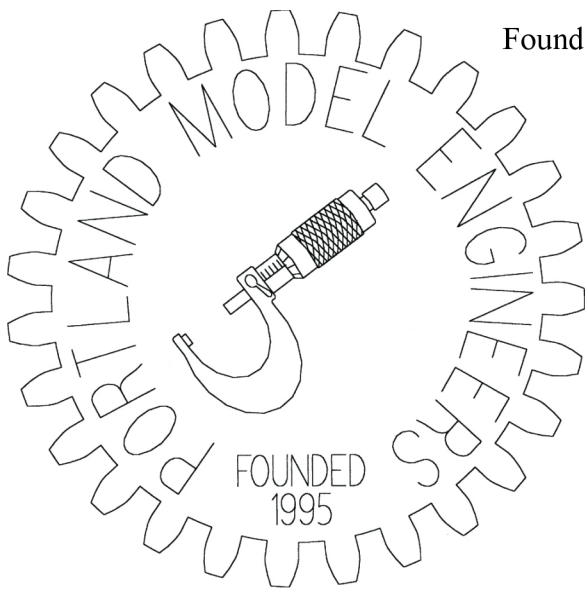


Founded by Dave and Beth Carr in 1995

**November 2007**

<http://www.portlandmodelengineers.org>



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### **For The Beginner #45 by Wes Ramsey**

Some essential tools for layout work will be listed. Some of these I have never used as in teaching high school you can't always get the students to use them.

The surface plate provides an accurate plane from which measurements for both layout and inspection may be made. In many machine shops, where a large amount of layout work is accomplished, a large area surface plate may be used. These are often known as layout tables. Any surface plate or layout table is a precision tool and should be treated as such. It should be covered when not in use and kept clean when being used. No surface plate should be hammered on, since this will impair the accuracy of the reference surface.

To make layout marks visible on the surface of the work, a layout dye is used. Layout dyes are available in several colors. The blue dye is very common. Depending on the surface color of the workpiece material, different dye colors may make layout marks more visible. Layout dye should be applied sparingly in an even coat.

Several types of scribes are in common use. The pocket scribe has a removable tip that can be stored in the handle. This permits the scribe to be carried safely in the pocket. The engineer's scribe has one straight and one hooked end. The hook permits easier access to the line to be scribed. The machinist's scribe has only one end with a fixed point. Scribes must be kept sharp. If they become dull, they must be reground or stoned to restore their point. Scribe point material can include hardened steel and tungsten carbide. When scribing against a rule, hold the rule firmly. Tilt the scribe so that the tip marks as close to the rule as possible. This will insure accuracy. An excellent scribe can be made by grinding a shallow angle on a piece of tool steel. This type of scribe is particularly well suited to scribing along a rule, thus obtaining maximum accuracy.

Last month we met at Dependable Pattern Works. The scale of work done there was truly breathtaking. Many thanks to both Ryan Thomson for hosting the tours and Marshall Thomson for showing us around and answering all our questions. Marshall has an interest in narrow-gauge N railroads among other things. Pictures of the event appear on the following pages.

Next month, Grant Carson graciously agreed to host Saturday, November 10 at 1:00pm at:

A & G Products  
7360 SW Bonita Road, Unit C  
Tigard, OR 97224

Remember to bring your latest project and a friend or two. Refreshments are provided.

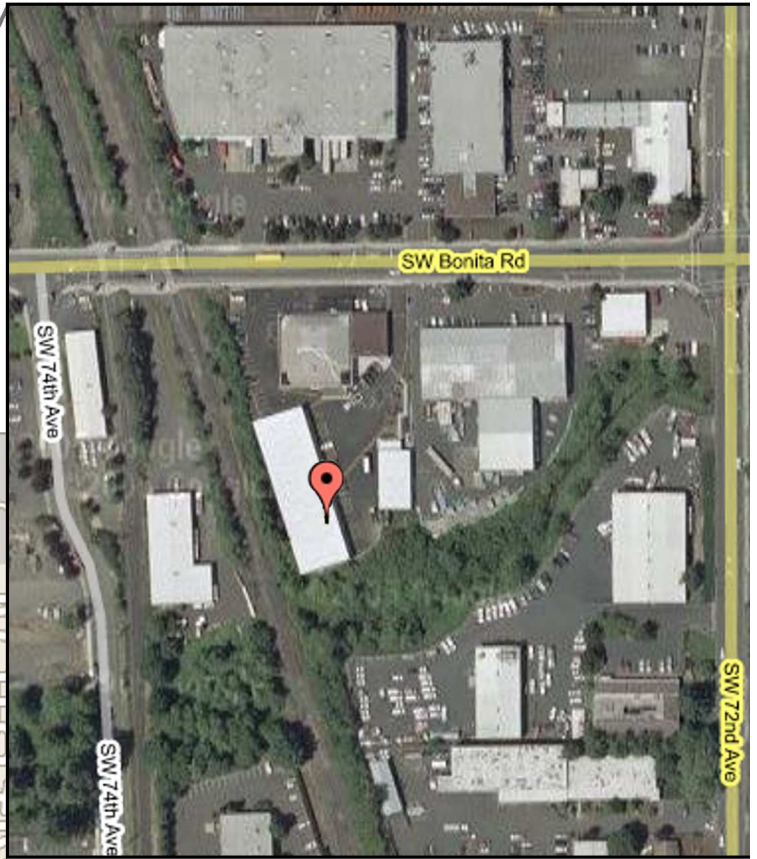
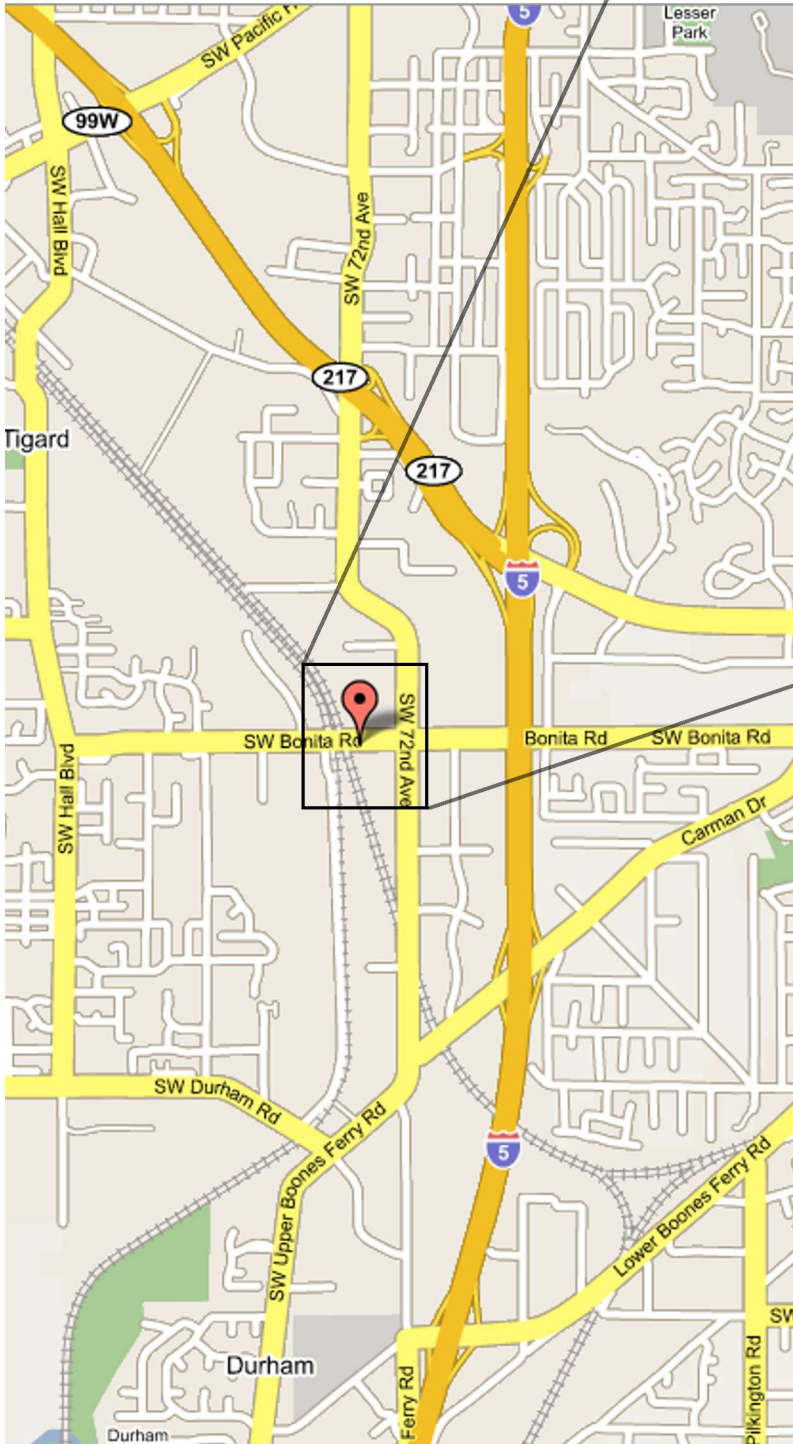
Also next month, nominations for club officers for the coming year will be collected. Greg Dermer has offered to continue as President but would just as easily let someone else have a turn. Elections will be held during the December meeting. Contact Greg or Roger Rudert.

Your current newsletter editor will be unable to continue next year due to increasing family responsibilities (due in March). This is a critical need for our group since attendance drops way off if the newsletter doesn't arrive on time each month. So if you are handy with a computer and/or camera or would like to learn a bit about desktop publishing and help out with this task, please contact Jarod Eells.

# A & G PRODUCTS

Saturday, November 10th, 2007  
Meeting, 1:00pm

A & G Products  
7360 SW Bonita Road, Unit C  
Tigard, OR 97224



## Directions to Grant's

From I-5:

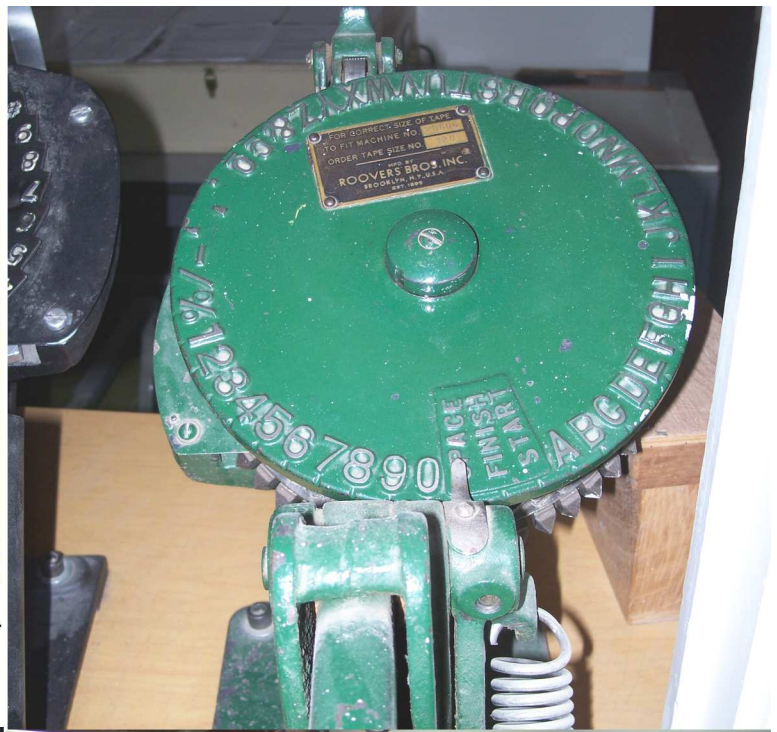
Use exit 292 to Hwy 217, go north about 1/4 mile toward Beaverton to SW 72nd exit. Turn left onto SW 72nd Ave, go about 3/4 mile to Bonita Road, turn right. A & G will be on your left.

From Hwy 99 (Pacific Ave):

Turn south onto SW 72nd Ave, proceed about 1-1/2 miles to Bonita Road, turn right. A & G will be on your left.



Ryan Thomson explained the types of work that DPW does. To the right is a large letter press for labeling patterns. Below is the front piece of a giant bucket loader.



These patterns are used to form core prints for the larger pattern on the right. The cores help to keep metal cross-section to a uniform thickness and reduce the overall weight of the piece.



Here are two examples of patterns for gas turbine blades that were cast in wax. The white material is a core which will make the vanes hollow. Small changes of mere thousands of an inch affect balance and performance.



Here Marshall Thomson talks to Paul Pierce about his model railroad kits.

A large 3D CNC router in action carves a part out of a 10 foot section of glued-up planking.



Those of us who took the Columbia Steel foundry tour will remember seeing parts made from this pattern. The teeth on the large buckets rapidly wear off and need to be replaced.