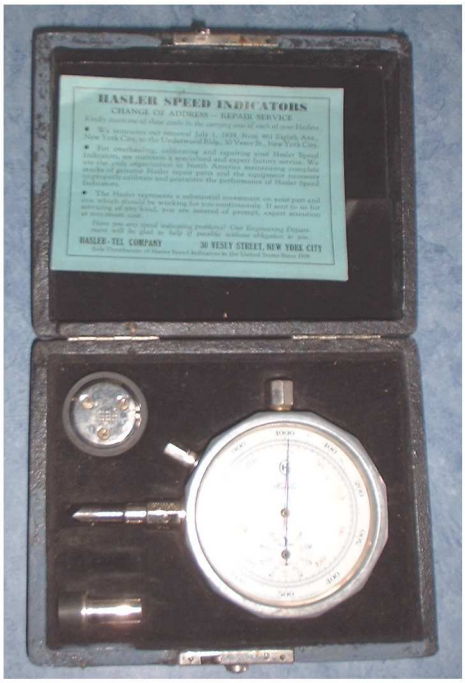


Going clockwise order from the top:

Tom Hammond brought in his lathe attachement. Starting from the article describing the project and the patterns which were then cast in bronze to final assembly with motors and belts.

Steve Ford also showed a rebushing plate.

And finally, Brett Flemming displayed his Swiss tachometer and a custom-built steady rest for his lathe.



Above Chuck Stark shows his International Harvester Mogul engine: the main block, pieces of the governor assembly and various castings.

Ken Moss uncovered several pieces of Revett, a cross slide and a vertical mill spiral cutting attachment.